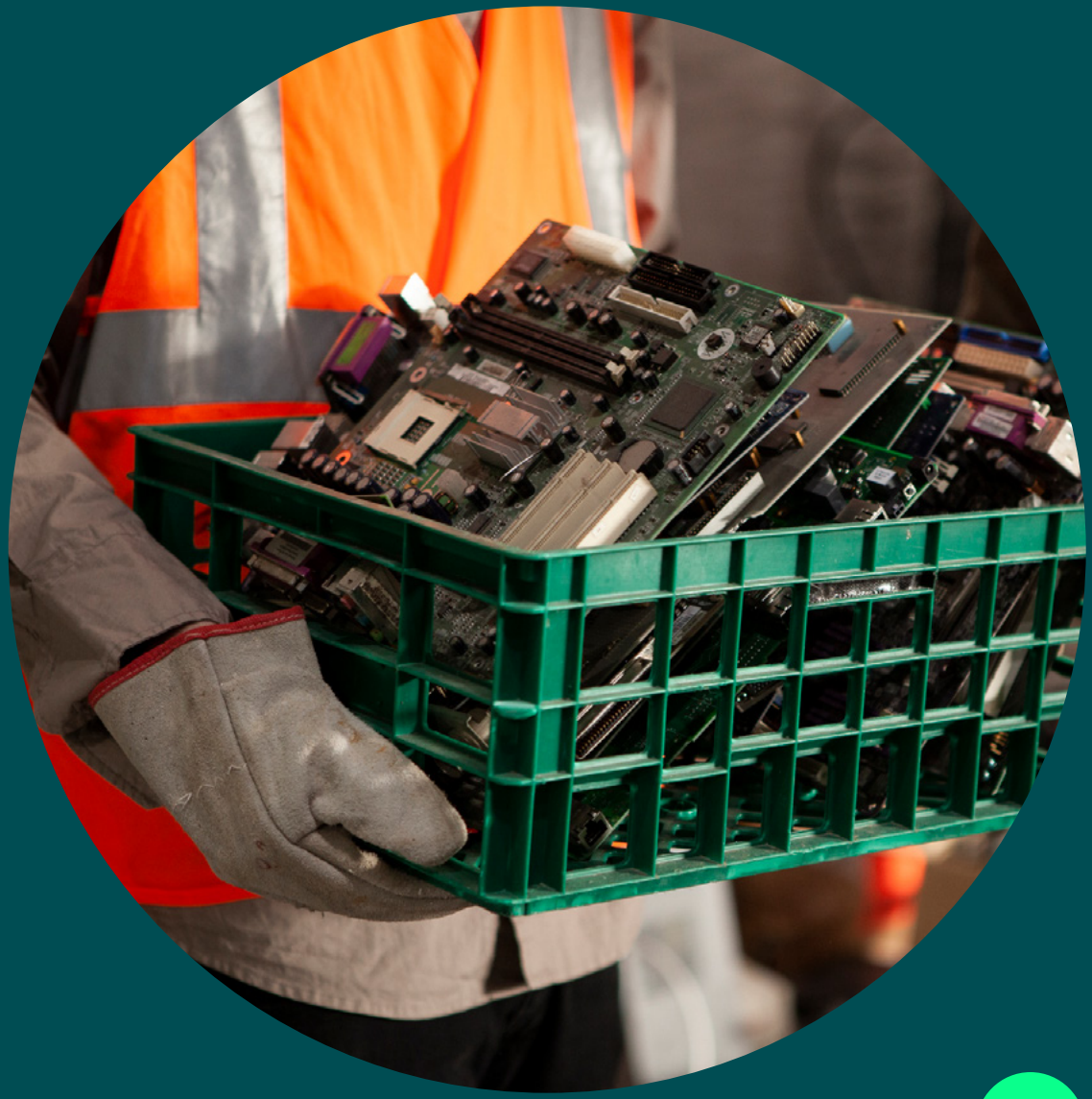
Circular Economy Institute

CEI EPR toolkit — stage 1



In partnership with CIWM stuff4life

September 2026

Foreword

In early 2026, CIWM and its Producer Responsibility Specialist Expert Group (SEG) identified an opportunity for the research and production of a toolkit on Extended Producer Responsibility for policymakers and sector and supply-chain practitioners. The SEG has acted as a steering group for the project, which was conducted by John Twitchen of env23 and Stuff4Life on behalf of CIWM.

Executive summary

CIWM's recently published analysis thought piece entitled "EPR is not a recycling tax" made the case for how Extended Producer Responsibility is integral to industrial strategy, a real opportunity to drive economic growth, and should support the drive towards a more circular economy.

There are currently many barriers to achieving circularity for four key ubiquitous products: textiles, batteries, mattresses, and Waste Electrical and Electronic Equipment (WEEE), related to end-of-life management.

Extended Producer Responsibility (EPR) is a key tool to help overcome these barriers but implementation in the UK is either non-existent or requires significant updating.

Against this background, and in an attempt to stimulate and support implementation, CIWM analysed what existing EPR advice and guidance was available from around the globe to inform the development of policy and practice excellence – an EPR 'toolkit.'

The evaluation found a plethora of documents in some areas, such as packaging, and specifically plastics covered in extensive detail. However, much of the available guidance was found to be ageing and/or superseded.

There is an extensive range of EPR literature, but it is unevenly distributed. WEEE, packaging and increasingly batteries are covered by substantial regulatory, academic, and technical literature, while recent textiles publications on the subject are expanding rapidly.

However, comparatively little current, transferable, and operational guidance exists for mattresses, reuse-first systems, cross-border textile flows, servitisation and integrated EPR – eco-design implementation.

Three recommendations have been proposed as a result of the initial Stage 1 work:

1. To produce a "missing toolkit blueprint" for UK Textiles, Mattresses, and Batteries EPR to facilitate the move from high-level principles towards implementable scheme design.

2. To ensure the blueprint is grounded in current UK producer-responsibility structures (e.g. WEEE and battery compliance schemes) and focused on the gaps highlighted by UK-facing textiles/EPR work.

3. To address the lack of focus on reuse, repair, refill, recharge, and lack of any meaningful link to eco-design measures (e.g. the EU's Ecodesign for Sustainable Products Regulation – ESPR) in current as well as future EPR schemes.

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1. Background to the toolkit

The Chartered Institution of Wastes Management (CIWM) is leading the way in challenging the status quo of the linear economy, championing the transition to a circular economy, net-zero, and a world beyond waste. CIWM aims to challenge, champion and change policy and practice through informed debate.

The organisation has identified product types where key interventions are required to attain better circularity due to the difficulties of managing them at their end of life, their use of critical raw materials, or their potential for causing environmental harm if mis-managed:

Textiles

Batteries

Mattresses

Waste Electrical and Electronic Equipment (WEEE)

CIWM considers well-designed, suitably targeted and implemented Extended Producer Responsibility (EPR) schemes as essential if we are to transition towards a circular economy, providing they do a necessary alignment between financial incentives and good environmental practices. CIWM expects EPR to be a key pillar of the eagerly awaited Circular Economy Growth Plan, and the subsequent sector roadmaps.

EPR is essential to tackling the impacts and end-of-life issues caused by products and materials such as textiles, batteries, mattresses, waste electrical and electronic equipment (WEEE), with green skills, beneficial economic impacts and resilience being the main prizes, alongside improving safety, reducing waste and carbon emissions.

With this in mind, CIWM looked at the landscape of existing EPR advice and guidance available to inform the development of policy and practice excellence – an EPR 'toolkit.'

2. Project objectives

The EPR Toolkit project set out to summarise best practice from around the world relating to EPR, across a number of different product types, including key elements such as eco-modulation, de-minimis levels, mandatory vs. voluntary programmes, producer led vs. scheme administrator, and fee transfer mechanisms to finance the end-of-life treatment where a product's end of life is likely to be overseas.

In addition to the above topline elements, CIWM wanted to cover the following detailed aspects, some of which are not covered in existing toolkits:

- driving better design
- encouraging use and retention of materials in products
- facilitating reprocessing and remanufacturing of materials into new products
- simplifying and reducing overall waste generation
- producing less-polluting products and services
- improving repairability and recyclability
- creating demand for recovered components and materials in the manufacture and supply of new products and services
- evolving new products and different delivery models e.g. servitisation.

The project has been broken down into two stages:

Stage 1 – Gap analysis study

Review content and scope of existing guides and toolkits; rather than re-invent the wheel, where appropriate, the CIWM Toolkit is based upon these existing bodies of work.

Stage 2 – Plugging the gaps

Further work may be confirmed, focused on plugging any gaps and providing additional detail on key elements where required to meet the work brief.

This report considers the findings of the Stage 1 work.

3. Findings — review of existing guides and toolkits

The review found a plethora of documents with some areas such as packaging and specifically plastics covered in extensive detail, alongside tried and tested methods for addressing them, e.g. take-back and kerbside collection, funding models, and deposit return schemes. It is also fair to say that some of the available guidance is now relatively old and/or superseded.

In contrast, relatively little exists covering the priority products CIWM has identified, and there seemed to be significant gaps relating to more subtle mechanisms such as right to reuse and repair, servitisation, links to demand generation and adoption of secondary raw materials, or beneficial economic impacts. This is despite an increasing number of schemes, globally, addressing these materials/product categories. There is also a broader recognised gap between circular economy and eco-design measures.

Below is a summary of the current status of the major producer responsibility and product stewardship schemes in place globally (a full table is available in Appendix 1).

Country/jurisdiction	Textiles	Batteries	WEEE	Mattresses
European Union	Y	Y	Y	Y
France	Y	Y	Y	Y
Netherlands	Y	Y	Y	Y
Sweden	Y	Y	Y	P
Belgium	E	Y	Y	Y
United Kingdom	E	Y	Y	E
United States	E	P	P	E
Japan/South Korea	E	Y	Y	E
Chile	Y	E	E	E

Key: Y Yes P Partial E Emerging

Note: in the above table: the EU is 'green' due to the coverage of current Regulations and Directives, which are for Member States to implement; several are yet to implement in full.

Conducting a gap analysis, signposting available advice and guidance, and addressing the information gaps was therefore identified as an area for action by CIWM and its Producer Responsibility Specialist Expert Group.

A number of guides and toolkits already exist, each providing information on aspects of EPR scheme structure and design common practices. However, each document focuses on different aspects of EPR schemes, whilst some may now be out of date and/or do not address the fully CIWM's proposed scope.

We have included a review of some of the most frequently referenced toolkits and guides in Appendix 2.

In truth, there are a multitude of tools that have been developed, tried and tested (to success or failure), and so it's less a matter of developing tools or toolkits for materials or products. More-so, the requirement is to:

- identify the right tools for use in tackling priority material/ product streams
- redress the current bias towards end-of-life/collection/ recycling by developing tools and systems which promote reuse/repair/prevention
- link eco-design and sustainable product regulations and principles with circularity principles.

The following is a heat map summarising the key documents reviewed against the criteria set out for review in this report*.

Toolkit Aspect	OECD EPR Toolkit	PREVENT EPR Toolbox	WRAP EPR	WRAP Textiles EPR Status	ZWE Designing EPR	WRAP Circular Textiles Blueprint
Eco-modulation	🟢	🟠	🟠	🟠	🟢	🟠
Minimum requirements (governance, obligations)	🟢	🟢	🟠	🟠	🟢	🟠
Producer-led vs scheme administrator roles	🟢	🟢	🟠	🟠	🟢	🟠
Mandatory vs voluntary schemes	🟢	🟠	🟠	🟢	🟢	🟠
Driving better product design	🟠	🟠	🟠	🟠	🟢	🟢
Encouraging use/retention of recovered materials	🟠	🟠	🟠	🟠	🟢	🟢
Facilitating reprocessing and manufacturing	🟠	🟢	🟠	🟠	🟢	🟢
Reducing overall waste generation	🟠	🟠	🟢	🔴	🟢	🟢
Producing less-polluting products and services	🟠	🟠	🟠	🔴	🟢	🟢
Improving repairability and recyclability	🟠	🟠	🟠	🟠	🟢	🟢
Creating demand for recovered materials/componenets	🟠	🟠	🟠	🟠	🟢	🟢
New products and delivery models (e.g. servitisation).	🔴	🔴	🟠	🔴	🟠	🟢

*NB: Given the speed of development in relation to eco-design and digital product passports, further work is recommended in order to update the heat map and identify additional areas for action with a specific focus on:

- compatibility with digital product passports
- individual versus collective producer responsibility
- product-level traceability
- design feedback loops
- repairability, durability and disassembly data
- links between EPR fee modulation and ESPR performance information.

Key:

🟢 Detailed

🟠 Brief

🔴 No coverage

We have also ranked the key documents by their maturity against the criteria, which provides a potential framework against which toolkits, guidance and indeed systems may be compared in the future.

Rank	Document	Maturity Score	Interpretation
1	Zero Waste Europe – Designing EPR	23/24	Most complete on strategic, systemic, and upstream transformation
2	WRAP – Circular Textiles Blueprint	20/24	Strongest on practical transformation, reuse, repair, and new models
3	OECD – EPR Toolkit	15/24	Best on governance, roles, mandatory schemes, and system design
4	PREVENT – EPR Toolbox	14/24	Solid operational setup guidance, limited upstream ambition
5	WRAP – Accelerating EPR Knowledge Report	13/24	Strong on enabling conditions, stakeholder engagement, and cross-country implementation learning
6	WRAP – Textiles EPR Status Report	10/24	Intelligence and mapping tool, not a design or implementation guide
6	WRAP – Textiles EPR Status Report	10/24	Intelligence and mapping tool, not a design or implementation guide

In summary, the document review concluded the following:

1. No single document provides a full and exhaustive overview:

- scheme design/governance-heavy tools do not drive transformation/implementation
- transformation-heavy tools (e.g. ZWE) lack operational compliance detail
- none address all of the identified priorities in the report brief.

2. A UK EPR 'Missing Toolkit Blueprint' could usefully:

- combine OECD governance and policy structure with PREVENT's modular approach
- …with the WRAP knowledge work's enabling environment and ZWE's systemic ambition
- …and WRAP Circular Textiles' practical business model and collaborative change focus.

3. Most critical cross-document gaps (confirmed by the heat map):

- Servitisation and alternative delivery models
- Explicit waste prevention (absolute reduction)
- Demand-side mechanisms for secondary materials

4. Findings — gap analysis

In order to better map the gaps, following prior engagement with members of CIWM's Producer Responsibility Specialist Expert Group (PR SEG), a short workshop was held with CIWM officers and advisers to review initial gap analysis work, identify additional sources and confirm gaps to focus on.

At the workshop it was decided to concentrate on CIWM's priority product streams:

- Textiles
- Batteries
- Mattresses
- Waste Electrical and Electronic Equipment (WEEE)

4.1 Major gaps by product/material stream

i. Textiles	
What exists	**Key gaps**
WRAP Circular Textiles Blueprint (strategic/ collaborative).*	Document not intended as operational, step-by-step textiles EPR "how-to" toolkit.
National PRO guidance in early adopters (France, Netherlands, Sweden).	Insufficient guidance on reuse vs recycling prioritisation.
OECD and ZWE policy framing.	Very limited advice on handling exports, quality grading, and market saturation.
Result: textiles EPR exists in law, but implementation is fragile and inconsistent.	

*NB: Since completion of WRAP's **Textiles EPR Status Report** (published January 2024), and original analysis for this report, further international evidence has become available through **Mapping of Global Extended Producer Responsibility (EPR) for Textiles** (2025). This validates WRAP's report, and provides a more up-to-date review of the rapidly evolving international landscape, confirming that textiles EPR is moving from early policy development towards wider implementation across Europe and beyond.

ii. Batteries*	
What exists	**Key gaps**
Strong regulatory guidance in the EU (Batteries Regulation), plus safety-focused operational guidance.	Operational fire-risk guidance at system level (collection, aggregation, transport, sorting) that is consistent and transferable across countries.
Stewardship guidance in some non-EU markets (e.g. Call2Recycle in USA/Canada).	Guidance for emerging economies where informal collection dominates.
OECD-level policy principles.	Growing body of guidance on electric vehicle (EV) and low power battery EPR; relatively little operational guidance for portable, and industrial batteries in mixed EPR systems; cross-border trade + waste shipment accountability issues.
Result: countries may know **what** to regulate, but not **how** to operationalise battery EPR at scale.	

*NB: Since preparation of the initial literature review, several important studies have been published examining Extended Producer Responsibility for batteries beyond the European regulatory framework. These include analyses of producer responsibility for power battery recycling in China, international trade flows associated with waste batteries, policy frameworks governing end-of-life lithium-ion batteries from electric vehicles, and the growing role of second-life battery applications.

Collectively, these studies demonstrate that battery EPR is rapidly evolving from conventional portable battery collection schemes towards far more complex systems involving electric vehicle batteries, critical raw material recovery, battery passports, second-life deployment, international movements of waste batteries and increasing attention to fire safety throughout collection, storage, and transport.

They also reinforce the importance of designing EPR systems that support resource security, circular supply chains and recovery of critical minerals while ensuring environmental protection and public safety. The newer evidence suggests that future battery EPR is increasingly concerned with designing **circular battery systems**, not simply end-of-life recycling.

These issues are likely to become increasingly significant as electric vehicle deployment accelerates globally.

iii. Mattresses	
What exists	**Key gaps**
A handful of strong national exemplars (Belgium – Valumat; Netherlands – RetourMatras).	Mattress-specific EPR guidance is scarce and geographically limited toolkit.
Some municipal or bulky-waste guidance.	Little guidance on health, contamination, acceptance criteria (hygiene, damage).
PREVENT/OECD frameworks (generic).	Limited replication guidance for countries wanting to copy BE/NL models.
Result: mattress EPR is spreading, existing guidance dated and not standardised.	

iv. WEEE*	
What exists	**Key gaps**
Extensive EU guidance (WEEE Directive).	Limited guidance on reuse-first systems (most tools focus on recycling).
WEEE Forum and WEEELABEX treatment standards.	Weak guidance for low – and middle-income countries dealing with informal recycling.
Many national compliance schemes.	Poor tools on cross-border flows and illegal exports.
Result: WEEE guidance is technically strong but socially and globally incomplete.	

*NB: Recent literature (in particular "20 years of e-waste regulation in the European Union and worldwide trends in legislation and innovation technologies for a circular economy", 2025) also highlights growing divergence between the UK and EU WEEE regimes following EU regulatory developments, alongside persistent issues involving online marketplaces, free-riding, collection targets, data comparability and access to treatment infrastructure. These issues should be reflected in any UK blueprint rather than relying solely on the original WEEE Directive framework.

4.2 Major gaps by geography/system maturity

4.2.1 Emerging and middle-income economies	
Gaps	**Observation**
Most guidance assumes high-capacity regulators and formal waste systems. Almost no country-adapted toolkits for informal-sector integration. Weak guidance on phased or "light-touch" EPR introductions.	Existing toolkits (OECD, PREVENT) acknowledge these issues but don't provide enough operational depth.

4.2.2 Mature EPR systems (EU, OECD countries)	
Gaps	**Observation**
Guidance still focuses on cost recovery, not waste prevention. Limited tools for eco-modulation hat genuinely changes design. Poor integration between EPR and reuse/repair/circular business models.	ZWE correctly diagnoses the problem, but practical tools to fix it are missing.

4.3 Top three biggest gaps overall (highest priority)

GAP 1 — Operational "How-To" toolkits for new and complex streams (Textiles, Mattresses, Batteries)	
There is a huge gap between high-level principles (OECD, ZWE), and real-world operational needs (collection design, acceptance criteria, safety, logistics).	
What's missing:	• Step-by-step implementation manuals • Template service contracts • Standardised acceptance and handling rules • Replication guides for proven models
Most critical for:	• Textiles, mattresses
Action needed:	• Product-specific, operational toolkits

GAP 2 — Guidance that puts reuse, not recycling, at the centre (across all product streams, especially textiles and WEEE)	
Most EPR guidance still treats reuse as secondary or optional (recognising recent increase in coverage of the issue); targets, fee modulation and reporting often disincentivise reuse.	
What's missing:	• Clear hierarchy-based scheme design tools • Reuse-specific targets, metrics, and funding mechanisms • Guidance on protecting reuse markets from being crowded out by recycling
Most critical for:	• Textiles, WEEE (plus packaging and plastics)
Action needed:	• Reuse-first EPR design frameworks with enforceable mechanisms

GAP 3 — Practical guidance for informal-sector & low-capacity contexts (Global South, emerging economies)	
Many countries have laws but lack enforcement capacity, formal collection infrastructure, and data systems.	
What's missing:	• Tools for hybrid formal–informal EPR systems • Guidance on fair compensation, inclusion, and transition • Simplified registration, reporting, and compliance models • EPR/scheme structures that address/fund regional specific issues e.g. beach wash-up
Most critical for:	• Batteries, WEEE, textiles in emerging economies
Action needed:	• "EPR-lite" (product stewardship/funding) and phased implementation toolkits

4.4 Summary table – major gaps

Rank	Gap	Why it matters
1	Product/material-specific operational toolkits	Without them, EPR laws don't translate into working systems
2	Reuse-first EPR design guidance	Current EPR risks locking in recycling-heavy, linear models
3	Informal-sector/ low-capacity implementation tools	Without these, EPR expansion will stall or fail

5. Recommendations

The key recommendation is for the production of a “missing toolkit blueprint” for UK Textiles, Mattresses, and Batteries EPR to inform, and assess benefits and impacts, for policymakers, producers, and stakeholders and to enable the country to move from high-level principles towards implementable scheme design, including:

- financial mechanisms
- compliance scheme/Producer Responsibility Organisation requirements
- deposit potential, and
- repair/reuse integration.

The second recommendation is to ensure the blueprint is grounded in current UK producer-responsibility structures (e.g. WEEE and Battery compliance schemes) and focused on the gaps highlighted by UK-facing textiles/EPR work, with the core purpose of the toolkit being to:

- translate EPR policy into practical, implementable systems for the UK
- bridge the gap between high-level principles and day-to-day operations
- ensure EPR schemes prioritise repair and reuse, not just recycling, and
- provide a consistent model for financial flows, compliance schemes, and enforcement.

The third recommendation is to address the lack of focus on reuse, repair, refill, recharge, and lack of any meaningful link to eco-design (e.g. ESPR) measures in current as well as future EPR schemes – combined, these measures would:

- provide the ability to design-out waste and design-in EPR
- to ‘servitise’ and therefore monetise EPR within the UK economy
- link to development of demand-side pull factors, and
- inform recycled content requirements and standards (noting existing REACH guidance).

Appendix 1 — Summary of existing EPR/stewardship schemes covering CIWM's priority materials (global)

Country / jurisdiction	Batteries	Mattresses	WEEE	Textiles	Notes and key source
European Union (Member States)	Yes	Yes (many MS)	Yes (all MS)	Yes/Rolling out	EU rules cover batteries and WEEE; textiles EPR widely adopted/being implemented by members; mattress EPR active in several MS but no EU-wide obligation.
Austria	Yes	Partial	Yes	Emerging	WEEE/batteries: established national schemes; textiles/mattress activity developing.
Belgium	Yes	Yes	Yes	Emerging/Planned	Mattress EPR via Valumat; multiple regional PROs for packaging/WEEE.
Bulgaria	Yes	Emerging	Yes	Emerging	WEEE/batteries per EU transposition; textiles/mattress schemes developing.
Croatia	Yes	Emerging	Yes	Emerging	WEEE legislation transposed nationally.
Cyprus	Yes	Limited	Yes	Limited	Transpositions vary; EU small MS have basic WEEE/ battery rules.
Czech Republic	Yes	Partial	Yes	Emerging	National EPR for WEEE/batteries; textiles/mattress pilots evolving.
Denmark	Yes	Partial	Yes	Emerging	Strong collection infrastructure; some textile initiatives.
Estonia	Yes	Limited	Yes	Limited	EU transposition applies.
Finland	Yes	Partial	Yes	Emerging	WEEE/batteries mature; textiles policy developing.
France	Yes	Yes	Yes	Yes (active)	France has established textiles EPR (Refashion), mattress recycling initiatives and full WEEE/batteries schemes.

Country / jurisdiction	Batteries	Mattresses	WEEE	Textiles	Notes and key source
Germany	Yes	Partial	Yes	Emerging/ developing	Robust WEEE/battery frameworks; textiles EPR under national implementation plans.
Greece	Yes	Emerging	Yes	Emerging	Government projects to set up mattress/textile EPR (capacity building).
Hungary	Yes	Partial	Yes	Yes (implemented)	One of the earlier EU adopters for textiles EPR (national measures implemented).
Ireland	Yes	Partial	Yes	Emerging	Standard EU streams in place; textiles pilots/planning.
Italy	Yes	Yes	Yes	Emerging (legislation planned)	CONAI covers packaging and sectoral EPRs; mattress and textiles EPR planned/announced.
Latvia	Yes	Limited	Yes	Yes (recent adoption)	Textile EPR introduced July 2024 (recent national adoption reported).
Lithuania	Yes	Limited	Yes	Emerging	
Luxembourg	Yes	Limited	Yes	Limited	
Malta	Yes	Limited	Yes	Limited	
Netherlands	Yes	Yes	Yes	Yes (legislated)	Mattress EPR, textiles EPR, batteries/WEEE mature.
Poland	Yes	Partial	Yes	Emerging	National EPR transpositions in place; textiles policy in development.
Portugal	Yes	Partial	Yes	Emerging	
Romania	Yes	Limited	Yes	Emerging	
Slovakia	Yes	Limited	Yes	Emerging	

Country / jurisdiction	Batteries	Mattresses	WEEE	Textiles	Notes and key source
Slovenia	Yes	Partial	Yes	Emerging	
Spain	Yes	Partial	Yes	Emerging/ planned	Packaging/WEEE mature (Ecoembes/Ecovidrio); textiles EPR in development in several regions.
Sweden	Yes	Partial	Yes	Yes (in force)	Sweden has national textiles EPR in force; strong WEEE/battery systems and DRS for drinks.
United Kingdom	Yes	Partial	Yes	Developing/pilots	WEEE and batteries regulated; textiles EPR under development/industry prep.
United States	Partial (state level)	Partial (state/ local/ind)	Partial (state level)	Limited/pilots	No federal EPR; many states have WEEE and battery laws (CA, NY etc.); textiles mainly local pilots; California first major state to adopt mandatory apparel EPR, New York drafting legislation.
Canada	Partial (provincial)	Partial	Partial (provincial)	Limited/pilots	Provinces implement e-waste/battery schemes; textiles limited.
Mexico	Emerging	Limited	Emerging	Emerging	Some municipal/state e-waste + EPR elements; national policy evolving.
Brazil	Emerging/ partial	Limited	Emerging/ partial	Limited/pilots	Brazil's National Solid Waste Policy includes EPR mechanisms; implementation varies by sector and states.
Chile	Emerging	Limited	Emerging	Yes (textiles in EPR law)	Chile recently added textiles to its EPR law; e-waste and battery policy expanding.
Argentina	Emerging	Limited	Emerging	Limited	National policy discussions; local pilots.
Colombia	Emerging	Limited	Emerging	Emerging	EPR elements in national solid waste law; sectoral rollouts variable.
Peru	Limited	Limited	Limited	Limited	
South Africa	Partial/ sectoral	Limited	Partial/ sectoral	Limited/pilots	Some industry stewardship initiatives and draft EPR regulations in process; implementation uneven.

Country / jurisdiction	Batteries	Mattresses	WEEE	Textiles	Notes and key source
Morocco	Emerging	Limited	Emerging	Limited	North African countries introducing EPR gradually.
Egypt	Emerging	Limited	Emerging	Limited	
India	Partial (WEEE and battery rules)	Limited	Yes (rules exist)	Limited/pilots	India has E-waste Rules and some battery rules; textiles EPR not yet widely applied.
Japan	Yes	Limited	Yes	Limited/pilots	Appliance recycling laws and battery/EV regimes; textiles pilots exist.
South Korea	Yes	Limited	Yes	Limited	Advanced recycling infrastructure; selective EPR across streams.
China	Yes	Limited	Yes	Limited/pilots	E-waste and some battery recycling laws; textiles recycling pilots in some provinces.
Australia	Partial (state level)	Partial	Partial (state-level or product-specific)	Pilots/voluntary	States have varying e-waste/battery schemes; textiles pilots and voluntary schemes.
New Zealand	Partial/ limited	Limited	Partial	Limited	Emerging interest and pilots.
Russia	Limited/ emerging	Limited	Emerging	Limited	Fragmented implementation; reforms under discussion.
Turkey	Yes	Limited	Yes	Limited/emerging	National transpositions of EU-style EPR for some streams.
United Arab Emirates	Emerging	Limited	Emerging	Limited	Some emirates piloting e-waste and battery collection.
Kenya/Nigeria/Ghana	Limited/ pilot	Limited	Limited/ pilot	Limited/pilot	Several African countries exploring EPR; many rely on broader waste laws and donor projects.

Appendix 2 — Review of frequently referenced toolkits, guides, and resources

OECD

The paper provides a succinct overview of EPR policy approach. It explains the historical development of EPR (originating with deposit-refund systems for beverage containers and evolving into broader "take-back" and recycling obligations) and sets out the key facts, product/sector coverage, and differences between voluntary .v. mandatory EPR schemes.

In its second part it presents principles and governance considerations for designing and implementing EPR systems. These include clear definition of responsibilities, target-setting, stakeholder coordination, transparency, government capacity, fair competition, and integration of the informal waste sector.

The conclusion reiterates that while EPR alone is not a silver bullet, when well-designed it can contribute significantly to collection, recovery, and design improvement.

Scope of issues, materials and tools covered

Issues addressed

- The toolkit tackles issues including cost-shifting (from governments to producers), improving collection and recycling rates, driving eco-design and reuse/re-use, ensuring transparency and monitoring, addressing free-riding, integrating informal waste sectors (especially in low-/middle-income countries).
- It also covers harmonisation/co-ordination across jurisdictions.

Materials/product categories in scope

- The paper notes that EPR schemes have historically been targeted at specific product categories (e.g., electronics, packaging, vehicles, tyres) rather than blanket material streams.
- It also highlights newer frontiers of EPR – such as construction materials, textiles, fishing gear, single-use plastics, and other products where plastics are widely used.

Tools and materials/support provided

- Although relatively brief, the document gives policymakers a set of guiding considerations (or "key guidance for policy design").
- These include setting binding targets, ensuring stakeholder dialogue and coordination, developing transparent financial and operational flows, ensuring competitive service provision in waste collection, and formalising the role of informal recyclers.
- It also points to further resources in its references.

What makes this a useful resource

- It distils a large body of literature into a clear, accessible format aimed at policymakers globally.
- It covers both developed and developing country contexts (including issues of the informal sector) – increasing relevance across geographies.
- It emphasises that EPR is not a standalone solution but must be integrated into broader waste, design, and circular economy policies.
- The principles it sets out are actionable: clearly definable, monitorable, and adaptable to local context.

PREVENT

The Toolbox – titled "EPR Toolbox | Know-how to enable Extended Producer Responsibility for packaging" – is a comprehensive interactive PDF developed by PREVENT Waste Alliance (financed by Germany's Deutsche Gesellschaft für Internationale Zusammenarbeit/GIZ) to provide training and guidance on designing and implementing EPR (Extended Producer Responsibility) systems for packaging waste.

It is oriented especially towards low- and middle-income country contexts, with inputs from partner organisations in Ghana and Indonesia.

The Toolbox collates knowledge modules, factsheets, country-case examples, FAQs and a video library on EPR systems.

Scope of issues, materials and tools covered

Issues addressed

- The Toolbox addresses the full lifecycle of packaging waste management under EPR: roles and responsibilities in the value chain.
- Establishment of producer responsibility organisations (PROs), legal/regulatory framework, financial flows and fee-setting, obligation registers, waste collection and sorting.
- Includes integration of the informal sector, incentives for citizen separation, deposit-return systems, achieving high-quality recycling, improving recyclability of packaging, and boosting market demand for recycled plastics.

Materials/product categories in scope

- Although the focus is on packaging waste broadly, there is particular emphasis on plastics and other packaging materials that typically enter consumer waste streams.
- The Toolbox does not provide much detail on product categories beyond packaging.

Tools and materials/support provided

- A modular set of factsheets (e.g., "How can roles and responsibilities in packaging value chains be defined?," "How can a PRO be established?," "How can the informal sector be involved and recognised for a Just Transition?").
- Video series ("EPR Explained!") which supplement the factsheets with expert interviews and case-examples.
- Country case reports/country-examples (particularly on Ghana, Indonesia) to illustrate how EPR systems have been (or could be) implemented in different contexts.
- A glossary, references/further reading list, interactive navigation (via PDF menus) to ease use.

What makes this a useful resource

- It is highly practical: modular layout allows governments, regulators, producers, waste stakeholders to dip into exactly the issues that apply in their context.
- It emphasises contexts beyond high-income countries (including informal sectors, developing economy constraints) – a frequent gap in many EPR resources.
- It links structural/systemic design (legal frameworks, registers, PROs) with operational aspects (collection/sorting, citizen engagement, recyclability) – ensuring a holistic view.
- It is openly available, and encourages adaptation for different territories.

WRAP EPR pages

Not strictly a toolkit, WRAP's EPR page primarily presents EPR as a regulatory mechanism that places the financial and operational responsibility for end-of-life product and packaging management onto producers (manufacturers/sellers), and away from local authorities and taxpayers.

The content underscores the urgency of tackling growing product/packaging waste streams and associated greenhouse gas emissions, positioning EPR as a key tool in a circular economy. WRAP describes its role as offering expertise, guidance, and support to a range of stakeholders – governments, producers/brands, councils, industry associations and NGOs – to design, implement and manage effective EPR systems.

Scope of issues, materials and tools covered

Issues addressed

- The transition of cost from public bodies to producers (polluter-pays principle) for waste management and recycling.
- Challenge of rapidly increasing consumption and waste, and the linkage to greenhouse gas emissions (for example in textiles, electronics, packaging).
- Design for circularity: reducing problematic or unnecessary packaging, encouraging reuse/refill, improving recyclability, and establishing better collection/sorting infrastructure.
- Governance and data aspects: transparency, reporting burdens, fee modulation for different material types (e.g. via recyclability assessment) and harmonisation across jurisdictions.

Materials/product categories in scope

- Heavy emphasis on packaging broadly, and plastic specifically but also draws attention to other waste streams where EPR is emerging.
- Textiles, WEEE, batteries and other "problematic waste streams;" "Proliferation of Textiles EPR systems" report addresses textile waste and EPR globally.

Tools and materials/support provided

- Establishment and expansion of EPR systems (for governments/regulators) – how to tailor EPR mechanisms to national/market context.
- Support for producers/brands: understanding obligations, compliance options, financial/administrative burdens; packaging modulated fees deep dive.
- For local authorities/councils and waste management organisations: operational insights, how EPR systems interface with collection/sorting and consumer engagement.
- Data and reporting frameworks e.g. guidance on packaging data collection for EPR in the UK (material/weight/recyclability).
- Research and status reports e.g. textiles EPR status report that maps out global EPR systems for textiles.

What makes this a useful resource

- Valuable combination of policy-level guidance, industry and operational perspectives, and data/reporting tools, thereby supporting the full value chain of EPR from design to implementation.
- It is grounded in the UK context (which is imminently rolling out major packaging EPR reforms) but also has international relevance – which helps compare cross-jurisdiction learning.
- It emphasises holistic change: moving beyond just end-of-life waste to tackle upstream design, material use, reuse/refill models, and broader circular economy levers.
- The availability of research and status reports (e.g., on textiles) means users can draw on real-world evidence and benchmarking.

WRAP – Accelerating EPR Knowledge Report

The **Accelerating EPR Knowledge Report** was published by WRAP in April 2025 and authored by Jordan Girling. The work was funded by the Norwegian Retailers' Environment Fund and summarises a wider programme intended to facilitate an enabling environment for Extended Producer Responsibility in Chile, India, South Africa, and the United Kingdom.

The programme sought to improve understanding of EPR development and implementation by supporting knowledge exchange between Plastics Pacts operating in the participating countries. It used a combination of webinars, business surveys, focus groups, workshops, stakeholder networking, and business engagement to identify common challenges, opportunities, and transferable good practices.

The report is principally concerned with EPR for packaging and plastics. However, many of the enabling conditions it identifies are applicable to other product and material streams, including textiles, batteries, mattresses, and WEEE.

Scope of issues, materials and tools covered

Issues addressed

- The political, institutional, and commercial conditions needed to support EPR;
- differences in EPR maturity and implementation between countries;
- business understanding of EPR requirements and objectives;
- engagement between government, producers, industry bodies, and other stakeholders;
- knowledge sharing between jurisdictions;
- barriers and opportunities affecting EPR development;
- identification and replication of good practice;
- adaptation of EPR principles to national circumstances.

Materials/product categories in scope

- The principal focus is packaging and particularly plastic packaging;
- evidence is drawn from the Plastics Pact networks in Chile, India, South Africa, and the UK;
- the broader findings on governance, stakeholder engagement, institutional capacity, and implementation conditions have relevance across other EPR streams.

Tools and materials/support provided

- Findings from business surveys and stakeholder engagement;
- summaries of webinars, focus groups and workshops;
- comparison of experiences across four national contexts;
- identification of common challenges and enabling conditions;
- examples of good practice that may be adapted or replicated elsewhere.

The report does not appear to provide a complete step-by-step implementation manual, standard contracts, model legislation, fee-calculation tools, or detailed operational templates. Its value is instead as a structured account of implementation experience and the wider conditions required to make EPR effective.

What makes this a useful resource

The report is useful because it moves beyond a purely theoretical account of EPR and considers how businesses and stakeholders experience the development of EPR systems in practice.

Its main strengths include:

- **Recent evidence:** Published in 2025, it reflects relatively current EPR debates and implementation experience.
- **Cross-country comparison:** It considers countries with different regulatory, institutional, and economic circumstances.

- **Business engagement:** Its findings are informed by surveys, workshops, and direct engagement rather than policy analysis alone.
- **Focus on enabling conditions:** It recognises that effective EPR requires appropriate governance, institutional capacity, stakeholder understanding, and collaboration.
- **Transferability:** Although focused on plastic packaging, many lessons concerning engagement, implementation readiness and governance can inform other EPR streams.
- **Relevance to the UK:** The UK is one of the four countries covered, making the work particularly applicable to the development of a UK-focused EPR toolkit.

Limitations

The report's principal limitation for the CIWM project is its packaging and plastics focus. It does not provide detailed operational guidance for textiles, batteries, mattresses, or WEEE, nor does it fully address some of the gaps prioritised by CIWM, including reuse-first targets, servitisation, repair systems, demand for secondary materials and product-specific acceptance or treatment standards.

It should therefore be treated as a strong resource on implementation conditions and stakeholder engagement, rather than as a complete operational EPR toolkit.

Overall assessment

The Accelerating EPR Knowledge Report provides a valuable bridge between high-level EPR principles and practical implementation experience. It is more directly relevant to the objectives of this study than WRAP's general EPR webpages and should be assessed as a standalone resource.

It complements rather than duplicates the other leading documents:

- OECD provides stronger overarching governance and policy-design principles;
- PREVENT provides more structured and modular operational guidance;
- Zero Waste Europe provides greater emphasis on systemic reform, prevention, and circularity;
- WRAP's Accelerating EPR Knowledge Report provides stronger evidence on stakeholder experience, enabling conditions and cross-country implementation learnings
- For these reasons, it merits a position close to the OECD and PREVENT resources in the maturity ranking, subject to consistent scoring against the full assessment criteria.

WRAP textiles EPR status report

The report provides a comprehensive overview of textile EPR schemes as they existed during research undertaken in late 2023 and published in January 2024. It remains an important baseline reference for understanding the emergence of textile EPR internationally. However, subsequent policy developments have been documented in the 2025 **Mapping of Global Extended Producer Responsibility (EPR) for Textiles**, which should be used alongside this report to provide the most current international picture.

It was prepared with research between November and December 2023, and published January 2024.

The report summarises the proliferation of Extended Producer Responsibility (EPR) systems for the textiles waste stream around the world and explains why EPR systems are needed.

It provides information on active, emerging, and planned textiles EPR schemes in different jurisdictions (e.g. France, the Netherlands, Sweden, Hungary etc).

The report gives context on the environmental impacts of textiles and outlines trends in global policy development for textile EPR.

Scope of issues, materials and tools covered

Issues addressed

- The environmental impact of textiles (high greenhouse gas emissions, water use, waste generation) and how EPR schemes can contribute to mitigation.
- The status of regulatory action: which countries already have textile extended producer responsibility (tEPR) schemes (or are developing them), what scope they cover and key policy timelines.
- Design considerations for tEPR: e.g. who pays, how fees are structured, targets for recycling, how reuse is encouraged, how to integrate producers/importers, how to monitor and report.

Materials and product categories in scope

- The focus is on textiles: clothing, footwear, household textiles, accessories. The report looks at “textiles and apparel” in the context of used textiles and waste textiles.
- It marks the difference between pre-consumer and post-consumer textile waste, but emphasises that much of the policy attention is on post-consumer flows (used garments, etc.) and how to bring them into circular systems.

Tools and materials provided

- The report acts as a status-mapping tool: providing tabulated data by jurisdiction of where tEPR schemes are active, planned or under consultation.
- It gives a policy-design checklist/considerations for governments and industry: key questions to ask when setting up tEPR. For instance: which products are covered? Will reuse count? How to discourage export of discarded textiles? How to set collection targets? How to modulate fees?
- It offers benchmarking and peer-comparison: allowing jurisdictions to compare their design approaches with others, identify best practices and pitfalls.
- It points to data gaps and highlights where further research or monitoring is needed (e.g. tracking of used-textile exports, fate of collected textiles, quality of recycled output).

What makes this a useful resource

- It provides a global view of where textiles EPR is going – helpful for any country or brand to see how others are approaching it.
- It tackles a sector (textiles) that is more complex than many other waste streams: because of reuse markets, global trade in second-hand goods, variable quality of waste, and diverse product types – so the guidance context is rich.
- It emphasises practical design aspects: e.g. the importance of including reuse/distribution channels, export controls, monitoring of material flows, fee modulation – all of which are often overlooked in simpler EPR schemes.
- For brands, producers, and importers it helps to anticipate regulatory developments: many markets are moving toward mandatory tEPR, so foresight is valuable.
- It complements other WRAP tools: for example, their general EPR guidance, market data on textiles etc, offering a link between policy and operational data.

Mapping of Global Extended Producer Responsibility (EPR) for Textiles (2025)

The **Mapping of Global Extended Producer Responsibility (EPR) for Textiles (2025)** provides one of the most comprehensive international reviews currently available of textile producer responsibility schemes. It examines the rapidly evolving global policy landscape, documenting jurisdictions where textile EPR has been implemented, is under development or remains at the policy discussion stage.

Unlike many earlier reports, which concentrated primarily on European developments, the mapping takes a broader international perspective and reflects significant policy developments occurring during 2024 and early 2025. As such, it provides an important update to WRAP's **Textiles EPR Status Report** published in January 2024.

Scope of issues, materials and tools covered

Issues addressed

- Implementation status of textile EPR worldwide;
- legislative developments and implementation timelines;
- scope of obligated products;
- producer responsibility organisation (PRO) structures;
- financing arrangements;
- eco-modulation and differentiated producer fees;
- treatment of reuse alongside recycling;
- exports of used textiles and associated policy implications;
- governance and regulatory approaches.

Materials and product categories in scope

The report focuses on post-consumer textile products, including clothing, footwear, and household textiles, whilst recognising that national schemes differ in the range of products included within producer obligations.

Tools and materials provided

Rather than acting as a procedural implementation manual, the report provides:

- international comparison of schemes;
- country-by-country mapping;
- implementation timelines;
- comparison of policy approaches;
- emerging trends in scheme design;
- references to national legislation and producer responsibility systems.

What makes this a useful resource

The principal value of the report lies in its comprehensive and current overview of the global textile EPR landscape. It demonstrates how quickly policy is evolving and provides a valuable benchmark against which national proposals may be compared.

Particularly useful features include:

- up-to-date international mapping;
- improved consistency of terminology across jurisdictions;
- comparison of implementation status rather than policy intentions alone;

- greater consideration of reuse, exports, and eco-modulated fee structures;
- evidence that textile EPR is moving from isolated national schemes towards wider international adoption.

Limitations

The report is primarily a mapping and benchmarking exercise rather than a practical implementation toolkit. It identifies where schemes exist and summarises their characteristics but generally provides less operational guidance on scheme establishment, governance, and day-to-day delivery than documents such as the OECD Toolkit or PREVENT EPR Toolbox.

Overall assessment

The report represents an important update to earlier textile EPR literature and complements rather than replaces **WRAP's Textiles EPR Status Report**. Together, the two publications provide both a robust baseline (WRAP, 2024) and a more current international snapshot (2025), strengthening the evidence base for the development of future UK textile EPR guidance.

WRAP Circular Textiles Blueprint

The Circular Textiles Blueprint (Version 3, January 2025) is a strategic guidance document published by WRAP to support stakeholders in transitioning the textiles sector toward a truly circular economy. The Blueprint draws on WRAP's extensive experience with collaborative voluntary initiatives such as Textiles 2030 and the UK Textiles Pact, and aims to provide a replicable framework of building blocks that can accelerate systemic change across production, use and end-of-life for textiles.

While the Blueprint is not a legal instrument, it functions as an evidence-based implementation roadmap for business, government and civil society partners seeking to complement regulatory measures like Extended Producer Responsibility (EPR) with collaborative action and innovation.

The report emphasises that policy measures alone are insufficient for transformative outcomes: coordinated, cross-value chain collaboration and voluntary action are essential to rapid progress.

Scope of issues, materials and tools covered

The Blueprint addresses the complexity and environmental impact of the textiles sector, which accounts for significant greenhouse gas emissions and water consumption globally. It outlines six core building blocks that underpin effective collaborative action for circular textiles:

- **Firm Foundations:** co-creation of shared problems, evidence, and justification for joint initiatives; strong initial commitment and stakeholder engagement.
- **Designing for Impact:** clear vision, ambitious targets, defined roles and responsibilities for participants.
- **Enablers of Impact:** governance structures and sustainable funding mechanisms to sustain long-term collaboration.
- **Implementing Change:** establishment of high-impact actions with robust roadmaps, pilot testing, and shared learning.
- **Measurement & Evaluation:** well-defined metrics, monitoring systems and periodic evaluation to adapt and scale efforts.
- **Recommendations:** overview of strategic priorities and actions to embed circularity in textiles value chains.

The document is informed by case studies (e.g. UK Textiles 2030, Danish sector collaboration) and integrates strategic insights on collaboration across brands, retailers, reuse/recycling organisations, policy bodies, and consumers, recognising that no single actor can drive the transition alone.

What makes this a useful resource

The Blueprint's value lies in its practical, action-oriented framework for driving circularity in textiles:

- **Collaborative focus:** It provides a structured model for establishing Voluntary Agreements (VAs) and sector-wide initiatives, filling a gap where regulations (like EPR) alone may be too slow or fragmented.
- **Building blocks as tools:** Each of the six building blocks serves as a toolkit component – from scoping and governance to measurement and scaling – that stakeholders can adapt to national or sectoral contexts.
- **Systemic integration:** It recognises the need to integrate design, production, business models, reuse and recycling, not just end-of-life disposal.
- **Evidence and examples:** Drawing on WRAP's operational experience and case examples strengthens credibility and makes it more relatable for practitioners.

In summary, the Blueprint is a strategic compass and practical toolkit for organisations – from brands and policymakers to NGOs and investor coalitions – looking to collaboratively accelerate the textiles industry toward circularity.

ZWE Designing EPR

The report analyses around 30 years of implementation of EPR in the EU context, identifies major gaps and shortcomings, and proposes a forward-looking framework (two pillars) to transform EPR from a waste-management financing mechanism into a strategic enabler of circularity, resource security and EU industrial competitiveness.

It highlights that while EPR has helped mobilise funding for waste collection and recycling, it has not significantly curbed waste generation, driven reuse/repair, or incentivised eco-design.

The report is one of only a handful to recognise the role of reuse and repair, and attempts to take a circular approach through joining up inputs, throughputs and outputs, balancing supply and demand side mechanisms.

Scope of issues, materials and tools covered

Issues addressed

- The report critiques the "EPR paradox": systems designed to manage waste end up perpetuating waste generation and the linear model rather than driving circularity.
- It covers performance issues: e.g. limited impact on waste prevention, low fee levels that do not influence design, inconsistent collection rates across streams, free-riding, lack of transparency, and fragmentation across EU jurisdictions.
- It places EPR in the broader strategic context of the EU's need for competitiveness, strategic autonomy (reduced reliance on imported raw materials), circular economy, and resilience of supply chains.

Materials/product categories in scope

- The report does not focus narrowly on one product type; rather it considers multiple waste streams to reflect mature EPR regimes (packaging, electronics, batteries, vehicles etc) in the EU.
- It emphasises that EPR must more strongly connect to reuse, repair, design for longevity – not only end-of-life management – thus implicitly covering goods of various kinds (consumer goods, textiles, electronics) though the primary focus is policy framework rather than material-specific guidance.

Tools and materials/support provided

- The report offers an analytical framework: reviewing historical context, summarising current key performance challenges (Part 1) and then proposing a vision and recommendations (Part 2) with a two-pillar approach (system optimisation; circular economy enabler).
- It provides specific policy recommendations: like harmonised definitions across Member States, a central EU-level body for EPR oversight, improved monitoring and transparency, modulated and higher EPR fees to support prevention/reuse/repair, shifting from cost-coverage only to circularity financing.
- It also underscores monitoring, data transparency, tackling free-riding, central registries of producers, harmonised rules across jurisdictions to reduce administrative burden.

What makes this a useful resource

- The report is timely, aligning with the EU's increasing interest in circular economy, critical raw materials, supply-chain resilience, and resource security – offering EPR a new strategic framing beyond waste-management.
- It is comprehensive: covering historical evolution, current deficits, future needs, and actionable recommendations rather than just describing EPR.
- It addresses system-level design rather than only operational minutiae – making it relevant for policymakers, regulators, industry associations, and waste-sector stakeholders.
- It emphasises the need for upstream interventions (design, reuse, repair) and not just downstream (end-of-life) which is a gap in many EPR resources.

World Bank IRAT

The World Bank's 2025 report **Extended Producer Responsibility for Plastic Packaging in Selected ASEAN Member States** analyses the readiness and implementation prospects of EPR systems for plastic packaging across seven ASEAN countries: Cambodia, Indonesia, Lao PDR, Malaysia, Thailand, the Philippines, and Viet Nam.

It was developed by the World Bank with technical partners and funded by the PROBLUE trust fund to help governments and stakeholders in Southeast Asia address plastic pollution by assessing legal frameworks, institutional capacity, infrastructure, producer markets, and waste management systems. The report introduces and applies a structured Implementation Readiness Assessment Tool (IRAT) to systematically evaluate how prepared each country is to implement EPR effectively for packaging waste.

Scope of issues, materials and tools covered

The report focuses specifically on plastic packaging waste – one of the most persistent and environmentally damaging waste streams in the ASEAN region– and examines systemic barriers to effective EPR rollout.

It uses the **IRAT framework**, which assesses six categories: legal/institutional frameworks, policy clarity, financing mechanisms, operational capacity, producer landscape, and data/monitoring systems. This framework enables comparison across jurisdictions and highlights both strengths and gaps in readiness for EPR implementation.

Key issues addressed include:

- **Regulatory and legal readiness:** assessing whether EPR frameworks, mandates and enforcement mechanisms exist or are in development.
- **Operational systems and infrastructure gaps:** evaluating waste collection coverage, sorting capabilities, recycling capacity, and services needed for EPR.
- **Producer landscape and compliance mechanisms:** analysing the presence of producers, producer responsibility organisations (PROs), and clarity of roles.
- **Data and monitoring systems:** examining the availability and quality of data needed for tracking performance and compliance.
- **Informal sector integration:** recognising the informal waste sector's role in collection and recycling, and the need to include it in EPR design.

The report also features country summaries, including the Philippines' early adoption of mandatory EPR and detailed gaps in targets and PRO frameworks.

What makes this a useful resource

This report is useful for policymakers, practitioners, donors, and industry for several reasons:

- **Comparative diagnostics:** The structured IRAT provides a systematic readiness assessment rather than a descriptive snapshot, helping countries prioritise reforms.
- **ASEAN-specific insights:** By focusing on diverse economic and governance contexts in Southeast Asia, it offers regionally relevant analysis of EPR challenges (e.g., informal sector engagement, infrastructure gaps).

- **Actionable recommendations:** The report outlines priority actions and roadmaps for establishing and scaling EPR systems, including legislative reforms, institutional strengthening, stakeholder engagement, and data systems.
- **Use in global dialogue:** It supports ASEAN integration with global policy dialogues (e.g., the Global Plastics Treaty) by highlighting where ASEAN countries are on the EPR implementation spectrum.

In summary, the document is both a diagnostic tool and a practical guide for advancing EPR for plastic packaging in emerging economies, with a focus on bridging policy design and operational capability.

Eunomia reports

Consultancy Eunomia has, like Wrap, produced a number of reports. From the list of reports produced, two have been included here, which focus on more diverse, less well covered issue (fishing gear) and those with more UK relevance (textiles EPR and WEEE EPR).

Ireland marine fishing gear EPR

Analysis of the Marine Fishing Gear Market in Ireland and Identification of Most Suitable Extended Producer Responsibility Model for Compliance with the Single-Use Plastics Directive is a 2024/25 study commissioned by Ireland's Department of the Environment, Climate and Communications (DECC) and prepared by Eunomia Research & Consulting Ltd with Poseidon Aquatic Resource Management Europe. The study responds to Ireland's obligations under the EU Single-Use Plastics Directive (SUPD), which requires member states to implement EPR schemes for plastics-containing fishing gear by 2025.

It aims to understand the market for fishing gear containing plastic in Ireland – including scale, types, supply chains, and end-of-life practices – and to identify an EPR model suited to the national context that aligns with legal requirements and practical realities.

Scope of issues, materials and tools covered

The report focuses on plastic fishing gear and aquaculture gear – a major source of marine litter and a priority stream under the SUPD given its environmental impacts and high prevalence in beach and seabed litter in Europe. It covers:

- **Market analysis:** Quantifying volumes/types of plastic fishing gear placed on the Irish market and existing waste flows, including current end-of-life treatment practices.
- **Regulatory context:** Irish and EU legal obligations under the SUPD and related port reception/maritime waste rules.
- **EPR model evaluation:** Assessment of potential EPR system options – including organisational forms, fee structures, producer responsibilities, reporting obligations, and financing mechanisms – that would comply with Irish and EU law.
- **Economic, environmental, and social impacts:** Comparison of prospective EPR models for cost-effectiveness, environmental outcomes (e.g., reduced litter, improved recycling/recovery), and stakeholder impacts.
- **Implementation roadmap:** A phased plan to introduce the chosen EPR model, including sequencing of regulatory steps, stakeholder engagement, infrastructure requirements, and monitoring/reporting processes.

The study also draws on international case examples and good practice to inform design elements, recognising the complexity of fishing gear materials and fragmentation of current waste flows.

What makes this a useful resource

This report is a practical, evidence-based blueprint for policymakers and industry on how to implement EPR for a non-packaging product stream (fishing gear) under a specificlegal directive. Its strengths include:

- A detailed market assessment that quantifies the problem and informs realistic scheme design.
- A comparative evaluation of EPR models tailored to national context, rather than generic principles.
- An impact analysis that balances environmental goals with economic and social feasibility, critical for buy-in from producers and fishers.
- A clear implementation roadmap that sequences actions to avoid overburdening stakeholders and aligns with legal deadlines.

Overall, it serves as a pragmatic reference for other jurisdictions seeking to extend EPR to fishing gear and similar complex product streams under marine litter or plastics legislation.

Driving a circular economy for textiles through EPR part 1, part 2

These two Eunomia-authored reports, commissioned by civil society partners and policy stakeholders, analyse how Extended Producer Responsibility (EPR) can be deployed to transform the textile sector from its historically linear, waste-intensive model into a circular economy.

“Driving a Circular Economy for Textiles through EPR” (2022) was commissioned by the European Environmental Bureau and Changing Markets Foundation to explore how EPR can shift responsibility for textile end-of-life management onto producers and, in so doing, drive systemic change.

“Further Considerations to Textiles EPR and Complementary Measures” (2023, for Policy Hub) builds on this by outlining objectives, design principles, harmonisation needs, and complementary policies needed to implement effective EPR schemes across the EU.

Scope of issues, materials and tools covered

The reports focus on textile products including clothing, footwear, and household textiles – one of the most environmentally impactful waste streams in Europe after food, housing, and mobility.

‘Driving a Circular Economy’ emphasises that current textile consumption produces significant waste with very low recycling rates (less than 1% into new garments) and that EPR should ensure producer-funded management of this waste. It argues for EPR combined with eco-design standards and other policy instruments to boost reuse, collection, and recycling.

‘Further Considerations’ provides a deeper technical framework for EPR scheme design. It stresses the need for harmonised EPR schemes across EU Member States to avoid fragmentation, reduce administrative burden, and maximise environmental outcomes (e.g. high rates of collection, reuse, and high-quality recycling).

It outlines recommended objectives (e.g. support for design change, separate collection, sorting, reuse, and recycling) and principles (polluter pays, cost-efficient schemes, differentiated fees and eco-modulation) to guide policy. It also addresses defining obligated producers and scope of products, data/reporting requirements, fee structures, eco-modulation criteria and supportive standards for collection and processing.

What makes these useful resources

Together, these reports are valuable because they:

- Connect EPR to broader circular economy goals, not just waste management, emphasising design, reuse, and recycling.
- Provide practical recommendations for scheme design (e.g., obligations, fee structures, harmonisation) that can inform EU-level and national implementing acts.
- Advocate for harmonised approaches across jurisdictions to minimise administrative burden for producers and stimulate consistency in environmental outcomes.
- Position EPR within a suite of complementary policy measures (eco-design, hazardous substance bans, separate collection systems) necessary for systemic change.

As a pair, they serve both as strategic policy visioning and technical design guidance for policymakers, industry and stakeholders aiming to deploy EPR effectively in textiles.

Ingredients for successful WEEE EPR (UK)

Electrical and Electronic Equipment: Ingredients for Successful Extended Producer Responsibility is a report by Eunomia Research & Consulting Ltd, prepared for Defra to inform design and implementation of a robust Extended Producer Responsibility (EPR) scheme for electrical and electronic equipment (EEE) in the UK.

The report identifies the “essential characteristics” of a successful EPR regime tailored to electrical and electronic products. It assesses a range of policy interventions, explores how to meet minimum operational requirements of an EPR system, analyses strengths and weaknesses of options, and outlines ways to address key barriers to achieving environmental objectives at proportionate cost to business.

A consumer behaviour study on WEEE (waste electrical and electronic equipment) was also undertaken to provide insight into public attitudes and practices toward EEE recycling.

Scope of issues, materials and tools covered

The report centres on EEE – electrical and electronic equipment – which includes a broad range of products from consumer electronics to household appliances. It situates EPR as part of the UK’s Resources and Waste Strategy and as a key mechanism in circular economy transition for EEE.

Key themes include:

- **Essential elements of effective EPR design:** Characteristics that ensure environmental outcomes are maximised without imposing disproportionate costs on business, such as clear obligations and robust enforcement, and alignment with lifecycle principles.

- **Policy mechanisms:** Evaluation of different policy interventions and their implications for compliance, administrative burden, producer behaviour, and environmental performance.
- **Identification of barriers:** Structural and practical barriers to effective EPR implementation, including data gaps, fragmented compliance, variability in take-back services, and challenges related to online sales and free-riding under EPR.
- **Consumer behaviour insights:** Findings from consumer research conducted in collaboration with the WEEE Compliance Fee Fund, shedding light on public motivation, disposal practices, and factors influencing engagement with WEEE take-back and recycling.

The report draws on evidence and international good practice to recommend principles and design features for a UK EEE EPR scheme that can deliver meaningful environmental improvements while supporting circularity across product lifecycles.

What makes this a useful resource

This Eunomia report is valuable for policymakers, industry and stakeholders involved in EPR because:

- It articulates specific design principles for EEE EPR that bridge high-level strategy and practical implementation.
- It evaluates a range of policy options against environmental and economic criteria, providing evidence-based guidance rather than generic statements.
- The inclusion of consumer behaviour data adds insight into potential demand-side impacts and barriers.
- It places EPR within the wider circular economy and lifecycle thinking context, helping ensure that scheme designs support broader sustainability goals, including reuse, repairability and responsible recycling.

By identifying what “good” looks like in EEE EPR and exploring barriers to success, the report helps support effective, evidence-based design and operation of producer responsibility schemes in the UK and potentially beyond.

Below we present the recommended design principles and key barriers, summarised from this report.

Theme	Recommended design principles	Main barriers to success
Scope and Obligations	Clear definition of obligated producers (including importers and online sellers); full financial responsibility for collection and treatment	Online sellers avoiding obligations; unclear producer responsibility in cross-border sales
Governance and Compliance	Approved compliance schemes with oversight; centralised coordination; transparent fee structures	Fragmented schemes reducing efficiency; weak regulatory enforcement
Targets	Collection targets based on waste arising; product-specific recycling targets; reuse/ prep-for-reuse targets	Targets not aligned with actual waste flows; insufficient reuse targets
Financial Mechanisms	Eco-modulated fees linked to recyclability and repairability; compliance fee safety net; ring-fenced infrastructure funds	Funding instability; insufficient incentives for design improvement
Collection Systems	Convenient national collection network; retailer take-back obligations; alignment with LA systems	Inconsistent collection coverage; consumer inconvenience
Treatment Standards	Mandatory depollution and dismantling standards; auditable downstream flows	Variable treatment quality; illegal exports of untreated WEEE

Theme	Recommended design principles	Main barriers to success
Data and Transparency	Accurate placed-on-market reporting; evidence tracking; independent audits	Data gaps; poor tracking of flows; free-riding producers
Product Design	Incentives for durability, modularity, repairability and easy disassembly	Products designed for low cost over recyclability; limited repair pathways
Markets for Secondary Materials	Support high-quality recycling outputs and closed-loop material use	Volatile material markets; limited domestic reprocessing
Consumer Behaviour	Awareness campaigns funded via EPR; clear disposal guidance	Household stockpiling; low public awareness; convenience bias

Divergencies between UK WEEE & EU WEEE Extended Producer Responsibility Systems (Jordan Girling, 2024)

This report examines the growing divergence between the UK and European Union WEEE producer responsibility systems following the UK's departure from the EU. It considers differences in legislation, governance, producer obligations, compliance arrangements, and policy direction, together with the practical implications for manufacturers operating across both markets.

Unlike general descriptions of WEEE legislation, the report focuses specifically on the consequences of regulatory divergence and the challenges associated with maintaining effective producer responsibility across neighbouring jurisdictions.

Scope of issues covered

Issues addressed

- Comparison of UK and EU WEEE legislation;
- producer obligations;
- governance arrangements;
- compliance schemes;
- financing models;
- collection targets;
- reporting requirements;
- regulatory divergence;
- impacts on producers operating in multiple jurisdictions.

Materials covered

The publication considers electrical and electronic equipment regulated under UK and EU WEEE legislation across the principal product categories covered by producer responsibility requirements.

Tools and guidance provided

The report provides:

- comparison of legislative approaches;
- analysis of regulatory differences;
- discussion of implementation challenges;
- policy observations relevant to future UK reform.

Although not a procedural implementation toolkit, it offers a valuable comparison of two closely related producer responsibility systems that are beginning to evolve independently.

What makes this a useful resource

The report provides one of the few detailed examinations of how UK WEEE policy is diverging from the EU framework. This is particularly relevant for UK policymakers considering future reforms and for producers operating across multiple markets.

Key strengths include:

- direct UK relevance;
- comparison of governance models;
- discussion of compliance obligations;
- analysis of regulatory evolution;
- consideration of future policy direction.

Limitations

The publication focuses primarily on legislative comparison rather than operational implementation and provides limited guidance on collection infrastructure, recycling technologies, or treatment standards.

Overall assessment

This report provides an important UK-specific supplement to wider international WEEE literature and should be regarded as a valuable reference when considering future reform of UK producer responsibility arrangements.

2002–2022: 20 Years of E-waste Regulation in the European Union and Worldwide Trends in Legislation and Innovation Technologies for a Circular Economy (2025)

This critical review provides one of the most comprehensive assessments currently available of the development of WEEE legislation over the past two decades. It examines the evolution of producer responsibility policy alongside advances in recycling technologies, circular economy principles, and international regulation.

Scope of issues covered

Issues addressed:

- development of WEEE legislation;
- international producer responsibility systems;
- circular economy policy;
- recycling technologies;
- resource recovery;
- critical raw materials;
- eco-design;
- innovation;
- global regulatory trends.

Materials covered:

The review addresses the full range of electrical and electronic equipment together with associated waste streams and material recovery technologies.

Tools and guidance provided:

The publication provides:

- historical review of legislation;
- comparison of international regulatory frameworks;
- review of recycling technologies;
- assessment of circular economy developments;
- identification of future policy trends.

Rather than acting as an implementation manual, it provides a comprehensive evidence base supporting future policy development.

What makes this a useful resource

The review is valuable because it places current WEEE policy within a broader international and historical context.

Particularly useful features include:

- comprehensive legislative review;
- comparison of international approaches;
- integration of policy and technological innovation;
- discussion of critical materials;
- emphasis on circular economy objectives;
- identification of emerging future challenges.

Limitations

The publication provides relatively limited operational guidance for establishing producer responsibility schemes and is intended primarily as a strategic review rather than a practical implementation toolkit.

Overall assessment

The report substantially strengthens the evidence base supporting WEEE producer responsibility by combining regulatory review with developments in recycling technologies and circular economy policy. It complements existing OECD guidance by demonstrating how producer responsibility systems have evolved over two decades and identifying future priorities for policy development.

International WEEE Management: Emerging Evidence from Singapore, India, South Asia, and Informal-Sector Risks (Recent Studies)

A growing body of recent international literature examines the practical implementation of WEEE producer responsibility systems outside Europe, with particular emphasis on rapidly developing economies, informal recycling sectors, and hazardous-substance management. These studies extend the traditional focus of WEEE policy beyond producer financing to include social, environmental, and public health considerations.

Scope of issues covered

Issues addressed

- implementation of WEEE EPR in emerging economies;
- informal recycling sectors;
- hazardous substances;
- occupational health;
- international trade;
- collection infrastructure;
- regulatory enforcement;
- resource recovery;
- circular economy development.

Geographic scope

The literature includes evidence from:

- Singapore;
- India;
- South Asia;
- wider emerging economies;
- international comparisons of formal and informal recycling systems.

Tools and evidence provided

The publications typically include:

- policy reviews;
- implementation case studies;
- comparative regulatory analysis;
- environmental risk assessments;
- recommendations for integrating informal recycling into formal producer responsibility systems;
- assessments of hazardous substance management and worker safety.

What makes this a useful resource

These studies broaden the evidence base beyond established European producer responsibility systems by recognising that effective WEEE management depends not only on legislation but also on institutional capacity, enforcement, collection infrastructure, and the integration of informal recycling activities.

Key strengths include:

- consideration of developing economies;
- greater emphasis on social impacts;
- recognition of informal-sector participation;
- discussion of hazardous substances and public health;
- practical implementation challenges;
- international perspective.

Limitations

Many studies focus on individual countries or regions rather than providing comprehensive implementation guidance. They are therefore best viewed as complementary evidence informing future policy development rather than stand-alone implementation toolkits.

Overall assessment

Collectively, these recent studies significantly strengthen the international evidence base for WEEE producer responsibility by highlighting implementation challenges that are often underrepresented within European policy literature. They reinforce the importance of governance, enforcement, worker safety, hazardous-substance management, and effective integration of formal and informal collection systems when designing future producer responsibility arrangements.

Extended Producer Responsibility for Packaging: Design and Implementation in Low- and Middle-Income Countries

The 2025 report **Extended Producer Responsibility for Packaging: Design and Implementation in Low- and Middle-Income Countries** is a technical guidance document developed by The Consumer Goods Forum's Plastic Waste Coalition of Action. It builds on earlier industry principles for optimal packaging EPR design and tailors them to the specific contexts of low- and middle-income countries (LMICs), where waste management systems are under-developed, informal sectors are significant, and institutional capacity varies widely.

The guidance draws on expertise from multinational consumer goods companies, local experts, and partners such as the Fair Circularity Initiative and Systemiq, and aims to support policymakers, industry leaders, waste management stakeholders, and community actors in creating effective, equitable and sustainable packaging EPR systems.

Scope of issues, materials and tools covered

The report focuses on **packaging waste**, particularly plastic packaging, as a key contributor to pollution while acknowledging that packaging represents only around 20 % of municipal solid waste in many LMICs. It emphasises that EPR alone cannot finance entire waste systems and must be complemented by broader investments in waste infrastructure, including collection, sorting, and recycling.

Key areas covered include

- **Policy design and legislative framework** – recommending clear, simple, enforceable EPR laws with performance targets, financing rules, governance structures, and roles defined for producers, regulators, and stakeholders.
- **Institutional arrangements** – advocating a centralised entity or single producer-led organisation to deliver EPR functions consistently.
- **Infrastructure and investability** – designing EPR to attract both public and private investment to address systemic waste management gaps.
- **Inclusion of informal sector** – integrating waste pickers into governance, payment systems, and implementation to recognise their crucial role and ensure social fairness.
- **Financial sustainability** – ring-fenced producer funds, net-cost principles, and mechanisms to ensure long-term service revenue.

The guidance also includes six essential design elements tailored for LMIC contexts, and annexes with governance models and investment drivers.

What makes this a useful resource?

This report fills a critical gap in EPR literature by specifically addressing **LMIC challenges** – where informal sectors, infrastructure deficits, governance complexity, and financing constraints often hinder EPR success. It combines industry best practice with practical considerations for emerging markets and emphasises inclusivity, investability and simplicity in policy design.

Its focus on not only **what** elements EPR systems must contain but also **how** they should be adapted to local contexts makes it a valuable resource for governments and stakeholders seeking to implement EPR in environments with limited waste management capacity. It also reinforces that EPR should be part of broader waste system development rather than a standalone solution.

Embracing Reuse in U.S. Packaging EPR Programs (2025)

This report examines how Extended Producer Responsibility (EPR) programmes for packaging can be designed to promote reuse alongside recycling. Drawing on emerging packaging EPR legislation across the United States and wider international experience, the report considers the policy mechanisms required to ensure that reuse becomes an integral component of producer responsibility rather than a parallel voluntary initiative.

Unlike many packaging EPR publications, which focus primarily on collection, recycling and producer financing, this report places waste prevention and reusable packaging systems at the centre of future programme design. It therefore provides an important contribution to the growing international debate on moving EPR beyond end-of-life waste management towards supporting a more circular economy. Reuse is increasingly recognised by policymakers and industry as a key strategy for reducing packaging waste, greenhouse gas emissions, and demand for virgin materials.

Scope of issues covered

Issues addressed

- integrating reuse within packaging EPR;
- waste prevention;
- reusable packaging systems;
- refill and return models;
- eco-modulated producer fees;
- policy incentives;
- producer obligations;
- infrastructure requirements;
- consumer participation;
- system performance measurement.

Materials covered

The report considers consumer packaging across a range of sectors, including food and beverage packaging, retail packaging, and household products, with particular emphasis on reusable and refillable systems.

Tools and guidance provided

The publication provides practical policy recommendations relating to:

- incorporating reuse targets within EPR legislation;
- financial incentives for reusable packaging;
- performance indicators for reuse systems;
- governance arrangements;
- producer collaboration;
- infrastructure development;
- consumer engagement;
- integration of reuse alongside recycling.

Although it is not a detailed implementation manual, the report offers a structured framework for embedding reuse within future packaging EPR systems.

What makes this a useful resource

The report is particularly valuable because it shifts the focus of packaging EPR from managing waste to preventing it. Rather than treating reuse as a separate environmental initiative, it demonstrates how producer responsibility can actively encourage reusable packaging systems through appropriate policy design and financial incentives.

Key strengths include:

- strong alignment with the waste hierarchy;
- emphasis on prevention before recycling;
- integration of reuse into producer responsibility;
- consideration of reusable business models;
- practical policy recommendations;
- recognition of infrastructure and behavioural challenges;
- relevance to emerging packaging EPR reforms.

The report complements broader policy guidance by demonstrating that EPR schemes can incentivise packaging redesign and new delivery models rather than simply financing collection and recycling. It also reinforces the growing consensus that reuse systems require coordinated investment, shared infrastructure, and supportive regulatory frameworks if they are to scale successfully.

Limitations

The report is centred on packaging EPR within the United States and reflects the rapidly evolving legislative landscape across individual states. While many of the policy principles are transferable internationally, detailed implementation mechanisms may require adaptation for UK or European regulatory systems.

The publication also concentrates primarily on policy design rather than providing operational templates, model legislation, or programme administration guidance.

Overall assessment

This report makes an important contribution to the evolution of packaging EPR by demonstrating how producer responsibility can be used to support reuse as well as recycling. It complements more traditional EPR guidance by extending the focus from end-of-life management towards waste prevention, circular business models, and higher-value resource retention.

For the purposes of this review, it provides useful evidence supporting the integration of reuse objectives, eco-modulated fees, and refill systems within future UK packaging EPR policy.

Product Stewardship Institute – Advancing Mattress Stewardship: A How-to Guide (2015)

The **Advancing Mattress Stewardship: A How-to Guide**, published by the Product Stewardship Institute (PSI) in 2015, provides one of the few dedicated implementation guides specifically focused on Extended Producer Responsibility (EPR) for mattresses. Developed in collaboration with government agencies, industry representatives, recyclers and stewardship organisations, the guide aims to assist policymakers and stakeholders in designing and implementing effective mattress stewardship programmes.

Unlike broader EPR guidance covering multiple product streams, this publication focuses exclusively on mattresses and therefore addresses many of the practical challenges associated with bulky waste collection, dismantling, material recovery, and programme financing.

Scope of issues covered

Issues addressed

- Rationale for mattress stewardship;
- programme design;
- legislative approaches;
- producer responsibility;
- financing mechanisms;
- collection systems;
- retailer take-back;
- municipal involvement;
- recycling infrastructure;
- performance measurement;
- stakeholder engagement;
- public communications.

Materials covered

The guide focuses primarily on post-consumer mattresses and foundations, including recovery of:

- steel;
- polyurethane foam;
- timber;
- textiles;
- other recoverable mattress components.

Tools and guidance provided

The guide provides practical advice covering:

- legislative considerations;
- governance models;
- stakeholder responsibilities;
- programme funding;
- collection network design;
- performance measures;
- public education;
- implementation planning;
- programme administration.

Although written for North American stewardship programmes, many of the principles are transferable to wider EPR system design.

What makes this a useful resource

The publication is valuable because it is one of the few resources dedicated entirely to mattress stewardship. It moves beyond policy principles to consider the practical requirements needed to establish functioning producer responsibility systems.

Key strengths include:

- product-specific implementation guidance;
- practical programme design;
- stakeholder roles and responsibilities;
- collection and logistics considerations;
- financing mechanisms;
- public engagement and communications;
- performance monitoring.

The guide also recognises that mattress stewardship presents different challenges from packaging and many other EPR streams because of product size, transport costs, contamination, and labour-intensive dismantling.

Limitations

Published in 2015, the guide predates more recent developments in circular economy policy, eco-modulated fees, digital product passports and wider European EPR reforms. It is also centred on North American legislative and institutional arrangements rather than UK or European systems.

Consequently, while many implementation principles remain relevant, the guide should be viewed as a product-specific implementation resource rather than a contemporary international review.

Overall assessment

Despite its age, **Advancing Mattress Stewardship: A How-to Guide** remains one of the most comprehensive implementation resources available for mattress EPR. It complements broader guidance such as the OECD Toolkit and PREVENT EPR Toolbox by providing practical advice tailored specifically to bulky furniture products and should be recognised as an important source informing future UK mattress stewardship policy.

Mattress Recycling Council – Programme Performance Reports (2019)

The Mattress Recycling Council (MRC) reports provide operational evidence from producer-funded mattress stewardship programmes operating within several US states. Rather than focusing on policy development, the reports present practical experience gained through the implementation and management of functioning producer responsibility schemes.

Scope of issues covered

The reports consider:

- programme performance;
- mattress collection;
- recycling rates;
- funding mechanisms;
- consumer participation;
- retailer take-back;
- logistics;
- contractor management;
- public awareness;
- operational costs.

Materials covered

The reports address post-consumer mattresses and foundations, including recovery of steel, foam, timber, and textile components through established recycling systems.

Tools and evidence provided

The publications include:

- operational performance data;
- recycling outcomes;
- collection statistics;
- programme governance;
- stakeholder responsibilities;
- lessons learned;
- examples of continuous programme improvement.

Unlike policy guidance documents, the reports provide evidence from real-world operation of mature stewardship schemes.

What makes this a useful resource

The reports demonstrate that mattress EPR can operate successfully at scale and provides practical evidence supporting many of the recommendations contained within the PSI implementation guide.

It is particularly useful because it illustrates:

- producer-funded operation;
- established collection infrastructure;
- high material recovery;
- continuous programme improvement;
- practical governance arrangements;
- consumer participation.

Limitations

The publications are an operational performance report rather than a policy toolkit and reflects North American regulatory arrangements. Consequently, some governance and financing arrangements may not transfer directly to UK implementation.

Overall assessment

The MRC reports provide valuable real-world evidence demonstrating how mattress stewardship schemes operate once implemented. It complements the PSI guidance by illustrating practical delivery rather than programme design.

Additional content (2026 update) — batteries

Bridging the Regulatory Gap: A Policy Review of Extended Producer Responsibility for Power Battery Recycling in China (2025)

This study examines China's rapidly developing regulatory framework for power battery recycling, focusing primarily on electric vehicle batteries. It considers how producer responsibility has evolved beyond conventional waste management towards supporting critical mineral recovery, industrial policy, and the development of a domestic circular battery economy.

Scope of issues covered

Issues addressed

- Producer responsibility for EV batteries;
- collection and reverse logistics;
- traceability;
- battery passports;
- producer obligations;
- dismantling and recycling infrastructure;
- critical material recovery;
- regulatory enforcement;
- second-life battery applications.

Materials covered

- Lithium-ion EV batteries;
- power batteries;
- battery materials including lithium, cobalt, nickel, and graphite.

Tools and guidance provided

The report reviews:

- Chinese legislation;
- regulatory responsibilities;
- implementation mechanisms;
- recycling pathways;
- producer obligations;
- emerging best practice.

Although primarily a policy review rather than an implementation toolkit, it provides valuable insight into one of the world's largest and fastest-growing battery recycling systems.

Strengths

- Comprehensive review of Chinese policy.
- Strong emphasis on critical materials.
- Covers producer obligations and implementation.
- Addresses battery passports and traceability.
- Useful international comparator beyond Europe.

Limitations

Focused primarily on China and EV batteries, with limited discussion of portable battery stewardship schemes or implementation outside the Chinese regulatory environment.

Overall assessment

The report provides valuable evidence on large-scale implementation of battery producer responsibility and highlights the increasing importance of integrating resource security with EPR policy.

Extended Producer Responsibility and Trade Flows in Waste: The Case of Batteries (2025)

This paper examines how international trade affects the effectiveness of battery producer responsibility schemes. It considers the interaction between EPR obligations, transboundary waste movements, recycling markets, and recovery infrastructure.

Scope of issues covered

The study considers:

- international movements of waste batteries;
- recycling markets;
- Basel Convention implications;
- exports;
- recovery economics;
- leakage from domestic EPR systems.

Strengths

Unlike many EPR publications, this report explicitly recognises that producer responsibility systems operate within global material markets rather than national boundaries. It demonstrates that international trade can significantly influence recycling performance, producer costs, and investment decisions.

Limitations

Provides relatively little operational guidance on scheme establishment but offers valuable policy insight into international resource management.

Overall assessment

Highly relevant for future UK EPR development, particularly where recovered battery materials may enter international supply chains.

Regulations and Policies on the Management of the End-of-Life of Lithium-Ion Batteries in Electric Vehicles (2025)

This publication reviews international legislation governing end-of-life electric vehicle batteries.

Issues addressed

- producer responsibility;
- battery collection;
- reuse;
- refurbishment;
- second-life applications;
- recycling;
- transport;
- storage;
- battery safety;
- critical materials.

Strengths

Particularly valuable because it recognises that EV batteries require a significantly different regulatory approach from conventional portable batteries owing to their size, chemistry, residual energy, and economic value.

The report highlights:

- battery passports;
- state-of-health assessment;
- reuse hierarchy;
- remanufacturing;
- second-life deployment;
- safe dismantling;
- traceability.

Limitations

Focuses on EV batteries rather than wider battery categories.

Overall assessment

Provides an important supplement to the EU Batteries Regulation by explaining how different jurisdictions are approaching practical implementation.

Emerging evidence on second-life batteries and safety

Several recent publications also examine:

- second-life deployment of EV batteries for stationary energy storage;
- thermal runaway;
- fire risks;
- collection and storage safety;
- transport risks;
- producer responsibilities relating to battery condition and residual charge.

These publications reinforce that future battery EPR systems must extend beyond simple collection and recycling targets to encompass product design, digital traceability, safe handling,

Summary of additional content — batteries:

Together, these recent publications significantly strengthen the evidence base for battery EPR.

Whereas earlier literature focused primarily on collection targets and producer financing, recent work increasingly addresses critical mineral recovery, international trade, electric vehicle batteries, digital traceability, second-life applications, and safety.

These themes are likely to shape the next generation of battery producer responsibility systems and should therefore be reflected within any future CIWM toolkit.

Appendix 3 — Available toolkits and coverage

Toolkit/ resource	Publisher	Geographic scope/ primary audience	Typical sector focus	Contains templates/ tools?	Format and recent update	Quick note
WRAP EPR hub and sector guides	WRAP (UK)	Global audience; UK/EU case studies; regulators, policy, industry	Packaging, textiles, WEEE, country summaries	Partial/varies by resource – guidance, evidence reports, country summaries and selected practical tools	Web hub plus PDFs; recent sector guides (e.g. USA packaging summary 2023) **wrap.ngo**	Strong on op detail plus sector case studies; useful for regulators/ PROs – worked examples
Accelerating EPR Knowledge Report	WRAP; funded by the Norwegian Retailers' Environment Fund	Chile, India, South Africa, and UK; policymakers, businesses, industry networks, and EPR stakeholders	Packaging and plastics, with transferable EPR implementation lessons	Partial – stakeholder findings, cross-country learning, and good-practice examples, but limited plug-and-play templates	43-page report, published April 2025; supported by webinars, surveys, focus groups and workshops	Strong on enabling conditions, business engagement, and implementation learning. Useful bridge between policy principles and practical experience, although not a product-specific operational manual
EPR Toolbox (PREVENT/ GAP for EPR)	PREVENT Waste Alliance/EPR Global Action Partnership	Global (aimed at LMICs and practitioners); policymakers, implementers	Packaging and plastics (primary); generic modules transferable to other streams	Yes; training modules, slide decks, country case studies, FAQs, interactive PDF	Interactive PDF/ web portal; originally published Oct 2020 (interactive toolbox updated resources 2022/2023). **Prevent Waste Alliance**	Best "learning and capacity building" pack for countries starting EPR; widely used in international capacity building

Toolkit/ resource	Publisher	Geographic scope/ primary audience	Typical sector focus	Contains templates/ tools?	Format and recent update	Quick note
State EPR/ Policy Toolkit	The Recycling Partnership (US)	US states, NGOs, advocates, local gov	Packaging and municipal materials	Yes; customizable slide decks, fact sheets, templates	PDF plus web toolkit (State EPR Toolkit, 2022). **The Recycling Partnership**	Practical, advocacy-friendly; ideal for NGOs/advocates and US legislators
OECD EPR primer and policy report	OECD	Global/OECD member governments, policymakers	Broad – conceptual and policy design across streams	Partial – policy principles, diagnostics, and examples; limited plug-and-play templates.	Report/PDF (major update 2024). **OECD**	Authoritative policy framing, evidence, rec design principles; go-to for high-level policy justification/ comparisons
World Bank — EPR guidance and IRAT (readiness tool)	World Bank	National governments, finance ministries, emerging markets	Packaging/ plastics, broader waste streams	Yes; readiness assessment tool (IRAT) plus country diagnostics	Reports & tool development (guidance and IRAT referenced in 2023-2025 publications). **World Bank**	Focuses on feasibility, financing plus institutional readiness – useful for funders and ministries, implementation roadmaps
UNEP/ UNIDO EPR guidance and operational manuals	UNEP + UNIDO, Basel Convention	Global (countries and UN projects – policymakers, capacity builders	Plastics and packaging primarily; broader EPR integration, treaty work	Yes; guidance, operational manuals, and UN capacity – building toolkits	Web resources, project toolkits; project pages and guidance (ongoing; several outputs 2018-2024+). **UNEP**	Focus on harmonising EPR under international plastics/chems agendas; frequently used in UN-led country support

Toolkit/ resource	Publisher	Geographic scope/ primary audience	Typical sector focus	Contains templates/ tools?	Format and recent update	Quick note
Zero Waste Europe – policy reports and design guidance	Zero Waste Europe (advocacy NGO)	EU/civil society, policymakers	Packaging and systemic EPR redesign (policy + social safeguards)	No plug-and-play templates but strong policy prescription, gov/ equity guidance	Reports and briefings (notable briefings and April 2025 report on EPR design). **Zero Waste Europe**	Valuable critique and redesign proposals (focus on waste prevention, governance, and worker inclusion)
Eunomia – sector toolkits and policy tool reports	Eunomia Research & Consulting	Governments, consultancies, and industry (Europe and global consults)	Sector deep-dives (packaging, textiles, carpets, WEEE etc.)	Portfolio of commissioned reports and modelling studies; availability and replicability of tools varies	Consultancy reports and toolkits (various years; many sector reports 2018-2024). **Eunomia**	Highly practical sector modelling and policy packages – used by governments preparing leg or impact assessments
Guideline and Toolkit for the Determination of Extended Producer Responsibility Fees (DFEE, South Africa, 2024)	South African government (example)	Cross-sector EPR/financial mechanisms	Government Guideline and Toolkit (2024)	Yes – practical toolkit	Draft guide/PDF (country-specific, e.g. South Africa draft EPR guide). **sawic.environment.gov.za**	Provides a practical methodology for determining EPR fees, including fee-setting principles and criteria, adjustment mechanisms, international examples and a calculation toolkit. Particularly relevant to the financial-design and fee-setting components of an operational EPR implementation toolkit

Toolkit/ resource	Publisher	Geographic scope/ primary audience	Typical sector focus	Contains templates/ tools?	Format and recent update	Quick note
2002-2022: 20 Years of E-waste Regulation in the European Union and Worldwide Trends in Legislation and Innovation Technologies for a Circular Economy	Academic review	International	WEEE/circular economy	Partial	Critical review (2025)	Comprehensive review of two decades of WEEE legislation, international regulatory developments, recycling technologies, and circular economy innovation, providing strategic context for future EPR development
Advancing Mattress Stewardship: A How-to Guide	Product Stewardship Institute (PSI)	North America	Mattress EPR	Yes	Implementation guide (2015)	One of the few dedicated implementation guides for mattress stewardship, covering governance, financing, collection systems, stakeholder roles, and programme design

Toolkit/ resource	Publisher	Geographic scope/ primary audience	Typical sector focus	Contains templates/ tools?	Format and recent update	Quick note
Bridging the Regulatory Gap: A Policy Review of Extended Producer Responsibility for Power Battery Recycling in China	Academic research	China	EV battery EPR	Partial	Policy review (2025)	Strong review of China's producer responsibility framework for power batteries, battery passports, critical materials, and circular economy policy

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