



Deliverable D2.3

Preliminary feedback and recommendation report for the implementation of the project pilots



13.07.2023



This project is co-financed by the LIFE Programme 2021-2027 of the European Union for the Environment and Climate Action under the project number 101104443 - LIFE22-PLP-BE-LIFE-ECOSWEEE.



Document Control Sheet

PROJECT INFORMATION

Project Number	101104443		
Project Acronym	LIFE22-PLP-BE-LIFE-ECOSWEEE		
Project Full title	LIFE - Enhancing Collection Of Small W/EEE and batteries (LIFE-ECOSWEEE)		
Project Start Date	1 April 2023		
Project Duration	22 months		
Funding Instrument	LIFE2027	Type of Action	LIFE-PJG
Topic	LIFE-2022-PLP-Environment		
Coordinator	WEEE Forum		

DELIVERABLE INFORMATION

Deliverable No	2.3
Deliverable Title	Preliminary feedback and recommendation report for the implementation of the project pilots
Work-Package No	2
Work-Package Title	Background research on good practices, drivers and obstacles in the collection of small U/WEEE and batteries.
WP-Leader (Name and Short Org. Name)	United Nations Institute for Training and Research (UNITAR)
Task No	2.3
Task Title	Feedback and recommendations for the implementation of the project pilots
Task Leader (Name and Short Org. Name)	United Nations Institute for Training and Research (UNITAR)
Main Author (Name and Short Org. Name)	Elise Vermeersch (UNITAR)
Other Authors (Name and Short Org. Name)	Vittoria Luda di Cortemiglia (UNITAR)
Reviewers (Name and Short Org. Name)	Felicitas Frick, Ramboll; Eniko Hajosi, WEEE Forum; Lucía Herreras, WEEE Forum
Status	Draft <input checked="" type="checkbox"/> Final <input type="checkbox"/>
Deliverable Type	Report <input checked="" type="checkbox"/> Data <input type="checkbox"/> Demonstration <input type="checkbox"/> Other <input type="checkbox"/>
Dissemination Level	Public (PU) <input checked="" type="checkbox"/> Sensitive (SEN) <input type="checkbox"/> Classified <input type="checkbox"/> PU: Public, fully open SEN: Sensitive, limited under the conditions of the Grant Agreement Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444 Classified C-UE/EU-C – EU CONFIDENTIAL under the Commission Decision No2015/444 Classified S-UE/EU-S – EU SECRET under the Commission Decision No2015/444

Date Approved by
Coordinator

DOCUMENT VERSION HISTORY

Version	Date	Author	Description of Change
1	11.07.2023	Elise Vermeersch	First draft
2	12.07.2023	Vittoria Luda	Review of first draft
3	24.07.2023	Elise Vermeersch	Second draft
4	25.07.2023	Vittoria Luda	Review of second draft
5	25.07.2023	Elise Vermeersch	Final draft
6	31.07.2023	Elise Vermeersch	Final version

DOCUMENT REVIEW

Reviewer	Date	Reviewer Name (Short Organisation Name)
1	27.07.2023	Felicitas Frick, Ramboll
2	27.07.2023	Eniko Hajosi, WEEE Forum
3	28.07.2023	Lucía Herreras, WEEE Forum

Legal disclaimer

This project is co-financed by the LIFE Programme 2021-2027 of the European Union for the Environment and Climate Action under Grant Agreement number 101104443 - LIFE22-PLP-BE-LIFE-ECOSWEEE. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

Abbreviations

Abbreviation	Definition
B2C	Business-to-consumer
DRS	Deposit return systems
EPR	Extended producer responsibility
EU	European Union
KPIs	Key performance indicators
NGO	Non governmental organisation
PROs	Producer responsibility organisation
UEEE	Used electric and electronic equipment
UNITAR	United Nations Institute for Training and Research
WEEE	Waste electric and electronic equipment
WP	Work package

Table of contents

Abbreviations	5
Table of contents	6
Index of figures	6
Index of tables	6
1. About the LIFE-ECOSWEEE project	7
2. Introduction	9
3. Methodology	11
4. Preliminary feedback and recommendations	12
4.1 General recommendations	12
4.2 Consumer reach, awareness, and involvement	13
4.3 Other stakeholders' involvement/partnership	16
4.3.1 Retailers and collection points	16
4.3.2 Companies, schools, offices	18
4.4 Motivating the target: Incentives definition	18
4.4.1 Financial incentives	20
4.4.2 Convenience (improving collection network).....	22
4.4.3 Other incentives	24
4.5 Measuring performance: KPI definition.....	25
4.6 Expanding the action: Replicability and scalability	27
5. Conclusions	28

Index of figures

Figure 1 – Possible steps in the implementation of incentive schemes (UNITAR elaboration from Naczaj, 2020).....	19
--	----

Index of tables

Table 1: Partners.....	8
------------------------	---

1. About the LIFE-ECOSWEEE project

Enhancing Collection Of Small WEEE and batteries

ECOSWEEE is a project co-funded by the European Union, under the LIFE Project Grants with the aim of practically testing several methods and incentives to increase the collection rate of small WEEE and portable batteries. Every product that is not collected for reuse or depolluted and recycled represents a wasted opportunity in terms of loss of natural resources and energy, a decreasing supply of (critical and/or valuable) materials to feed into manufacturing, which in turn puts the sector's resilience, the EU economy's autonomy and jobs in jeopardy. Since after twenty years of WEEE rules, Member States (MS) are falling short of reaching the EU minimum collection rate of 65%. The EU is committed to improving the small WEEE collection rate in the frameworks of the European Green Deal.

The project proposes to design and implement 10 new pilots in 8 Member States to test the practicability, achievability, usefulness, and viability of different collection strategies and incentives. Strategies to be tested include deposit return, buyback, and other reward schemes, e.g. donation, postal services, other collection routes, involvement of online retail, financial aspects, and improvement of the collection network. Another 11 ongoing or planned initiatives carried out by producer responsibility organisations (PROs) will also provide direct input to the project. Results of the pilot implementation will be analysed on the basis of pre-established criteria and indicators to measure the impacts and effectiveness (success) of the actions implemented, define potential areas of improvement, and provide recommendations to policymakers at Member States and EU levels.

The primary target users of the project results are PROs and other stakeholders involved in the collection of small WEEE and batteries across the MS, which will have access to the mapping of incentive-driven collection schemes, the good practices identified, and the recommendations developed by the project. Second, the project's results will be targeted at the EC and other EU bodies involved in decision-making and will contribute to the consultation process on the revision of WEEE legislation and the Commission proposal on Batteries Regulation. Finally, EU consumers, who will be directly involved in consultations as well as active participants in the piloting of different take-back solutions, will benefit from the project's results by testing the collection strategies developed in the project and acquiring additional knowledge on the small U/WEEE and portable battery collection.

Partners:**Table 1: Partners**

WEEE FORUM	WASTE OF ELECTRICAL AND ELECTRONICAL EQUIPMENT FORUM AISBL - WEEE Forum (Belgium)
UNITAR	UNITED NATIONS INSTITUTE FOR TRAINING AND RESEARCH (Switzerland)
SPI	SOCIEDADE PORTUGUESA DE INOVACAO CONSULTADORIA EMPRESARIAL E FOMENTO DA INOVACAO SA (Portugal)
RAMBOLL	RAMBOLL DEUTSCHLAND GMBH (Deutschland)
ECO	ERION COMPLIANCE ORGANIZATION SCARL (Italy)
ECYCLE	APPLIANCES RECYCLING S.A. (Greece)
ECOTIC	ASOCIAȚIA ECOTIC (Romania)
ELECTRÃO	ELECTRÃO – ASSOCIAÇÃO DE GESTÃO DE RESÍDUOS (Portugal)
GRS Batterien	STIFTUNG GEMEINSAMES RUCKNAHMESYSTEM BATTERIEN (Deutschland)
Stichting OPEN	STICHTING ORGANISATIE PRODUCENTENVERANTWOORDELIJKHEID E-WASTE NEDERLAND (Netherlands)
ZEOS DOO	ZEOS RAVNANJE Z ELEKTRICNO IN ELEKTRONSKO OPREMO DOO (Slovenia)
WEEE Ireland	WASTE ELECTRICAL AND ELECTRONIC EQUIPMANT IRELAND (Ireland)

2. Introduction

In the European Union (EU), the WEEE Directive¹ and Battery legislation² have laid down ambitious collection and recovery targets. Yet, after twenty years from the enactment of the WEEE rules, the current official statistics show that in the EU, despite having some of the highest WEEE collection rates in the world, Member States are falling short of reaching the EU minimum collection rate of 65%. An overall WEEE collection rate of 48.5%³ is reported, of which small WEEE register the lowest figure of 15%⁴.

A study by UNITAR and the WEEE Forum⁵ looking at the WEEE generation in the EU, Norway, United Kingdom, Switzerland, and Iceland, concludes that considerable amounts of WEEE are diverted to other undocumented flows, including:

- collected with metal scrap, in which case they are recycled but not with the same environmental and material efficiency standards as WEEE formally managed would be;
- disposed of with mixed residual waste and ending up in incinerators and landfills;
- illegally exported outside the EU and exported for reuse.

¹ As per the WEEE Directive, as of 2019, annual minimum collection rate is 65% of EEE put on the market or 85% of WEEE generated on the territory of that Member State. As of 2018, recovery targets of IT and telecommunications equipment is 80%. See: Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (recast) Text with EEA relevance. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012L0019>.

² As per the new Battery Regulation, Member States shall achieve the following minimum collection rates: a) 45% by 31 December 2023; b) 65% by 31 December 2025; and c) 70% by 31 December 2030. See: Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC. See: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32023R1542>. The previous target set in the Battery Directive was 45% by 26 September 2016. See: Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC. <https://eur-lex.europa.eu/eli/dir/2006/66/oj>.

³ Eurostat, 2023. Waste statistics – electrical and electronic equipment. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Waste_statistics_-_electrical_and_electronic_equipment#Electronic_equipment_.28EEE.29_put_on_the_market_and_WEEE_collected_by_country.

⁴ The highest collection rate for mobile phone alone in the EU is estimated at 15% of devices put on the market. See “Study on options for return schemes of mobile phones, tablets and other small electrical and electronic equipment in the EU” (European Union, 2022).

⁵ Baldé, C.P., Iattoni, G., Xu, C., Yamamoto, T., 2022. Update of WEEE Collection Rates, Targets, Flows, and Hoarding – 2021 in the EU-27, United Kingdom, Norway, Switzerland, and Iceland, 2022, SCYCLE Programme, United Nations Institute for Training and Research (UNITAR), Bonn, Germany. https://weee-forum.org/wp-content/uploads/2022/12/Update-of-WEEE-Collection_web_final_nov_29.pdf.

Moreover, a certain amount of EEE/WEEE is hoarded in households. The types of EEE/WEEE mostly hoarded are smaller items, such as small IT equipment and small equipment.

To address this collection issue, the ECOSWEEE project aims at practically testing several methods and incentives to increase the collection rate of small WEEE and portable batteries. In order to implement pilots with a higher potential of success, the project has been looking at past experiences to identify good practices and lessons learnt.

The current deliverable 2.3 provides preliminary results as part of task 2.3 “Feedback and recommendations for the implementation of the project pilots”. A final report (D2.4) under the same task will be delivered in month 7 of the project (October 2023).

3. Methodology

Task 2.3 (D2.3 and D2.4) builds on task 2.1 “Mapping of collection practices” and task 2.2 “Identification of the drivers and obstacles in the collection of small WEEE, batteries and EEE for re-use at the EU level” (for specific methodologies of tasks 2.2 and 2.3, please refer to D2.2 and D2.3 respectively). Task 2.1 is mainly based on surveys and interviews with European producer responsibility organisations (PROs), while task 2.2 builds principally on consumer surveys in several European countries.

Task 2.3 gathers, reviews and analyses the main results emerging from both tasks and develops concrete feedback and recommendations aimed at informing the implementation of the project pilots in WP3. A first set of feedback and recommendations is presented in month 4 (July 2023) as part of deliverable 2.3 and a second set in month 7 (October 2023) as part of deliverable 2.4.

To complement the information provided in task 2.1 and 2.2, task 2.3 performed a desk review.

Due to time constraints and tasks’ overlapping inherent to the project, the feedback and recommendations presented in this report are not applicable to all project pilots, as some pilots were already on-going or finalized at the time this report was produced. However, to maximize the usefulness and impacts of the report, the authors have prepared this report in a way that it can serve and inform future pilots external to the ECOSWEEE project.

Caution: The below information and recommendations do not pretend nor aim at being exhaustive, rather they reflect the information gathered and analysed from the PROs, consumers surveys and targeted desk review.

4. Preliminary feedback and recommendations

The efficiency and effectiveness of take-back schemes rely on a combination of elements and actions, including especially the involvement of key stakeholders and partners, the definition of incentives, but also ensuring proper performance measuring, and planning the replicability and scalability of the scheme. The below presents preliminary recommendations based on successful collection experiences of European PROs and other relevant stakeholders involved in waste collection, supplemented by a literature review.

4.1 General recommendations

Key recommendations from task 2.1:

- ⇒ Define overall goal/ motivation for the pilot:
 - Increase collection rates in order to a) reach collection targets; b) increase valuable material flows; c) decrease illegal waste streams, d) extend product life when possible.
 - Increase awareness to a) increase collection rates b) strengthen the relationship with end-consumers/increase visibility of PROs and visibility of disposal options, c) extend product life when viable.
 - Reduce administrative burden (e.g., for retailers), increase user convenience when disposing of e-waste and batteries.
- ⇒ Select type of incentive (tool) to reach the goal.
- ⇒ Analyse the collection rate across your country to choose the regions with highest impact (e.g., in Paris the collection rate is much lower than in rest of France).
- ⇒ Be aware that the settings for a pilot might be different for a city or the countryside
- ⇒ Get in touch with PROs across country borders to share learnings. It should be taken into account that effective incentives may differ from one country/area to another.
- ⇒ Get in touch with PROs in same country to assess potential to cooperate (if possible in a competitive system).
- ⇒ Define and monitor KPIs to measure the success of the initiative in line with the goals.

- ⇒ Economic viability strongly dependent on targets set i.e., collection target, collection area.
- ⇒ Define your target audience. Target audience can range from school children to teachers, office workers, retail customers but also WEEE dismantlers or recyclers. Suitable communication is required for each target group.
- ⇒ Inclusion of retailers in collection schemes and their goodwill and engagement can be improved through contribution by the schemes to cover costs involved in meeting the legal takeback obligations.
- ⇒ Define the actors (municipalities, schools, retailers etc.) that should be part of the pilot. Search for synergies with other actors, collection systems and waste collection systems.
- ⇒ Consider to contract local actors such as municipalities, social organisations, consultants, coordinators, project managers etc. for regional activities
- ⇒ Communicate your pilot and more specifically communicate it in an easy way.
- ⇒ Test your hypotheses (i.e. pilot a campaign) before scaling up and perform small-scale test before large-scale tests.
- ⇒ If the pilot aims for reuse of WEEE, guarantee correct and transparent data deletion communicate it to the users.

4.2 Consumer reach, awareness, and involvement

Small WEEE and batteries are often disposed of with mixed residual waste or hoarded in households by consumers. As per several country studies⁶, the reasons for hoarding broken or functioning items include notably the prospect of repair, the wish to keep a back-up, the possibility of reusing spare parts, the sentimental value/emotional attachment, but also the lack of information of where to recycle them or the lack of incentive. Consumer involvement is therefore a cornerstone of the WEEE and battery collection and entail both increasing consumer awareness and increasing “convenience” by offering consumers a range of options and extended collection network. Several principles can positively stimulate the success and

⁶ Ipsos APEME, 2022. Project WEEE Flows Toolkits Portugal 2022. Quantitative report; GBD Research and Ecotic, 2022. Habits of Romanian population regarding small e-waste 2022.

effectiveness of activities aimed at increasing consumer awareness and involvement in a take-back system.

CSCP (2022)⁷ conducted a comprehensive desk research into the behaviour of end users to understand why people do or do not return/recycle/repair old electronic devices.

Key recommendations from CSCP:

- ⇒ Bridge the knowledge gap about the possibility for equipment to be recycled, reused or repaired properly; consumers need to become aware of the opportunity.
- ⇒ Provide easily accessible and understandable information.
- ⇒ Create trust and transparency measures.
- ⇒ Provide incentives that motivate to bring back the device.
- ⇒ Provide infrastructures that make it easy for the consumers to bring back their devices.

A 2023 project by the BCRC Slovakia⁸ gathered and analysed successful awareness raising campaigns carried out in several countries (in Europe and worldwide) to increase the collection of waste computing equipment, waste mobile phones and other WEEE, highlighting various examples of incentives for better involvement of the public and other actors.

Key recommendations from BCRC Slovakia:

- ⇒ Support replicability of the approaches through various activities when possible. Relevant stakeholders (e.g. schools, NGOs, PROs) should get acquainted about the initiatives implemented by others to understand how they managed to successfully involve the consumers in the collection, what were the drivers and the results of different means of communication and efforts.

⁷ CSCP, 2022. Electronic club. Project final report. Consumer Insight Action Panel.

https://www.cscp.org/wp-content/uploads/2022/06/CIAP_Electronics_final_report_electronics_club_2022.pdf.

⁸ The Basel Convention Regional Centre for Training and Technology Transfer for Central Europe, Slovakia (BCRC Slovakia) implemented the pilot project “Improving of Environmentally Sound Management of computing equipment and mobile phones in Moldova and Belarus” as part of the programme Follow-up Partnership to the Partnership for Action on Computing Equipment (PACE) established on a decision of the Parties at the fourteenth meeting of the Conference of the Parties to the Basel Convention (Decision BC-14/19).

- ⇒ Envisage a prize, reward or some kind of bonus and ensure the publicity of the initiative's results on-line to enhance the competitiveness of the schools or individuals (see also section 4.3 on incentives).
- ⇒ Make use of visual tools, such as display of dismantled appliances and their components can represent an attractive approach particularly for the pupils and students.
- ⇒ Produce an on-line map of all collection points available nationally to facilitate the correct information on the existing possibilities to hand over the WEEE through the network.
- ⇒ Provide an insight into the process which the handed over devices and appliances undergo after their collection to increase the transparency and attract the interest of more people. Such options may include for example:
 - Possibility of choosing the donor of the donation for each given device (where applicable);
 - Possibility to track the destiny of the WEEE handed over (or at least an information provided to the involved consumers);
 - Regularly provide updated information on the amounts of WEEE already collected by the activity;
 - Information on the means of secure removal of all residual data, particularly from the devices such as mobile phones.

Key recommendations from task 2.1:

- ⇒ Communication for a new initiative but also for WEEE collection in general has to be easy and to be repeated again and again and not only be done as a one-time campaign.
- ⇒ Some interview partners made good experience with local coordinators to advertise and run an initiative in a defined region.

4.3 Other stakeholders' involvement/partnership

4.3.1 Retailers and collection points

Retailers are important partners for WEEE and battery collection, as they allow to reach a large number and type of consumers. The WEEE Directive⁹ establishes obligations for retailers to support the WEEE collection as follows:

- 1x1 obligation: when supplying a new product, distributors are responsible for ensuring that such waste can be returned to the distributor at least free of charge on a one-to-one basis as long as the equipment is of equivalent type and has fulfilled the same functions as the supplied equipment. Member States may derogate from this provision provided that they ensure that returning the WEEE is not thereby made more difficult for the final holder and that it remains free of charge for the final holder. Member States making use of this derogation shall inform the Commission thereof;
- 1x0 obligation: distributors provide for the collection, at retail shops with sales areas relating to EEE of at least 400 m², or in their immediate proximity, of very small WEEE (no external dimension more than 25 cm) free of charge to end-users and with no obligation to buy EEE of an equivalent type, unless an assessment shows that alternative existing collection schemes are likely to be at least as effective. Such assessments shall be available to the public.

In addition, the recently approved Regulation on batteries and waste batteries¹⁰ states that:

- Distributors shall take back waste batteries from the end-user free of charge and without imposing an obligation on the end-user to buy or to have bought a new battery, regardless of their chemical composition, brand or origin as follows (...) for waste portable batteries, at or in the immediate vicinity of the distributor's retail outlet;
- Distributors that supply batteries by means of distance contracts to end-users (i.e. on-line distributors) shall provide for a sufficient number of collection points covering the whole territory of a Member State and taking into account population size and density, expected volume of waste portable batteries, waste LMT batteries, waste SLI batteries,

⁹ Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (recast) Text with EEA relevance. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012L0019>.

¹⁰ Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32023R1542>.

waste industrial batteries and waste electric vehicle batteries respectively, and accessibility for and proximity to end-users, allowing end-users to return batteries.

- In the case of sales with delivery, distributors shall offer to take back waste portable batteries, waste LMT batteries, waste industrial batteries, waste SLI batteries and waste electric vehicle batteries free of charge at the point of delivery to the end-user or at a local collection point. The end-user shall be informed when ordering a battery of the take back arrangements for a waste battery.

Key recommendations from task 2.1:

- ⇒ Increase retailers' awareness about the issues of small WEEE and portable battery collection and their obligations.
- ⇒ Involve retailers in collection campaigns.
- ⇒ Offer rewards to retailers / collection points – sharing contributions from the PROs to retailers and collection points to support them in covering their costs for collection strongly increases their goodwill and engagement and the number of available collection points and improves the service for customers. Given that there is a legal requirement for retailers to contribute to collection, compensation may refer to other non-mandatory services provided such as monitoring of volumes collected and reporting.
- ⇒ Reduce the administrative burden for retailers for operating a collection point.
- ⇒ Pilots should assess the economic and environmental viability of collection using the retail collection network. Expanding the collection network through small local retailers may increase convenience for users, but result in less economic and environmentally efficient logistics. Pilots should assess the use of alternative logistics that will compensate the economic and environmental effects of having more pick-ups of small waste volumes.

4.3.2 Companies, schools, offices

Free collection from certain sources such as offices and schools has been proven successful by various PROs in several countries. The collection service can be permanent, made available on special days, or requested through an app or the website of the initiative.

Key recommendation from BCRC Slovakia:

- ⇒ Involve students in collecting WEEE and spreading the word among the school population, to leverage on the positive drive this activity can generate in this target group and on their enthusiasm. Consider rewarding their engagement with some kind of prize or gifts. Such group can very positively influence other students and create a competitive environment in the whole school.

Key recommendations from task 2.1:

- ⇒ Cluster collection regionally and offer it in denser regions to improve the economic viability of collection.
- ⇒ Provide suitable containers for different small WEEE and batteries to increase the efficiency and acceptance of the service.
- ⇒ Consider incentivising not only students but also teachers as in some countries teachers need to prove social/environmental engagement.
- ⇒ Collection initiatives at schools, kindergartens etc. should rather be considered an awareness or education training than the main lever to increase collection volumes directly.

4.4 Motivating the target: Incentives definition

In simple words, an incentive is something that encourages a person to do something (Cambridge Dictionary). As previously mentioned, small WEEE and portable batteries are often not properly disposed off, or are kept at home for various reasons. Providing incentives, whether financial or otherwise, can help to change these behaviours.

Naczaj (2020) synthesized literature review about incentives, responsabilisation and implication for waste-related behaviour change. The below figure builds on Naczaj (2020)¹¹ to explain how to implement incentive schemes:

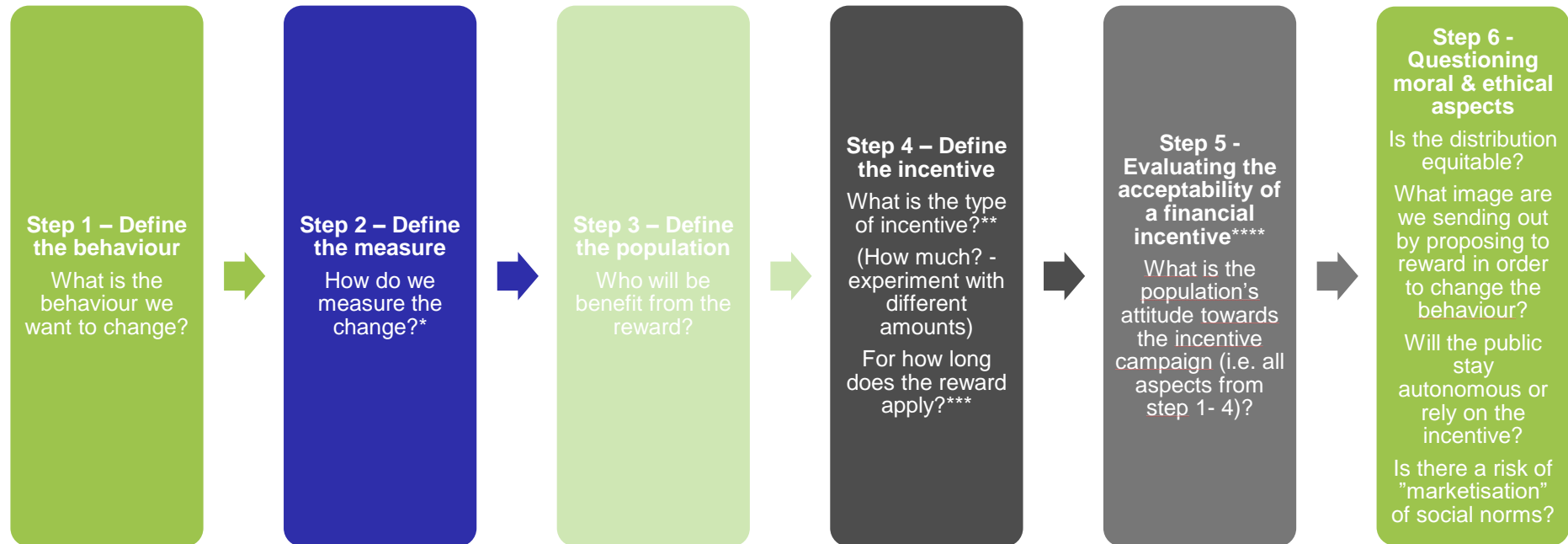


Figure 1 – Possible steps in the implementation of incentive schemes (UNITAR elaboration from Naczaj, 2020)

* The incentive can be indexed and measured on an act (e.g., recycling an object), on a result (e.g., the tonnage recycled in a certain period of time) or on a substitute for the behaviour (e.g., a certain number of vouchers issued for each recycling of an object, or the weight of household waste)

** Financial incentives include monetary and non-monetary reward. Convenience incentives include postal service and bring points. Other incentives include charity and awareness.

*** For a new behaviour to be adopted and become a habit, it is advised to conceive it as assistance over a sufficiently long period, and not as a simple reward.

**** Step 4 is specifically useful for major campaigns, those that produce a change in rules, or legislation.

¹¹ Naczaj, D. (2020). Financial incentives, responsibility and involvement for behaviour change regarding wastes management. Synthesis of the literature review in behavioural sciences.

4.4.1 Financial incentives

4.4.1.1 Direct payment

Direct payment consists in a monetary benefit offered to encourage behaviour or actions which otherwise would not take place.

Key recommendations from Naczaj:

- ⇒ Avoid using the incentive on its own. Instead, implement it into a large-scale campaign with other argumentative and behavioural levers.
- ⇒ Emphasise consistency and coherence between the behaviour to be adopted and the incentive.
- ⇒ Separate the amount of the incentive from the original price of the item.
- ⇒ Use levers that rely on intrinsic motivation (e.g. “I sort my waste because that’s who I am” instead of “I sort my wastes because I earn money with it”), such as:
 - Descriptive norms: what the majority does;
 - Injunctive norms: what the majority think everyone should do;
 - Normative feedback: appreciate our past behaviour and compare it to the others;
 - Engagement: obtain smaller preparatory acts in the direction of the targeted behaviour.

Key recommendations from task 2.1:

- ⇒ Direct payment to consumers seems less common. Good experience was made with giving a fixed price for one kilogram of collected small WEEE (and not per device).
- ⇒ Further incentivize (e.g. with higher price per ton) higher volumes of small WEEE and battery collected, separated and handed-over by dismantlers and other professional waste collectors.

4.4.1.2 Deposit return systems

Deposit return systems (DRS), consist in giving an economic value to an item by requiring consumers to pay a deposit at the point of sale, which will be refunded when the item is returned. The deposit system is well known for packaging.

A European benchmark ran by the French Agency for Ecological Transition ADEME (2023)¹² for deposit systems for reuse and/or recycling of packaging in Europe shows that, in some countries, national recycling deposit systems can achieve or even exceed a 90% return rate for returnable packaging under certain conditions. The products in question are different from the scope of the project (household packaging vs EEE/WEEE/batteries), however, some general recommendations applicable to any type of product can be extracted.

Key recommendations from ADEME:

- ⇒ Apply a deposit that is sufficiently attractive.
- ⇒ Put in place an effective take-back system.
- ⇒ The coverage should be adapted to population density and optimised logistically.
- ⇒ Use an easy-to-understand labelling system.
- ⇒ Ensure appropriate and sustained communication – for any new system, the public needs to be educated and get used to it until it becomes a common practice; communication is key to ensure involvement of consumers and ease the hesitations. In terms of deposit system for WEEE collection, consumers are mainly concerned about the amount of the deposit, and practical obstacles (transport and storage of packaging, time required, etc.) thus communication could focus on those aspects.
- ⇒ Remember that the full functioning of a deposit system will take time – there is minimum two years between the legislative adoption of a deposit system and its operational deployment and a two-year ramp-up period to reach target performance levels.

Note from task 2.1: none of the interviewed PROs has tested deposit return schemes for WEEE and batteries. Many of them are against it due to several reasons, such as the organization burden and associated cost in setting up such scheme, the issue of money accumulation due to the long lifetime of WEEE and batteries, the risk of deposit tourism among countries in case of price variation and the different dynamics of WEEE and batteries compared to other types of waste like packaging where DRS have been

¹² ADEME, 2023. Réduction, réemploi et recyclage des emballages ménagers. Dossier de presse du 29 juin 2023. 8 nouvelles études de l'ADEME. <https://presse.ademe.fr/wp-content/uploads/2023/06/ADEME-DP-Reduction-reemploi-et-recyclage-des-emballages-menagers.pdf>.

tested (e.g. users do not tend to hoard packaging, packaging disposal areas are implemented for longer and wider than WEEE and battery collection areas).

4.4.1.3 Other rewards (non-monetary)

Non-monetary rewards include a number of options, such as providing vouchers, toys, or new electronics in exchange of used EEE, WEEE or batteries. Other non-monetary incentives like donations to charity are explored further down in the document. Examples of campaigns may include competitions between schools, where the school collecting more waste is rewarded with equipment for the school, books, etc. Raffles where all users buying a new product can participate and win a discount voucher etc.

Key recommendations from task 2.1:

- ⇒ Involve school/kindergarten in collection challenges. Some PROs have made good experience with raffles and school/kindergarten challenges to collect small WEEE or batteries once in a certain time period. The winning party receives non-financial rewards like new electronic devices, vouchers for books, toys, investment in a playground etc. Such activities require local coordinators on place and cooperation with or incentivisation of teachers. However, other PROs see an ethical conflict in always giving out new devices/stuff to consumers.
- ⇒ Consider running the campaign at a specific timing that coincide, for example with school period, spring cleaning, or Christmas season, to increase potential success. These campaigns are time-limited, but may have recurrent annual editions.

4.4.2 Convenience (improving collection network)

Convenience refers to the improvement of the collection network, either by improving the information on where to find existing collection points (increase visibility of collection network), or by extending the collection places and options.

4.4.2.1 Bring points

Key recommendations from the Irish EPA:

- ⇒ Make collection points more visible within larger retailers to help normalise the practice.
- ⇒ Incorporate small WEEE collections in the delivery of new appliances to make compliant recycling convenient for consumers.

- ⇒ Establish more collection options, for example bring banks in frequently visited locations such as shopping centres, organise more frequent special collection events within the community to promote compliant recycling.

Key recommendations from task 2.1:

- ⇒ Result: bring points seem to be the activity number 1 from PROs to increase collection. Especially for batteries, all kind of boxes (plastic, paper, etc.) are installed across the Member States.
- ⇒ Setting up a collection point is still related to administrative burden. Hence retailers and municipalities are reluctant to set up collection points. Support from PRO can increase their engagement.
- ⇒ Rewards to retailers/ collection points: Sharing contributions from the PROs to collection points in order to support them in covering their costs for collection strongly increases their goodwill and engagement and the number of available collection points as well as improving the service for customers.
- ⇒ Involve producers that are also playing the role of distributors to participate in such campaigns.
- ⇒ Make sure that (open/unsecured) collection points are not subject to theft and that bags are not misused (e.g. filled with residual waste), for this it is important to assess the location of the bring banks and use appropriate visuals informing the public about the type of waste to be disposed.
- ⇒ Providing suitable containers for different small WEEE and Batteries by the logistics operator has been proved to be beneficial to the efficiency and acceptance of the service.

4.4.2.2 *Postal services*

This point refers to collection of WEEE and batteries using the national post service or private parcel services.

Key recommendations from task 2.1:

- ⇒ Review the applicable legislation in your country because using postal service for the collection of WEEE and batteries is prohibited in certain countries. The main reason is that WEEE and batteries may be considered to be hazardous waste, therefore they are subject to specific hazardous waste

legislation requirements. Additionally, the presence of potentially damaged lithium batteries (prone to explosion) in the postal stream can also be considered a risk. Main prerequisite for a postal service pilot is a good partnership with a postal service company and a possibility for them to earn money and reduce risks associated to hazardous waste handling

- ⇒ Make sure to use adapted containers (e.g. reusable bags were tried out for a 'Business-to-consumer' (B2C) postal services but they turned out to become unsightly and unusable too quickly).

4.4.3 Other incentives

4.4.3.1 Charity

Used EEE, WEEE, and batteries can also be donated to social/charity organisations dealing with second hand trade and re-use or repair.

Key recommendation from the Irish EPA:

- ⇒ Provide alternative options, such as “preparation for reuse” and altruistic donation schemes to consumers - such options can help to overcome the tendency to resist the recycling of items that are still functional, and registered charity shops in conjunction with “approved preparation for reuse of WEEE organisations” could play a role in these collections. Regardless as to whether the bulk of items end up being reused, it provides a channel for items to enter the formal WEEE system via organisations approved to prepare WEEE for reuse.

Key recommendations from task 2.1:

- ⇒ Good experience was made with a QR code that can be scanned by customers when dropping of their small WEEE and batteries into containers at retailers and selecting which charity goal they want to donate to.
- ⇒ During COVID confinement, a good number of initiatives promoting donation of IT equipment to breach the digital gap and facilitate home-schooling proved to be successful.
- ⇒ Collaboration agreements between PROs and social organisations are identified in many Member States (according to WEEE Forum survey to their members). Social organisations provide for the collection and repair/sale of repaired/re-use of WEEE. The additional dimension of the social aid is an incentive for users disposing of waste.

4.4.3.2 Visible fees

The concept of visible fee requires producers, distributors and retailers of EEE/battery to display the costs for take-back and recycling of the item (based on units or per kilogram) in a separate line, either at the point of sale and/or on the invoice. Currently, the visible fee is allowed or partially used in countries such as Belgium, Switzerland, Cyprus, Czech Republic, France, Ireland, Italy, Luxembourg, Netherlands, Portugal, Romania and Slovenia.

The visible is often recommended at the first stages of implementing the extended producer responsibility (EPR).

Key recommendation from BCRC Slovakia:

- ⇒ Ensure transparent and visible fees paid by producers to cover the costs of the extended producer responsibility (EPR) scheme under collective producer responsibility. This may help the customers to realize the cost of collection and disposal of the product when it becomes waste and can represent a good tool to create public awareness already at the point of sale.

4.5 Measuring performance: KPI definition

Key performance indicators (KPIs) are an essential tool for companies in the administrative and support, waste management and remediation services industry. These metrics provide valuable insights into the performance of the business, enabling managers and decision-makers to identify areas for improvement, track progress, and make informed decisions.¹³

¹³ Spider strategies. Waste Management and Remediation Services KPIs.
<https://www.spiderstrategies.com/kpi/industry/administrative-and-support-waste-management-and-remediation-services/>

General principles for selecting key performance indicators¹

- **Independent:** The KPIs should be independent or almost-orthogonal (i.e., avoiding overlaps) and changes to an indicator should not impact other indicators.
- **Reliable:** The concept of each indicator should be clear, simple and easy to understand (i.e. widely-accepted definition not subject to different interpretations) and the calculation of the associated data should be intuitive and simple.
- **Measurable:** The KPIs value shall be measurable and comparable scientifically (objectivity) between different phases of development (i.e. over time and space). The historic and current data should be either available or easy to collect.
- **Achievable:** The goal of the KPIs should be achievable and the set of indicators should cover relevant aspects of the initiative. It should also be possible to extend and amend the set of KPIs according to the actual stage of development.
- **Relevant:** The KPIs should provide insight into the progress of the initiative in obtaining goals and executing its strategy. The indicators for evaluation should be aligned to the measured subject. The index system should reflect the level of general development for a particular aspect.
- **Timely:** It is important to express the value of the KPI over time. Every KPI has a meaning only if the time dimension in which it is realized is known.

Key recommendations from desk review:

- ⇒ Get up to date on legislative requirements – regulations in the waste industry evolve regularly at both national and EU levels and may set new collection targets, obligations, restrictions, etc.
- ⇒ Take stock of the waste situation in the pilot area and collect baseline metrics (= metrics before the pilot)
- ⇒ Remember that KPIs are just “indicators” – KPIs are not always comparable among different areas, city, regions, countries and even not comparable from one year to the next in the same area, as many factors may influence waste collection performance.

Key recommendations from task 2.1:

- ⇒ Majority of the pilots use the collected volumes as indicators for success. One stakeholder contacted however, considered this a too narrow metric that does not take into account other aspects.

4.6 Expanding the action: Replicability and scalability

The success of a take back scheme should also take into account the replicability and scalability of the action. In simple words, scalability is the ability of a system to grow larger, while replicability is the ability of system to be duplicated at another location or time.

Key recommendations from desk review:

- ⇒ Detail your methodology – it is essential that key players willing to replicate the action understand the details of the action as fully as possible. On the other hand, the player replicating the action should follow the methodology as closely as possible and document all steps of the replication process.
- ⇒ Ensure transparency and complete reporting of your action – it is essential that key players willing to replicate the action are fully informed about all the aspects (timelines, duration, budget, practical challenges, etc.) that may prevent or hinder the successful implementation of the project. Using objective and quantitative data can help achieving replicability.
- ⇒ Get more people involved in developing or reviewing your project. Getting a diverse team involved in a study helps mitigate the risk of bias because you are incorporating different viewpoints into setting up your question and evaluating your data.

Key recommendations from task 2.1:

- ⇒ Make sure the pilot is economically viable before scaling it up. In most cases, a pilot is an investment and do not necessarily pay off.
- ⇒ Estimate the cost difference between the pilot and ‘real’ scale campaign before scaling up the campaign. Pilot costs are not always comparable or aligned with costs associated to a ‘real life’ scaled up campaign.

5. Conclusions

Deliverable 2.3 provided preliminary results as part of task 2.3 “Feedback and recommendations for the implementation of the project pilots”. A final report (D2.4) under the same task will be delivered in month 7 of the project (October 2023) including additional recommendations from the PROs surveys analysis currently performed under task 2.1 and the consumer survey currently performed under task 2.2.

