

# D6.1 - Report with introduction on the identified EU-projects

Deliverable 6.1

PNO Consultants



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### CREDITS

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# Contents

<b>List of abbreviations</b> .....	<b>4</b>
<b>Introduction</b> .....	<b>5</b>
<i>Objectives and tasks</i> .....	6
<b>Methodology</b> .....	<b>7</b>
<i>Programme selection and data sources</i> .....	7
<i>Scope, keywords and selection</i> .....	9
<b>Mapping results</b> .....	<b>10</b>
<i>Results Search 1</i> .....	10
<i>Conclusion and future steps</i> .....	12
<i>Adjusted scope, keywords &amp; selection for second search</i> .....	13
<i>Results Search 2</i> .....	14
<b>Clustering</b> .....	<b>16</b>
<i>Selection of clustering projects</i> .....	16
<i>Clustering process</i> .....	17
COLLECTORS results.....	17
Identification of project needs .....	18
Project specific factsheets .....	18
<b>Recommendations</b> .....	<b>19</b>
<b>Annexes</b> .....	<b>20</b>
<i>Annex I: List of identified projects Search 1</i> .....	20
Identified projects - summary .....	21
Waste collection (general).....	24
Waste Electrical and Electronic Equipment.....	41
Paper and Packaging Waste .....	47
Construction & Demolition Waste.....	51
<i>Annex II: List of identified projects Search 2</i> .....	55
Waste Collection (in general) .....	59
Waste Collection WEEE.....	69
Waste Collection C&DW .....	87
Waste collection (Policy Support).....	96
<b>COLLECTORS Consortium</b> .....	<b>98</b>

# List of abbreviations

CDW	Construction and demolition waste
COLLECTORS	waste COLLECTiOn systems assessed and good pRacticeS identified
LP	Lead Partner
PPW	Paper and Packaging Waste
PRO	Producer Responsibility Organisation
EG	Expert Group
WEEE	Waste Electrical and Electronic Equipment
WP	Work Package

# Introduction

Waste management and collection have been the subject of legislation since the development of ancient civilisations. In Athens, around 500 BC, legislation governed the construction of municipal landfills<sup>1</sup>; the first instance of a waste collection and resource recovery system was organised around 18<sup>th</sup> century British 'dust-yards' consisting of nutrient-rich coal ash suitable for reuse in brick-making and fertilizer. Industrialization, urbanization and increasing economic welfare have led to a dramatic increase in material consumption, and therefore waste generated per capita.

Currently, Europe consumes 16 tonnes of material per person per year, of which 5 tonnes become waste. Although the management of that waste continues to improve in the EU, the European economy currently still loses a significant amount of potential 'secondary raw materials' such as metals, wood, glass, paper, plastics present in waste streams. In 2010, total waste production in the EU amounted to 2,5 billion tons. From this total only a limited (albeit increasing) share (36%) was recycled, while the rest was landfilled or incinerated, of which some 600 million tons could be recycled or reused.

Considering the factors outlined above, it is understandable that today, waste is a major topic of interest in public policy. With the growing awareness of the environmental impacts and economic consequences of waste production, waste has become a key subject of many funding and policy programmes initiated by the European Union, such as the Framework Programmes for Research and Technological Development and the LIFE programme for the implementation of European Environment and Climate Action. Waste management in urban areas, innovative methods of resource extraction, waste sorting methods as well as waste collection are examples of topics where innovation, research and development has been stimulated.

Many projects have been funded within the major funding programmes of the EU. It is important to map the projects regarding waste collection in order to leverage on their experiences, maximise the impact of COLLECTORS actions and avoid duplication. To this end, COLLECTORS has identified over 100 relevant projects for various purposes. This enabled us to build upon prior research, include relevant waste collection systems in WP1, provided us with experts for our expert panel at various moments in the project, and lastly led us to several recently started EU-projects that now in turn can capitalize on our project results. The actual clustering exercises happened through a physical meeting at the fourth COLLECTORS conference in Thessaloniki in December 2019 as well as through Skype and Microsoft Team calls later in 2020.

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<sup>1</sup> [http://www.seas.columbia.edu/earth/wtert/sofos/Columbus\\_thesis.pdf](http://www.seas.columbia.edu/earth/wtert/sofos/Columbus_thesis.pdf)

This report contains the following elements: an **introduction** to the objectives; the **methodology** for the mapping analysis, data sources and the mapping scope, keywords and selection; **results** of the performed searches; and a **conclusion**. This report has been a work in progress and was periodically updated during the COLLECTORS project.

## Objectives and tasks

The main objective of this report is to align COLLECTORS with other relevant EU projects in the field of waste collection and (secondary) raw materials. The report covers the mapping of relevant EU-projects to ensure uptake of state-of-the-art knowledge in the project and avoid duplication of research actions. This report is part of WP6 and serves all three tasks in the work package;

1. T6.1 - Perform a mapping of relevant EU-projects (H2020; LIFE; INTERREG; etc.)
2. T6.2 - Organise 3 expert panels to provide feedback at different stages of the project
3. T6.3 - Develop 3 customized factsheets on waste collection systems for EU-projects.

The tasks described above build upon – and support – each other, as well as other activities in COLLECTORS. The results of the mapping analysis (T6.1) provided input for potential experts (e.g. project coordinators) for the expert panels (T6.2) and technologies and best practices identified in T6.1 provided input into WP1 (Inventory of waste collection systems). T6.3 actively involved the projects in T6.1 in order to identify their data and knowledge needs as a basis for the factsheets.

This deliverable is due in the final project month [M31], and therefore this report has been a work in progress throughout the project. Corresponding to the three dates of the expert group meetings (WP1 - M4; WP2 & WP3 - M10; WP4 - M26) this report has been kept updated. In each update, the scan of recently funded projects has been elaborated, in order to ensure the relevancy of the clustering activities. These elaborations have been included in the two annexes attached. Annex 1 includes the list of identified projects between M1 and M20; Annex 2 includes the projects identified between M21 and M31.

# Methodology

The first objective of this work package is to map the general European research and innovation landscape related to waste collection. In this analysis, a first exploration was made of relevant projects related to general waste collection and waste collection specifically in the three waste streams considered by the COLLECTORS project: paper and packaging waste (PPW), construction and demolition waste (CDW) and waste electrical and electronic equipment (WEEE).

This section will provide a discussion of programme selection and data sources, as well as a brief description of the scope, keywords and selection that were used in order to obtain the final list of projects relevant to COLLECTORS.

## Programme selection and data sources

This section will briefly describe the funding programmes, the rationale behind why these programmes were selected and the method used to access the relevant data sources.

Four different types funding programmes have been considered:

- Framework Programmes for Research and Innovation (FP7 – H2020)
- LIFE
- INTERREG
- National funding (UK; NL)

The **Framework Programmes for Research and Innovation** is the EU's biggest financial instrument for stimulating research, technological development and innovation. FP7 was centred around different themes, of which Environment (including the subprogramme for Sustainable Management of Resources) was allocated nearly €2 bn between 2007 and 2013. FP7's follow-up programme, H2020, aims to implement several policy objectives of the European Union through three different research areas ("pillars"): "Excellent Science", "Industrial leadership" and "Societal challenges". Specifically within the Societal challenges pillar under the theme "Climate action, environment, resource efficiency and raw materials" challenge, waste has been a central topic. Since waste is a cross-cutting issue with presence throughout different pillars and challenges, a broader analysis of the Framework Programme was conducted.

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### *D6.1. Report with introduction on the identified projects*

The study of these programmes was performed using Matchpoint<sup>2</sup>, a tool developed by PNO Consultants to analyse databases on patents, technical papers and funded projects. The funded projects section is based on the CORDIS database, which is the European Commission's primary public repository and portal to disseminate information on all EU-funded research projects and their results. Matchpoint enables the user to extract large amounts of data based on search parameters such as subject, project partner or framework programme.

**LIFE** is the EU's financial instrument specifically supporting environmental, nature conservation and climate action projects throughout the EU. It has three sub-programmes ("Nature, Biodiversity", "Environment" and "Climate Action"). Since waste is a central topic of the environment programme, many relevant projects are expected to have been funded under this programme. The database was accessed through the public LIFE projects database<sup>3</sup> and converted to Excel to facilitate selection and analysis.

**INTERREG** helps regional and local governments across Europe to develop and deliver better policy. Actions are funded within one of four themes: "Research and innovation", "SME competitiveness", "Low-carbon economy" and "Environment and resource efficiency". INTERREG's focus on local and regional governments in combination with the relevant themes make INTERREG projects on waste collection especially relevant for clustering with COLLECTORS. The analysis was performed by searching the KEEP database<sup>4</sup> complemented with (manual) desk research.

**National funding programmes** were analysed where available. COLLECTORS has access to databases of projects funded by the United Kingdom and The Netherlands. These projects were considered potentially interesting due to their location-specific context. Both databases were accessed through Matchpoint. For the final search, the focus has been on EU projects only.

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<sup>2</sup> <https://matchpoint.innovationplace.eu>

<sup>3</sup> <http://ec.europa.eu/environment/life/project/Projects/index.cfm>

<sup>4</sup> <https://www.keep.eu/keep/>



## Scope, keywords and selection

To ensure relevance of selected projects, a temporal scope of 10 years from the start of the project was selected. Projects funded in or after 2007 were deemed most relevant, as projects funded before that time (including their results, recommendations and technological innovations) were considered likely to be outdated.

The keywords that were used to perform the search are summarized in Table 3. Different search operators were utilized in order to create the most efficient search string / query.

<b>Waste collection (general)</b>
<ul style="list-style-type: none"><li>- "Waste collection"</li><li>- "Waste collection" AND system</li></ul>
<b>Waste electrical and electronic equipment (WEEE)</b>
<ul style="list-style-type: none"><li>- ("WEEE" OR "waste electrical and electronic equipment" OR "e-waste" OR "electronic waste")</li><li>- ("WEEE" OR "waste electrical and electronic equipment" OR "e-waste" OR "electronic waste")</li><li>- AND collection</li></ul>
<b>Paper and packaging waste (PPW)</b>
<ul style="list-style-type: none"><li>- (paper OR cardboard OR plastic OR metal OR glass OR wood) AND packaging AND waste - "packaging waste" AND collection</li></ul>
<b>Construction and demolition waste (C&amp;DW)</b>
<ul style="list-style-type: none"><li>- "construction waste" OR "demolition waste" OR "construction and demolition waste" OR "C&amp;DW"</li><li>- ("construction waste" OR "demolition waste" OR "construction and demolition waste" OR "C&amp;DW") AND collection</li></ul>

Table 3. Keywords used to find relevant projects

# Mapping results

## Results Search 1

During the first search during March 2018 (M4), a total of 114 projects were found between the period of 2007 - 2018, of which 69 relate to waste collection in general, 20 to WEEE, 12 to PPW and 13 to CDW. Of these projects, 35 were funded within the Framework Programmes (FP7 – H2020); 33 within LIFE; 37 within INTERREG; and 9 within national funding programmes in The Netherlands or the United Kingdom. The distribution of topics and programmes is tabulated below.

	General	WEEE	PPW	CDW	Total
FP7 – H2020	18	3	7	7	<b>35</b>
LIFE	15	12	4	2	<b>33</b>
INTERREG	33	2	0	2	<b>37</b>
National	3	3	1	2	<b>9</b>
Total	<b>69</b>	<b>20</b>	<b>12</b>	<b>13</b>	<b>114</b>

Table 4. Themes vs. funding programmes

Different types of projects were identified in a preliminary categorisation. A first exploration of the results is outlined below. Over the course of the projects, this categorisation has been finalized and applied to the project database.

- Projects related to urban **sustainability and urban metabolism** (e.g. FORCE); projects with holistic view on waste collection systems (e.g. Waste4Think)
- Projects involving **local and regional authorities with regard to waste management; case studies** (e.g. INTHERWASTE; GreenCycle)
- Projects with regard to **local or regional waste policy implementation** (incl. IT tools, e.g. R.E.P.T); projects regarding **organisational models for waste collection** and private-public partnerships (e.g. BALKWASTE)
- Projects developing **technological innovations in sorting, separation and collection**; projects regarding **innovative logistical models** for waste collection (e.g. SmartWASTE; START)
- Projects creating **collaboration or knowledge platforms and (training) networks** related to waste collection, recycling, circular economy and secondary raw materials (e.g. NEW\_InnoNet, Cir€uit)
- Projects regarding **data collection, harmonization and availability** of waste streams and secondary raw materials (e.g. QUMEC; ProSUM)

D6.1. Report with introduction on the identified EU-projects

For each of these types of projects, different approaches may be used in order to facilitate clustering. In the course of the project, an overview will be created that determines the type of involvement for each type of project, and will determine appropriate communication and dissemination activities accordingly.

In terms of total funding, more than 225 MEUR was awarded to the selected projects related to waste collection. Of this, 125.8 MEUR was assigned to general waste collection projects; 25.5 MEUR to projects related to WEEE; nearly 25 MEUR to projects related to packaging waste; and 49.2 MEUR to C&DW. The distribution between programmes was as follows: 132 MEUR from FP7 & H2020; more than 48 MEUR from the LIFE programme; 44 MEUR from INTERREG; and around €540.000 from national programmes. These figures are visualised in Fig. 1.

In order to map geographical distribution of the projects, a map was created containing the location of all project coordinators (Figure 2). The figure shows that in the first mapping exercise, INTERREG has a strong presence in Central and Eastern Europe; the role of FP7 & H2020 coordination is often assumed by organisations in North-Western Europe. It is important to note that the database used for collecting INTERREG database is a work in progress and may therefore not be complete. In the following phase of the project, database representativity will be checked and INTERREG projects supplemented with any additional information resulting from this analysis.

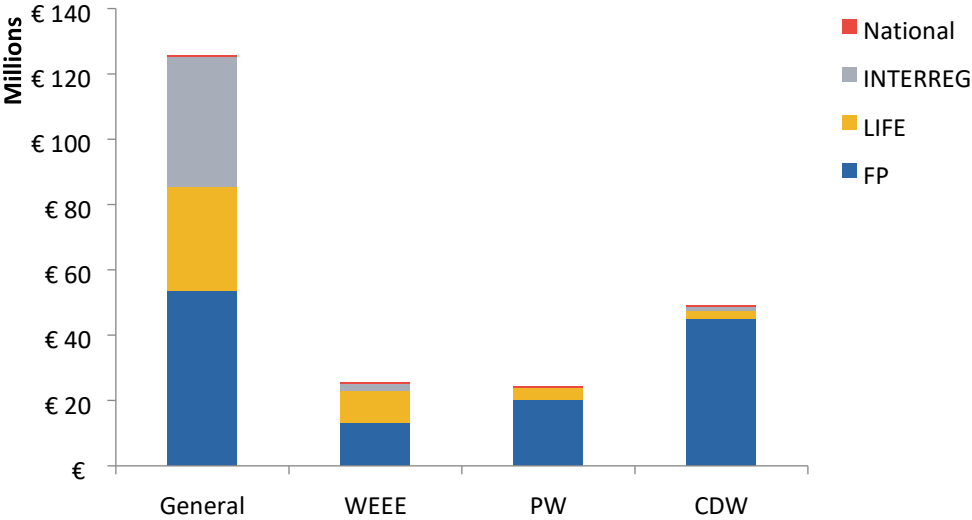


Figure 1. Funding visualised by theme and funding programme.

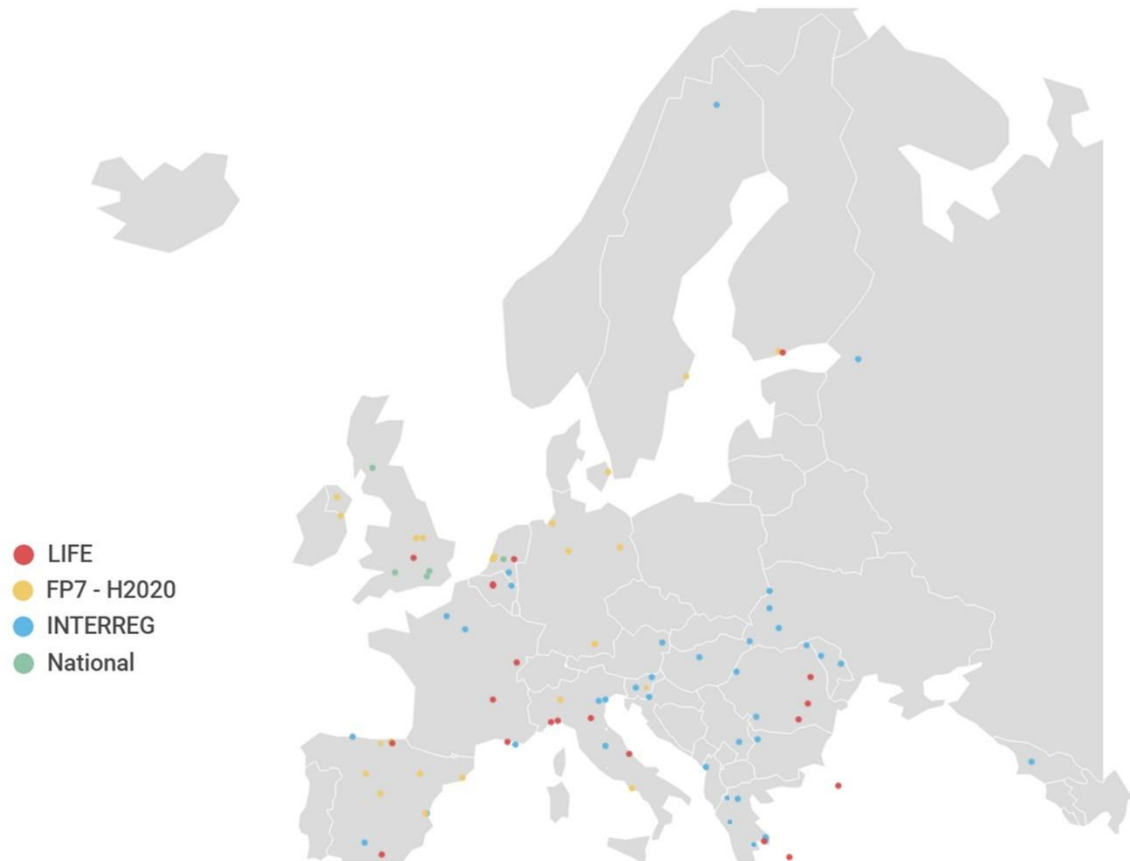


Figure 2. Geographical distribution of identified projects

The 114 identified projects are assessed by start date and further relevance for COLLECTORS. 32 relevant and recent projects remained, which are presented in further detail in Annex 1.

## Conclusion and future steps

As part of COLLECTORS' clustering efforts a first mapping was performed of European research, development and innovation projects with regard to waste collection in the three waste streams considered by COLLECTORS. This has resulted in a list of 109 relevant projects funded within FP7/H2020, LIFE, INTERREG and Dutch and British national funding programmes.

In the second phase of the project, this deliverable has been further developed. The following actions have been taken:

- Review and validation of the project database by partners during biweekly telco's and expert group (during COLLECTORS expert panels) to identify potentially missing projects;
- Periodically, WP leaders have been asked to define the type of input or involvement of projects their WP may benefit from;

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### D6.1. Report with introduction on the identified EU-projects

- Periodic update of recently funded projects; potentially expanding project search based on partner's requirements; (updated search 1.1 in M10)
- Development of a clustering strategy;
  - e.g. definition of strategy following from project categories and partners' inputs during GA
  - e.g. periodic scan of organisations/project coordinators potentially relevant for participating in the Expert Group
  - e.g. project conferences that COLLECTORS can attend
- Update of the search action in M10 for second expert group.

Throughout the project, this deliverable has been a work in progress. The actions defined have been aligned with each expert group meeting.

## Adjusted scope, keywords & selection for second search

The second and final search took place in the fourth quarter of 2019 and in January 2020. For this search, to ensure relevance of selected projects, the scope was adjusted to cover not only the context and search for possible speakers at Collectors' meetings, conference and workshops, but to also cover clustering for which a selection of projects was needed. In addition, the keywords were slightly changed to cover not only those mentioned in Table 3.1 (Waste collection in general, WEEE, PW and C&DW), but also waste collection projects with a policy support focus.

To ensure continuity, a temporal scope starting from 2017 was selected. For clustering purposes, projects funded in or after 2017 were deemed most relevant, as projects funded before that time (including their results, recommendations and technological innovations) were approaching their final stage and thus had limited or not enough time to participate in a six month clustering process and were moreover covered in the first search. The keywords used to perform the search were the same as for search one with one addition; 'Waste Collection Systems' and are summarized in Table 3. Different search operators were utilized in order to create the most efficient search string / query.

Different search operators were utilized in order to create the most efficient search string / query and in addition to Matchpoint, as a cross-check, the following databases were consulted:

- the [www.keep.eu](http://www.keep.eu) database for INTERREG projects;
- the Cordis database (<https://cordis.europa.eu/projects>) for H2020 projects;
- the LIFE Database (<https://ec.europa.eu/environment/life/project/Projects/index.cfm>) for LIFE projects.

## Results Search 2

The second search resulted in a total of 39 relevant projects active in the period from 2017 - 2019, of which 12 relate to waste collection in general, 2 to Policy Solutions (PS), 10 to WEEE, 6 to PPW and 9 to CDW. Of these projects, 20 were funded within H2020, including one EIT Raw Materials funded project; 6 within LIFE; and 13 within INTERREG. The distribution of topics and programmes is tabulated below and a full list can be found in Annex 2.

	General	WEEE	PW	CDW	PS	Total
H2020	5	8	1	4	2	<b>20</b>
INTERREG	7	0	2	4	0	<b>13</b>
LIFE	0	2	3	1	0	<b>6</b>
Total	<b>12</b>	<b>10</b>	<b>6</b>	<b>9</b>	<b>2</b>	<b>39</b>

Table 5. Themes vs. funding programmes, search 2

Different types of projects were identified and an overview of the results is outlined below:

- Projects related to urban **sustainability and circular economy** (e.g. 2LIFES and CityLoops); projects on waste collection systems in general (e.g. CEWASTE);
- Projects involving **local and regional authorities with regard to waste management; case studies** (e.g. ReThinkWaste; SmartWaste);
- Projects with regard to **local or regional waste policy implementation** (e.g. LCA4Regions);
- Projects related to **policy support** for waste collection system in general (e.g. OptiWaMag, Cicerone and PROMPT);
- Projects with a focus on:
  - WEEE such as CIRC4LIFE on development and implementation of a circular economy approach for sustainable products and services through their value and supply chains in electrical and electronic products;
  - PPW in PAPERCHAIN in which five novel circular economy models centered in the valorisation of the waste streams generated by the PPI as secondary raw material for a number of resource intensive sectors: construction sector, mining sector and chemical industry are to be deployed;
  - C&DW in CIRCuiT in which three innovative solutions in the four cities will be demonstrated: dismantle buildings to reuse materials; transformation and refurbishment; and design for disassembly and flexible construction.

The amount of funding by theme is illustrated below:

D6.1. Report with introduction on the identified EU-projects

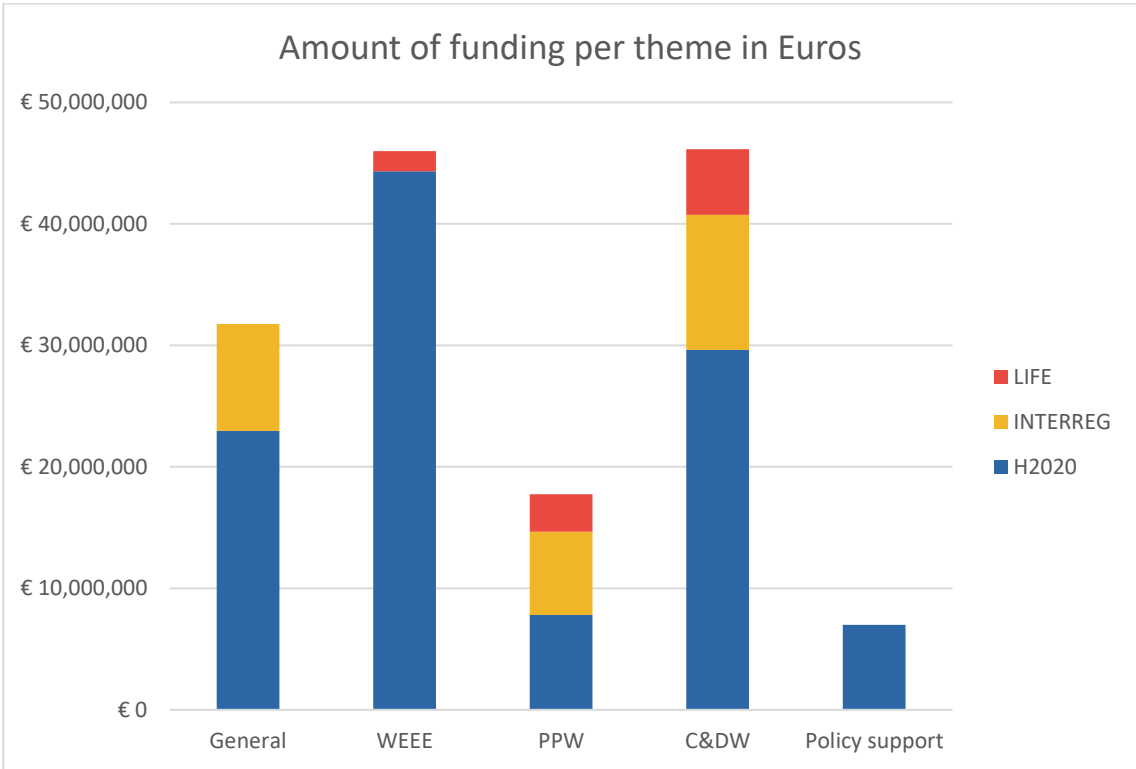


Figure 2. Funding visualised by theme and funding programme.

The 39 identified projects are presented in further detail in Annex 2.

# Clustering

## Selection of clustering projects

In order to maximise the impact of the tools and knowledge developed within COLLECTORS, a targeted selection procedure is used. From the above selected 39 projects, projects were selected for clustering purposes according to two criteria; match of planned project tasks and activities with the tools produced in the COLLECTORS project; and sufficient remaining time (:at least one year) to project end. This is done by selecting projects according to the above described search criteria, filtering projects with relevant and matching project descriptions/activities, assessing the project timeline, and lastly contacting the projects via email to assess their interest in the clustering exercise. This resulted in a list of 13 potential clustering projects as set out below:

Programme	Name	Topic
INTERREG Europe	PLASTEKO	Supporting EU regions to curb plastics waste and littering
INTERREG Europe	SMART WASTE	Innovation in Waste Management Policies
H2020	PROMPT	PRemature Obsolescence Multi-Stakeholder Product Testing Program
H2020	PolyCe	Post-Consumer High-tech Recycled Polymers for a Circular Economy
INTERREG Europe	EURE	Effectiveness of Urban Environmental Policies to improve Resource Efficiency
H2020	City Loops	Closing the loop for urban material flows
EIT Raw Materials	PANORAMA	Physical AccouNts Of RAW MAterial stock and flow Information Service
INTERREG Europe	LCA4REGIONS	Improved Environment and Resource Efficiency through use of Life Cycle Instruments for implementation of regional policies of the EU
INTERREG Europe	OptiWaMag	Optimization of waste management in urban spaces and in households
H2020	CEWASTE	Voluntary certification scheme for waste treatment
H2020	CICERONE	CIrcular Economy platfoRm for eurOpeaN priorities strategic agEnda
LIFE	WEEE	Waste Electrical and Electronic Equipment (WEEE): treasures to recover!
LIFE	Rethink Waste	Rethinking municipal tariff systems to improve waste management

Table 6. Overview of selected clustering projects



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## D6.1. Report with introduction on the identified EU-projects

All project representatives from the selected projects for clustering activities were invited to attend a first clustering session in Thessaloniki in parallel with the Collectors project meeting in December 2019. Prior to this meeting, the selected and invited projects received summarized information about the COLLECTORS results. The goal of this meeting was to present the COLLECTORS results in detail, brainstorm where and how these results and/or tools could be beneficial to the projects and learn from each other's project results. Representatives from two projects were able to attend the meeting in Thessaloniki; Smart Waste and Plasteco. With the additional projects, bilaterally Skype calls have been organized.

Based on the match between project scope and activities, project timeline and willingness to cooperate, clustering activities have been organised with the following projects:

1. Smart Waste;
2. Plasteco;
3. PROMPT;
4. PolyCe;
5. LCA4Regions;
6. CityLoops and;
7. Rethink Waste.

## Clustering process

The clustering process consists of three main steps;

1. Presentation of COLLECTORS tools and results;
2. Collaborative identification of projects' needs;
3. Drafting of project-specific factsheet.

The steps are described in more detail below.

### COLLECTORS results

Clustering started with the compilation of a matrix to determine which of the COLLECTORS tools is of most interest to the clustering project. The following tools and/or reports are identified and presented to the projects:

- **Life Cycle Analysis (LCA)**; An environmental assessment on waste collection in Europe by applying LCA, analysing how improving municipal waste collection can reduce the environmental impact for the PPW, WEEE and CDW.
- **Cost Benefit Analysis (CBA)**; A financial assessments on waste collection in Europe by applying CBA, analysing how separate collection for PPW, WEEE and CDW can be implemented while balancing costs.
- **Value Chain Analysis (VCA)**; Assessment of the contribution of waste collection systems to improve circularity and on solutions implemented in waste collection systems that enable the recycler to produce more value, by producing better (qualitative) secondary materials.

## D6.1. Report with introduction on the identified projects

- **Social Acceptance Analysis (SAA)**; An assessment in dialogue with citizens of the implemented solutions and key elements for societal acceptance on waste collection in Europe.
- **Multiple-Criteria Decision-Making (MCDM)**; A decision making tool used for prioritising elements and aspects of waste collection systems by weighing and ranking parameters.
- **Policy recommendations**; Synthesis of all COLLECTORS results, the feedback from stakeholders and experts on the regulatory and governance barriers or catalysers to effective waste collection.
- **Good practices**; Description of the 12 good performing waste collection practices identified in the COLLECTORS project.

## Identification of project needs

To see how information about these tools can best be shared with the receiving project, a series of meetings was planned and resulted in shared factsheets (Deliverable 6.3). Based on these discussions, Table 7 below shows the identified interest per project.

	LCA	CBA	VCA	SAA	MCDM	Policy Rec	Good practices
SmartWaste		X				X	X
CityLoops	X	X			X		
RethinkWaste			X	X			
PolyCe						X	
LCA4Regions	X					X	X
PROMPT	X	X			X		
PLASTEKO		X		X	X	X	

Table 7. Overview of interest per project

Initially it was planned to only develop three factsheets, however, given the interest of the contacted projects as well as the overlap between the interest in tools, it was decided to include more projects in the clustering activities, thereby positively contributing to the impact and knowledge sharing of the COLLECTORS results.

## Project specific factsheets

The factsheets consist of a two pager specifically written for the project in question. Further details on this are enclosed in Deliverable 6.2.

# Recommendations

The reaching out to other projects to identify project context, speakers and potential clustering projects activities conducted in this WP shows that a significant share of the EU funded projects identified, and granted in the past few years, aim to deliver theoretical results, such as recommendations for policies and strategies, compilations of good practices and case studies, analysis of existing or hypothetical scenarios, tools for self-assessment, literature databases and existing practices etc. Quite often, this sort of deliverables raise awareness and provide learnings to interested actors. This can be considered a first step and ice-breaker for a potential (real) implementation of these products. Testing in practice the products delivered in a pilot exercise seems the most sensible next step before conducting a real implementation. Pilot experiences will provide the necessary learnings, quantification of impacts, identification of challenges etc. required for planning a real implementation. Outcomes of the pilots would be extremely useful for those territories considering adopting the measures proposed in the projects.

Given the challenges that Member States have to face as regards waste collection targets and circular economy strategies, this consortium would recommend that the EU funding programme facilitates the continuation of some of the projects described above. This could be done by allocating a part of the funding from EU programmes to initiatives focusing on the practical implementation of the recommendations and deliverables produced in previous projects, and providing incentives to project consortiums for submitting new proposals aiming at this.

The publication of Deliverable 6.1 and the clustering activities contained in it, provides an important – and timely – opportunity to assess how both planned and existing sources of European and or national funding should be designed and geared towards ensuring successful deployment of researched waste technologies, methodologies and tools (usually in H2020 projects). For example at European level, Interreg Europe for embedding research findings in Action Plans for evidence based policy-making and other ETC programmes and ERDF programmes for pilot testing of new technologies in view of deployment in European regions, and EIB instruments to finance market introduction by financing funding gaps in line with priorities of the next programming period and under the new post 2020 Multiannual Financial Framework (MFF). In addition, national funding and financing programmes and schemes in the various Member States will also allow for uptake and deployment of the above mentioned technologies, guidelines and tools as these are often aligned with EU policy objectives and funding and financing priorities.

We recommend this opportunity of alignment to be carefully considered and assessed to maximise the exploitation and uptake of European research project results.

# Annexes

## Annex I: List of identified projects

### Search 1

This Annex contains a list of the projects relevant for COLLECTORS. For now, a selection was made of projects ended in 2016 or after. These projects were deemed most relevant to the purpose of the work packages involved. The identified projects will be used as input for WP1 (Inventory of waste collection systems) and WP6 (Clustering with other projects), mainly to avoid duplication of work and to ensure uptake of state-of-the-art knowledge.

The following pages contain a summary table of the identified projects, followed by a more detailed description in order to assess the project's relevance. The extended list of projects can be found in the Excel attached.

Identified projects for clustering

## Identified projects - summary

Funding prog.	Acronym	Title	Start Date	End Date	Status	Coordinator	Country
<b>Waste collection - general</b>							
INTERREG	GREENPOINT-MOB	Development of a mobile Green Point at the cross-border region and promotion of prevention and recycling	1-5-2018	30-04-2020	Active	Waste Management of Western Macedonia S.A.	GREECE
INTERREG	INTERNET OF BINS	Joint Initiatives for Smart and Sustainable Municipal Solid Waste Management	1-4-2018	31-03-2020	Active	Municipality of Ziros	GREECE
LIFE	SMART Waste PACA	Towards a Circular Economy in the Provence-Alpes-Côte d'Azur Region	1-1-2018	31-12-2023	Active	Region PACA	FRANCE
UK	SWIFT	Smart Waste Infrastructure & Forecasting Telematics	1-9-2017	31-8-2018	Active	Sustainable Venture Development Partners Ltd	UNITED KINGDOM
INTERREG	CIRCE2020	Expansion of the CIRcular Economy concept in the Central Europe local productive districts	1-7-2017	30-6-2020	Active	ARPAV - Regional Agency for Env. Protection & Prevention of Veneto	ITALY
INTERREG	Benefit As you Save	Stimulating Citizens Participation to Recycle Processes through the Implementation of Benefits systems	12-1-2017	29-11-2019	Active	Municipality of Vari - Voula – Vouliagmeni	GREECE
INTERREG	ISOS	Sustainable islands: Network of islands for the long-lasting development and preservation of heritage	1-1-2017	1-1-2020	Active	Département du Var	FRANCE
H2020	FORCE	Cities Cooperating for Circular Economy	1-9-2016	31-8-2020	Active	KOBENHAVNS KOMMUNE	DENMARK
H2020	Waste4Think	Moving towards Life Cycle Thinking by integrating Advanced Waste Management Systems	1-6-2016	30-11-2019	Active	FUNDACION DEUSTO	SPAIN
H2020	UrBAN-WASTE	Urban strategies for Waste Management in Tourist Cities	1-6-2016	31-5-2019	Active	GOBIERNO DE CANARIAS	SPAIN
H2020	SmartWASTE	Smart logistics for WASTE and recycling operations in European cities	1-6-2016	31-5-2019	Active	ENEVO OY	FINLAND
INTERREG	INTHERWASTE	Interregional Environmental Integration of Waste Management in European Heritage Cities	1-4-2016	31-3-2021	Active	SADECO (Sanitation Córdoba)	SPAIN

H2020	NB4WASTE	Narrowband IoT for Waste Collection in Rural Areas	1-8-2017	30-11-2017	Closed	SYLFO TECNOCONSULTING SL	SPAIN
UK	Wastage	Wastage - A commercial and industrial waste production and collection minimisation system	1-2-2017	31-7-2017	Closed	Sustainable Venture Development Partners Ltd	UNITED KINGDOM
UK	Eunomia LCA	Eunomia LCA - Carbon impacts of local waste collection	1-8-2013	31-1-2014	Closed	Eunomia Research & Consulting Limited	UNITED KINGDOM
LIFE	LIFE ReWaCo	Reversed Waste Collection	1-7-2013	31-7-2016	Closed	Gemeente Arnhem	NETHERLANDS
LIFE	WASTE ON A DIET	Strategy to reduce waste, increase re-using and recycling, reduce incineration and storage, in a rural and urban area	1-7-2012	30-6-2016	Closed	Syndicat de Besançon	FRANCE
<b>Waste Electrical and Electronic Equipment (WEEE)</b>							
H2020	C-SERVEES	Activating Circular Services in the Electric and Electronic Sector	1-5-2018	30-4-2022	Active	AIMPLAS - ASOCIACION DE INVESTIGACION DE MATERIALES PLASTICOS Y CONEXAS	SPAIN
LIFE	LIFE E-WASTE GOVERNANCE	GOVERNANCE OF WASTE EEE (WEEE) AND WASTE PBA (WPBA) FLOW AND CUNSUMER FRINDLY COLLECTION AND AWARENESS RAISING	1-1-2016	30-10-2020	Active	ZEOS, ravnanje z električno in elektronsko opremo, d.o.o.	SLOVENIA
LIFE	LIFE 2014 CRMRecovery	Critical Raw Material Closed Loop Recovery	1-9-2015	29-3-2019	Active	The Waste and Resources Action Programme	UNITED KINGDOM
UK		Circular Economy Business Models for Collecting Household ITC WEEE for Reuse	1-9-2015	29-2-2016	Closed	Re-Tek (UK) Limited	UNITED KINGDOM
H2020	EWIT	EWIT: Developing an e-waste implementation toolkit to support the recycling and the secondary raw material recovery strategies in metropolitan areas in Africa	1-2-2015	31-1-2017	Closed	CONSORZIO REMEDIA	ITALY
LIFE	LIFE - INFOCYCLE	Development of a Communication and Training campaign for the recycling of Waste Electrical & Electronic Equipment (WEEE)	1-7-2014	30-6-2016	Closed	Appliances Recycling S.A	GREECE
LIFE	WEEENMODELS life	Waste Electric and Electronic Equipment - New MODEL for Logistic Solutions	2-9-2013	31-10-2016	Closed	Comune di Genova	ITALY
<b>Paper and packaging waste (PPW)</b>							
LIFE	LIFE RECYPACK	Circular economy of commercial plastic packaging in urban environments - LIFE RECYPACK	1-10-2017	31-3-2020	Active	AIMPLAS Asociación de investigación de materiales plásticos y conexas	SPAIN
H2020	PlastiCircle	Improvement of the plastic packaging waste chain from a circular economy approach	1-6-2017	31-5-2021	Active	INSTITUTO TECNOLOGICO DEL EMBALAJE, TRANSPORTE Y LOGISTICA	SPAIN

H2020	IMPACTPapeRec	Boosting the implementation of participatory strategies on separate paper collection for efficient recycling	1-2-2016	31-1-2018	Closed	INSTITUTO TECNOLOGICO DEL EMBALAJE, TRANSPORTE Y LOGISTICA	SPAIN
Construction and Demolition waste (CDW)							
H2020	CINDERELA	New Circular Economy Business Model for More Sustainable Urban Construction	1-6-2018	31-5-2022	Active	ZAVOD ZA GRADBENISTVO SLOVENIJE	SLOVENIA
H2020	BAMB	Buildings as Material Banks: Integrating Materials Passports with Reversible Building Design to Optimise Circular Industrial Value Chains	1-9-2015	28-2-2019	Active	INSTITUT BRUXELLOIS POUR LA GESTION DE L'ENVIRONNEMENT	BELGIUM
H2020	HISER	Holistic Innovative Solutions for an Efficient Recycling and Recovery of Valuable Raw Materials from Complex Construction and Demolition Waste	1-2-2015	31-1-2019	Active	FUNDACION TECNALIA RESEARCH & INNOVATION	SPAIN
UK	DRIM	Deconstruction and Recovery Information Modelling (DRIM): A Tool for identifying and reclaiming valuable materials at end-of-life of Buildings	1-4-2016	31-3-2018	Closed	University of the West of England	UNITED KINGDOM

## Waste collection (general)

GREENPOINT-MOB	INTERREG
Development of a mobile Green Point at the cross-border region and promotion of prevention and recycling	
Waste Management of Western Macedonia S.A., Greece	
1/5/2018 - 30/4/2020 (Active)	€570072
<p>In the CBC area of GR-AL is one of the biggest challenges the appropriate Waste Management on a municipal and regional level. Although a couple of CB and national programmes have been executed in the past, little progress has made achieved in relation to the waste recycling and reuse.</p> <p>The GREENPOINT MOB project brings an innovative way of recycling in remote and distance areas where no any possibility to recycle existing before and at the same time promotes recycling-at-home. The primary goal of the project is to improve the waste management of remote and distant areas by increasing 50% the waste recycling in relation with the state before. In order to achieve this goal the GREENPOINT MOB gives a lot of emphasis to the appropriate training of citizens and to information events that accompany the placement of the GREENPOINT MOB (a mobile recycling unit for all different waste streams) in order to recycle in practice starting from the young generations and persuade the older ones.</p> <p>GREENPOINT MOB project put a lot of emphasis to the raise awareness activities with open dissemination events in total eight (8) places where the GREENPOINT MOBS will temporary establish. There, training and educational activities will take place with the participation of young and old about proper waste management practices and recycling-at-home attitude. Prior to each open event, information seminars to the project areas will initiate for students, civil servants, companies' employees to set-up the ground for responsible waste management and the use of GREENPOINT MOB.</p>	



INTERNET OF BINS	INTERREG
Joint Initiatives for Smart and Sustainable Municipal Solid Waste Management	
Municipality of Ziros, Greece	
1/4/2018 - 3/31/2020 (Active)	€555361
<p>The eligible CB area is characterized by low quality and density of environmental infrastructure (mainly in the Albanian area), while, at the same time, the partnership, identified that waste monitoring and management are becoming an acute problem for their urbanization and economic development. Although public services have been around for a long time, they have seen only limited innovation with operational efficiency. Moreover, to a greater or smaller degree, waste management approaches at local scale (like municipalities solid waste management) affect both the urban profile and the "worth living" for both citizens and tourists.</p> <p>Considering the imperative need for introducing new and more effective approaches for municipal solid waste management (MSWM), little has been done to jointly address the risks, that participating countries face and the opportunities that arise. For instance, MSWM initiatives have been addressed in a rather superficial and conventional approach. Related infrastructure has not been sufficiently developed, the SWM practices have not been improved and both citizens and tourism activities are suffering.</p> <p>The INTERNET OF BINS project's overall objective is in full accordance with the programme's specific objective of the thematic priority in which belongs: To increase the capacity of CB infrastructure in waste management and monitoring by adopting innovative approaches/models for sustainable solid waste management at local level. The project itself, serves as a pilot project and model for other communities of the programme area and goes beyond the existing waste management practices both a) in the programme area and b) in the participating countries as well.</p>	

SMART WASTE	LIFE-IP
Towards a Circular Economy in the Provence-Alpes-Côte d’Azur Region	
Region PACA, FRANCE	
1/1/2018 - 12/31/2023 (Active)	€9905659
<p>The Provence-Alpes-Côte d'Azur (PACA) region faces many challenges in terms of waste management. Its inhabitants produce more household waste than the national average (i.e. 457 kg/inhabitant in 2014, compared with 344 kg/inhabitant in France) and waste reduction momentum has yet to kick in. For instance, with 400 kg of household waste/inhabitant/year directly sent to landfill or incineration, PACA is the second poorest performing region in France (after Corsica) in terms of reuse and recycling.</p> <p>The region has a low rate of sorted recycling collection and a heavy reliance on landfill facilities, which has slowed the emergence of waste recycling centres. The PACA region analysed the reasons for this and discovered that departmental councils that previously oversaw waste planning (2005-2015) have decreased their efforts since regions took over, and that state control of equipment for waste management was insufficient, partly explaining the high number of illegal waste landfills. Furthermore, awareness of the negative environmental impacts of inadequate waste management was also considered insufficient. The negative impacts of waste management are increased by intense pressure from demographic growth and tourism.</p> <p>The overall objectives of LIFE IP Smart Waste PACA are twofold: firstly, the project aims to fully implement the departmental waste plans in compliance with the Waste Framework Directive; and secondly, the project aims to implement the regional waste management plan for the PACA region. Based on the assessment of the waste situation and difficulties, the project partnership has also defined a common ambition: i.e. to make a region-wide switch in the waste prevention and management sector to an innovative, sustainable, inclusive, and integrated circular economy.</p>	

SWIFT	UK
Smart Waste Infrastructure & Forecasting Telematics	
Sustainable Venture Development Partners Ltd, UNITED KINGDOM	
9/1/2017 - 8/31/2018 (Active)	€69863€
<p>Current methods of waste collection have remained largely unchanged for decades, whereby significant inefficiencies exist in the system, creating unnecessary air pollutants and the congestion of busy urban roads. Smart Waste Infrastructure &amp; Forecasting Telematics (SWIFT seeks to address these issues through the use of sensors and collection route optimisation. Retrofitting/installing the SWIFT device in bins/skips will also lead to a reduction in the incidence of litter resulting from overflowing bins/skips (improving the amenity of urban areas) and fly tipping. Throughout the UK, 37 of 43 zones are in excess of the mean annual limit for NO2 emissions (commonly associated with vehicles), the incidence of litter has not declined over the past 12 years and costs between &amp;pound;717- &amp;pound;850Mpa and there were 852,000 incidents of fly tipping 2013-14. This project seeks to confirm the impacts on emissions, truck movements, litter and fly tipping hypothesised to arise as a result of installation of the SWIFT device on bins and skips used for waste collection in the commercial and industrial (C&amp;I) waste sector.</p>	

CIRCE2020	INTERREG
Expansion of the CIRcular Economy concept in the Central Europe local productive districts	
ARPAV - Regional Agency for Environmental Protection and Prevention of Veneto, ITALY	
7/1/2017 - 6/30/2020 (Active)	€1934516,25
<p>Transition towards circular economy is a core priority of the EU 2020 Strategy, particularly relevant for Central European industrial areas due to the outstanding use of primary natural resources in various production stages: processing, packaging and transportation. Recycling rates, however, are still far from directive targets and one main reason for this is that the reuse of byproducts is often performed only by companies' independent initiatives. Central European countries are characterised by numerous business organisational models but the same crossvalue relationships are not fully exploited for waste valorization and for reducing the use of primary natural resources.</p> <p>The CIRCE2020 project aims to facilitate a larger uptake of integrated environmental management approach in five specific Central European industrial areas by changing patterns from single and sporadic company recycling interventions to an integrated redesign of industrial interactions based on the concept of circular economy. The goal is to introduce innovative crossvalue chain waste governance models and transnational analytic tools to improve capacities of concerned waste public-private sector to reduce dependencies from primary natural resources within industrial processing. The project should also provide robust evidences about environmental and economic benefits from shifting to enhanced industrial symbiosis.</p>	

Benefit As you Save	INTERREG
Stimulating Citizens Participation to Recycle Processes through the Implementation of Benefits systems	
Municipality of Vari - Voula – Vouliagmeni, Greece	
1/12/2017 - 11/29/2019 (Active)	€775704
<p>The common challenge is implementation of European Directive 2008/98/EK introducing the "polluter pays principle" and the "extended producer responsibility", including two new recycling and recovery targets to be achieved by 2020: 50% preparing for re-use and recycling of certain waste materials from households and other similar origins. The Directive requires that Member States adopt waste management plans and waste prevention programmes. Since Balkan states are still far from these targets, project's ambition is to contribute to recycle percentage increase. According to an initial survey in the seven project target areas, the most important observation was low participation of citizens in recycling process. Therefore the core element of a common strategy to achieve EU recycling targets is to increase citizens' participation.</p> <p>Ultimate goal of the strategy is to institute direct incentives to citizens according to their contribution to waste separate selection at source. Thus action plans will be developed in each partner area based on a common methodology, defining the process of separate selection and collection, the way of citizens participation, the type of benefits and the way these will be returned to citizens. Action plans will be pilot implemented to evaluate and to measure the results and incorporate them to local strategies for an effective solid waste management. A 20% increase of recycle percentage and enhancement of environmental awareness are expected. The main outputs are the local action plans and practices based on "Benefit As You Save" (BAS) systems and a networking platform firstly among the partner areas, with the view to be enlarged with new stakeholders since BAS practices will meet widely acceptance.</p> <p>Local societies and economies in partner areas will benefit since the increase of recycle percentage will drop local expenses for solid waste management. In addition, a slight improvement of income of citizens actively participating in local recycle activities is expected. The transnational dimension concerns joint development of BAS systems and testing of their effectiveness in different conditions. The innovation approach is a Balkan version of Pay As You Throw systems in municipal waste management. In Central and West Europe, municipal taxes are calculated with PAYT systems, depending on the quantities of mixed waste disposed of by households.</p> <p>The current situation of Balkan countries doesn't permit to directly implement PAYT: Tax systems, low level of culture concerning separate selection at source, lack of recycling infrastructures covering the whole residence areas, a negative attitude against everything appears as a new tax are some of the difficulties to implement PAYT systems. In contrast BAS systems could overcome these problems. The project added value is not only development of a</p>	

new recycling practice, but far beyond this, an 18-month application and testing of the innovative concept/project results.

ISOS	INTERREG
Sustainable islands: Network of islands for the long-lasting development and preservation of heritage	
Département du Var, FRANCE	
1/1/2017 - 1/1/2020 (Active)	€1270883,82
<p>The small islands of the Maritime area are territories that have unique cultural and natural heritage, however they are also fragile territories in relation to the challenges posed by mainly seaside tourism. These island territories, with notable variations in population based on the season, face the shared issues of the degradation of their heritage, waste management or providing energy that is little suited to the environmental quality of the locations. The islands involved in the partnership – the island of Lérins (AM), the islands of Hyères (VAR), the islands of Lavezzi (CORSICA), the island of Capraia (TUSC), the island of Tavolara and Asinara (SARD), and the island of Palmaria (LIG) – wish to commit themselves to this integrated strategic territorial project to preserve their heritage and develop a “sustainable island” approach together. The approach will be based on the initial international initiative of Small Sustainable Islands; making the Maritime cooperation area the perfect trial zone for this new brand. The ISOS project – Isole Sostenibili (Sustainable Islands) therefore intends to:</p> <ul style="list-style-type: none"> <li>• create a network of French and Italian islands committed to the preservation of island cultural and natural heritage which will be animated with technical workshops, conferences, mobilisation of experts, a schedule or a set of initiatives.</li> <li>• implement, with local operators, tangible pilot actions for: - improved management of natural resources with innovative solutions suited to the small islands (renewable energy, sorted waste collection, etc.) and the enhancement of island heritage. The dissemination of this network on a Maritime scale and the investments envisaged will lead to the certification of “sustainable islands” for the islands in the project, having co-built sustainable strategies for the protection of natural and cultural heritage to the benefit of the population.</li> </ul>	

FORCE	H2020
Cities Cooperating for Circular Economy	
KOBENHAVNS KOMMUNE, DENMARK	
9/1/2016 - 8/31/2020 (Active)	€9724969
<p>The overall objective is to minimise the leakage of materials from the linear economy and work towards a circular economy. Specific objectives are to:</p> <ul style="list-style-type: none"> <li>• Engage cities, enterprises, citizens and academia in 16 participatory value chain based partnerships to create and develop eco-innovative solutions together.</li> <li>• Develop 10 viable end-markets by demonstrating new applications for plastic waste, metals (EEE devices), biowaste and wood waste.</li> <li>• Develop a governance model for cities based on value chain based partnerships.</li> <li>• Develop decision support tools and assess the actual impact by use of Big Data.</li> <li>• Ensure replication through the FORCE Academy aiming at enterprises, citizens and policy makers.</li> </ul> <p>The eco-innovative solutions will be demonstrated across four cities (Copenhagen, Hamburg, Lisbon and Genoa) and using the four materials:</p> <ul style="list-style-type: none"> <li>• Flexible plastics: Recycling and upgrade of 5,000 tonnes of flexible plastic from enterprises and private households will enable virgin material substitution, corresponding to preventing emissions of 12,500 tonnes of CO2.</li> <li>• Metals: Citizens will be mobilised to reclaim an additional 2 kg/capita of WEEE (app. 3,600 tonnes). A communication campaign will reach 100,000 citizens and support at least five SME's that repair damaged EEE devices so that 10-20% of the collected WEEE can be redistributed.</li> <li>• Wood waste: additional 12,000 tonnes wood waste from urban and mountain areas will be collected. 8-10,000 tonnes of brushwood will be used for compost production, and 1416,000 tonnes will be processed into wood particles.</li> <li>• Biowaste: around 7,000 tonnes of biowaste from the municipal mixed waste stream will be recovered: 3,000 tonnes coming from restaurants and hotels, and 4,000 tonnes coming from households.</li> </ul> <p>The partnerships will result in the creation of viable eco-innovative market solutions, exploited by the partners. Replication in other cities will be incentivised thus ensuring competitiveness of European Circular Economy and green growth.</p>	

Waste4Think	H2020
Moving towards Life Cycle Thinking by integrating Advanced Waste Management Systems	
FUNDACION DEUSTO, SPAIN	
6/1/2016 - 11/30/2019 (Active)	€8818556

The main objective of this project is to move forward the current waste management practices into a circular economy motto, demonstrating the value of integrating and validating a set of 20 eco-innovative solutions that cover all the waste value chain. The benefits of these solutions will be enhanced by a holistic waste data management methodology, and will be demonstrated in 4 complementary urban areas in Europe. The eco-innovative solutions include technological and non-technological tools such as:

- a) IT tools to support the daily operation and long-term planning,
- b) Apps for citizens empowerment and engagement,
- c) Educational materials based on innovative teaching units and serious games,
- d) Tools for citizen science for the co-creation of novel solutions,
- e) Mechanisms to boost behavioral changes based on economic instruments and social actions, and
- f) Decentralized solutions for valorization and reuse of high value resources.

The different solutions will be implemented in 4 complementary European areas: a) Zamudio (ES) is a highly industrialized area with a spread population that uses a separated kerbside collection; b) Halandri (GR) is a large suburban city with a wide range of business that has a very basic waste management system; c) Seveso (IT) is a residential town that uses a door-to-door system; d) and Cascais (PT) is an extensive and high touristic coastal town that implements an advanced collection system. The project includes a consortium of 19 partners with 4 public agencies and administrations, 3 research centers and universities, 8 SMEs, 2 LEs, 1 cluster and 1 NGO, that will work together during 36 months with an overall contribution from the EC of €9M. The most relevant expected impacts are: a 20% increase in waste sorting, 10% saving of management costs, and 10% reduction of GHG emissions. The experience gained, and the synergies among the partners describe the best possible scenario to launch new governance and business models.



UrBAN-WASTE	H2020
Urban strategies for Waste Management in Tourist Cities	
GOBIERNO DE CANARIAS, SPAIN	
6/1/2016 - 5/31/2019 (Active)	€4248782,5
<p>Europe’s cities are some of the world’s greatest tourism destinations. The socio-economic impact of tourism is extraordinary and urban tourism, but it brings at the same time a range of negative externalities, including high levels of unsustainable resource consumption and waste production. In comparison with other cities, tourist cities have to face additional challenges related to waste prevention and management due to their geographical and climatic conditions, the seasonality of tourism flow and the specificity of tourism industry and of tourists as waste producers.</p>	
<p>UrBAN-WASTE will support policy makers in answering these challenges and in developing strategies that aim at reducing the amount of municipal waste production and at further support the re-use, recycle, collection and disposal of waste in tourist cities. In doing so UrBAN-WASTE will adopt and apply the urban metabolism approach to support the switch to a circular model where waste is considered as resource and reintegrated in the urban flow.</p> <p>UrBAN-WASTE will perform a metabolic analysis of the state of art of urban metabolism in 11 pilot cities. In parallel a participatory process involving all the relevant stakeholders will be set up through a mobilization and mutual learning action plan. These inputs will be integrated in the strategies along with a review of the most innovative existing technologies and practices in the field of waste management and prevention. The strategies will then be implemented in the 11 cities and the results will be monitored and disseminated facilitating the transfer and adaptation of the project outcomes in other cases.</p>	

SmartWASTE	H2020
Smart logistics for WASTE and recycling operations in European cities	
ENEVO OY, FINLAND	
6/1/2016 - 5/31/2019 (Active)	€1470314
<p>The key problem in waste collection today is static routes and schedules: truck drivers are driving “blindly” from bin to bin and collecting containers that are either half empty or over filled. This adds up to a large amount of unnecessary costs, such as time spent, gas consumption and greenhouse gas emissions. Globally, over 400 million waste containers are being served by millions of trucks every day, and 50 % of the value in the market is in the logistics. Enevo is a growing Finnish technology company that aims to capitalise on this 12-billion-euro business opportunity and become the #1 supply chain platform company for waste and recycling operations worldwide.</p> <p>As waste management plays a central role in the circular economy, Enevo is a key player in developing more efficient waste collection and management systems. Enevo helps its customers make their waste and recycling operations more efficient, leading to a more sustainable world. Enevo’s vision is to turn all waste in the world into a valued resource. The SmartWASTE project is addressing two significant EU-wide challenges:</p> <ol style="list-style-type: none"> <li>1) Optimising transport operations and tackling the environmental and logistical challenges that the European transport sector is facing</li> <li>2) Waste management in the circular economy context.</li> </ol> <p>The objective of SmartWASTE proposal is to scale-up and expand the service into new European regions by piloting the solution with potential customers in 10 large scale pilots. Through piloting, Enevo gains important feedback that is provided back to product development to improve Enevo's offering and operations to be better suited for large scale regional expansion.</p>	

INTHERWASTE	INTERREG
Interregional Environmental Integration of Waste Management in European Heritage Cities	
SADECO (Sanitation Córdoba), SPAIN	
4/1/2016 - 3/31/2021 (Active)	€1274851
<p>Cities are places where environmental performance management is of utmost importance: in the majority of them there is a concentration of unsustainable behaviours in terms of waste management, energy efficiency or mobility. Heritage Cities share this fact with other cities but, in addition, the preservation of heritage and the management of significant amounts of waste, due to high tourist and economic activity levels, make the observance of waste-related strategies by authorities, private actors and households of specific importance.</p> <p>Heritage cities share different characteristics:</p> <ul style="list-style-type: none"> <li>• Historical artistic heritage, which leads to permanent flows of tourists, remarkable economic activity and significant production of related waste</li> <li>• Mostly ancient cities with winding city centres where ordinary waste management methods and equipment hardly work</li> <li>• Need to observe aesthetic criteria for interventions in urban protected spaces, waste- field interventions included</li> <li>• Visibility to the rest of the world</li> </ul> <p>Improving local and regional policies for sustainable waste management in Heritage Cities.</p> <p>Even though Heritage Cities have probably developed interesting solutions and policies in many fields, running waste-related services is complicated in such scenarios. In such a framework, the aim of INTHERWASTE is European Heritage Cities to exchange experiences and policies for efficient and sustainable management of municipal waste and in order to contribute through mutual capacity-building, policy learning and drafting action plans - to the environmental performance of waste management in EU cities. The capacity of the staff of involved authorities to design and implement policies and measures in the waste field and governance in the same field are expected to be improved, too. Solutions and policies proved feasible in INTHERWASTE are believed to be transferable to most Heritage Cities as well as to non-heritage (less-demanding contexts) cities in the EU. The visibility of Heritage Cities worldwide can help reduplicate experiences identified in many other cities.</p>	

NB4WASTE	H2020
Narrowband IoT for Waste Collection in Rural Areas	
SYLFO TECNOCONSULTING SL, SPAIN	
8/1/2017 - 11/30/2017 (Closed)	€50000
<p>The NB4WASTE Project, developed by SYLTEC, will put on the market an integral IoT solution for municipal waste collection management in rural areas using the new NB-IoT communication standard, for the first time in this type of market, including a specific developed low cost unit ultrasonic sensor technology with low energy consumption and 10 years battery life. Thanks to NB4WASTE solution municipalities will increase yield and profit per service (30%) and will save on fuel costs (25%). Additionally waste bin companies business will increase by 40% offering the NB4WASTE solution.</p> <p>Exploitation of Big Data obtained by means of the NB4WASTE in order to decrease operating costs will be one of the main objectives. Thus, by route optimization and predictive operations thanks to Big Data exploiting will result in 25-50% costs and 25% CO2 savings. The main alternatives to NB-IoT as competitive solutions available on the market of Low Power Wide Area technologies are LoRa and SigFox but both of them are worse considering market flexibility implementation and coverage. Only NB-IoT ensures business scalability expansion and reliable service. If we add market flexibility (open standards) and coverage (spectrum efficiency) to the main properties scored by experts (low power, bandwidth, supplier breadth, security and deployments) it is the most competitive alternative.</p> <p>NB4WASTE will contribute to Circular Economy by increasing recycling targets due to more optimized selective collection implementation for smart waste management in rural areas. It will also promote competitive rural business and help European Members for digital inclusion ensuring that everybody can contribute to and benefit from the digital economy and society. Financial 5 years forecast demonstrates NB4WASTE profitability. With a margin of 20% and a total of 418 units sold during 2019-2023 period (20% market penetration: France, Italy, Spain, UK and Chile) the Return of Investment for SYLTEC will be around 3,84.</p>	

Wastage	UK
Wastage - A commercial and industrial waste production and collection minimisation system	
Sustainable Venture Development Partners Ltd, UNITED KINGDOM	
2/1/2017 - 7/31/2017 (Closed)	32130£
<p>Sustainable Venture Development Partners (SVDP) works with investors, entrepreneurial managers and corporate partners to originate, build and grow sustainable companies. Occupying the space between incubation and venture capital Sustainable Ventures develops its own business concepts from idea through to exit. SVDP has developed a prototype design for a waste collection and prevention system for commercial and industrial organisations (C&amp;I) known as WASTAGE. Integrating bin waste level sensors, collection route optimisation and data driven employee behavioural change intervention methods. The potential target UK market for WASTAGE is the 4.9m C&amp;I organisations that produce 47m tonnes of waste per annum. Although there many providers of waste collection there is a systematic economic misalignment between customer (who are charged per bin container collected) and waste collection providers.</p>	

Eunomia LCA	UK
Eunomia LCA - Carbon impacts of local waste collection	
Eunomia Research & Consulting Limited, UNITED KINGDOM	
8/1/2013 - 1/31/2014 (Closed)	5000£
<p>The project will look to create an online league table for the carbon impacts of local authority waste collection services. The aim of this is twofold; to make authorities (and the public) more aware of their standing relative to others and to provide best practice examples to empower them to improve. Access to this service will be free but a more advanced section will be on a subscription basis which will allow the user to create bespoke scenarios.</p>	

LIFE ReWaCo	LIFE
Reversed Waste Collection	
Gemeente Arnhem, NETHERLANDS	
7/1/2013 - 7/31/2016 (Closed)	€775383
<p><b>Background</b></p> <p>Many raw materials are becoming scarcer. Household waste contains large amounts of such materials that could be recovered and reused, but in Europe most of this waste is burned in incinerators or transported to landfills. There are both environmental and economic benefits to moving towards a circular economy, with the reuse or recycling of waste materials. In order to recover more materials (resources), the service level for households in low-rise buildings needs to be increased, so making it easier for residents to help selectively recycle resources such as paper, plastic, and organic kitchen and garden waste. On the other hand, making it more difficult to dispose of the residual waste, by requiring it to be taken to communal waste collection areas, can act as a complementary approach to encourage recycling.</p> <p><b>Objectives</b></p> <p>The main objective of the LIFE ReWaCo project was to demonstrate a new, more efficient and cost-effective household waste collection system, called Reversed Waste Collection (ReWaCo), in three different neighbourhoods of Arnhem: a low-income neighbourhood, a mixed neighbourhood with both low-rise and high-rise buildings, and a neighbourhood with only lowrise buildings. The aim was to offer a series of incentives to the local population, to encourage people to separate valuable household waste (e.g. paper, plastics, and organic kitchen and garden waste), through improvements in waste collecting.</p> <p>At the same time, the aim was to discourage the disposal of large quantities of residual waste, by making it necessary for it to be taken to communal underground waste collection points. The project aimed to implement a monitoring system to assess the environmental, social and financial results of the pilot scheme, and to disseminate recommendations to help implement the concept in other European municipalities.</p>	

WASTE ON A DIET	LIFE
Strategy to reduce waste, increase re-using and recycling, reduce incineration and storage, in a rural and urban area	
Syndicat de Besançon, FRANCE	
7/1/2012 - 6/30/2016 (Closed)	€1777810
<p><b>Background</b></p> <p>Reduction in waste, the reuse and recycling of materials and less use of landfill are key aims of EU policy. This requires some innovative solutions. At the beginning of 2012, Grand Besançon became the first conurbation with over 50 000 inhabitants to adopt a “pay-as-you-throw” scheme to finance waste treatment and encourage reduction of residual household waste. The city has installed radio frequency identification (RFID) chips on residual waste bins and aims that by 2014, residents will be charged according to quantity and weight sent for incineration. However, 70% of the city's population lives in collective housing, where the cost of waste management is not billed directly to individual households. These areas have a high rate of turnover among residents as well as a significant social and cultural diversity, making traditional written communication tools ineffective. Production of residual household waste for incineration is highest in these households - providing the city with its greatest challenge and greatest opportunity for improvement.</p> <p>Rural areas of the region have their own difficulties, particularly an increase in the flow of waste through the household waste recycling centres (HWRCs). There is urgent need to optimise the running of the centres to improve quality of sorting as well as to increase quantities recycled. In 2009: residual household waste in the region was 217 kg/inhabitant/yr; waste recovery in the HWRCs was 38%; total waste intended for landfill was 12 000 tonnes; and household waste management costs were €75 per inhabitant.</p> <p><b>Objectives</b></p> <p>The project aims to deploy solutions to facilitate full implementation of the pay-as-you-throw scheme. It aims to address the particular challenges of collective housing and rural areas to reduce quantities of waste and increase local treatment and recycling of organic waste. The project will establish a team of six people to assess waste management practices at the entrances of each collective housing residential block. They will investigate quantities of waste, standards of cleanliness and extent of poor waste practices. The team will suggest ways and tools by which the city council, landlords, waste collection and composting organisations can improve their interventions to have the most positive impact on household waste management practices. The project will run “waste prevention” awareness campaigns for people living in collective housing. To overcome barriers of language, literacy and cultural differences, project staff will run practical workshops covering themes such as: shopping; preparing meals; redesigning clothes and furniture; and purchasing second-hand goods. The project will also seek to explain the pay-asyou-</p>	

throw scheme and related charges. Composting facilities will be developed and made available for three years so that every inhabitant of collective housing can compost their organic waste. Local solutions will be tailored to the number of residences, the available space and the engagement of local volunteers. To optimise the HWRCs in rural areas, a controlled-access system will be established, thus limiting the number of users on a site at any one time. This will allow operatives to improve supervision of disposal and advice to users, thereby limiting the sorting mistakes that hinder recycling.

A dismantling centre for bulky objects will be established to deal with waste from the whole network of sorting centres and limit the portion landfilled. Wood, metal and plastic parts can be sorted and where possible recycled and reused or otherwise valorised.



## Waste Electrical and Electronic Equipment

C-SERVEES	H2020
Activating Circular Services in the Electric and Electronic Sector	
AIMPLAS - ASOCIACION DE INVESTIGACION DE MATERIALES PLASTICOS Y CONEXAS	
5/1/2016 - 4/30/2022 (Active)	€6349067

### Background

C-SERVEES aims to boost a resource-efficient circular economy in the electrical and electronic (E&E) sector through the development, testing, validation and transfer of new circular economic business models (CEBMs) based on systemic eco-innovative services that include: eco-leasing of EEE, product customization, improved WEEE management, and ICT services to support the other eco-services. ICT tools (relying on QR codes) will be developed as the driver of the proposed eco-innovative services to take full advantage of the potential and synergies of two major revolutions of our time: the circular economy and the Industry 4.0. The project will thus contribute to transform the E&E sector into circular and 4.0, raising new opportunities for end-users (such as their involvement in design or the access to a product as a service) and for social and solidarity economy (conducted by NGOs, like EMAUS, which employ people at risk of social exclusion to repair and prepare WEEE for re-use). The techno-economic, environmental and social viability of the new CEBMs will be validated through demonstrations dealing with four target products belonging to different EEE categories: large household appliances, IT equipment, telecommunications equipment, and consumer equipment.

### Objectives

The main aims of the C-SERVEES project are to:

- Develop circular economic business models for the E&E sector and to develop ICT tools for bidirectional communication and secure information exchange throughout the EEE value chain to support new business models;
- Implement and validate the new circular economic business models;
- Provide key enabling tools for boosting the replicability and transferability of CEBMs.

The ultimate objective is to contribute to the uptake of CEBMs for growth and jobs.

LIFE E-WASTE GOVERNANCE	LIFE
GOVERNANCE OF WASTE EEE (WEEE) AND WASTE PBA (WPBA) FLOW AND CONSUMER FRIENDLY COLLECTION AND AWARENESS RAISING	
ZEOS, ravnanje z električno in elektronsko opremo, d.o.o., SLOVENIA	
1/1/2016 - 10/30/2020 (Active)	€919209
<p><b>Background</b></p> <p>Electrical and electronic equipment (EEE), and waste arising from these appliances, including waste portable batteries and accumulators (PBA), have environmental impacts throughout their life cycle. This is due to the fact that in recent years, EEE has increased in technological complexity, with new product innovations and ever-shortening product life expectancy. The amount of collected obsolete household appliances, computers, mobile phones and other electronic products increases every year. To reduce the environmental impact of waste EEE (WEEE) and waste portable batteries and accumulators (WPBA), a high level of separate collection is essential. However, WEEE and WPBA collection in Slovenia has lagged behind the collection target set by the European Union. The beneficiary has established, with the Ministry of the Environment and Spatial Planning, a system for the collection and further treatment and recovery of WEEE and WPBA. However, there is still significant potential for increasing collection rates in Slovenia and much more effort could be put into raising awareness of this potential. This project is a follow-up to the Slovenia WEEE campaign (LIFE10 INF/SI/000139). One of the main conclusions of that project was that only continuous work in a long run can achieve the best results in changing people's behaviour.</p> <p><b>Objectives</b></p> <p>The main aims of the LIFE E-WASTE GOVERNANCE project are to:</p> <ul style="list-style-type: none"> <li>• Set up and expand the collection network and increase the capacity for efficient and sustainable management of WEEE and WPBA; and</li> <li>• Establish an infrastructure for permanently raising public awareness concerning separation of WEEE/WPBA by creating green corners, street containers and a mobile caravan.</li> </ul> <p>The ultimate objective is a long-term change in the behaviour of consumers, especially concerning the separation of WEEE and WBA, in order to reach the collection targets defined in Directive 2012/19/ES and Directive 2006/66/ES (65% of WEEE collected by 2020). Project activities will focus on contemporary methods of collection, and the existing national network of WEEE and WBA collection and separation will be upgraded.</p>	

LIFE 2014 CRMRecovery	LIFE
Critical Raw Material Closed Loop Recovery	
The Waste and Resources Action Programme, UNITED KINGDOM	
9/1/2015 - 3/29/2019 (Active)	€1262662
<p><b>Background</b></p> <p>The UK has identified electrical and electronic equipment (EEE) as priority products due to their high embodied carbon and their environmental impact as a waste stream. Each year around 9.9 million tonnes of WEEE is generated in the EU. Only 30% of WEEE generated is reported as properly collected and recycled. Many modern electrical and electronic products contain metals which have been classified as critical raw materials (CRMs) by the Commission. The supply and economic viability of CRMs are at risk in the EU, and these materials have higher impacts than other raw materials. Most CRMs are virtually unrecovered from WEEE. The high losses of CRMs are attributed to the current collection and recycling arrangements. In the UK, WRAP has explored the viability of recovering CRMs from the EEE waste streams and highlighted the need to find a wide-reaching solution.</p> <p><b>Objectives</b></p> <p>The LIFE 2014 CRMRecovery project aims to demonstrate viable approaches to increase the recovery of target CRMs by 5% within the project lifetime. The target product categories are: display, consumer electronics, ICT and small household appliances; and The target materials are graphite, cobalt, antimony, tantalum, rare earths, silver, gold and platinum group metals (PGMs), but the project will not be limited to these materials. These targets have been selected because previous work by all partners has indicated that these are the CRMs with the highest value and concentration and these are the product categories where they are found in greatest volumes. Supporting objectives are to demonstrate:</p> <ul style="list-style-type: none"> <li>• The environmental, economic and social benefits that an innovative circular economy for CRMs could deliver for the EU;</li> <li>• Innovative collection, reuse, recycling and other forms of recovery of WEEE;</li> </ul>	
<ul style="list-style-type: none"> <li>• Key inputs to a European infrastructure plan for collection and recovery of products, parts, components and CRMs from WEEE;</li> <li>• Innovative methods to support the 7th Action Programme, to improve the evidence base for environmental policy and citizen support to improve the transparency of the end result of end-of-life products, parts, components and materials; and</li> <li>• How through positive price mechanisms WEEE shipped to non OECD countries can be reduced.</li> </ul>	

EWIT	H2020
EWIT: Developing an e-waste implementation toolkit to support the recycling and the secondary raw material recovery strategies in metropolitan areas in Africa	
CONSORZIO REMEDIA, ITALY	
2/1/2015 - 1/31/2017 (Closed)	€1641750
<p>Urbanization is on the rise in Africa and this trend is expected to continue in the future. The fast growing use of technology is creating a rising e-waste stream, for which there is limited recycling capacity. Waste management infrastructures and public awareness of the health issues is largely non-existent. Basic environmental precautions are almost absent and health and safety regulations are loosely enforced. Improvements are therefore urgently needed to combat related health issues, alleviate poverty and develop the local recycling sector.</p> <p>EWIT project's aim is to address these challenges, assisting African municipalities in the implementation of effective e-waste management systems for their communities. The project will develop a comprehensive mapping of the baseline data of African metropolitan areas related to e-waste management, analyzing the most relevant experiences, processes and legal tools available. It will then deliver a dynamic and easy to use information and service portal to offer guidance and practical support for the design and development of e-waste collection and recycling systems.</p> <p>EWIT will generate the expected impacts through 5 coordinated work packages. The working model is based on two different set of workshops, one led by "Cities" and the other by "Experts". Tools, implementation models, policies and procedures will feed a dedicated information and service platform called "E-waste implementation toolkit". This dynamic and easy to use internet portal will be a strategic source of knowledge for decision makers at industry and local government level. Dissemination will play a key role to assure that the project's deliverables are well understood and ready to be applied. EWIT will define the conditions and actions necessary to implement effective waste recycling systems in metropolitan areas, increasing recycling opportunities for entrepreneurs, generating new jobs and improving environment and health protection of local communities.</p>	

LIFE - INFOCYCLE	LIFE
Development of a Communication and Training campaign for the recycling of Waste Electrical & Electronic Equipment (WEEE)	
Appliances Recycling S.A, GREECE	
7/1/2014 - 6/30/2016 (Closed)	€369937
<p><b>Background</b></p> <p>The generation of electronic waste in Greece is estimated at around 14 kg/per capita annually, significantly higher than the EU average (3.5kg/capita). The WEEE Directive (2012/19/EU) sets specifications for the treatment of Waste Electrical and Electronic Equipment (WEEE) and specific recycling targets for EU Member States. The collection rate for WEEE in Greece is limited due to relatively poor citizen participation. This is due to low levels of environmental education, a lack of implementation of recycling schemes for WEEE by local government bodies, and limited trust towards recycling systems. In addition, the existence of peddlers illegally collecting and trading WEEE and used electrical parts at extremely low prices hinders the effectiveness of current recycling schemes.</p> <p>Meanwhile, companies cooperating with the Appliances Recycling S.A. system do not always implement the foreseen environmental techniques when managing end-of-life equipment. As a result, collected WEEE can be of low quality with parts of significant market value (when recycled) missing; while hazardous substances such as mercury, cadmium, lead, asbestos and PCBs are extracted without specific precautions, endangering the natural environment.</p> <p><b>Objectives</b></p> <p>The LIFE - INFOCYCLE project aimed at improving the available quantity of WEEE (Waste Electrical and Electronic Equipment) in the Epirus and Thessaly regions of (Waste Electrical and Electronic Equipment) in the Epirus and Thessaly regions of Greece, with actions also aimed at increasing the quality of processes at existing collective recycling schemes run by project partners. This will minimise the environmental footprint of WEEE. Complementary actions were aimed at increasing environmental awareness regarding the risks of maltreating WEEE. More specifically, the project planned significant communication actions and a series of training activities, both for partners operating recycling scheme and for local and regional authorities.</p>	

WEEENMODELS life	LIFE
Waste Electric and Electronic Equipment - New MODEL for Logistic Solutions	
Comune di Genova, ITALY	
9/2/2013 - 10/31/2016 (Closed)	€1038029
<b>Background</b>	
<p>The use of electronic devices has increased in recent decades; in addition, the lifespan of many products has become shorter. Consequently, the stream of waste electrical and electronic equipment - commonly known as WEEE or e-waste - is also growing. An estimated 20-50 million tonnes/yr are generated worldwide. It is estimated that WEEE volumes in the EU alone will reach 12 million tonnes by 2020. The presence of dangerous components in the equipment causes serious problems in the WEEE management process, with significant risks for the environment and also the loss of valuable resources. The recast EU WEEE Directive (2012/19/EU) combines earlier directives on WEEE and Restrictions on Hazardous Substances. It sets collection, recycling and recovery targets for all types of WEEE. It also sets maximum limits for the presence in new electrical and electronic equipment (EEE) of dangerous substances, such as mercury, cadmium, lead, hexavalent chromium and polybrominated biphenyls (PCB). Today most European cities have implemented new WEEE collection systems, able to guarantee a proper management of large and medium-sized equipment. However, collection and separation of small WEEE – dimensions under 50 cm - is still inadequate, particularly through small points of sale, which are not yet organised to comply with the EU obligations. As a consequence, a high proportion of WEEE escapes from the proper management processes.</p>	
<b>Objectives</b>	
<p>The WEENMODELS life project aims to demonstrate that through the application of an efficient logistics system and the central coordination of WEEE collection services, it is possible to reach and even to exceed the targets defined by the EU’s recast WEEE Directive. Specifically, the project will define and implement a new model of reverse logistics for WEEE aiming to recapture value from the waste stream or proper disposal of those parts that cannot be reused or recycled. The new collection and logistics model should offer a stable and systematic service that minimises service costs.</p>	
<p>WEENMODELS will help develop synergies in the waste management cycle between private and public entities, as well as end users. The project will notably work to build the capacity of new ‘experts’ within retailers who would be able to identify the possible residual lifecycle of EEE. This should enhance the strategic role of retailers and conveyors in reducing the inappropriate management of WEEE. Ultimately, the project aims to reduce the amount of WEEE disposed of through unsorted waste streams, thus reducing the risk of illegal or improper disposal of highly toxic substances and related environmental risks. It also hopes to stimulate positive socioeconomic effects by promoting new markets linked to the reuse of valuable materials.</p>	

## Paper and Packaging Waste

LIFE RECYPACK	LIFE
Circular economy of commercial plastic packaging in urban environments - LIFE RECYPACK AIMPLAS - Asociación de investigación de materiales plásticos y conexas, SPAIN	
10/1/2017 - 3/31/2020 (Active)	€566323
<p><b>Background</b></p> <p>There is scope to improve the management of commercial plastic packaging waste (CPPW) in the EU. More CPPW is sent to landfill than is necessary, leading to social, economic and environmental problems. There is a body of legislation that requires proper management of CPPW and that promotes the end of landfilling and the efficient use of resources. However, in most situations, the aims of the legislation are not fulfilled. On average, CPPW represents 15-30% of household waste in the EU. According to Plastics Europe, 62% of the total EU packaging waste stream derives from households while the remaining 38% comes from commercial and industrial sources. On average, 30.8% of total post-consumer plastic waste goes to landfill and 39.5% to energy recovery. In Greece and Bulgaria, however, the landfill share exceeds 80%. If CPPW were to be recycled at 80% efficiency, AIMPLAS calculates that the EU plastics market would benefit from more than 820 000 tonnes of recycled material per year, worth about 500 million annually.</p> <p><b>Objectives</b></p> <p>LIFE-RECYPACK is a demonstration project to foster green public procurement (GPP) of CPPW in urban areas. The project will demonstrate that this waste stream is a valuable resource from which new recycled added-value materials and products can be obtained. The project will implement an innovative management model to assist local authorities in decision making, and to provide companies with incentives to participate. The project will evaluate the generation of CPPW by business/shopping centres, urban commercial centres, distribution companies and professional small and medium-sized enterprises (SMEs). The project will focus on polyethylene, which is the most common type of plastic, and expanded polystyrene, which is a concern because of its low density. The project will operate two recycling facilities, in Hungary and Spain, which will produce recycled polyethylene and recycled polystyrene from CPPW.</p> <p>The recycled material will be used to manufacture new plastic products, thereby closing the loop.</p> <p>The project will also evaluate the potential for replication of its recycling systems in Belgium, Croatia, Poland, Romania and Turkey. LIFE-RECYPACK will be an example of a circular economy business model and will contribute to the recycling of plastic waste, which is one of the priority sectors in the EU Circular Economy Action Plan. The project will also help the implementation of the Waste Framework Directive, the Landfill Directive and the Packaging Waste Directive.</p>	

PlastiCircle	H2020
Improvement of the plastic packaging waste chain from a circular economy approach	
INSTITUTO TECNOLOGICO DEL EMBALAJE, TRANSPORTE Y LOGISTICA, SPAIN	
6/1/2017 - 5/31/2021 (Active)	€7774016
<p>The European plastic market is not currently aligned with the circular economy. More than 25.8 million tonnes of plastic waste are produced per year in the EU28 being recycled only 29.7%. This represents a clear loose in the plastic market loop (losses of €10.56bn). Moreover, this goes against the EU legislation on waste (high environmental impact; 23.8 Mt of CO2).</p> <p>Low recycling rates of plastic are mainly due to the situation of packaging waste (i.e. main plastic waste fraction), since it is mainly domestic residue and consequently the quality of the material collected depends on the system of segregation available and the environmental awareness of citizens.</p> <p>PlastiCircle aims to develop and implement a holistic process to increase recycling rates of packaging waste in Europe. This will allow to reprocess again plastic waste in the same value chain (i.e. Circular economy; closure of plastic loop). This process is based on four axes: collection (to increase quantity of packaging collected), transport (to reduce costs of recovered plastic), sorting (to increase quality of recovered plastic), and valorization in value-added products (i.e. foam boards, automotive parts like engine covers/bumpers/dashboards, bituminous roofing membranes, garbage bags, asphalt sheets/roofing felts and urban furniture like fences/benches/protection walls).</p> <p>The target is to increase collection from 81.7% to 87% and valorization in a 9.8%. The implementation of PlastiCircle approach in Europe have the potential to increase collected plastic in 861,250t (reaching 14.14 Mt) and valorization in 1.59Mt. The valorization of this new material, represents a market value of €2.86bn-€7.95bn. Taking into account current figures of the plastic sector (turnover €350bn, 62,000 companies, 1.45M employees), this could imply creation of 5001400 new companies and the generation of 11,900-33,000 new jobs in the medium to long term if PlastiCircle approach is extended in a EU level.</p>	



IMPACTPapeRec	H2020
Boosting the implementation of participatory strategies on separate paper collection for efficient recycling	
INSTITUTO TECNOLOGICO DEL EMBALAJE, TRANSPORTE Y LOGISTICA, SPAIN	
2/1/2016 - 1/31/2018 (Closed)	€1486782
<p>The European plastic market is not currently aligned with the circular economy. More than 25.8 million tonnes of plastic waste are produced per year in the EU28 being recycled only 29.7%. This represents a clear loose in the plastic market loop (losses of €10.56bn). Moreover, this goes against the EU legislation on waste (high environmental impact; 23.8 Mt of CO<sub>2</sub>).</p> <p>Low recycling rates of plastic are mainly due to the situation of packaging waste (i.e. main plastic waste fraction), since it is mainly domestic residue and consequently the quality of the material collected depends on the system of segregation available and the environmental awareness of citizens.</p> <p>PlastiCircle aims to develop and implement a holistic process to increase recycling rates of packaging waste in Europe. This will allow to reprocess again plastic waste in the same value chain (i.e. Circular economy; closure of plastic loop). This process is based on four axes: collection (to increase quantity of packaging collected), transport (to reduce costs of recovered plastic), sorting (to increase quality of recovered plastic), and valorization in value-added products (i.e. foam boards, automotive parts like engine covers/bumpers/dashboards, bituminous roofing membranes, garbage bags, asphalt sheets/roofing felts and urban furniture like fences/benches/protection walls).</p> <p>The target is to increase collection from 81.7% to 87% and valorization in a 9.8%. The implementation of PlastiCircle approach in Europe have the potential to increase collected plastic in 861,250t (reaching 14.14 Mt) and valorization in 1.59Mt. The valorization of this new material, represents a market value of €2.86bn-€7.95bn. Taking into account current figures of the plastic sector (turnover €350bn, 62,000 companies, 1.45M employees), this could imply creation of 5001400 new companies and the generation of 11,900-33,000 new jobs in the medium to long term if PlastiCircle approach is extended in a EU level.</p> <p>The European paper industry is at the core of the bioeconomy, using wood, a renewable material, and Paper for Recycling (PfR) as its main raw materials for producing paper products. This industry is a strategic sector in the EU economy, actively contributing to the re-industrialisation of Europe. Currently, the production of paper and board in the EU is 91 tonnes per year, while PfR represents 63%. The contribution of PfR has increased over the last few years (from 25 t to 40 t).</p> <p>This increase in the availability of PfR has not taken place in all EU states, and this is especially true in Eastern European countries. Besides, although high collection rates are achieved, the quality of this material does not always meet the requirements of paper recycling. Both facts make difficult to keep up with the increases in PfR collection rates observed over the last few years if specific actions are not taken.</p>	

IMPACTPapeRec aims to put Europe at the forefront of PfR collection, ensuring raw material procurement from mainly European sources through an innovative approach based on the participation of the whole paper value chain including citizens and municipalities, which is also open to other sectors. Main objective is to provide an innovative and common knowledge platform, which will enable present and future cooperation. Analysis on best practices in PfR collection and assessment procedures are delivered, considering specific local conditions. They will encourage reliable decisions and make solutions available to decision-makers ensuring the procurement and supply of PfR in Europe through the improvement of municipal paper collection. Medium-long results are: increases in PfR collection (up to 75%); 1.57 Mt/year and raw material savings of €385 million.

This proposal has positive support from the EU of the commitment approved within the EIP on raw materials “IMPACT - Introduction and Improvement of Separate Paper Collection to avoid landfilling and incineration”.

## Construction & Demolition Waste

CINDERELA	H2020
New Circular Economy Business Model for More Sustainable Urban Construction	
ZAVOD ZA GRADBENISTVO SLOVENIJE	
6/1/2015 - 5/31/2022 (Active)	€6729219
<p>CINDERELA project aims to develop a new Circular Economy Business Model (CEBM) for use of secondary raw materials (SRM) in urban areas, connecting different industries, the construction sector and municipal services, decision makers and the general public with the support of CinderOSS, a “One-Stop-Shop” service, articulated in (i) an on-line ICT platform for tracking and modelling the urban waste-to-product flows, on-line marketing and sharing knowledge and information along the value chain (ii) production and marketing of (SRM) based construction products and (iii) building with SRM based construction products supported by building information modelling (BIM). Different streams of waste will be exploited in the project, i.e. construction and demolition waste, industrial wastes, heavy fraction from municipal solid waste and sewage sludge, mostly of them currently landfilled and/or incinerated. Their suitability for use for building materials will be demonstrated through large scale demonstration activities in Slovenia, Croatia and Spain while the ICT platform will be demonstrated in Slovenia, Croatia, Spain, Poland, Italy and The Netherlands. The project will contribute to 20% reduction of environmental impacts along the value and supply chain, reducing virgin material exploitation and converting wastes to products. Sustainability of CEBM will be proven with the environmental, economic and social assessment through whole life (LCA, LCC and S-LCA). The pre- feasibility analysis of the proposed CEBM indicates an increase of recycling by 30% of CDW, 13% of industrial waste, 100% of heavy fraction and 25% of sewage sludge with a net profit of 18%.</p>	

BAMB	H2020
Buildings as Material Banks: Integrating Materials Passports with Reversible Building Design to Optimise Circular Industrial Value Chains	
INSTITUT BRUXELLOIS POUR LA GESTION DE L'ENVIRONNEMENT, BELGIUM	
9/1/2015 - 2/28/2019 (Active)	€8858763
<p>The aims of BAMB (Buildings as Material Banks) are the prevention of construction and demolition waste, the reduction of virgin resource consumption and the development towards a circular economy through industrial symbiosis, addressing the challenges mentioned in the Work Programme on Climate action, environment, resource efficiency and raw materials. The focus of the project is on building construction and process industries (from architects to raw material suppliers).</p> <p>The BAMB-project implements the principles of the waste hierarchy: the prevention of waste, its reuse and recycling. Key is to improve the value of materials used in buildings for recovery. This is achieved by developing and integrating two complementary value adding frameworks, (1) materials passports and (2) reversible building design. These frameworks will be able to change conventional (cradle-to-grave) building design, so that buildings can be transformed to new functions (extending their life span) or disassembled to building components or material feedstock that can be upcycled in new constructions (using materials passports). This way, continuous loops of materials are created while large amounts of waste will be prevented.</p> <p>Activities from research to market introduction are planned. Fundamental knowledge gaps should be bridged in order to introduce both frameworks on the market. Advanced ICT tools and management models will enable market uptake and the organization of circular value chains in building and process industries. New business models for (circular) value chains will be developed and tested on selected materials. The inclusion of strategic partners along the value chains in an industrial board will maximize market replicability potential, while several (mostly privately funded) building pilots will demonstrate the potential of the new techniques. Awareness will be raised to facilitate the transition towards circularity by policy reform and changing consumer behavior.</p>	

HISER	H2020
Holistic Innovative Solutions for an Efficient Recycling and Recovery of Valuable Raw Materials from Complex Construction and Demolition Waste	
FUNDACION TECNALIA RESEARCH & INNOVATION, SPAIN	
2/1/2015 - 1/31/2019 (Active)	€7511870
<p>EU28 currently generates 461 million tons per year of ever more complex construction and demolition waste (C&amp;DW) with average recycling rates of around 46%. There is still a significant loss of potential valuable minerals, metals and organic materials all over Europe. The main goal of HISER project is to develop and demonstrate novel cost-effective technological and nontechnological holistic solutions for a higher recovery of raw materials from ever more complex C&amp;DW, by considering circular economy approaches throughout the building value chain (from the End-of-Life Buildings to new Buildings).</p> <p>The following solutions are proposed:</p> <ul style="list-style-type: none"> <li>• Harmonized procedures complemented with an intelligent tool and a supply chain tracking system, for highly-efficient sorting at source in demolition and refurbishment works.</li> <li>• Advanced sorting and recycling technologies for the production and automated quality assessment of high-purity raw materials from complex C&amp;DW.</li> <li>• Development of optimized building products (low embodied energy cements, green concretes, bricks, plasterboards and gypsum plasters, extruded composites) through the partial replacement of virgin raw materials by higher amounts of secondary high-purity raw materials recovered from complex C&amp;DW.</li> </ul> <p>These solutions will be demonstrated in demolition projects and 5 case studies across Europe. Moreover, the economic and environmental impact of the HISER solutions will be quantified, from a life cycle perspective (LCA/LCC), and policy and standards recommendations encouraging the implementation of the best solutions will be drafted.</p> <p>HISER will contribute to higher levels of recovered materials from C&amp;DW from 212 Mt in 2014, to 359 Mt in 2020 and 491 Mt by ca. 2030, on the basis of the increase in the recovery of aggregates, from 40% (169 Mt) to more than 80% (394 t) and wood, from 31% (2.4 Mt) to 55% (5 Mt);. Similarly, unlocking valuable raw materials currently not exploited is foreseen, namely some metals and emerging flows.</p>	

DRIM	UK
Deconstruction and Recovery Information Modelling (DRIM): A Tool for identifying and reclaiming valuable materials at end-of-life of Buildings	
University of the West of England, UNITED KINGDOM	
4/1/2016 - 3/31/2018 (Closed)	218964 £
<p>More than 50,000 buildings are demolished yearly in the UK leading to huge demolition waste that ends in landfill (Power, 2014). It is noted that demolition waste comprises significant proportion of valuable building materials that could be re-used for new constructions or refurbishment if recovered properly. However, no such tool currently exists that can help in</p>	
<p>identification of valuable building materials for reuse &amp; recycling. The overall aim of this project is to develop an intelligence-based tool called Deconstruction and Recovery Information Modelling (DRIM) that will enable identification of reusable and recoverable building materials at end-of-life of a building. DRIM Tool will enable: (i) production of deconstruction plan; (ii) simulation of deconstruction process; (iii) production of deconstruction protocols during demolition</p> <p>of the building to enable efficient recovery; (iv) improved demolition waste collection schemes. The tool is aimed at both new and existing buildings sector. The Tool will use innovative technologies that include ontologies, NoSQL and big data analytics to capture and predict end-of-life properties and value of building materials. It is about circular economy in the construction industry.</p> <p>Rival Solutions: None of the existing waste tools within the industry (i.e. ArchiCAD, Revit, SMARTWaste, WRAP Netwaste, etc.) has deconstruction and material recovery functionality. The DRIM tool is therefore unique within the industry. It will provide a simulation platform to benchmark the whole-life sustainability of designs in terms end-of-life re-usable, recyclable and recovered materials.</p>	

## Annex II: List of identified projects Search 2

This Annex contains a list of the projects relevant for COLLECTORS based on the results of the second mapping exercise. A selection was made of projects that are still running while the COLLECTORS project ends, preferably up to one year after the COLLECTORS end date. These projects are deemed most relevant to the purpose of the work packages involved.

Funding Programme	Acronym	Title	StartDate	End Date	Status	Coordinator	Country
H2020	WASTE2WATTS	Unlocking unused bio-WASTE resources with loW cost cleAning and Thermal inTegration with Solid oxide fuel cells	1-1-2019	31-12-2020	active	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Swi
H2020	CityLoops	Closing the loop for urban material flows	1-10-2019	30-9-2023	active	ICLEI European Secretariat	Ger
H2020	CIRCuiT	Circular Construction In Regenerative Cities	1-6-2019	31-5-2023	active	KOBENHAVNS KOMMUNE	Dk
H2020	NONTOX	Removing hazardous substances to increase recycling rates of WEEE, ELV and CDW plastics	1-6-2019	31-5-2023	active	Teknologian tutkimuskeskus VTT Oy	SF
H2020	CREAToR	Collection of raw materials, Removal of flAme reTardants and Reuse of secondary raw materials	30-6-2019	30-11-2022	active	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Ger
H2020	SCALIBUR	SCALABLE TECHNOLOGIES FOR BIO-URBAN WASTE RECOVERY	1-11-2018	31-10-2022	active	INSTITUTO TECNOLOGICO DEL EMBALAJE, TRANSPORTE Y LOGISTICA	Es
H2020	WaysTUP!	Value chains for disruptive transformation of urban biowaste into biobased products in the city context	1-9-2019	28-2-2023	active	SOCIEDAD ANONIMA AGRICULTORES DE LAVEGA DE VALENCIA	Es

Report with introduction on the identified EU-projects

H2020	CEWASTE	Voluntary certification scheme for waste treatment	1-11-2018	31-10-2020	active	WORLD RESOURCES FORUM ASSOCIATION	Swi
H2020	WoodCircus	Underpinning the vital role of the forest-based sector in the Circular Bio-Economy	1-11-2018	31-10-2021	active	Teknologian tutkimuskeskus VTT Oy	SF
H2020	POLYCE	Post-Consumer High-tech Recycled Polymers for a Circular Economy	1-6-2017	31-5-2021	active	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Ger
H2020	CIRC4LIFE	A circular economy approach for lifecycles of products and services	1-5-2018	30-4-2021	active	The Nottingham Trent University	UK
H2020	CIRCUSOL	Circular business models for the solar power industry	1-6-2018	31-5-2022	active	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V	Be
H2020	Car E-Service	No results in Cordis					
H2020	PAPERCHAIN	No results in Cordis	1-6-2017	31-5-2021	active	ACCIONA CONSTRUCCION SA	ES
H2020	CIRCULAR FLOORING	New products from waste PVC flooring and safe end-of-life treatment of plasticisers	1-6-2019	31-5-2023	active	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Ger
H2020	REMADYL	Removal of Legacy Substances from polyvinylchloride (PVC) via a continuous and sustainable extrusion process	1-6-2019	31-5-2023	active	CENTRE SCIENTIFIQUE & TECHNIQUE DE L'INDUSTRIE TEXTILE BELGE	Be
H2020	PROMPT	PRemature Obsolescence Multi-Stakeholder Product Testing Program	1-5-2019	30-4-2023	active	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Ger
H2020	CICERONE	Circular Economy platform for European priorities strategic agenda	1-11-2018	31-10-2020	active	EIT Climate-KIC SL	Es
H2020	PLAST2BCLEANED	No results in Cordis					
INTERREG Europe	2LIFES	Promoting Re-Use from the Public Policies	1-8-2019	31-1-2023	active	EMULSA, Municipal Company of Urban Environment Services of Gijon	Es
INTERREG VB NWE	CHARM	Circular Housing Asset Renovation and Management	25-10-2018	24-10-2022	active	Delft University of Technology	NL



Report with introduction on the identified EU-projects

INTERREG Europe	CONDEREFF	Construction & demolition waste management policies for improved resource efficiency	1-6-2018	31-5-2023	active	Polytechnic University of Valencia	Es
INTERREG VB NWE	FCRBE	Facilitating the circulation of reclaimed building elements in Northwestern Europe	25-10-2018	24-1-2022	active	Rotor asbl-vzw	Be
INTERREG Europe	OptiWaMag	Optimization of waste management in urban spaces and in households	1-8-2019	31-1-2023	active	County Administrative Board of Östergötland	Swe
INTERREG Europe	PLASTEKO	Supporting EU regions to curb plastics waste and littering	1-8-2019	31-7-2023	active	Municipality of Rethymno	El
INTERREG VA Two Seas	PLastiCity	Resourcing Plastics from the City	1-8-2019	30-9-2022	active	Stad Gent	Be
INTERREG Europe	SMART WASTE	Innovation in Waste Management Policies	1-8-2019	31-7-2023	active	Agenzia Regionale Recupero Risorse	It
INTERREG VB NWE	URBCON	By-products for sustainable concrete in the urban environment	25-8-2018	24-4-2023	active	Stad Gent	Be
INTERREG VA South Baltic	WASTEMAN	Integrated Sustainable Waste Management Systems decreasing pollution discharges in the South Baltic area	1-7-2018	30-6-2021	active	Institute of Fluid-Flow Machinery Polish Academy of Sciences	Pl
INTERREG Europe	WIN POL	Waste Management Intelligent Systems and Policies	1-6-2018	30-11-2022	active	EMULSA, Municipal Company of Urban Environment Services of Gijon	Es
INTERREG Europe	EURE	Effectiveness of Urban Environmental Policies to improve Resource Efficiency	1-8-2019	31-7-2023	active	EIXO Atlantico	Es

Report with introduction on the identified EU-projects

INTERREG Europe	LCA4REGIONS	Improved Environment and Resource Efficiency through use of Life Cycle Instruments for implementation of regional policies of the EU	1-8-2019	31-7-2023	active	Government of Navarre	Es
EIT Raw Materials	PANORAMA	Physical AccouNts Of RAW MAterial stock and flow Information Service	1-1-2019	31-12-2021	active	Leiden University	NL
LIFE	WEEE	Waste Electrical and Electronic Equipment (WEEE): treasures to recover!	1-9-2017	31-8-2020	active	ANCI Toscana	It
LIFE	BIOTAWEE	Bioleaching of WEEE wastes for the recovery of valuable metals	1-7-2018	31-12-2020	active	REYDESA RECYCLING, S.L.	Es
LIFE	CEPLAFIB	Implementation of a new Circular Economy through the valorisation of postconsumer PLAstic waste and reclaimed pulp FIBer	2-7-2018	30-6-2021	active	Slovenian Tool and Die Development Centre	Slo
LIFE	PHIPP	Paper-hemp insulation pilot production	3-9-2018	1-9-2021	active	SIA Balticfloc	Lv
LIFE	LIFE4FILM	Post-consumption film plastic recycling from municipal solid waste	1-7-2018	31-12-2020	active	Fomento De Construcciones Y Contratas S.A.	Es
LIFE	REthinkWASTE	Rethinking municipal tariff systems to improve urban waste governance	1-7-2019	30-6-2022	active	ETRA SpA	It

## Waste Collection (in general)

CEWASTE	H2020	
WORLD RESOURCES FORUM ASSOCIATION (Swi)		
01.11.2018 - 31.10.2020 (Active)	€ 1 924 717,50	(EU: € 1 924 717,50 )
<p>CEWASTE contributes to an improved recovery of valuable and critical raw materials (CRMs) from key types of waste through traceable and sustainable treatment processes in the entire supply chain of secondary raw materials and will address the specific challenge to secure the sustainable access to CRMs and objectives set by the EU action plan for the Circular Economy, the issue of illegal trade of wastes within the EU and to non-EU countries and the need to support the development of environmentally and socially sound recycling systems globally.</p> <p>The project will develop, validate and launch a voluntary certification scheme for collection, transport and treatment facilities of key types of waste containing significant amounts of valuable and critical raw materials.</p> <p>To ensure a comprehensive approach and a robust result, the project will be developed along the following six specific objectives: Objective 1 - Understand existing recovery practice, standards and verification schemes; Objective 2 - Develop sustainability and traceability requirements; Objective 3 - Develop an assurance system and related verification procedures; Objective 4 - Validate the new voluntary scheme; Objective 5 - Ensure long term sustainability of the scheme; Objective 6 - Ensure a transparent stakeholder process.</p>		

SCALIBUR	H2020	
SCALABLE TECHNOLOGIES FOR BIO-URBAN WASTE RECOVERY		
01.10.2019 - 30.09.2023 (Active)	€ 12 005 922,50	(EU: € 9 999 391,39 )
<p>SCALIBUR creates a holistic consortium to cut urban biowaste and replace it with a new production chain of biomaterials, forming a partnership of end users to recover and transform biowaste from three municipalities, namely Madrid (ES), Albano (IT) and Kozani (EL), into value added products.</p> <p>During SCALIBUR a complete study of the quality, logistics and management schemes for municipal solid waste (MSW) and urban sewage sludge (USS) will be performed, to integrate innovative systems and technologies and obtain high-value biobased products. In SCALIBUR, HORECA waste will be transformed to proteins, lipids and chitin from insect rearing, while the organic fraction of MSW will generate biopesticides and bioplastics by high-solid enzymatic hydrolysis followed by fermentation. The resulting biogas from MSW and USS will be upgraded by bioelectrochemical treatment to produce commodity chemicals and bioplastics, such as PHBV.</p> <p>By cutting traditional linear waste management, new business models are created for the resulting circular value chains, applying a sustainable approach to generate new activities and benefits. These new profit sources will be created from a baseline analysis of existing waste management data and business models for each municipality, generating social innovation and favouring the adaptation and uptake of new opportunities along the entire urban value cycle. Continuous tests and development along SCALIBUR will create and fine tune new business models based on innovative processes, and feedback will be obtained from all stakeholders, in order to improve the definition, performance and integration of value, to minimize waste and maximize its benefit. With social engagement strategies, key communities will participate in all aspects of the new value creation, calibrating the returns of the project both for the generation of jobs and improved urban welfare, such as reducing the dependence from outside materials and the environmental impacts.</p>		

2LIFES	INTERREG EUROPE	
EMULSA, Municipal Company of Urban Environment Services of Gijon		
01.08.2019 - 31.01.2023 (Active)	€ 1.417.725,00	(EU: € 1.192.685,25 )
<p>A significant part of reusable home appliances, books, clothes, WEEEs, furniture and food are still being wasted and landfilled and reuse could be much further developed: waste programmes in force include reuse but prioritise recycle, even if reuse is more environmentally and socially friendly. 2LIFES is an instrument that will help to boost reuse from the public policies, formally shaping an activity that can promote environmental sustainability as well as employment and solidarity. 2LIFES focuses exclusively on reuse and more specifically on reuse promoted by public administrations- something pending as this is usually promoted by the third sector.</p> <p>The project brings together advanced cities and regions in the political backing of reuse in addition to others that are in the process of doing so. The problem of masses of reusable goods prematurely recycled or even landfilled is cross-cutting in the whole of Europe. The main results expected are the development of new channels, infrastructures and protocols for reuse through the instruments in force as well as the awareness-raising of households, businesses and administrations regarding the need to change the consumption patterns. Green jobs around reuse initiatives can also be expected. Interreg Europe framework for stakeholders' involvement is excellent for 2LIFES, since reuse initiatives require the collaboration of municipal waste services with SMEs, civil society, NGOs, social enterprises and training and employment services.</p>		

<b>OptiWaMag</b>	<b>INTERREG EUROPE</b>	
County Administrative Board of Östergötland		
01.08.2019 - 31.01.2023 (Active)	€ 1. 168.692,00	(EU: € 973.422,80 )
<p>OptiWaMag involves 6 EU regions with a shared ambition to accelerate the scaling up of waste management innovation that can support active and innovative environment and resource efficiency and secure the triple win of economic growth, more sustainable ecosystem services and improved wellbeing of Europe’s citizens. Focusing on these scopes, the policy project’s primary goal is to improve Structural Funds’ policies and implementation related to waste management and enhance regional and interregional ecosystems. OptiWaMag recognises that effective, policy shaping outcomes require enhanced cooperation between involved stakeholders.</p> <p>The policy project will thus incorporate interregional collaboration, involving a wide range of expert stakeholders, which comprises exchange of good practices, mutual learning, peer assessment, knowledge transfer, targeted coaching and collective, co-designed policy development. It will deliver its results through interlinked project activities and outputs during 3 sequential steps: 1) Identification and Analysis; 2) Interregional Mutual Learning; 3) Knowledge Transfer and Action Planning. Steps 1 and 3 also include assessments of policy enhancement and learning performance. Wide dissemination of good practices and lessons are the backbone of OptiWaMag.</p> <p>The primary outputs include: - The project self, peer and expert assessment tools and findings focused on regions’ strengths, weaknesses, policy priorities and policy enhancements - A Framework Strategy for developing evidence based and co-designed policies, programmes and implementation methods and for identifying the best method to improve policy instruments; - 6 Regional Action Plans (informed by the Framework Strategy, pre and interim self-assessments and Advisory Board case study) to enhance the implementation of regional policy instruments across Europe.</p>		

SMART WASTE	INTERREG EUROPE	
Agenzia Regionale Recupero Risorse		
01.10.2019 - 31.07.2023 (Active)	€ 1.175.008	(EU: € 998.756,80)
<p>Local, regional and national authorities are working hard to address the problem of waste management. They consider new approaches and technologies to reduce, reuse, recycle and recover waste. They attempt to fit these into a comprehensive and circular approach. But how are they doing? Are these measures having a real impact? Could they be done better? SMART WASTE is born to answer these questions.</p> <p>SMART WASTE evaluates to what extent current national, regional and local policies have promoted successful innovation in waste management. It then proposes interregional solutions to address policy weaknesses. Five policy partners, with support from an expert Advisory Partner, evaluate their policy context, assessing how it has supported smart waste management, and propose improvements to policy instruments. Three partners have selected ERDF funding programmes and 2 work on local programmes. All have the potential to fund experimental projects to test innovative waste measures.</p> <p>An early output will be a first Action Plan focused on Good Practice transfer to fund new projects. Policies could also benefit from improvements linked to management approaches and strategic focus. A second stage Action Plan will build on interregional and regional evaluation and learning in the project to propose and implement such changes. SMART WASTE contributes to European waste policy, including the Environmental Action Programme and the new Circular Economy rules. It contributes to Europe 2020 objectives for smart and sustainable growth. It supports Interreg Europe aims for improved policy on key societal challenges, thanks to interregional learning between territories with different experiences and stages of development.</p> <p>SMART WASTE territories will see increases in reduction, reuse, recycling and recovery of waste, with knock-on environmental and economic benefits. The final result? Smarter, more effective, sustainable and cost efficient waste management, benefiting all territorial stakeholders. SMART WASTE's long term result will be more innovative, effective, sustainable and cost efficient waste management systems. SMART WASTE territories should see significant increases in reduction, reuse and recycling and recovery of waste. The process can also impact on competitiveness: by focusing on innovation, the project stimulates a market for companies that can offer smart waste management products.</p>		

<b>WASTEMAN</b>	<b>INERREG VA South Baltic</b>	
Institute of Fluid-Flow Machinery Polish Academy of Sciences		
01.07.2018 - 30.06.2021 (Active)	€ 1.511.550,00	(EU: € 1.228.636,00 )
<p>The Municipal Solid Waste Management sector in the South Baltic area needs to decrease its pollution discharges from the systems of collection, treatment and utilization of municipal waste resources. Further, the Municipalities in the South Baltic area needs to change their Waste Management from linear to circular systems, to ensure the effective recycling of waste resources from households, institutions and enterprises. The project addresses the needed change of the MSWM sector in the South Baltic. The main objective of the project is to implement Integrated Sustainable Waste Management systems that will decrease the pollution from the waste management sector and at the same time ensure the effective recycling of municipal waste resources.</p> <p>The project implements Integrated Sustainable Waste Management (ISWM) systems in the MSWM sector through three main outputs that addresses the three basic objectives of the ISWM system: A) Working together with multiple stakeholders, B) Building a stable service value chain C) Enabling sustainable value aspects. The first output is a Design Manual for co-design of ISWM systems which supports the building of design strategies in cooperation with the municipal stakeholders of the South Baltic area. The second output is a comprehensive package of innovative User Applications for integrated, sustainable recycling of municipal waste fractions. The User Applications represents user oriented innovative solutions, integrating the value chain of collection, treatment and utilization of waste resources. The third output is a Management Toolbox which comprises management guidelines and case stories, which represents a framework for implementation and dissemination of the ISWM model. The complete ISWM systems will be produced in a cross border cooperation ensuring a circular change in the South Baltic area. The technology and management system exchange provides added value from the Partners through the cross-border cooperation.</p>		



WIN POL	INTERREG EUROPE	
EMULSA, Municipal Company of Urban Environment Services of Gijon		
01.06.2018 - 30.11.2022 (Active)	€ 1.363.045,00	(EU: € 1.158.588,25 )
<p>Technology and innovation have reached the field of waste and equipment and systems are increasingly more intelligent. Today, container-systems can identify recyclers and the amount of waste disposed of, when and where; they can communicate their available capacity to the collection services, compact waste, eliminate odours, be accessible or show information through screens. There is energy efficient equipment and Big Data solutions able to analyse usage trends and plan accordingly, in addition to many other ICT-based solutions, contributing in different ways to waste minimisation and to sustainability in the waste management process.</p> <p>The WIN-POL project aims at improving policies for waste management so that they increasingly foster and promote the use of intelligent equipment and planning derived of it, significantly contributing to waste minimisation in European cities and regions, through improved management procedures and awareness campaigns. Intelligent equipment and systems for waste disposal, collection and management bring about the opportunity to improve policies because the detailed information produced makes it possible to develop individual and accurate taxation policies in line with the “who pollutes pays” principles. They also lead to improved resource efficiency in the collection routes, to highly targeted campaigns that address critical groups of waste producers who have been identified thanks to data collected and, in general, to better strategic waste management planning at urban level as well as to cost optimisation in the mid-term, even if initial investments have to be faced. However, the degree of introduction of innovative equipment varies significantly from one environment to another. The WIN POL partnership gathers together cities and regions with proven experience in intelligent equipment and related waste management policies, and cities and regions planning to introduce them in the mid-term.</p>		

EURE	INTERREG EUROPE	
EIXO Atlantico		
01.10.2019 - 31.07.2023 (Active)	€	(EU: € 1.533.753 )
<p>EU Cohesion Funds are not fulfilling cities expectations regarding their usefulness to design and implement a proper urban policy, especially in the field of resource-efficiency environmental quality.</p> <p>The objective of EURE is, by <b>interregional cooperation</b>, to improve the way these funds address the environmental urban challenges of cities at peripheral regions, paying also attention to those cities of small dimension but with influence in the sparsely populated areas where they are located, by :</p> <ul style="list-style-type: none"> <li>• improving support to European urban areas in being more resource-efficient;</li> <li>• including the principles of the <b>circular economy</b> as a transversal priority of the integrated urban policies;</li> <li>• assuring proper environmental performance management.</li> </ul> <p>The project will contribute to Europe’s sustainable growth and territorial cohesion, both as dimensions of the Europe 2020 strategy. Namely, it will contribute to the achievement of the flagship initiative “Resource-efficient Europe” by supporting urban areas in sustainable and more efficient use of resources and in the <b>introduction of the circular economy principles in cities’ governance</b>.</p>		

<b>LCA4Regions</b>	<b>INTERREG EUROPE</b>	
Government of Navarre		
01.10.2019 - 30.09.2023 (Active)	€	(EU: € 1.719.759)
<p>LCA4Regions is expected to contribute to a more effective implementation of environmental policy instruments by the application of Life Cycle Methodologies. Thus, the project is focused on expanding the use of life cycle methods as a holistic approach when conceiving and implementing public policies related to the environment protection and resource efficiency.</p> <p>Life cycle expertise resides mainly in the business sector while public authorities are much less familiar with the techniques and their functioning. However, the full success of policy implementation depends on a similar expertise also in governmental authorities. The outcomes of improved public policy implementation are greater concordance with stated sustainability objectives, fewer unwanted side-effects and greater transparency in the compromises and offsets that need to be made to move ahead on sustainable economic targets.</p> <p>Expected project results are 7 Actions Plans which will contribute to improve policy instruments introducing the LCA in all steps of policy cycle management and to enlarge the circle of end-users that will benefit from making conscious decisions on resource efficiency and investments using the LCA.</p>		

PANORAMA	EIT Raw Materials	
Leiden University		
01.01.2019 - 31.12.2021 (Active)	€ ?	(EU: € ? )
<p>To date, there is no reliable information service that maps the flows and stocks of materials yet – information that should be the basis of any type of materials management. By improving this sector, competitiveness in Europe will be enhanced overall, with a underlined focus on sustainability.</p> <p>This project proposes to create such a service, well aligned with the EU DG JRC’s Raw Materials Information Service (RMIS). It will utilize the experience gathered in a large number of underlying EU funded projects. This will link information about materials to standard economic accounting, which in turn helps authorities, investors, and firms to assess how sound materials management will support economic performance and jobs. It will help industrial firms and associations to understand supply chain vulnerabilities, as well as further understanding of the ‘urban mine’ – what volumes of secondary materials are where, and what this means for an optimal economy of scale for their exploitation.</p>		

## Waste Collection WEEE

PLAST2BCLEANED	H2020	
01.10.2019 - 30.09.2023 (Active)	€ 4 500 830	
<p>PLAST2bCLEANED, a project funded by the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 821087, has officially started this past June with the aim of developing a recycling process for WEEE plastics in a technically feasible, environmentally sound and economically viable manner.</p> <p>To fulfil this aim, PLAST2bCLEANED will address the recycling of the most common WEEE plastics acrylonitrile butadiene styrene (ABS) and high impact polystyrene (HIPS) that contain up to 20wt% brominated flame retardants (BFR) and up to 5wt% of the synergist antimony trioxide (ATO). PLAST2bCLEANED will close three loops: (1) polymer, (2) bromine, and (3) ATO.</p> <p>The consortium working to achieve these project goals is lead by TNO and formed by Fraunhofer, Coolrec, ICL, Gaiker, Sustainable Innovations, Electrolux, Campine, Elix and Juchheim.</p> <p>The PLAST2bCLEANED Kick off meeting took place in Leiden (the Netherlands) on June 11 and 12. During two days all the consortium partners were able to present their responsibilities within the project.</p>		

CIRC4LIFE	H2020	
The Nottingham Trent University		
01.05.2018 - 30.04.2021 (Active)	€ 7.228.773,75	(EU: € 6.294.033,39 )
<p>This project aims to develop and implement a circular economy approach for sustainable products and services through their value and supply chains. Three new circular economy business models will be developed including (i) co-creation of</p>		

products and services, (ii) sustainable consumption, and (iii) collaborative recycling and reuse.

This project will be demonstrated at a large scale in electrical and electronic products and farming/agri-foods sectors, provide an effective means to communicate with wide communities to disseminate the project outcome, and involve a large number of stakeholders along value and supply chains throughout the project lifetime, including end-users, producers, researchers and civil society.

An ICT platform will be developed to support the development, implementation, demonstration, communication and dissemination.

<b>CIRCUSOL</b>	<b>H2020</b>	
Vlaamse Instelling voor Technologisch Onderzoek N.V		
01.06.2018 - 31.05.2022 (Active)	€ 8.178.317,13	(EU: € 7.014.892,76)
<p>Solar power generates nearly 4% (and still growing) of Europe’s electricity demand. Resource efficiency is a critical success factor for the solar power sustainable growth. Performance-based, third-party ownership Product-Service System (PSS) has been widely seen as a key circular economic model to stimulate resource efficiency and reduce waste generation. CIRCUSOL aims to establish solar power as a spearhead sector to demonstrate a path driven by PSS business models towards a circular economy in Europe.</p> <p>Through a co-creative approach with end-users and the entire value chain, CIRCUSOL will develop two main blocks of a circular PSS model: circular product management with re-use/refurbish/remanufacture (“second-life”) paths in addition to recycling, and value-added new product-services for residential, commercial and utility end-users. Five large-scale, real-life demonstrators will be set up in these 3 market segments, in 3 European countries (FR, BE and CH) to validate market acceptance, business viability and resource efficiency benefits.</p>		

CIRCUSOL will deliver tangible innovation for the solar power industry with market-validated PSS business models, 2nd-life PV/battery labelling/certification protocols and cost/application analysis, and an info-sharing ICT platform.

Results will be exploited in FR, BE and CH and prepared for replication in Europe (Letters of Support of stakeholders attached). CIRCUSOL will also deliver verified circular business innovation methodologies for broader use by other industries, sustainability professionals and academia; plus evidence-based knowledge in circular economy implementation for policy makers. CIRCUSOL will contribute to a more resource efficient Europe, while reducing GHG emissions and creating new business opportunities and jobs.

Car E-Service	H2020	
01.10.2019 - 30.09.2023 (Active)	€ 7 722 365,75	(EU: € 6 229 505,01 )
<p>Electric and Hybrid Electric Vehicles (E&amp;HEVs) will be an opportunity to drastically innovate mobility products and services in the direction of sustainability and of higher accessibility for customers. If coupled with innovative services offered by car manufacturers in a network of well coordinated partners supporting extensive and efficient End-Of-Life operations, the advent of E&amp;HEVs could revolution the current mobility consumption uses of people and preserve the environmental much more than the only substitution of traditional cars with E&amp;HEVs could do. In particular, non-ownership based models of E&amp;HEVs with additional added-value services (leasing or renting contracts with periodic upgrade through remanufacturing, pay per use, etc.), would give OEMs the possibility to establish long-term customers relationships on one hand, and of setting-up innovative supply chains that performs systematic remanufacturing and reuse of E&amp;HEVs parts in order to maximize the residual value of components and materials on the other. Remanufacturing, reuse and recycling would become the strategies upon which car manufacturers would base future competitiveness, leveraging on the benefits of costs saving and, at the same time, guaranteeing environmental benefits and superior performances to customers. However, there are substantial barriers to implement these new business models. The</p>		

main one is developing adequate capabilities to remanufacture and reuse E&HEVs' components and materials in order to provide customers with added value. This is significantly difficult especially from the technological point of view, since E&HEVs determine a fundamental transformation in vehicles design, featuring a substantial evolution in the critical components and materials. The CarE-Service project will demonstrate new enabling technologies and service to systematically perform innovative reuse and remanufacturing as key-processes to provide value to customers and, at the same time, to minimize environmental impacts.

RECIPPS	H2020	
01.10.2019 - 30.09.2023 (Active)	€ 1 999 831,25	EU: € 1 999 831,25
<p>RECIPES seeks to address the highly debated question as to how to protect health and safety of persons and the environment whilst promoting innovation. RECIPES is pioneering because of its a ground-breaking and interdisciplinary endeavour involving the integration of social and legal discipline and based on co-creation with policy-makers and other stakeholders. It aims to reconcile science, innovation and precaution to foster social awareness and responsibility in the EU in research and innovation by developing new empirically sound and theory informed institutional design and tools. It will build effective cooperation between science and society and link scientific excellence with social awareness and responsibility.</p> <p>In order to fully grasp the complexity and the controversies around the precautionary principle, RECIPES will examine the application of the precautionary principle in international treaties, EU level and five countries. It will also carry out eight case-studies, so as to understand and explain the potential differences in the application of the precautionary principle in the different cases, which reflects the particular context of the case and reasoning behind the decision to invoke the precautionary principle.</p> <p>RECIPES will develop new tools for the application of the precautionary principle taking into account the innovation principle. It will involve engagement of stakeholders in all stages of the research. It will moreover develop mechanisms for public involvement in research and innovation. It will develop scenarios for the future application of the precautionary principle and from there, it will co-create a new approach to the precautionary principle and new tolls to help policymakers and other stakeholders to</p>		



assess risks and uncertainty and allow decisions to be made on a case-by-case basis, responding to the question how to responsibly decide on precaution and innovation.

NONTOX	H2020	
Removing hazardous substances to increase recycling rates of WEEE, ELV and CDW plastics		
01.06.2019 - 31.05.2023 (Active)	€ 4 998 076,25	(EU: € 4 998 076,25 )
<p>Increasing recycling rates is crucial for the implementation of a circular economy as clearly stated in the EU Plastic Strategy.</p> <p>The overall objective of NONTOX is to increase the recycling rates of plastics waste containing hazardous substances by developing and optimising recycling processes to produce safe and high quality secondary plastic materials and by optimising the overall process economics by integration.</p> <p>NONTOX focuses on the removal of hazardous and undesired substances from plastic waste taking into account the whole value chain: sorting and pre-treatment techniques, recycling technologies but also post-treatment techniques.</p> <p>Valorisation of by-products and removed substances is also considered to enhance potential applications. NONTOX will target material recovery of plastics originating from WEEE, ELV and C&amp;DW streams containing hazardous additives or undesired compounds such as flame-retardants, stabilizers, fillers, etc. Main secondary plastic outputs will include for example, ABS, EPS, PS, HIPS, PE, PP. The market for these polymers is massive as together they represent about half of the EU demand for plastics and yet a significant portion of these valuable plastics is landfilled or incinerated.</p> <p>NONTOX will further develop two different technologies (Extruclean and CreaSolv®) to remove hazardous substances from aforementioned plastic waste streams, allowing for increased recycling rates. NONTOX will also improve knowledge and state of the art concerning pre-treatment and sorting of plastic waste containing hazardous substances. Thermochemical conversion of non-target plastics and side streams from the main recycling processes will be investigated to increase system efficiency by integration and widen the range of final products and applications. NONTOX is conceived by a multidisciplinary consortium including internationally renowned RTOs, universities, key industrial partners and recyclers as well as product design experts.</p>		

CREAToR	H2020	
Collection of raw materials, Removal of flAME reTardants and Reuse of secondary raw materials		
01.10.2019 - 30.09.2023 (Active)	€ 4 985 853,75	(EU: € 4 985 853,75)
<p>CREAToR focusses on process development and demonstration (to TRL 5) to remove hazardous, already banned bromine-containing flame-retardants from waste streams using continuous purification technologies (supercritical CO<sub>2</sub> and cost-effective solvent-based processes using natural deep eutectic solvents (NADES)) in twin-screw extruders. CREAToR will cover the whole value chain, starting from collecting thermoplastic waste streams from building and construction (B&amp;C) and from waste electrical and electronic equipment (WEEE). Respective recyclers and sorters of both industries are part of the CREAToR consortium.</p> <p>The project will implement ways to collect secondary raw materials, identify the presence of hazardous flame retardants, remove these contaminants from the materials and finally reuse the materials. As case studies they will be reused as valuable secondary raw materials for new B&amp;C insulation panels, closing the circle of economy, for automotive interior application, and for producing 3 D printed parts for aerospace applications. The respective end user partners are also part of the CREAToR consortium. For further increasing the economic feasibility of the approach an optimised logistic concept and a harmonized material quality classification scheme will be developed and applied.</p> <p>CREAToR will create a circular economy solution, transforming waste streams that are currently incinerated at costs of &gt;180 €/t (especially from the B&amp;C and WEEE sector) into value-bringing secondary raw materials. The economic viability of CREAToR will be validated through material benchmarking and LCA/LCC assessment for the whole value chain resulting in next generation products. The strong industrial/recycler presence in the consortium (12 industrial partners, among them three recyclers, six SMEs, and six large enterprises) will ensure the market relevance of the developments and the rapid commercialisation of the results within 1-2 years after the end of the project.</p>		

PolyCE	H2020	
FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.		
01.06.2017 - 31.05.2021 (Active)	€ 9.452.964,59	(EU: € 8.321.995,72)
<p>Various activities address the WEEE value chain in order to reduce waste generation and enhance the sustainable resource management through use of recycled materials instead of their virgin counterparts. While the system for metals recycling is already well established, the rising volumes of waste plastics point to stalemates in the current plastics economy, which hamper its shift to a more circular model. Although there are individual efforts to improve the collection and recycling of WEEE plastics, the plastics value chain is still too fragmented and WEEE recycled plastics seem unattractive material for the end-user.</p> <p>To shift towards circular economy a systematic transformation is required, involving all actors in the value chain and encompassing the entire lifecycle of plastic materials. While substantially reducing the WEEE plastics generation and enhancing the use of recycled plastics in new applications, PolyCE will demonstrate the feasibility of circular plastics supply and value chain.</p> <p>In particular, PolyCE will elaborate harmonized set of technical requirements addressing the entire value chain and develop grade system for recycled plastics according to their material properties and final application suitability. Accordingly, PolyCE will strengthen the market for recycled plastics through an online platform integrating the different plastic grades. In parallel, the technical and economic feasibility as well as environmental benefits of using recycled plastics will be validated in several electronics demonstrators. In addition, PolyCE will provide Guidelines for designing new electronics products with recycled plastics. The project's impact will be scaled up by involving target cities and their green public procurement initiatives; by EU-wide information and awareness raising campaigns. PolyCE will establish a feedback loop from the research activities, provide policy input regarding technical feasibilities and policy conflicts from technical perspective.</p>		

WEEE	LIFE	
ANCI Toscana		
01.10.2017 - 31.08.2020 (Active)	€ 1.850.602	(EU: € 1.101.604 )
<p>The LIFE WEEE project aims to maximise the collection of WEEE in Tuscany, Italy, and Andalusia, Spain, by implementing a new governance model based on a capillary involvement of businesses and awareness raising activities among citizens. Communication towards citizens and businesses will enable these target groups to carry out new practices and to collaborate, thus ensuring the success of the initiative. Drawing public attention to the importance of separate collection of WEEE is essential to both eliminate activities that lead to severe environmental risks and for the full implementation of the WEEE Directive. The specific objectives of the project are to:</p> <ul style="list-style-type: none"> <li>• Improve the regional governance of WEEE collection and management, by encouraging virtuous behaviours among citizens and businesses and improving the exchange of information between the authorities involved;</li> <li>• Create WEEE disposal sites, closely located and easily accessible by citizens, involving local businesses in the process;</li> <li>• Encourage the involvement of businesses dealing with electrical and electronic equipment, including large distribution chains (in line with Art. 14 the WEEE Directive);</li> <li>• Simplify administrative and bureaucratic procedures for WEEE management;</li> <li>• Raise awareness among citizens, local institutions, stakeholders, businesses and other key actors involved in WEEE collection; and</li> <li>• Test and scale up the governance model in other EU territories.</li> </ul> <p>Expected results:</p> <ul style="list-style-type: none"> <li>• Revision of regional waste planning documents in Tuscany and Andalusia, development and testing of a model of municipal tax regulations with incentives for WEEE collection in 140 communities in Tuscany and activities for capacity building of public officers;</li> <li>• Involve 5000/6000 SMEs in Tuscany and 2500 SMEs in Andalusia in WEE related communication, dissemination and training activities. Extend the pre-existing network of WEEE collection points - 500-600 SMEs joining the collection points in Tuscany and 250 in Andalusia ;</li> </ul>		

- Develop WEEE management software for SMEs allowing to speed up the compilation of WEEE compulsory registration forms and transport documents as well as eliminate the use of paper records ;
- Develop a LIFE WEEE APP – georeferencing the WEEE collection points;
- Involvement of at least 50% of the municipalities of the region of Tuscany to improve the quality of the information on WEEE available to citizens and to identify facilitation tools for businesses.

BIOTAWEE	LIFE	
REYDESA RECYCLING, S.L.		
01.07.2018 - 31.12.2020 (Active)	€ 932.377	(EU: € 544.426)
<p>Waste electrical and electronic equipment (WEEE) is one the fastest growing waste streams in the EU (3-5% per year) and is expected to reach more than 12 million tonnes per year by 2020. WEEE is made up of complex mixture of materials, including potentially toxic substances such as lead, mercury, cadmium and beryllium. These pose considerable environmental and health risks if not treated properly. Rare, precious and expensive metals are also used to make electronic goods, for example, 10% of the world's gold. For the EU, which accounts for less than 1% of global gold output, this means depending on imports.</p> <p>Collection, treatment and recycling of WEEE is essential to improve environmental management, enhance resource efficiency by making more secondary raw materials available, and contribute to the development of a circular economy. LIFE BIOTAWEE will pilot a new technology for recovering gold, silver, copper and platinum from printed circuit boards found in electrical and electronic waste. These valuable metals are currently incinerated because they cannot be recovered from the non-metallic fractions of the circuit boards.</p> <p>The two-stage 'bioleaching' process will combine aerobic and anaerobic treatment and produce methane which can be used as a source of power. The new solution is expected to reduce energy consumption and processing costs in comparison with other treatment processes (pyrometallurgy, hydrometallurgy, one-step bioleaching). It will also make use of available waste from other industries (food and animal feed) as an additional nutrient-booster for microorganisms.</p> <p>The project will also evaluate the whether two-stage bioleaching can be used to cost-effectively process other waste streams with a high plastic content (such as batteries and end-of-life vehicles). Results will be communicated to relevant stakeholders across Europe. LIFE BIOTAWEE will contribute to the implementation of the EU Regulation on copper scrap end of waste, The Waste Incineration Directive and the Integrated Pollution Prevention and Control Directive.</p> <p>Expected results:</p> <ul style="list-style-type: none"> <li>• Demonstration of a two-step bioleaching process for recovering valuable metals from the non-metallic fractions of printed circuit boards, while producing enough methane to reduce electricity consumption by 1 035 Kwh per year;</li> <li>• A 50% reduction in metal recovery costs compared with hydrometallurgical processes and 35-40% compared with one-step bioleaching;</li> </ul>		

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*Report with introduction on the identified EU-projects*

- An 8% reduction in carbon dioxide emissions and 1% reduction in hazardous waste generated compared with hydrometallurgical processes; and
- 75-100% of metal recovered, including a fourfold increasing in the amount of gold recovered.



## Waste Collection PPW

PAPERCHAIN	H2020	
ACCIONA CONSTRUCCION SA		
01.06.2017 – 31.05.2021 (Active)	€ 9.217.196,20	(EU: € 7.826.080,89)
<p>Europe is the second world producer of pulp and paper, manufacturing 130 million tonnes in 2014 and representing 23% of world production. This sector is resource intensive and produces 11 million tonnes of waste yearly . It has been found that 25-40% of municipal solid waste generated each year worldwide is paper-related. Furthermore, Europe is nowadays facing the challenge of resource scarcity and more efficient use. If managed in a sustainable manner, PPI waste can become a valuable raw material for other resource intensive industries such as the construction (i.e 5,4 billion tonnes of raw material consumption) or the chemical industry (1 billion tonnes). Mining industry waste generation is estimated at up to 20.000 million tons of solid waste yearly, and relevant part of this waste needs to be kept in environmental safety conditions, which in turn implies additional use of resources (e.g borrow materials). New widespread markets are needed to extend the valorisation operations, reduce the landfilling rates and increase the competitiveness of the PPIs creating new added value markets for their inorganic waste.</p> <p>The overall objective of PAPERCHAIN is to deploy five novel circular economy models centered in the valorisation of the waste streams generated by the PPI as secondary raw material for a number of resource intensive sectors: construction sector, mining sector and chemical industry. PAPERCHAIN aims to unlock the potential of a resource efficient model based on industrial symbiosis which will demonstrate the potential of the major non-hazardous waste streams generated by the PPI as valuable secondary raw material.</p>		

PLASTEKO	INTERREG EUROPE	
Municipality of Rethymno		
01.08.2019 - 31.07.2023 (Active)	€ 1.613.758,00	(EU: € 1.338.734,90 )
<p>The widespread plastic pollution necessitates a strong reaction from EU regions, to address growing environmental and health concerns. PLASTEKO, in line with the “European Strategy for Plastics in a Circular Economy”, will support participating territories to take the steps necessary for a transition towards a “new plastics economy”; the focus will be on advances in waste management, eradication of single-use plastics from regional value chains, and spurring growth through eco-innovation.</p> <p>PLASTEKO will cover the areas of waste management, public procurement, funding/investments, secondary raw materials, and awareness raising and support 8 partners from 8 EU countries, through joint policy learning efforts and exchanges of experiences, to benefit from the momentum of the EU plastics strategy and achieve their goals in terms of protecting the environment, increasing resource efficiency, alleviating health effects, and boosting innovation. The project will enable partners and key stakeholders to: a) assess the current situation, potential, and barriers in their regions, b) identify pathways for sustainable growth in plastics value-chains, and c) design and put into effect new policy measures and regulations.</p> <p>Expected impact: -Increased capacity of 180 staff of public administrations to effectively support new growth trajectories &amp; energy security. -19 million euros unlocked to support projects on plastic reuse, eco-innovation, alternative technologies. -Increased awareness &amp; consensus building among plastic producers and consumers/the public.</p>		

<b>PlastiCity</b>	<b>INTERREG VA Two Seas</b>	
Stad Gent		
01.10.2019 - 30.09.2022 (Active)	€ 9.450.153,65	(EU: € 5.501.450,69)
<p>The project aims to develop replicable strategies and solutions to increase recycling rates of secondary plastic resources in urban areas, and demonstrate this in 4 cities in the 2S area through creating local plastic reuse and refinery hubs. The project develops/demonstrates strategies for logistics, pretreatment and reprocessing, amongst others by using a mobile unit, induces behavioral change through urban platforms, and develops business cases for at least 4 new value chains.</p> <p>Typical baseline plastic recycling rates in the 2S region are around 20-30%. PlastiCity increases this RR with at least 20% (to over 50%, or &gt;10000 tons extra per case) i.a. by unlocking the potential of medium size actors. As a consequence, PlastiCity creates business activity and jobs (100-400) within the circular economy. This goal is on a 10 year basis, with a gradual increase (approximately 40% achieved at the end of the project).</p> <p>The main project output is a strategy to create PlastiCity hubs to significantly increase the recycling rates lost plastics in urban environments in the 2Seas region. Such a hub is defined as a local network of relevant partners and physical infrastructure, supported by a digital environment/Urban Platform. We also deliver: - A methodology to deliver tailored solutions for logistics and lumping waste streams with optimized balance between quantity and quality of plastic collection and reprocessing. - A replicable model to create capacity for plastics in the circular economy through urban platforms (with digital data management) and new business models. - Demonstration and implementation of the Plasticity approach in 4 case study areas with the development of 4 new value chains with business cases, the design of 4 new products and first investments to actually start up (parts) of the hub. - A mobile unit that is used for testing, demonstration and sensitisation in the 4 case study areas.</p>		

CEPLAFIB	LIFE	
Slovenian Tool and Die Development Centre		
02.07.2018 - 30.06.2021 (Active)	€ 1.832.020	(EU: € 1.099.211)
<p>In 2014 Europe generated about 25 million tonnes of post-consumer plastic waste, only 39.5% of which was recovered and 29.7% recycled, while 30.8% went to landfill. More than 8 million tonnes of plastic ends up in the world's seas and oceans, with harmful effects on the marine environment.</p> <p>To create an effective after-use economy, recycled plastics must satisfy market needs, particularly for added value applications, and there must be sufficient flows of high-quality recyclates.</p> <p>The LIFE CEPLAFIB project aims to produce a new material called CEPLAFIB for the packaging, automotive and construction industries to demonstrate that the new material can be produced at a competitive price and that it is suitable for extended manufacturing techniques such as thermoforming and injection moulding. The project will involve partners from four countries (Slovenia, Finland, Poland and Spain), representing plastics and paper recyclers, manufacturers, technology suppliers and researchers.</p> <p>LIFE CEPLAFIB supports EU policies on recycling and zero waste, including the Waste Framework Directive, the Landfill Directive and the Directive on Packaging and Packaging Waste. By improving product durability and recyclability it will also be in line with the goals of the Ecodesign Directive. Closing the loop for the plastic and paper value chains will contribute to the implementation of the circular economy action plan.</p>		

PHIPP	LIFE	
SIA Balticfloc		
03.09.2018 - 01.09.2021 (Active)	€	(EU: € )
<p>The market for insulation material in Europe was calculated at 235 million cubic metres in 2014. It is expected to grow at over 3% per year until 2022. The most commonly-used insulation material is synthetic mineral wool, followed by polystyrene and polyurethane. Mineral wool is a low-cost material that is easy to transport, but little of it is recycled: over 90% goes to landfill.</p> <p>LIFE_PHIPP will demonstrate the environmental benefits and cost effectiveness of a new type of building insulation material made of recycled paper and hemp fibre, manufactured at a pilot facility in Latvia. The new insulation mats are designed to be easy-to-install, structurally sound and with thermal insulation properties comparable to those of mineral wool. Other advantages will include breathability, recyclability and health safety benefits. The product will be manufactured at about one-third of the cost of pure natural fibre material. It will be displayed in retail building material stores making it widely accessible to individual home owners.</p> <p>This LIFE project is in line with the objectives of the EU Circular Economy Action Plan. It addresses the circular economy concept through actions spanning the value chain or ensuring the use of secondary resources / scrap materials / wastes in other industries or value chains. Expected results:</p> <ul style="list-style-type: none"> <li>• A stable production process capable of manufacturing 250 cubic metres per day of paper-hemp building insulation mats (batts), which can supply 7% of the estimated market of mineral wool insulation in Latvia;</li> <li>• An expected lifetime of at least 10 years for the pilot plant, which will manufacture different blended insulation materials, develop and test new combinations and mixes and provide demonstration material for different markets and applications;</li> <li>• All required certification and eco-labelling for demonstration and sale of the insulation mats in Latvia and three key markets - UK, Germany, and Finland. The news mats will be installed in demonstration buildings in all four countries;</li> <li>• Draft green procurement specifications and technical information on the design, installation, use and end-of-life disposal of the paper-hemp insulation mats for each of the four target markets; and</li> <li>• Manufacturing process and new product presented to at least 50 organisations in Europe, including potential technology entrepreneurs, manufacturers of loose paper or hemp insulation, paper collectors and recyclers, and professional associations of civil engineers and architects.</li> </ul>		

LIFE4FILM	LIFE	
Fomento De Construcciones Y Contratas S.A.		
01.10.2019 - 30.09.2023 (Active)	€ 4.540.630	(EU: € 1.982.157 )
<p>The EU discards an estimated 25 million tonnes of plastic waste each year, of which almost a third of this waste is shipped to landfills. Despite objectives set out in the EU strategy on plastics in the circular economy to increase recycling rates, Europe currently recovers less than a third of the plastic that it discards. Most plastic packaging is only used once during its lifecycle, with 95% of its value is lost after this first use. Plastic films such as low-density polyethylene make up 40% of this waste. Recycling them would save natural resources, alleviate the burden on landfills and reduce the overall carbon footprint of the plastic industry.</p> <p>Main project objective is to demonstrate a set of new and off-the-shelf technologies to recycle low-density polyethylene plastic films economically. The project will recover this material from municipal solid waste using an innovative optical separation technique. Squeeze dryers and a close-circuit water treatment will then wash the discarded plastic before it is extruded through a double degassing process to transform it into usable industrial feedstock. The process will make better use of natural resources as set out in the EU Packaging and Packaging Waste Directive and the Waste Framework Directive. A pilot plant located in Alhendín, Spain, will produce over 500 kg of recycled polyethylene an hour, leading to some 4 000 tonnes of plastic recycled each year. Expected results:</p> <ul style="list-style-type: none"> <li>• Demonstrate a novel, cost-effective technology for recycling low-density polyethylene films;</li> <li>• Treat 10 000 tonnes of municipal waste each year at a pilot plant in Alhendín, Spain;</li> <li>• Define a sound business model to replicate solutions throughout the plastic industry and other waste sectors.</li> </ul>		

## Waste Collection C&DW

<b>CIRCULAR FLOORING</b>	<b>H2020</b>	
FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.		
01.06.2019 - 30.05.2023 (Active)	€ 5.387.768,25	(EU: € 5.387.768,25 )
<p>CIRCULAR FLOORING aims to enable circular use of plasticized PVC (PVC-P) from waste flooring by developing recycling processes that eliminate plasticizers including hazardous phthalic acid esters (e.g. DEHP). We will demonstrate the project results via production of high quality recycled PVC at TRL 5-6, reprocessing of eliminated plasticizers to new phthalate-free plasticizers and re-use of recycled polymers and additives in new flooring applications. Waste flooring will be subjected to the CreaSolv® Process, which dissolves PVC-P from the material mix and eliminates undissolved matter as well as co-dissolved plasticizers in an extractive purification step (&gt;99%). Pure PVC is recovered from the solution and solvents will be reused completely in the process. Using a controlled catalytic reaction, extracted phthalate ester plasticizers will be converted completely (&gt; 99%) to harmless compounds with plasticizing properties.</p> <p>Together with tailor-made additives, both recovered products are integrated in novel PVC flooring designed for circularity. Chemical and mechanical product analysis, process simulation, LCA, SEA, and business modelling will support process development, upscale and product design. The approach addresses exactly the scope of the call because (i) innovative solutions are developed for removing undesirable substances from secondary raw materials, (ii) removed plasticizers and additives pose health or environmental risks and would adversely affect the quality of the recycled materials and (iii) the hazardous compounds are handled safely and destroyed completely. Addressing the 500.000 t PVC flooring market with recommendations on design for recycling and novel circular materials produced at TRL 5-6, the expected impact on the flooring value chain will be substantial. An interdisciplinary team of 4 RTO, 6 industrial partners (3 SME) and 1 non-profit company will finally implement the new circular economy approach into the PVC flooring industry.</p>		

<b>REMADYL</b>	<b>H2020</b>	
Centre Scientifique & Technique De L'industrie Textile Belge		
01.06.2019 - 30.05.2023 (Active)	€ 4.832.976,25	(EU: € 4.832.976,25)
<p>REMADYL aims at recycling so-called ‘old PVC’, i.e. PVC additivated with hazardous legacy substances (LS) the presence of which is a persistent barrier for PVC recycling as there are currently no economically viable solutions for their removal. To tackle this major challenge, REMADYL will develop a breakthrough single step continuous process based on extractive extrusion technology in combination with novel solvents and melt filtration, which has the potential of rejuvenating ‘old PVC’ into REACH compliant high purity PVC tuned towards the demands of various soft and hard PVC products at market competitive cost (ca €570/ton, CAPEX and OPEX included). The process also has potential for other plastics applications, e.g. removal of (halogenated) flame retardants.</p> <p>Using this process, REMADYL will demonstrate the circular use of PVC for window profiles and waterproofing sheets, providing a flagship example for the circular economy. The extracted phthalate plasticizers will be safely disposed (with energy valorisation) and the lead will be re-used in batteries.</p> <p>REMADYL will deliver a breakthrough support to the Circular Economy Package and resource efficiency targets for Europe as recovered PVC will reduce incineration and landfilling. Assuming we recycle 400kton/year of ‘old PVC’ waste within 5 years after REMADYL, this will result in a reduction of ca 800ktons CO<sub>2</sub>eq and 8ktons lead emissions. This also implies the creation of ca 800 new jobs and a turnover of ca €280million. Safety aspects will be studied, leading to best practices, standardisation input and policy recommendations.</p>		



<b>CityLoops</b>	<b>H2020</b>	
ICLEI European Secretariat (Ger)		
01.10.2019 - 30.09.2023 (Active)	€ 10 457 051,57	(EU: € 9 990 351,57)
<p>CityLoops brings together six ambitious European cities to demonstrate a series of innovative tools and urban planning approaches, aimed at closing the loops of urban material flows and increasing their regenerative capacity.</p> <p>Demonstration actions will be implemented in relation to construction/demolition waste, including soil, and organic waste. During the inception phase, a circular city scan methodology and indicators will be developed and implemented in each city, by adapting current MFA and Urban Metabolism methods to include context-specific data and challenges, to adjust planned demonstration actions, provide an evaluation framework for the measures and monitor their progress towards a circular economy. A series of further innovative decision support tools will be developed (such as City Lab, a GIS based city planning tool, and a pre-demolition resource-mapping tool) for specific demonstration actions. In each city, a Local Stakeholder Partnership will be established at project outset, involving citizen groups, businesses communities, and other relevant partners, to guide planning and implementation. In each case, public procurement actions will also be analysed to assess potential supportive measures.</p> <p>As the selected cities are small to medium sized cities (pop. 50,000 – 600,000), Apeldoorn, Bodø, Mikkeli, Porto, Seville and Roskilde/Høje-Taastrup, the tools, approaches and solutions demonstrated should be replicable in a large number of cities across Europe. Replication is embedded throughout the project. At city level, all demonstration cities will prepare scale-up plans. At a regional level Collaborative Learning Networks will be established, consisting of other municipalities, public bodies, and other relevant regional institutions, to prepare regional upscaling plans. At a European level, a series of Replication Zones will be recruited over the course of the project to prepare replication plans. Guidance on replication will also be produced.</p>		

CIRCuiT	H2020	
KOBENHAVNS KOMMUNE		
01.06.2019 - 31.05.2023 (Active)	€ 10 595 250	(EU: 9 814 612,50 )
<p>To this day, many techniques, tools and approaches have been developed and tested either on a lab scale or in pilot buildings around Europe. These demonstrations have served as great showcases for circular built environments, but they are yet to be demonstrated at higher level.</p> <p>Copenhagen, Hamburg, Helsinki region (City of Vantaa) and Greater London have teamed up with partners from the entire built environment value chain. The results will have a direct uptake in the value chain and enable cities to initiate circular transition. CIRCuiT will demonstrate three innovative solutions in the four cities: dismantle buildings to reuse materials; transformation and refurbishment; and design for disassembly and flexible construction.</p> <p>CIRCuiT will develop urban planning instruments to support cities in implementing circular construction solutions and initiate changes at system level; implement a Circularity Hub, a data platform to evaluate progress of circular economy and regenerative capacity; and set up a knowledge sharing structure, the CIRCuiT Academy, to promote upscaling of solutions. London, Hamburg, Helsinki region and Copenhagen have the ambition to bridge the implementation gap from individual pilots to the actual circular and regenerative city, by demonstrating the application of current and future developed tools and instruments for circular built environment at a city level in 36 demonstration projects. It is the intention to boost the regenerative capacity of the three cities and Helsinki region, and finalise the development of an advanced set of indicators for impact measurement in an effective and cross-European monitoring programme. The aim is to increase the regenerative capacity in the four cities, and to reduce the yearly consumption of virgin raw material by 20% in new built environments, and to show cost savings of 15%.</p>		

<b>NONTOX</b>	<b>H2020</b>	
<i>Removing hazardous substances to increase recycling rates of WEEE, ELV and CDW plastics</i>		
01.06.2019 - 31.05.2023 (Active)	€ 4 998 076,25	(EU: € 4 998 076,25 )
<p>Increasing recycling rates is crucial for the implementation of a circular economy as clearly stated in the EU Plastic Strategy.</p> <p>The overall objective of NONTOX is to increase the recycling rates of plastics waste containing hazardous substances by developing and optimising recycling processes to produce safe and high quality secondary plastic materials and by optimising the overall process economics by integration.</p> <p>NONTOX focuses on the removal of hazardous and undesired substances from plastic waste taking into account the whole value chain: sorting and pre-treatment techniques, recycling technologies but also post-treatment techniques.</p> <p>Valorisation of by-products and removed substances is also considered to enhance potential applications. NONTOX will target material recovery of plastics originating from WEEE, ELV and C&amp;DW streams containing hazardous additives or undesired compounds such as flame-retardants, stabilizers, fillers, etc. Main secondary plastic outputs will include for example, ABS, EPS, PS, HIPS, PE, PP. The market for these polymers is massive as together they represent about half of the EU demand for plastics and yet a significant portion of these valuable plastics is landfilled or incinerated.</p> <p>NONTOX will further develop two different technologies (Extruclean and CreaSolv®) to remove hazardous substances from aforementioned plastic waste streams, allowing for increased recycling rates. NONTOX will also improve knowledge and state of the art concerning pre-treatment and sorting of plastic waste containing hazardous substances. Thermochemical conversion of non-target plastics and side streams from the main recycling processes will be investigated to increase system efficiency by integration and widen the range of final products and applications. NONTOX is conceived by a multidisciplinary consortium including internationally renowned RTOs, universities, key industrial partners and recyclers as well as product design experts.</p>		

CHARM	INTERREG VB NWE	
Delft University of Technology		
25.10.2018 - 24.10.2028 (Active)	€ 6.940.716,76	(EU: € 4.164.430,06 )
<p>The building sector is responsible for more than 60% of the resource use in Europe with more than 30-50 % of material use taking place in the housing construction sector. The sector also generates about one third of all waste in the EU. Thus, increasing resource efficiency in the housing sector is of great importance for a sustainable society. Currently, the trend is to improve recycling of building materials from demolition waste. This often leads to downcycling in the shape of reducing the use value of materials (e.g. concrete from buildings being converted to aggregate for foundations of roads). A circular economy promotes optimal reuse of building materials at an equivalent value (e.g. bricks reused as bricks).</p> <p>CHARM develops and implements an asset management approach to prevent downcycling of materials in renovation and construction of social rented dwellings by creating:</p> <ul style="list-style-type: none"> <li>• circular building strategies tested in demonstration exemplars;</li> <li>• guidelines for a circular procurement strategy for social housing organisations;</li> <li>• material exchange platforms to enable circular flows of materials and building components in the social rented sector.</li> </ul> <p>Project output will be jointly generated by social housing organisations from 4 countries in the InterregNWE region (Belgium, France, the Netherlands, United Kingdom), in co-creation with supply chain partners and knowledge institutes. The housing organisations are front runners in different aspects that are crucial to circular asset management strategies. The CHARM building strategies lead to 36% of materials being prevented from downcycling, compared to the current maximum of 10%, being equivalent to 40.000 tonnes annual material recovery by the project partners alone. Dissemination and uptake of the results in the social rented sector in the NWE region will be achieved through the involvement of European as well as national innovation exchange platforms.</p>		

CONDEREFF	INTERREG EUROPE	
Polytechnic University of Valencia		
01.10.2019 - 30.09.2023 (Active)	€ 1.416.574,00	(EU: € 1.204.087,90)
<p>CONDEREFF regions aim to accelerate their policy work on improving resource efficiency at territorial level. The EU Construction &amp; Demolition Waste Management Protocol and the transition towards Circular Economy can guide the regulative roll-out of C&amp;D waste management across EU regions; accordingly, the proliferation of infrastructures &amp; methods for recycling and re-use of C&amp;D waste materials can introduce a green growth opportunity. Regions can exploit this opportunity by improving their policy instruments to factor these developments in, and support projects and processes to this direction.</p> <p>CONDEREFF project brings together 8 partners from 7 countries to exchange experiences and practices on how to move forward from existing procedures on C&amp;D waste management towards the adoption and further exploitation of the best practices and measures applied in the field to enable participating regions to advance their goals for resource efficiency and green growth through proper management of C&amp;D waste and boost demand for C&amp;D recycled materials and support both sustainability and recycling in the construction sector.</p>		

FCRBE	INTERREG VB NWE	
Rotor Asbl – vzw		
25.10.2018 - 24.01.2022 (Active)	€ 4.375.434,12	(EU: € 2.625.260,47 )
<p>In NW-Europe, currently only 1% of building elements are reused following their first application. Although a large number of elements are technically reusable, they end up being recycled by crushing or melting, or disposed. The result is a high environmental impact and a net loss of economic value.</p> <p>FCRBE aims to increase by +50%, the amount of reclaimed building elements being circulated in its territory, by 2032. Focussing on the northern half of France, Belgium and the UK, the project also covers, with a lesser intensity, the Netherlands, Ireland, the rest of France and Luxembourg. This area houses thousands of SMEs specialised in the reclamation and supply of reusable building elements. Despite their obvious potential for the circular economy, these operators face significant challenges: visibility, access to important projects and integration in contemporary building practices. Today, the flow of recirculated goods stagnate and may even decrease due to a lack of structured efforts.</p> <p>To respond appropriately to these challenges, the project sets up an international partnership involving specialised organisations, trade associations, research centres, an architecture school and public administrations. It is rooted in earlier initiatives that were successfully initiated, on a local level. The project will deliver 1 online directory that richly documents more than 1500 specialised reuse operators, 1 pre-demolition audit method for reusable elements, a set of 4 innovative specification methods for reclaimed products, and more. These tools will be tested and promoted through 36 pilot operations taking place in large (de)construction projects, whereby more than 360 t of elements will be reused. Effective communication efforts towards the stakeholders of the construction industry (including public authorities) will facilitate a smooth integration of these outputs into field practices and policies.</p>		

URBCON	INTERREG VB NWE	
Stad Gent		
25.08.2018 - 24.04.2023 (Active)	€ 5.202.446,54	(EU: € 3.121.467,92 )
<p>URBCON will reduce the high primary raw material consumption and CO2 emissions, that result from the construction and maintenance of the urban built environment (e.g. buildings, pavements, sewer pipes, bridges). The focus is on concrete, being the most used building material. The overall objective is to apply by-products (such as metallurgical slags and combustion ashes) as alternative raw materials for concrete in the urban NWE region, and as demonstrated in metropolitan areas Rotterdam and Ghent, and in a circular office building.</p> <p>Despite NWE’s circular economy drive and leading role in recycling of wastes, the high-end use of by-products in construction remains limited because of a lacking transregional approach (need for critical mass in policy making, wider availability of by-products). By replacing primary raw materials with by-products, 84 million tonnes of construction minerals will be saved per annum.</p> <p>The project steps and main outputs are: 1) to develop concrete mixes with up to 100% by-product aggregates and low carbon footprint cements; 2) to match by-product providers with the construction sector in a web-based platform, forecasting availability and considering the logistical chains underlying the construction demand; 3) to test and demonstrate the URBCON technology in three pilots; 4) to prepare the roll-out of the technology through a transition roadmap, with a proposed policy framework, life cycle assessment, pre-standardisation, and business viability of urban cements, aggregates and concretes.</p> <p>The consortium combines world-leading know-how in by-product based construction minerals, supplementary cementitious materials, alkali-activated binders, high-alumina cement, digital mapping of resources, and life cycle assessment and costing. URBCON will establish the technology and remove implementation barriers, bringing the new capacity to construct and maintain infrastructure with eco-efficient high-end concrete across NWE and Europe.</p>		

## Waste collection (Policy Support)

PROMPT	H2020	
Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V.		
01.05.2019 - 30.04.2023 (Active)	€ 4.997.778	(EU: € 4.997.778 )
<p>Waste production and resource use is increasing for electric and electronic consumer products. At the same time many critical materials cannot be recovered in recycling processes. Therefore a promising strategy would be to lengthen the lifetimes of these products in order to get closer to a Circular Economy.</p> <p>PROMPT will support the development of more durable and longer lasting products by lowering the asymmetry of information between consumer and manufacturer and thereby to allow consumers to make better choices through development of an integral testing programme for electric and electronic consumer products that takes into account the main key issues of product failures and premature obsolescence: Product durability and reliability; Adaptability, upgradability, and reparability and User behaviour and market.</p> <p>PROMPT takes a multi-stakeholder approach. Consequently, results will be achieved that are viable for different stakeholders and independent from manufacturers. With the help of an Advisory Board, additional stakeholder input will be gathered.</p> <p>A baseline of research will be established by collecting empirical data on technical issues, design shortcomings, market obstacles and replacement causes for premature obsolescence. These results will give input to the development of a range of specific testing methods addressing the three fields of issues outlined above. The results will be synthesized in an integral testing programme for premature obsolescence to be validated and benchmarked through test cases. Results will be analysed and prepared to give validated input to standardisation, product design, consumer communication and policy recommendations.</p>		



CICERONE	H2020	
EIT Klimate-KIC SL		
01.11.2018 - 31.10.2020 (Active)	€ 2.027.611,25	(EU: € 1.998.860 )
<p>CICERONE brings together programme owners, research organizations and other stakeholders to create a platform for efficient Circular Economy programming. The priority setting and the organization of the future platform will be driven by Programme Owners (POs), involved either as project partners, or via a stakeholder network. Diversity of national / regional situations is reflected in the partnership. The work will be carried out in close cooperation with research &amp; technology organisations (RTOs), which contribute with their expertise of the main scientific and technological challenges. Consultation mechanisms will also ensure that all stakeholders will be able to actively contribute (civil society, industry, innovative SMEs, startups, cities, investors, networks, etc.). An initial benchmarking exercise will be carried out for a deeper understanding of the state of the art, mapping stakeholders, existing RDI priorities as well as funding and legal mechanisms.</p> <p>A prioritisation methodology will be developed to support an analysis of the current performance: synergies, gaps and duplications will be characterised, and pathways for improvements will be formulated. Identified best practices will drive the definition of policy recommendations. Once the state of the art has been clearly mapped out, the actual prioritisation work will be carried out. This includes building a Strategic Research and Innovation Agenda (SRIA), performing an ex-ante impact assessment of joint programming on circular economy R&amp;I, and developing a policy toolkit to promote the priorities and foster adoption by policy-makers. The project will also set the grounds for the future PO platform, starting with defining its strategic role in the existing landscape. The next step will be to specify governance and possible legal frameworks, as well as creating a financially sustainable model. It is a key objective that the platform be sustained after the end of the project.</p>		

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