



The LIFE Programme: over 20 years contributing to waste management in the EU

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LIFE Programme - Communications Team

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Waste Management
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The LIFE Programme

LIFE = L'Instrument Financier pour l'Environnement

The EU funding tool for the Environment

- **Born in 1992**
- **4 171 projects approved (570 on waste)**
- **Budget: €3.46 billion for 2014-2020 (2.14 bn in 2007 - 2013)**
- **Two sub-programs:**
 - **LIFE Environment**
 - **LIFE Climate Action**



Structure

LIFE ENVIRONMENT (€2.5 billion)

- **Environment and Resource Efficiency:** Water, Waste, Resource Efficiency, Health and Air Quality and Emissions.
- **Nature and Biodiversity:** Implementation of Habitats and Birds Directives, the Natura 2000 Network and the Union Biodiversity Strategy to 2020;
- **Environmental Governance and Information:** Information, communication and awareness raising campaigns in line with the 7th Environment Action Programme

LIFE CLIMATE ACTION (€864 million)

- **Climate change mitigation:** reduction of GHG emissions
- **Climate change adaptation:** increased resilience to c. change
- **Climate change governance and information:** promote awareness raising on climate matters and better climate governance





Complementarity

with other EU programmes and fundings

Research & Development
= Horizon 2020



PILOT /
DEMONSTRATION
= LIFE



Access to market
= CIP Eco-innovation





Types of projects (I)

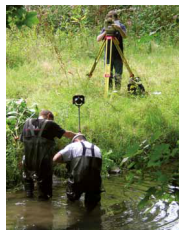
- **‘Traditional’ project:** best practice, innovation and demonstration projects, as well as governance/information projects.
- **Integrated projects:** aim to implement on a large territorial scale projects on the areas of nature, water, waste, air and climate mitigation and adaptation. They must mobilise at least one other relevant EU, national or private source.





Types of projects (II)

- **Technical assistance project:** to help applicants develop integrated projects.
- **Capacity-building project:** that support capacity building in Member States in order to enable them to participate more effectively in the LIFE Programme.
- **Preparatory projects:** to support specific needs for the development and implementation of EU environmental or climate policy and legislation.





Co-funding rates

- **Nature & Biodiversity** projects: 60% in general; 75% for projects targeting priority habitats and species.
- **Capacity building** projects: 100%
- **Integrated, preparatory and technical assistance** projects: 60%
- For projects under the sub-programmes:
 - ‘**Climate Action**’
 - ‘**Environment**’, thematic priorities of
 - ‘**Environment and Ressource Efficiency**’
 - ‘**Environment Governance and Information**’

60% in 2014-17
55% in 2018-20



ES-WAMAR (LIFE06 ENV/ES/000044)

ES, SODEMASA (Public company) + ES and FR private companies and ES associations.

Oct 2006 – Apr 2011

€6.9 million (Total) – **€2.5 million** (EU)

ENVIRONMENTAL PROBLEM

Bad management of pig slurry lead to soil contamination and eutrophication



ACTIONS

Design of a common management system that:

- rationalises processing and distribution of slurry
- valorises the pig slurry as organic fertiliser among farmers
- reduces social aversion and interferences with other economic activities





ES-WAMAR (LIFE06 ENV/ES/000044)

METHODOLOGY

Creation of three pilot management systems consisting of:

Three manure management centres in charge of:

- **collection and treatment** of pig slurry.
- **distributing and selling** the raw material among the farmers.
- **mediate** between the pig farmers, the public administration and the agricultural producers.
- development of a **software tool** to help in the management by:
 - . Storing information about manure **production and use**.
 - . Providing **traceability information** of the manure (required by the public administration).
 - . Checking the **state of stock**.

METHODOLOGY

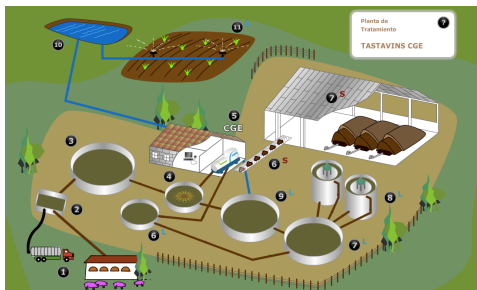
3 systems for 3 different areas:



1 with **large agricultural surface**: fertiliser receptor
 → valorisation and correct management of pig slurry as fertiliser. (*Tests in barley, grain and maize fields*)



1 **mountainous** with both producers and receptor
 → test of transport by pipeline



1 with **intense pig production**: fertiliser producer → slurry treatment plant to reduce Nitrogen charge



RESULTS

- Over **800 000 m³** of manure managed
- **100 000 m³** of slurry treated by plant
- **N concentration**: Reduction in surface and groundwaters from **102 to 83 mg/l** in 62 spots monitored (2009-2010)
- **P concentration**: Reduction in soil from **50.7 to 39.1 mg P/kg** in 210 farms (2008-2010)
- **16 new employments** created → they are now creating a 4th centre





EUROPEAN WEEK FOR WASTE REDUCTION

(LIFE07 INF/F/000185 – LIFE12 INF/BE/000459)

FR, AEME public agency + FR, ES, PT
2009 – 2012 ; 2013 - 2017
€4.1 million (Total) – €2 million (EU)

ENVIRONMENTAL ISSUE

Waste prevention as first priority action in the waste hierarchy pyramid

Households in the EU produce 8% of total waste.

OBJECTIVES

Reduce the amount of municipal waste generated in Europe by raising awareness about existing strategies and policies at national and EU level.



METHODOLOGY (I)

EWWR

(LIFE07 INF/F/000185 - LIFE12 INF/BE/000459)

- One week of **awareness rising** events all over Europe, and beyond.
- **Any public or private organisation** can participate
- The organised actions must fall within these three **themes**:

Reduce - At source

Reuse - Preparing for reuse and reuse

Recycle - Waste sorting and recycling



METHODOLOGY (II)

EWWR
(LIFE07 INF/F/000185 - LIFE12 INF/BE/000459)

European Week for Waste Reduction:

Thousands of awareness-raising actions on waste reduction, product reuse and materials recycling

2014 → 22-30 November



Prevention Thematic Days:

One per edition between 2013 and 2017. Each of the annual Prevention Thematic Days will focus on a different theme.

2014 → No food waste!



METHODOLOGY (III)

EWWR

(LIFE07 INF/F/000185 - LIFE12 INF/BE/000459)

European Clean-Up Day



To reduce littering in nature and to give visibility to the issue, the EWWR coordinates a Europe-wide annual clean-up day.

EWWR awards

The annual EWWR awards ceremony is an event created to reward the most outstanding actions carried out in each EWWR edition.



RESULTS

EWWR

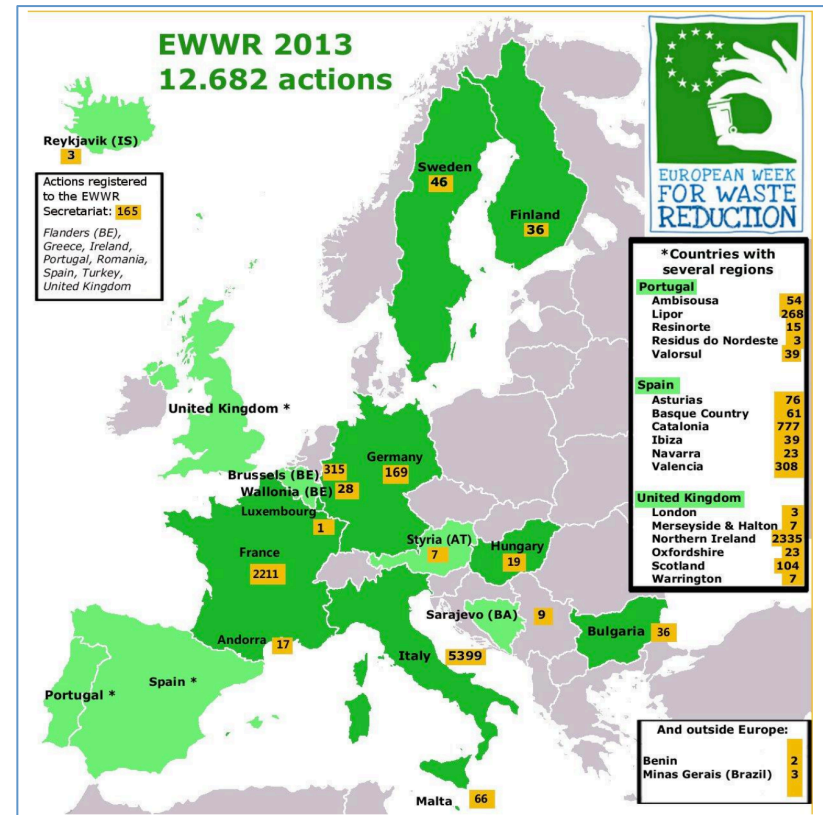
(LIFE07 INF/F/000185 - LIFE12 INF/BE/000459)

In the period 2009-2012 over
14 000 activities

Only in 2013 → **12 682**

Countries **outside the EU** can
participate too!

More information at:
<http://www.ewwr.eu/>





CONWASTE (LIFE06 ENV/D/000488)

D, MDSE public company + D, CZ, SK private partners
2006 - 2009
€4.4 million (Total) – €1.2 million (EU)



ENVIRONMENTAL PROBLEM

Closing of old industrial landfills requires substantial amounts of natural construction material.



OBJECTIVES

New landfill sealing system using waste:

- cement
- ashes
- mineral

RESULTS

Creation of a two-layer sealing system:



- Sealing layer (1 m)

Mineral soil material
+
Ashes
+
Pasty material (sludge)

⇒ **Inertisation** ⇒

- .Very low water permeability
- .Reduction of pollutant migration
- .Storage capacity CO₂ and heavy metals
- .Resilience to acid H₂O



- Cultivation layer (1.5 m)

Mineral soil material
+
Sludge



- .Water storage capacity 20% volume
- .Substrate for Energy plants



VALUVOIL (LIFE09 ENV/ES/000451)

ES, CARTIF private research institution + FR, ES, PT
2006 – Jul 2009
€1.04 million € (Total) – **€0.5 million (EU)**

ENVIRONMENTAL PROBLEM

- Waste vegetable oils (WVO) is an environmentally-friendly alternative to palm and soya oils for biodiesel production.
- Biodiesel production from WVO still produces by-products which pose both environmental and health concerns.

OBJECTIVES

Improved system for **valorising residues** and by-products from biodiesel production from WVO as:

- **organic amendments** for agriculture
- **biogas**

METHODOLOGY (II)

Improved anaerobic digestion of residues:

1. Development of a semi-industrial two-phase **anaerobic digester**:
 - Hydrolysis / Acidification
 - Methanogenesis
2. Development of the **optimal digestion mixture**:

Sludge (inoculum)

+

Pre-treatment/refining waste

+

Pig manure



METHODOLOGY (III)

VALUVOIL (LIFE09 ENV/ES/000451)

Valorisation for:

- Plant biostimulant and soil microbial biomass enhancer. Tests in:
 - . Rye grass
 - . Barley

- Production of Syngas. Mixing of the final digestate (over 90% water) with:
 - . Sunflower stover
 - . Pre-treatment residues
 - . Glycerol
 - . Dehydrated digestate





VALUVOIL (LIFE09 ENV/ES/000451)

RESULTS

Development of a **integral waste management** system that:

- Digests the by-products from WVO biofuel production, removing:
 - . **Chemical Oxygen Demand** by **86.4%**
 - . **Total Dissolved Solids** by **81.9%**
- Is able to produce up to 2 234 L/day of biogas with a methane concentration of 65% → saving 484 kWe/year
- Final digestate showed beneficial not as fertilizer but as both:
 - . Plant growth **biostimulant**
 - . Increasing **soil's microbial activity**
- Cost reduction of oil-polluted water treatment by 2,4€/l



Funding: More information

New Regulation 2014-2020 :
[Regulation \(EC\) No 1293/2013](#)

National Contact Points:

Information on eligibility and project preparation
<http://ec.europa.eu/life/contact/nationalcontact>

EU Communication tools and services :

- [LIFE website](#)
- [Project database](#)
- [Thematic publications](#)





Thank you for your attention!

Questions?

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From Roof to Road

(LIFE07 ENV/DK/000102)

DK, Karsten Rasmussen Holding
Thisted A/S (Private company)
Jan 2009 – Jan 2012
€2.07 million (Total) – €1.02 million
(UE)



ENVIRONMENTAL PROBLEM

- **Bitumen** is used in felt roofing material, containing between 40-50 % compared with 5-7 % in road asphalt.
- At end of life, waste bitumen is **landfilled** or **incinerated** releasing **heavy metals**, **CO₂** and **VOCs** into the air and soil.
- **1.8 million tonnes** of waste bitumen from roofing materials generated per year in the EU. Some 40 000 tonnes in Denmark.

OBJECTIVES

- Demonstrate a method for **recycling bitumen felt roofing material** and use it in **road construction**

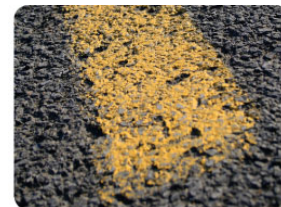
METHODOLOGY

- **Collection** of the raw material
- Development of a mobile felt **processing machinery** for:
 - .Grinding
 - .Sorting
 - .Mixing in the asphalt production
- **Tests** in road construction



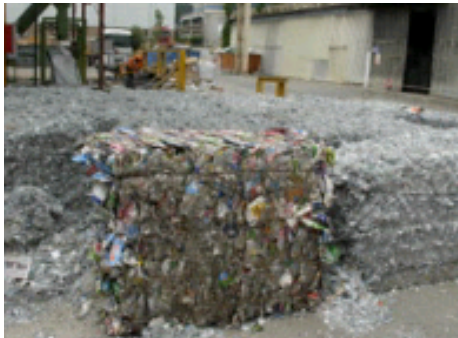
RESULTS

- Development of a **waste collection network** with 150 suppliers (landfills and roofing felt manufacturers)
- **1000 tonnes** of waste roofing material processed
- **Recycling of 70%** of the waste roof, replacing **10%** of virgin bitumen in road construction
- New **good quality asphalt**. All necessary certifications passed except for use on airport runways.
- Reduction of GHG emissions: **1.7 kg CO₂** per kg roofing felt diverted from incineration



CLEAN (LIFE06 ENV/ES/000010)

ES, Stora Enso + NL, DE, AT partners
May 2006 - May 2010
€5.4 million € (Total) – €0.9 million
(EU)



ENVIRONMENTAL PROBLEM

Over a **million tonnes of drink cartons** are thrown away after use every year in Europe.

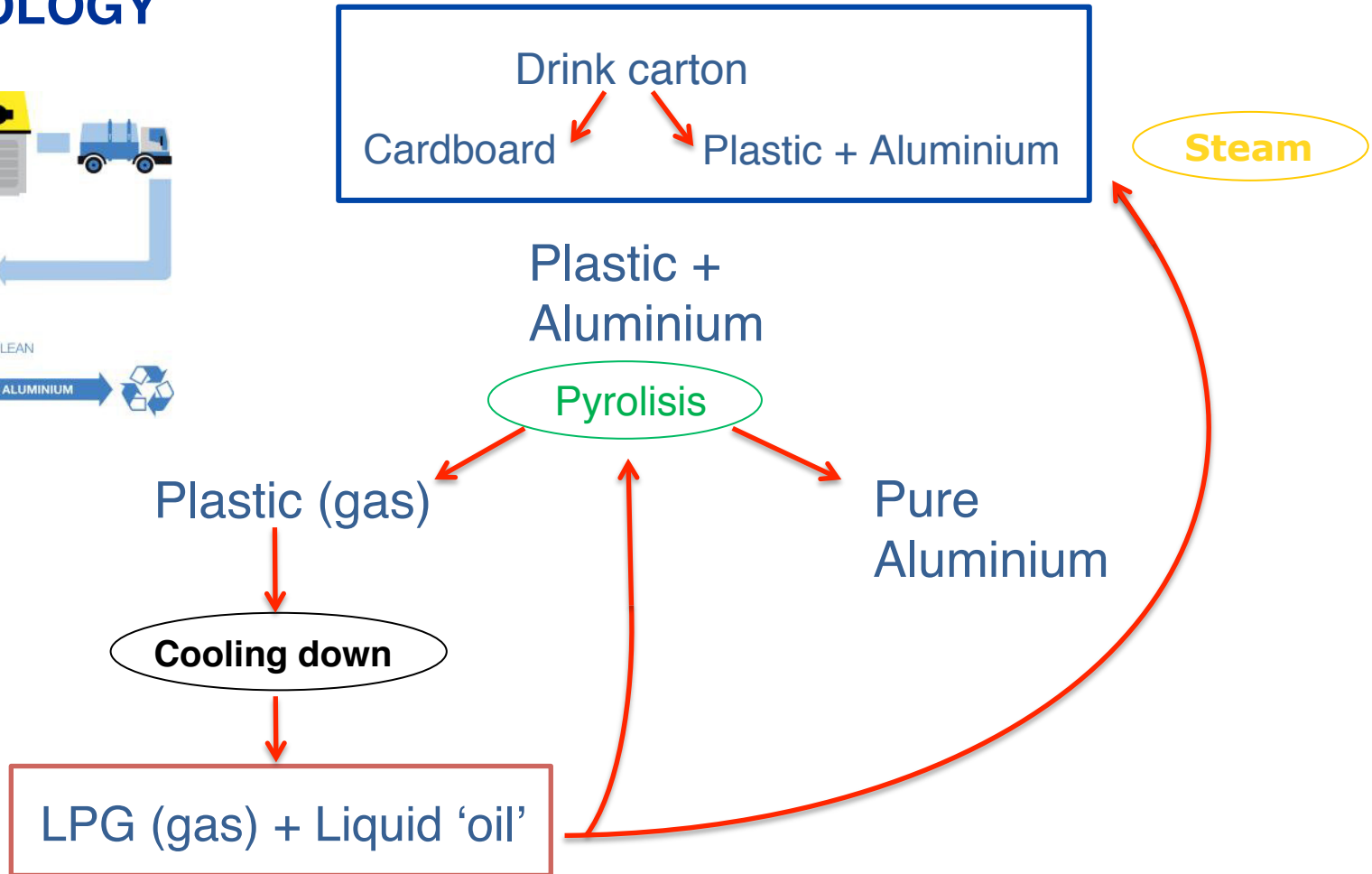
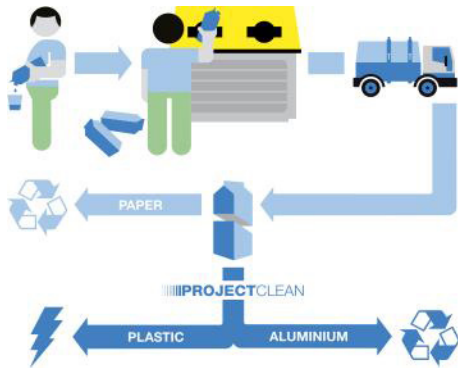
OBJECTIVES

New method for fully recycling drink cartons

- 100% recovery of Aluminium
- Produce 'green' energy



METHODOLOGY



RESULTS

- New technology:
 - .Capacity **50 000 tonnes/yr** of cardboard
 - .Performance:
 - **CO2 reduction** of:
 - . 250 tonnes/yr from transport
 - . 6 000 tonnes/yr from bauxite process
 - **21 000 MWh/yr** saved from bauxite process
 - **6 300 tonnes/yr** of Natural Gas saved (steam)
- Recovery of **1 260 tonnes/yr** of Aluminium → Recycling



CLEANWOOD (LIFE06 ENV/IRL/000532)

IE, Paflab Ltd
Oct 2006 - Aug 2010
€3.3 million (Total) – €0.94 million (EU)

ENVIRONMENTAL PROBLEM

Ireland produces around **250 000 tonnes of wood waste** per year.

OBJECTIVES

New recycling technology of waste wood from:

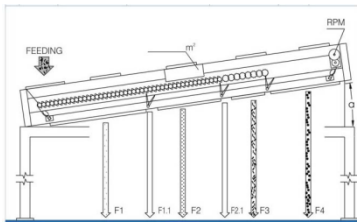
- Construction & demolition
- Commercial (spent pallets, packaging and furniture)
- Municipal

PROCESS

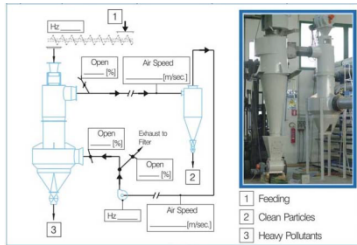
- **Mechanical separation** of metals, ceramics, glass and plastics
- **Visual separation** of resin, paint, etc.



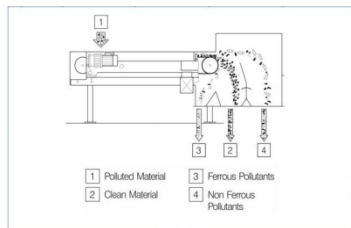
MECHANICAL SEPARATION



- **grading** by size → filters



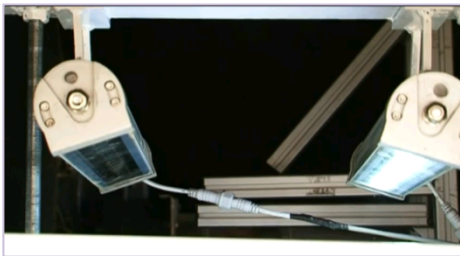
- **separation** of woodchips from ferrous, non ferrous metals, ceramics, glass and plastics
→ magnets + compressed air



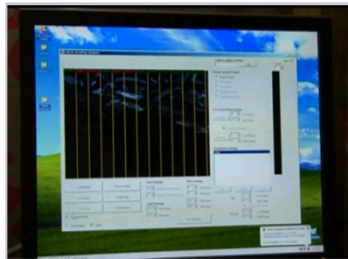
- **breaking down** of larger chips.

VISUAL SEPARATION

- **removal of chips polluted** with resin, paint and other chemical agents
- **identification of polluted** chips through a system of:



Cameras



Software

analyses the chips
and identifies the
pollutants



Separation convey

Air knife system and
pulse counter to
spot the pollutant

RESULTS

- **70% recovery** of clean wood
- Processing capacity of **100 000 tonnes** (244 259 tonnes of wood waste produced in Ireland annually)
- **Moisture level** of wood reduced from **40% to 5%**

- Available clean wood for:

- .boiler fuel
- .feedstock
- .animal bedding
- .horse gallops
- .horticultural mulches

