



Circular Economy Implementation in Greece

LIFE18 IPE/GR/000013 - LIFE-IP CEI-GREECE



NEWSLETTER!

May 2022 - No 4

The integrated project LIFE-IP CEI-Greece, of eight years duration, entered dynamically it's second phase, after the successful completion of the first preparatory phase, with a great deal of milestones and deliverables having been finalized during the difficult circumstances of the pandemic. After the successful ending of Phase I, the project submitted its 1st Interim Report to the European Executive Agency for the Climate, Infrastructure and the Environment (CINEA), with all completed deliverables and the project's Key Performance Indicators (KPIs) which were successfully approved, along with the next project funding.



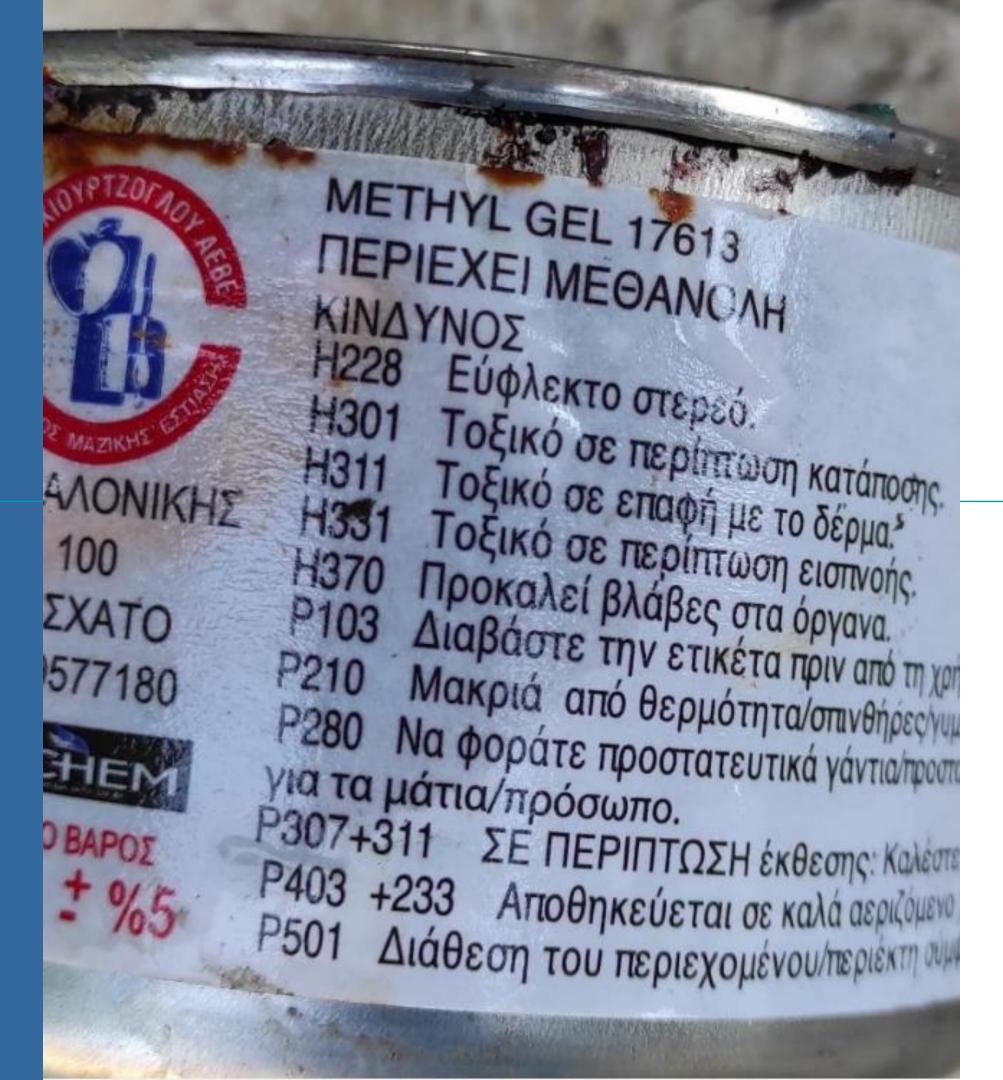






HAZARDOUS HOUSEHOLD WASTE





The project LIFE-IP CEI-Greece, having recognized on time the need to undertake specific actions for the separate collection and appropriate management of HHW, has dedicated important actions to this purpose (preparatory action A2.4, concrete action C.3 and action A3.2 with the issuing of an appropriate guide.

Waste that is characterized as Hazardous Household Waste (HHW), arise from a variety of household activities, within which lie at least one or more dangerous attributes*, due to a number of chemical, biological and natural characteristics.

^{* (}as described in Annex III of Part B' of N. 4819/2021 [Government Gazette 129A]).

The need for separate collection and safe final management of HHW



Although found in small quantities in the municipal waste stream, hazardous waste produced by households (HHW) pollutes municipal waste, making their processing difficult and effecting the quality of recycling, reducing the degree of material recoverability, impeding management in the low levels of waste hierarchy and creating pressures along their final disposal.

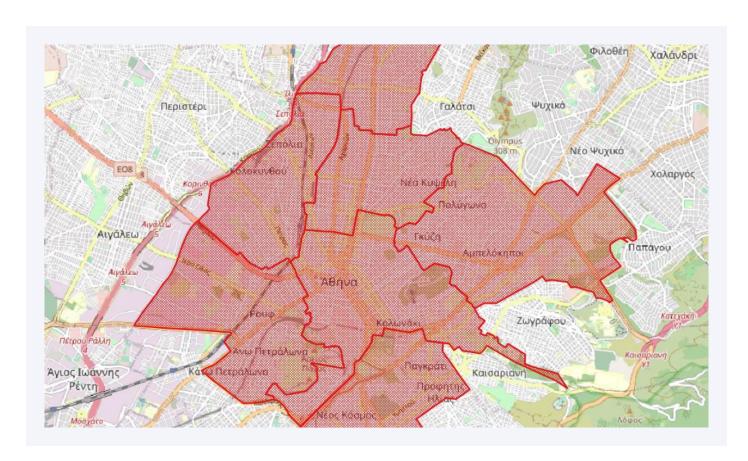
The obligation for separate collection has been established with Law 4819/2021 (article 46) from 2024, harmonizing the country with the requirements of the updated Directive for Waste.

Responsible for the establishment and operation of separate collection systems are the Local Government Bodies (at level A), with the exception of waste streams that fall into alternative waste management systems.

Responsible for the further management of HHW are Waste Management Bodies or, the Local Government Bodies (at level A) and their legal entities that operate as Waste Management Bodies, with a reservation for the responsibilities of respective systems of alternative waste management.

The system for separate collection that will be designed, should be friendly towards the citizens, in order to achieve maximum results that will directly relate to the citizens successful participation.

Action A2.4 | Preparatory studies for the integrated management of HHW



Municipality of Athens



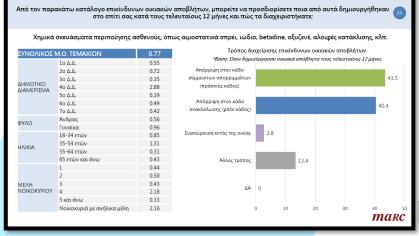
Region of Western Macedonia

In the context of the preparatory action A2.4 of LIFE-IP CEI-Greece, a number of works and studies have taken place in order to design a citizen friendly integrated system for the successful collection and management of HHW. These studies are the necessary preliminary stage for the concrete implementation action C.3, during which a number of proposals will be developed and implemented at pilot level in the Municipality of Athens and the Region of Western Macedonia, aiming towards the achievement of separate collection of the produced HHW at a high standard, and their subsequent safe final management.

Assessing the current situation.

Research for the mapping of stakeholders that are directly or indirectly involved in the production and management of HHW.

Collection & analysis of quantitative and qualitative data regarding HHW in the 2 pilot areas of implementation.



A public opinion survey through telephone interviews for collection of qualitative and quantitative data.

Quality composition studies of HHW in the Municipal Solid Waste of the two areas, with sampling and analysis methods conducted according to specific standards.

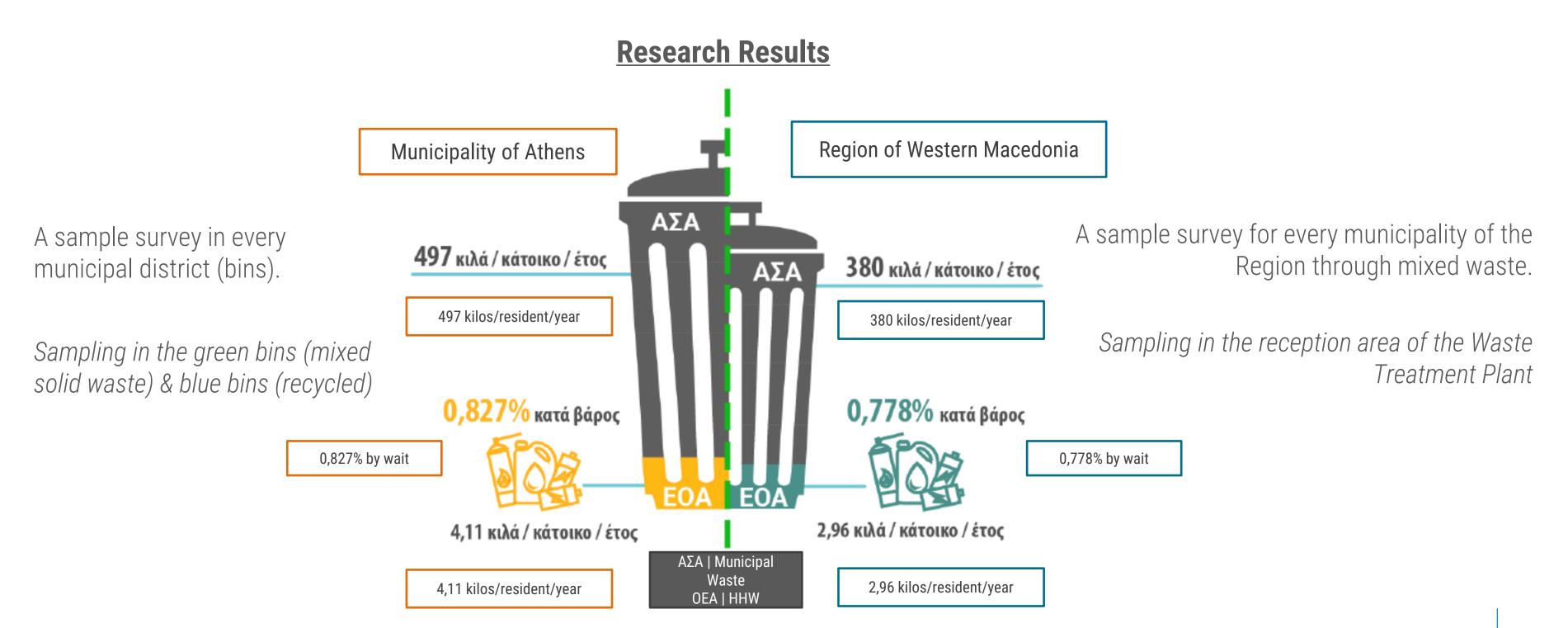


A common methodological framework for the 2 pilot areas

The structure of the methodology designed and followed in the studies of DIADYMA SA for Western Macedonia and TERRA NOVA for the Municipality of Athens is identical; so that quantitative as well as qualitative results, and the suggested waste management actions have a common reference Framework, to be compared. This approach, is expected to facilitate the transfer of knowledge and know-how that was developed in the context of action A.2.4 in other parts of the country, through the Guide for designing a system for separate collection and management of Hazardous Household Waste developed in the context of action A3.2.

Production of Hazardous Household Waste

Conducting a research in order to define the quantitative & qualitative composition of HHW in the two pilot Areas, the Region of Western Macedonia and the Municipality of Athens.



Quality composition of HHW

The main categories of HHW



Απόβλητα χημικών προϊόντων • οικιακής χρήσης



Οικιακά απόβλητα υγειονομικής περίθαλψης



Απόβλητα Ηλεκτρικού και Ηλεκτρονικού Εξοπλισμού



Μπαταρίες ηλεκτρικών συσκευών



Απόβλητα συντήρησης οχημάτων



Απόβλητα αποξηλώσεων οικιακής κλίμακας **Household Chemical Waste**

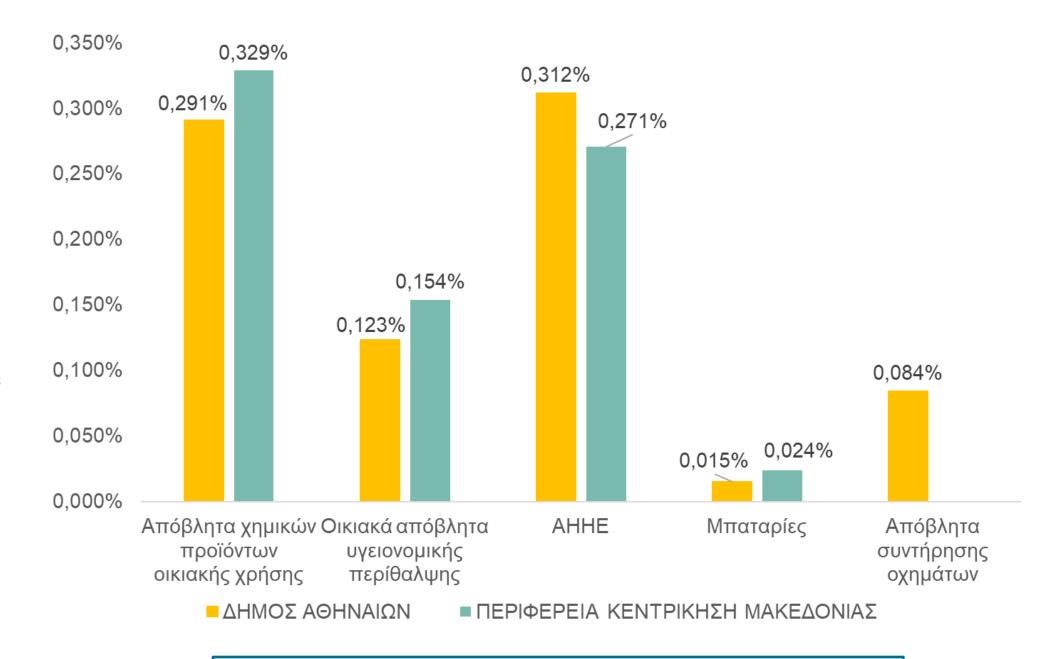
Household healthcare waste

• Electrical and electronic equipment waste

Batteries of electric appliances

Vehicle Maintenance waste

Domestic stripping waste



Municipality of Athens

Region of Western Macedonia

The HHW depending on their management are classified in three broad categories:

- 1. HHW that fall into Collective Systems of Alternative Waste Management (small electric/electronic appliances, fluorescent and low consumption light bulbs, household type batteries, lead accumulators, used car oils).
- 2. Other HHW that don't fall in C.S.A.W.M. (cleaning products and personal hygiene products with organic solvents, dangerous constructing materials containing solvents, colors, glue, polishes etc., chemical waste including packaging, biocides, plant protection products, sterilizing products and washing liquids, vessels under pressure, aerosols etc., fire extinguishers, printing waste inks, toners, car maintenance waste).
- 3. Household medical waste (medication, sharp objects, needles, contaminating waste from home care, gauzes, catheters etc.)

Reinforcement of Collection Points, Communication Actions, Green Centres.

Collection: from Shops, from predetermined Points at a certain time (Itineraries or Events)
At specific Points for Collection(Bins), and Green Centres.

Expired medicines, Needles – Sharp Objects: Pharmacies Contaminating waste from home care: Delivery at a special collection vehicle or collection from the social services of the Municipality, the advancement of the system will be further examined in the Municipality of Athens with fixed collection points operating at existing health establishments (hospitals, health centres, municipal medical practices etc.)









PAY

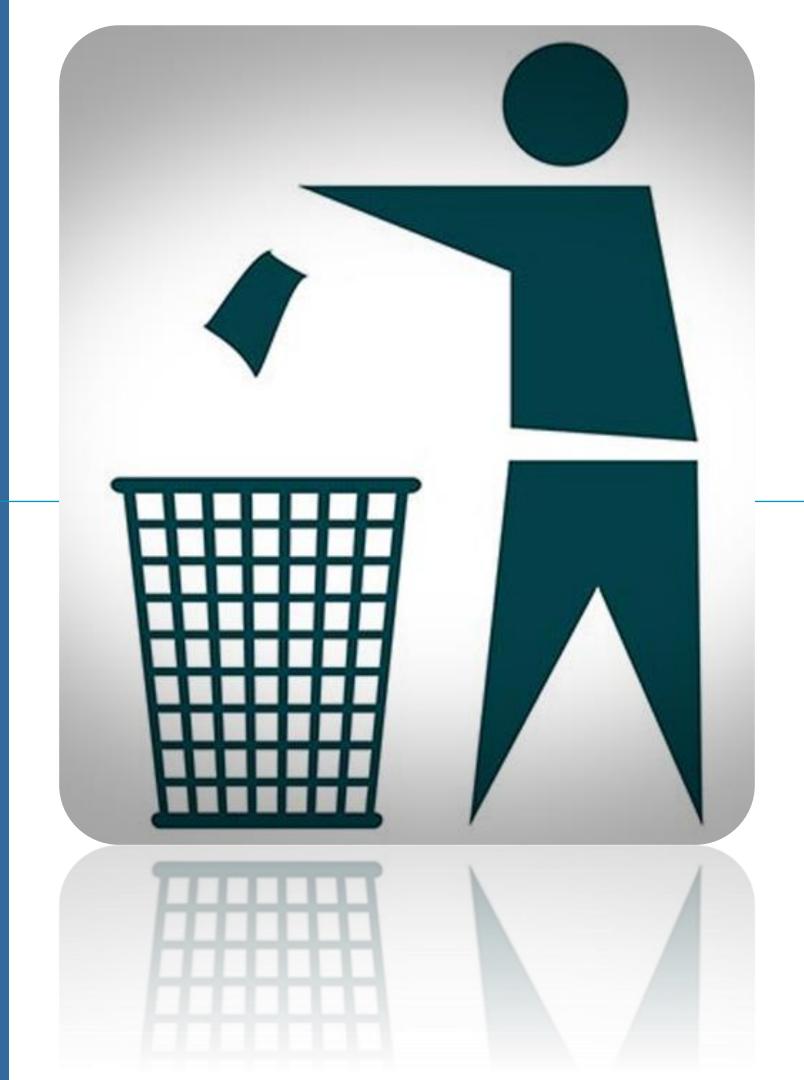
THE "PAY AS YOU THROW" SYSTEM



ECONOMIC INSTRUMENTS IN WASTE MANAGEMENT



Baring in mind the legally binding obligation to implement Pay-as-you-throw in the Greek Municipalities with the Law 4819/2021, the Municipality of Vari, Voula, Vouliagmeni, strategic project partner, is preparing to become the first authority in Greece to implement the PAYT scheme at full-scale, in the context of the LIFE-IP CEI-Greece project. This pilot action, is progressing fast, coordinated by the Ecological Recycling Society, in close collaboration with the Municipality of VVV, where the partners have completed the relevant preliminary study for the implementation of PAYT in MoVVV, and the current situation at national level.



Sustainable waste management is based on waste reduction, that can be promoted with given motives to the citizens.

The principle "the polluter pays" constitutes at the level of EU law a fundamental pillar of the European environmental policy. Sustainable waste management can be boosted if waste management cost is fairly distributed among those that produce waste.

The application of a billing system from municipalities known as "Pay-As-You-Throw – PAYT", is a tool that can become a solution to the problem of waste management that has economic, social, environmental and legal aspects.

Preliminary study for the implementation of PAYT in MoVVV and the current situation at national level



This study was completed in the context of Action A1.3.2 (Study for the full-scale assessment of Pay-as-you-throw schemes) and presents av overview of PAYT schemes, examining the current situation and the benefits for local authorities from the implementation of such systems, also including results from existing case studies throughout Europe and the rest of the world. Additionally the study focuses in previous experiences and developments in Greece, including the legal framework, and the recent withdrawal of the major legal barriers in Greece for the implementation of PAYT schemes that was inforced, with the law 4819/2021. This law is the key driver for the development of PAYT systems in Greece, as local authorities with a population exceeding 100.000 residents must implement & operate PAYT systems up until the 1st of January 2023 and the municipalities exceeding 20.000 residents up until the 1st of January 2028.

The deliverable also includes an introduction to the pilot projects for PAYT implementation that have been applied in Greece, focusing in the Municipality of Vari Voula Vouliagmeni and it's pilot PAYT programmes so far.

Emerging patterns in our overall conclusions

After the reviewing of a number of European and international case-studies and the relevant bibliography, we can point out the following emerging patterns in our overall conclusions:

- PAYT systems effectively reduce the amount of residual waste produced by households and businesses.

1

- When PAYT systems are implemented in combination with the separate collection of other waste streams the residual waste reduces further, in comparison with cases that separate collection is not combined.

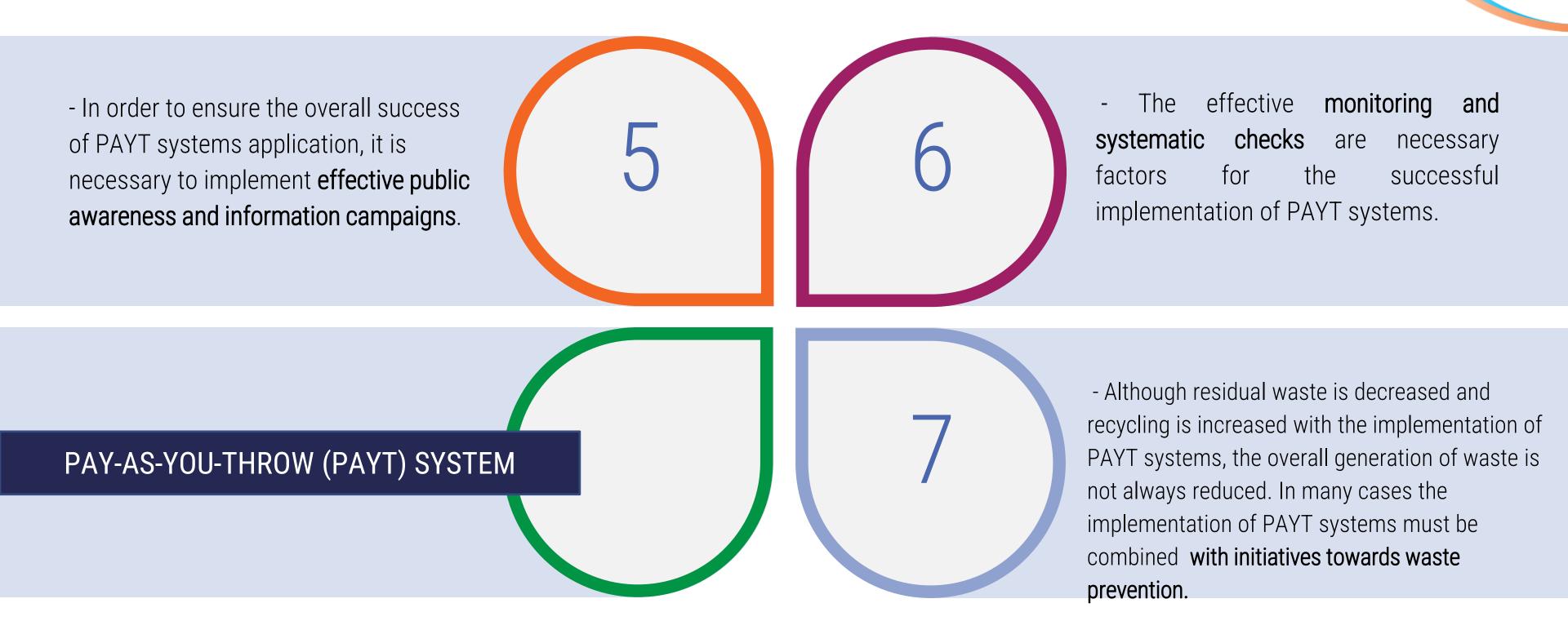
- The overall charges for waste fees reduce for households when a PAYT system is applied, in contrast to the implementation of a fixed charge system. This is primarily due to the reduction of residual waste.

4

3

- The implementation of PAYT systems also results in increased recycling rates as well as improved purity and quality of recycled materials.

Emerging patterns in our overall conclusions



The PAYT system in the Municipality of Vari Voula Vouliagmeni



In the municipality of Vari Voula Vouliagmeni a number of scenarios and 3 pilot applications of "Pay as you Throw" | "Win as you Separate" methods have been developed so far.

The environmental footprint of these efforts is positive. The participation of citizens, businesses and local authorities in the activities of the Municipality, with the philosophy of positive reward is already giving very important results.

The PAYT system in the Municipality of Vari Voula Vouliagmeni

We chose to fund from our own funds and compare three different systems by which the 'Pay as you Throw' | 'Win as you separate' schemes can be implemented.

The first system that we test is the use of prepaid waste bags. The Municipality distributed free waste bags (10L, 20L, 35L και 60L). The participants have been instructed to use these bags exclusively and the collection of waste takes place 3 times per week. During the collection, each bag is registered and all the information is gathered in an electronic platform, through which the Municipality records the waste volume of each building.

The second system we try is the use of **prepaid waste bins**. The Municipality distributed free waste bins (120L ή 240L) in all the participant buildings (each building has its own bin). The participants have been instructed to use exclusively these bins and waste collection takes place 3 times per week. During the collection each bin is registered and all the information goes to an electronic platform, through which the Municipality records the volume of waste of each building.

The third system is about the use of a Smart Bin. The use of a smart bin materializes with the use of a magnetic key (tag) only, which is essential every time that waste is being disposed in the Smart Bin. Each magnetic tag is unique, exclusively connected with each household and can be used with any smart bin. Each waste disposal is measured for its volume and all the information goes to an electronic platform of the Municipality.

During the implementation of the 3 systems, the citizens continue to Separate at Source with the use of a brown bin for the sorting of organic waste and three separate bags for paper/plastics/recyclable packaging materials. The municipality of VVV collects such waste door-to-door at each building.



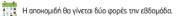






Πώς θα γίνεται η συλλογή των σύμμεικτων απορριμμάτων μας

- Συλλέγουμε τα σύμμεικτα απορρίμματά μας στις ειδικές κίτρινες σακο
- Τοποθετούμε τις σακούλες κοντά στην είσοδο του κτιρίου μας λίγες ώρες
- Μόνο οι ειδικές κίτρινες σακούλες θα συλλέγονται κατά την αποκομιδή





















Πώς θα γίνεται η συλλογή των σύμμεικτων απορριμμάτων μας

- Κλειδώνουμε τον κίτοινο κάδο πάντα μετά την τοποθέτηση των ασκομλών μας
- **Μόνο** οι σακούθες που θα βρίσκονται μέσα στους κίτρινους κάδους θ λλέγονται κατά την αποκομιδή.



με το ειδικό κλειδί που θα λάβουμε από τον Δήμο.









ΝΕΟ ΣΥΣΤΗΜΑ ΣΥΛΛΟΓΗΣ ΤΩΝ ΣΥΜΜΕΙΚΤΩΝ ΑΠΟΡΡΙΜΜΑΤΩΝ

ΜΕ ΕΞΥΠΝΟ ΚΑΔΟ

στο πλαίσιο της πολιτικής του δήμου «Πληρώνω όσο Πετάω»

Πώς θα γίνεται η συλλογή των σύμμεικτων απορριμμάτων μας;

- ο Συλλέγουμε τα σύμμεικτα απορρίμματά μας μόνο στους ειδικούς **έξυπνους κάδους**, που θα τοποθετηθούν στην οδό Αθηνών από τον Δήμο.
- Χρησιμοποιούμε οποιαδήποτε σακούλα θέλουμε για τη συλλογή απορριμμάτων.
- ο Για να κάνουμε χρήση του κάδου σκανάρουμε το **μαγνητικό κλειδί** μας.
- Μόνο οι σακούλες εντός του έξυπνου κάδου θα συλλέγονται.
- ο Συνεχίζουμε τη «Διαλογή στην Πηγή» και τη χρήση «καφέ κάδου», ώστε να μειώσουμε την ποσότητα σύμμεικτων απορριμμάτων.



Action A3.2 | Technical support for the implementation of EU waste legislation



Guide for the design of a separate collection and management system for Hazardous Household Waste

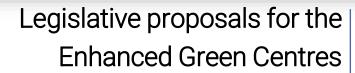
The purpose of this action is to contribute implementation of the new obligations arising from European law, taking into account that these are now also provisions of the new national legislative framework for waste. Therefore the action aims to provide technical support for the implementation of a) the separate collection of HHW and b) the financial tool PAYT, with the completion of suitable guides that will facilitate the municipalities of the country to make correct decisions, particularly during the design stage, so that they will gradually harmonize successfully adopt the above, within the framework of their administrative duties. In addition a short Guide will be produced on Green Centres and Reuse Centres, in order to familiarize citizens and municipalities with the purpose and scope of such infrastructures.



Guide for the implementation of the system Pay-as-you-Throw

The preparation for the publication of the complete Guides is at an advanced stage.







Guide for the Green Centres





During the 1st phase of the project, a study of the analysis of educational needs with a plan for the engagement of stakeholders, that are related directly or indirectly to the circular transition were prepared by the Green Fund. Capitalizing on evidence from extensive previous research completed under Action A1 (Baseline Assessments, inception studies at national scale and stakeholder mapping), a greater preference was expressed by almost all stakeholders for advisory support, a subject that is not essentially an educational topic, but it expresses the inability of the agencies to understand their role within the new setting shaped by the necessity for the circular transition.

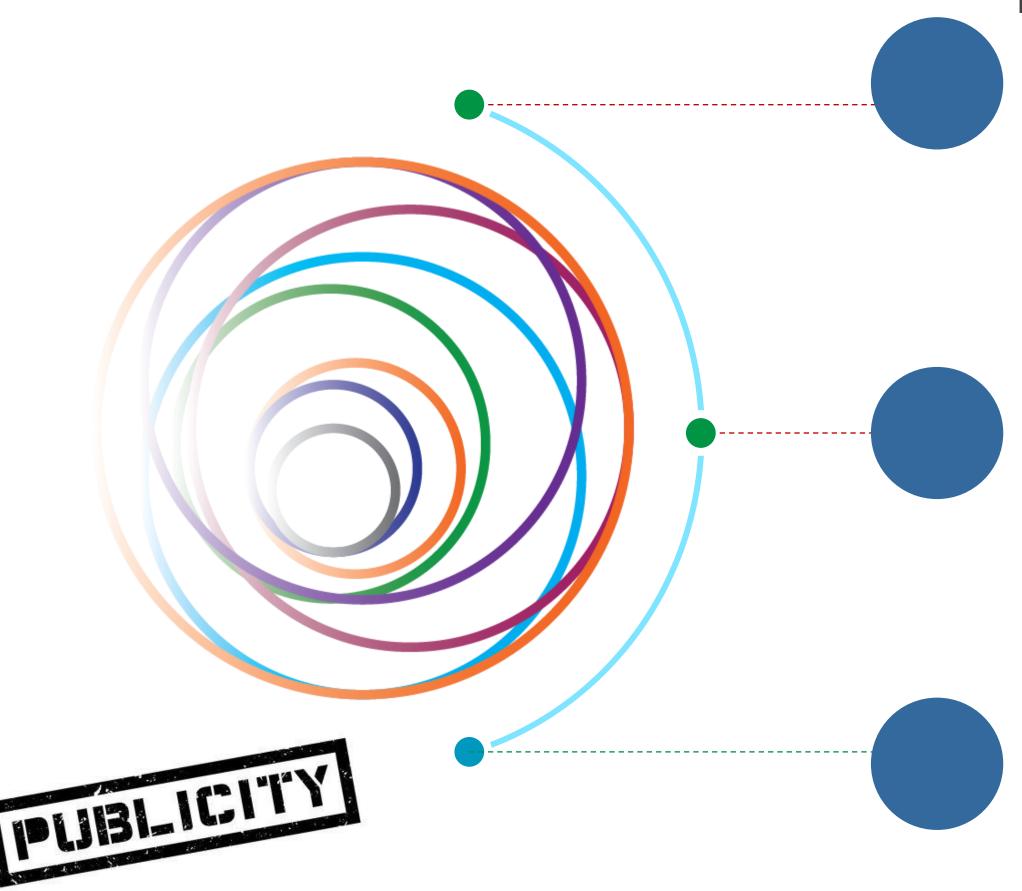
Additionally, high in the educational priorities of the institutions/agencies rank the following: networking and synergy opportunities, the legislative framework, opportunities for recycling/ recovery of waste, waste prevention actions and circular economy business models.

C7 | Capacity Building Actions

Capacity building actions are of crucial importance for the implementation of CE in Greece and start at the beginning of the 2nd phase of the project.

The sub-actions of C7 include targeted workshops on specific topics at local and regional level, the establishment of a dialogue forum on food waste prevention as well as long-distance training about the principles of Circular Economy for stakeholders of distant areas.

Action E1.5 | Publications/Articles



National Circular Economy Survey

• <u>Πανελλαδική έρευνα για την ΚΟ στο πλαίσιο του έργου LIFE-IP CEI-Greece</u>, K. Koryzi, Scientific Expert, MEEN

Related Publications

- Oikonomikos Taxydromos, 6 January 2022
- Ethnos, 7 April 2022
- Green Agenda, 7 April 2022
- B2Green, 7 Arpil 2022

Green Public Procurement

- ΠΔΣ: Η εφαρμογή τους συμβάλει στη βιώσιμη ανάπτυξη, Z. Gaitanarou, Waste Expert, Green Fund
- Efimerida ton Syntakton, Special Edition on Sustainable Development, 26-27 March 2022
- Green Agenda, 6 April 2022

Hazardous Household Waste

- Η πρόκληση της διαχείρισης των ΕΟΑ, G. Spanos, Chemical Engineer NTUA Terra Nova.
- reporter.gr, 8 February 2022

Action E1.8 | Circular Economy in the Sporades Islands – The case of Alonissos, 26/11/2021





Further information

The event was organized by the Municipality of Alonissos in collaboration with DAFNI Network, with the support of the Hellenic Recycling Agency (HRA) and the Ministry of Environment & Energy (MEEN), in the context of action E1.8 "Local awareness raising events for the LIFE-IP CEI-Greece demonstration actions". The event was part of the *European Week for Waste Reduction* 2021, with this year's theme being 'Circular Economy Communities'.

During the same morning a group from DAFNI Network and HRA, in collaboration with the teachers of the junior school of Alonissos, organized an educational workshop for the local students on the topics of Recycling and Circular Economy, in which 90 students in total, from all the school classes took part.



E2, Dissemination & Networking

- > 19/01/2022 Participation in the RREUSE policy working group with representatives from OECD and the EU, regarding the role of Reuse in Circular Economy, also communicating information about LIFE-IP CEI-Greece Ecological Recycling Society.
- > 24/02/2022 Participation in a digital event of the Hellenic Wind Energy Association with main topic "Wind Energy and CE: Recycling of the Wind Generators" presenting among others, the project LIFE-IP CEI-Greece Ecological Recycling Society.
- > 15/03/2022 Participation in an on-line discussion with the NGO Sciaena, that implements action in the island of Culatra in Portugal with regard to the reduction of single use plastics, their usage in CE and challenges for the improvement of waste management. During the talk the project LIFE-IP CEI-Greece was presented and networked *Ecological Recycling Society*
- > 17-22/5/2022 Presentation of the main actions, the impact and the deliverables of LIFE-IP-CEI-Greece regarding economic instruments & funding tools in the 5th Symposium of Eco-sustainability and the 1st Symposium of Eco-gastronomy and Eco-Art at Elafonissos *Green Fund*.

E2 | Dissemination and networking



Under the auspices of LIFE-IP CEI-Greece the <u>International Apple Conference</u>, was organized on 12/5/2022, with internationally acclaimed speakers, focusing on all the latest developments in the production and trade of this popular fruit. The conference was organized as a parallel event of the 6th International Exhibition FRESKON (12-14 May in the International Exhibition Centre of Thessaloniki one of the most important exhibition on fruit and vegetables in the Balkans and South East Europe, where companies of all sizes from Greece and abroad gather and promote their latest innovations.

Among the exhibitors in the year's FRESKON exhibition was the Central Market of Thessaloniki S.A. partner of LIFE-IP CEI-Greece, participating in our project with a focus in raising awareness on food waste prevention.

Upcoming awareness events and conferences

Anniversary
Celebration Event
for the 30 years of
the European LIFE
funding programme

Thursday, 26 May 2022

The project LIFE-IP CEI-Greece will take part, in the anniversary event for the 30 years of the European funding programme LIFE, organized by our project partner, GREEN FUND.

Further info

International
Conference on
Sustainable Waste
Management,
Corfu 2022

15-18 June 2022

Research papers deriving from the LIFE-IP CEI-Greece actions will be presented in the International Conference on Sustainable Waste Management in the island of Corfu.

Regional Awareness
Event (Info Day),
West Macedonia

Wednesday, 22 June 2022

The project partner DIADYMA SA organizes a hybrid regional awareness event in the city of Kozani, for the programme LIFE-IP CEI-Greece in the Region of Western Macedonia.

Further info

Upcoming awareness events and conferences

The poster presenting LIFE-IP CEI-Greece 'Circular Economy Implementation in Greece', in the context of the 30 year anniversary celebration event of the funding programme LIFE, organized by the Green Fund.







9th International Conference on Sustainable Waste Management

- ➤ Research Paper presentation on the development of a Special Programme for Food Waste Prevention, that was elaborated in the context of LIFE-IP CEI-Greece.
- i. C. Chroni, K. Abeliotis, A. Arfanakou, S. Mani, K. Koryzi, K. Lasaridi
 Development of the Food Waste Prevention Action Plan for Greece in the framework of the LIFE -IP CEI-Greece project.
- ➤ Research Paper presentations about the studies for the pilot implementation of integrated management systems for hazardous household waste that were elaborated in the context of LIFE-IP CEI-Greece.
- i. K. TsioptsiasManagement of household hazardous waste
- ii. I. Spanos, A. Sotiropoulos, Ch. Fotakis, K. Tsimpliaris, G.
 Rigopoulos, S. Mani
 Hazardous Household Waste in the Municipality of Athens:
 qualitative and quantitative characteristics



Get involved. Stay informed!

PARTNERS











































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The project LIFE-IP CEI-GREECE (LIFE18 IPE/GR/000013) is co-funded by the LIFE programme of the EU.



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