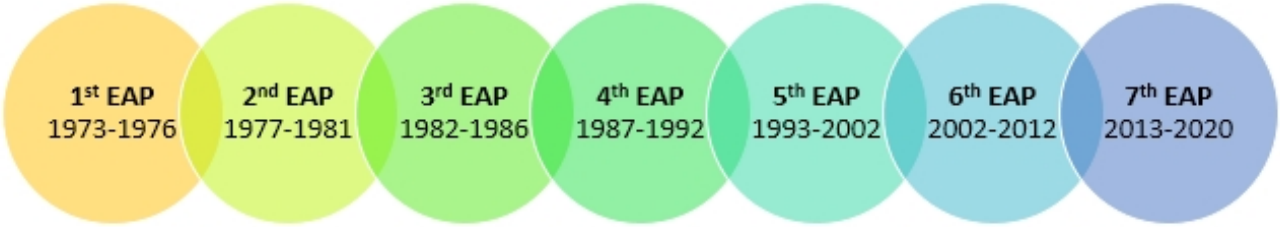
The European waste management policy has been developed over the last 40 years. The main parameter for the development of this policy was the Environmental Action Program (EAP) and the formulation of the European legislative framework. It should be noted that the waste management policy up to 2020 is in line with the EU's broader Europe 2020 strategy for smart, sustainable and inclusive growth.



The 6th Environmental Action Programme (EAP) focuses on the 20% reduction of waste landfilling by 2010 and 50% reduction by 2050. Furthermore, several actions are included such as separate collection for at least paper, metal, plastics and glass by 2015.

However, the 6th EAP expired in July 2012, with the majority of its actions and priorities to be continued. The final evaluation of the 6th EAP highlighted a number of shortcomings, and for that reason the achievement of the objectives was set out in the 7th EAP. This EAP requires the full commitment of the Member States and the Union institutions as well as the willingness to take responsibility to achieve the program's intended benefits.

The priority targets for waste management which set by 7th EAP are the following:

- Reduction the amount of waste generated
- Maximization the recycling and re-use schemes
- Reduction the incineration of recyclable materials
- Phasing out the landfill of recyclable and recoverable waste
- Fully implementation of the waste policy for all Member States.
- Review of the objectives of the Basic Waste Directives, based on:
- – Sustainable resources use
- – Circular economy

In the European Union every year:

- Approximately 7.3 billion tonnes of natural resources are consumed
- And approximately 2.7 billion tonnes of waste are produced
- – of which only 40% is re-used or recycled, with the residual amount landfilled and incinerated

The 7th EAP should contribute to achieving the already agreed environmental and climate change objectives in the EU and to identify gaps in policy areas that may require additional objectives. The EU has agreed to:

- achieve a reduction of at least 20% of greenhouse gas emissions by 2020 (30%, provided that other developed countries commit themselves to comparable emission reductions and that developing countries will contribute adequately according to their responsibilities and capabilities each),
- ensure, by 2020, that 20% of energy consumption is from renewable sources; and
- Succeed to reduce primary energy use by 20% compared to projected levels, improving energy efficiency.

The 7th EAP is based on the principles of precaution, prevention and restoration of pollution at source and “pay as you throw” principle. It is estimated that improvements in resource efficiency may:

- Reduction of material input requirements by 17-24% by 2030
- Save 630 billion euros a year in industries (8% of annual turnover)
- Strengthen EU GDP to 4%
- Reduction of annual greenhouse gas by 2-4%

The scope of the existing legislation on MSW is:

- elimination of negative impacts on the environment and health,
- development of a resource-efficient and low-carbon economy
- insurance of the resilience of Europe's physical capital to pressures and changes.

Legislation on waste policy is based on the following axes:

- **Legislation on waste policy is based on the following axes:**
- – Waste Framework Directive (2008/98 / EC)
- – Waste classification (2000/532 / EC)
- – Regulation No 1013/2006 on shipments of waste

Legislation on waste policy is based on the following axes:

- **Guidelines on the operation of waste management**
- Landfill Directive (1999/31/EC)
- Directive on the incineration of waste (2000/76/EC)
- Ships Waste Directive (2000/59/EC)
- • Guidelines for special waste streams
- • Packaging & Packaging Waste (94/62/EC)
- • Waste batteries and accumulators (2006/66/EC)
- • Waste electrical and electronic equipment (2002/96/EC, 2002/95/EC)
- • Sewage sludges (86/278/EEC)
- • End of life cycle vehicles (2000/53/EC)
- • Lubricant Oils and Construction & Demolition Excavations (2008/98/EC)

The legislative framework set up for the management of Urban Solid Waste from the EU Environmental Policy and applicable in its member states, is based on the prioritization of the management options as follows:

- prevention and reduction of the amount of waste generated

- recovery of materials for re-use and if only these cannot be recycled>/li>
- energy recovery and
- Safe disposal of residues in Sanitary Landfill (HYDY).

Figure 1: The Pyramid of Solid Waste Management Targeting Pyramid according to 2008/98/EK (Άρθρο 4, §1).

The Waste Framework Directive (2008/98/EC) contains provisions on the management of household waste according to which EU Member States will need to develop their National Waste Management Strategy in a way that promotes re-use of products as well as the necessary preparation for re-use, high-quality recycling and separate collection of waste. The 1999/31/EC Landfill Directive also obliges Member States to reduce the amount of biodegradable organic waste disposed of for burial to 35% over the whole of 1995 up to 2016 (or 2020 for some Member States, such as Greece). The transposition of the legal framework into Greek law was implemented by Law No. 4042/2012 and Joint Ministerial Decision 29407/3508/2002, in line with the Directives mentioned.

According to the Greek legislation, it should be achieved:

- At source separation of recyclable materials (at least for glass, paper, plastic and metal) by 2015
- preparing for re-use and recycling of solid waste (at least for paper, metal, plastic and glass) from households and possibly other sources to the extent that such waste is similar to household waste,

- Increase at least 50% of the total weight by 2020
- Reduction of 50% of the amount of biodegradable municipal waste going to landfills by 2013 and 35% by 2020 compared to 1997 levels

Regarding the bio-waste management on EU countries and Greece:

- **EU** (JRC, 2012)
- • 120-140 million tonnes of bio-waste produced per year
- • 90 million tonnes of household bio-waste produced per year
- • 40% of biowaste is landfilled
- • 29% of biodegradable sorting at source

- **GREECE (ΕΠΠΕΡΑΑ, JRC, 2012)**
- • 2.5 million tonnes of bio-waste produced per year
- • 2.2 million tonnes of household bio-waste per year
- • The majority of biowaste is landfilled
- • 0% of biowaste is sorted at source (SD)

It is noted that the at source separation schemes for Bio-waste in the only way for a sustainable management of MSW, given the following benefits arising from its implementation:

- **GREECE (ΕΠΠΕΡΑΑ, JRC, 2012)**
- • Achievement of high recycling rates for MSW considering the high levels of biowaste in MSW
- • Diversion of Biodegradable Urban Waste from Landfilling
- • Facilitation of the recycling and utilization of other MSW as bio-waste containing high moisture and low calorific value
- • Provision of the ability to produce high quality compost
- • Raise of the public awareness on waste management issues
- • Optimization of the collection and transportation in all MSW leading to reduction of environmental, economic and social impacts in relation to the management of mixed MSW

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