

# Circular Economy

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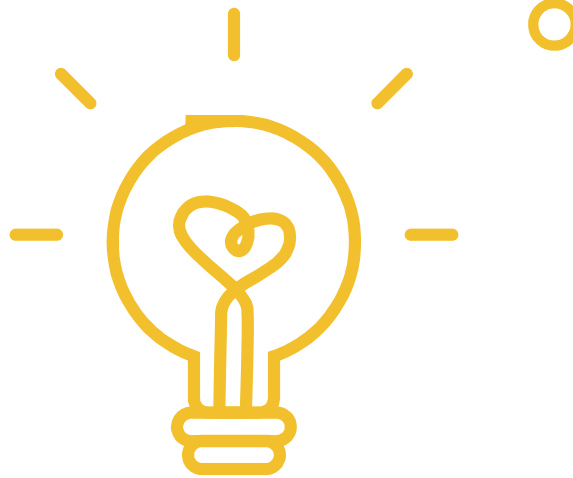


Looking beyond the current “take-make-waste”-model, a circular economy aims to redefine growth, while focusing on positive, society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system.



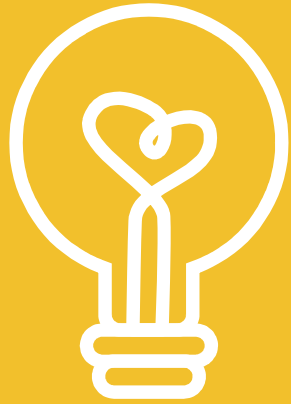


# The Danish Way



01

# Circular business models



# Facts

01

91% of Danish chemistry and plastic producing companies have strategic targets for reducing waste and increasing recyclability

02

In 2021, the Danish government presented an Action Plan for Circular Economy constituting a national design for the prevention and management of waste towards 2032

03

1 out of 5 Danes participate in activities

# 02 Waste Management



# Facts

01

In Denmark, 2/3 of all waste is recycled (when including both citizen and industry waste)

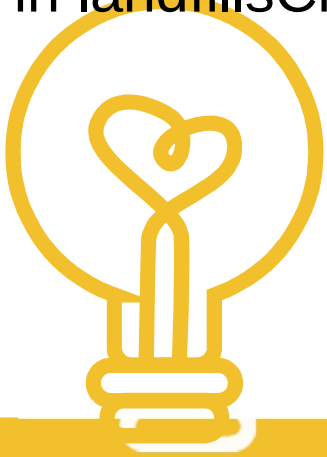
02

In Denmark, only 4% of waste ends up in landfills

Circular construction

03

3 billion people worldwide lack access to controlled waste disposal facilities



03

# Circular Construction





# Facts

01

In the EU, demolition and construction waste account for 35% of the total amount of waste

02

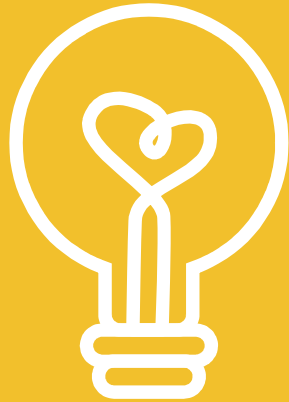
80% of construction emissions can be saved through more efficient use of materials

03

Globally, the construction sector utilises 50% of the raw materials we extract



# EXISTING SITUATION IN GREECE AND THE THE COUNTRY'S POTENTIAL





In Greece, as of the date of the guide's publication (first semester of 2020) separate collection of bio-waste has been restricted in the implementation of limited pilot programs, in regards to home composting, on-site composting, selection at source (SaS) and composting of material recovered from MBTs (NWMP, 2015). Only a limited number of municipalities which have implemented a pilot project have upscaled their system (e.g. Halandri, Voula - Vari - Vouliagmeni, )





The challenges for the municipalities on separate collection of, especially but not exclusively, household bio-waste, are mainly in regards to:

- The biodegradability of the specific type of waste.
- The easily occurring contamination in households, and the difficulty of removing impurities.
- The unstable sources of nuisances, e.g., odour, percolation.
- The variable moisture levels, affecting the logistical and technical requirements for its collection and further processing



# GOOD PRACTICE CASE STUDIES FROM EUROPE





Depending on the type of settlement structure the applied systems for bio-waste collection differ across the EU (Oeko-Institut+EY, 2019):

.Urban areas: Most of the EU capital cities rely on door-to-door separate collection of bio-waste supported by Civic Amenity Sites (CAS) (Bipro 2015). In general, door-to-door schemes seem to be the most common schemes for separate collection of bio-waste especially food waste from households.

.Rural areas: Separate collection of bio-waste in rural areas has been a practice in Austria for many years. The results demonstrate that high capture rates and good quality can be obtained in regions with many rural areas e.g. Styria.



# Box 1: Case Study - Milan (Italy) (Oeko-Institut + Ey, 2019)



Figure 7: Collection point at high-rise building in Milan & Bio-waste collection in Milan (Favoino, 2015; Giavini, 2016)

# Box 2: Case study - Ljubljana (Slovenia) (Oeko-Institut + EY, 2019)



Underground collection points in central city and neighbouring areas, in Ljubljana (JP VOKA SNAGA)



# Box 3: Case study - Würzburg (Germany) (Dr. Tuminski GmbH, 1994)



Marketing area for bagged compost and products from compost at Würzburg composting facility.



Storage area for compost and soil products.



Citizens filling in compost from bulk.



# Summary of EU case studies on bio-waste separate collection

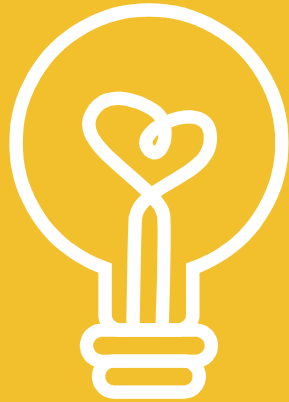
EXAMPLE	MILAN	LJUBLJANA	WÜRZBURG
<b>Lessons learned</b>	Example with "high-speed implementation period" of less than two years to full scale	A reasonable collection rate of more than 70% of bio-waste.	Multiple ways of marketing of compost products to citizens and agriculture
<b>Key factors for success</b>	Strong commitment to a user-friendly collection of bio-waste via an obligatory scheme	Dense collection system allows better quality of collected material, optimisation of collection frequency, better possibilities for increased peoples engagement/participation	Long term approach and steady communication with marketing target groups

# Sustainable waste treatment plant in Greece's West Macedonia region reduces landfilling



# A public-private partnership

The plant is operated a public-private-partnership involving the Greek government and by EPADYM SA. EPADYM is responsible for the financing, construction and operation of the plant until 2042. The plant collects waste from the region's 12 municipalities – where a total of 300 000 people live. The plant is part of a wider regional target of achieving compliance with the EU's waste legislation and environmental strategy. The site is located about 22 km from the city of Kozani.



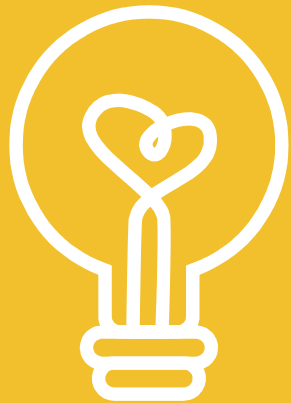
# Construction and sustainability

Along with the treatment plant, several other installations have been built or commissioned during the project – a residual landfill, an additional waste transfer station, a waste water treatment plant, a workshop facility and administration buildings.



## ◀ Total investment and EU funding

Total investment for the project “Integrated Solid Waste Management System PPP in Western Macedonia” is EUR 48 000 000, with the EU’s European Regional Development Fund contributing a EUR 12 700 000 loan through the “Central Macedonia - Western Macedonia - Eastern Macedonia & Thrace” operational programme for 2007-2013.



THANK YOU FOR  
YOUR TIME!

