

About DAKOFA

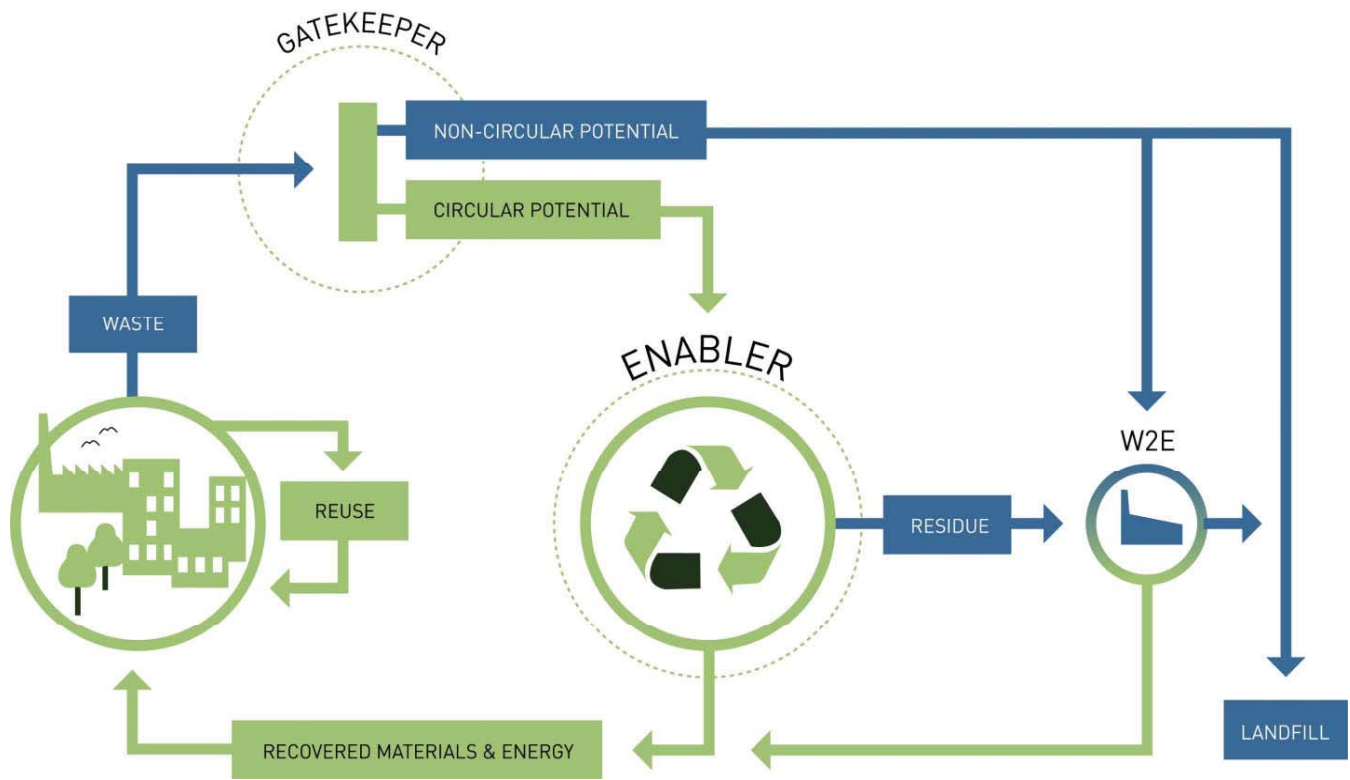
- DAKOFA - "Waste & Resource Network Denmark"
- 255 member organizations from the public and the private sector
- 10 network-groups
- 10+ conferences per year
- 15+ courses and seminars per year
- The Danish National Member of ISWA
- Knowledge-based and non-political





Where are we?

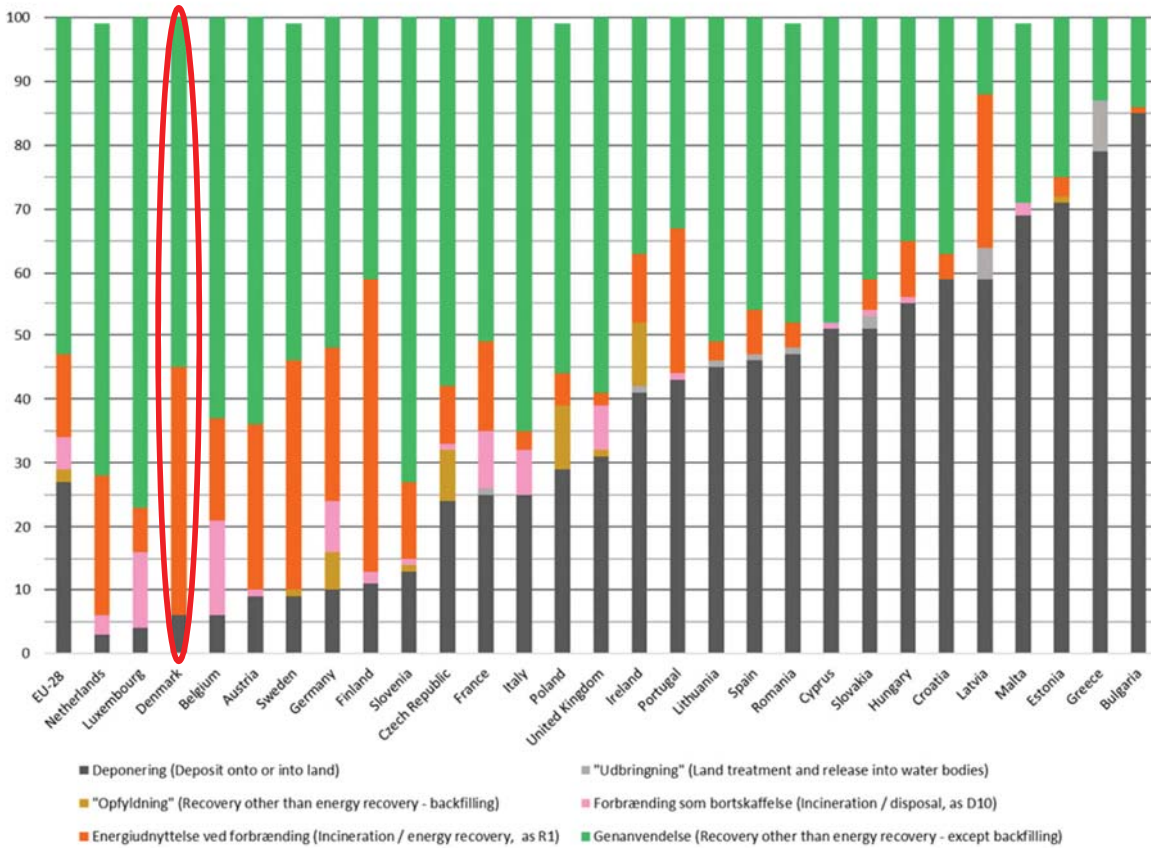




Waste treatment in Denmark (all waste, excl. soil)



Waste treatment in the EU in 2012 (% excl. imported waste)







How did we get there?

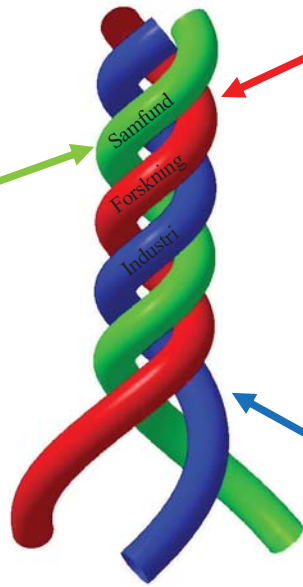


The "Triple Helix"

Three actors
have contributed:

Authorities

- Showing the direction
- Creating market
- Programmes



Knowledge institutions

- Knowledge
- Platforms for development
- Working together

Industry

- Co-funding
- Joint ventures
- Market knowledge

Danish waste management regulation

- Waste is primarily regulated in the **Danish statutory order on waste** (no. 1309)
- As an EU member state, Denmark has implemented the **Waste Framework Directive** (WFD) in the statutory order on waste
- Waste management initiatives are only partly regulated by national law, since Danish municipalities have extensive legal ground for **self-determination**
- National strategies and objectives, guide municipalities in shaping their practices.



The municipality assigns the waste

- Earlier, the municipalities had the **responsibility for all waste** generated within the borders of a given municipality
- Since 2010 the municipalities no longer have the responsibility for recyclable waste from industry. Instead, this waste is collected and treated on **general market conditions**
- The municipalities have the **right** to decide on the collection scheme as well as the **obligation** to secure the necessary processing capacities for collected waste.



Integrated planning

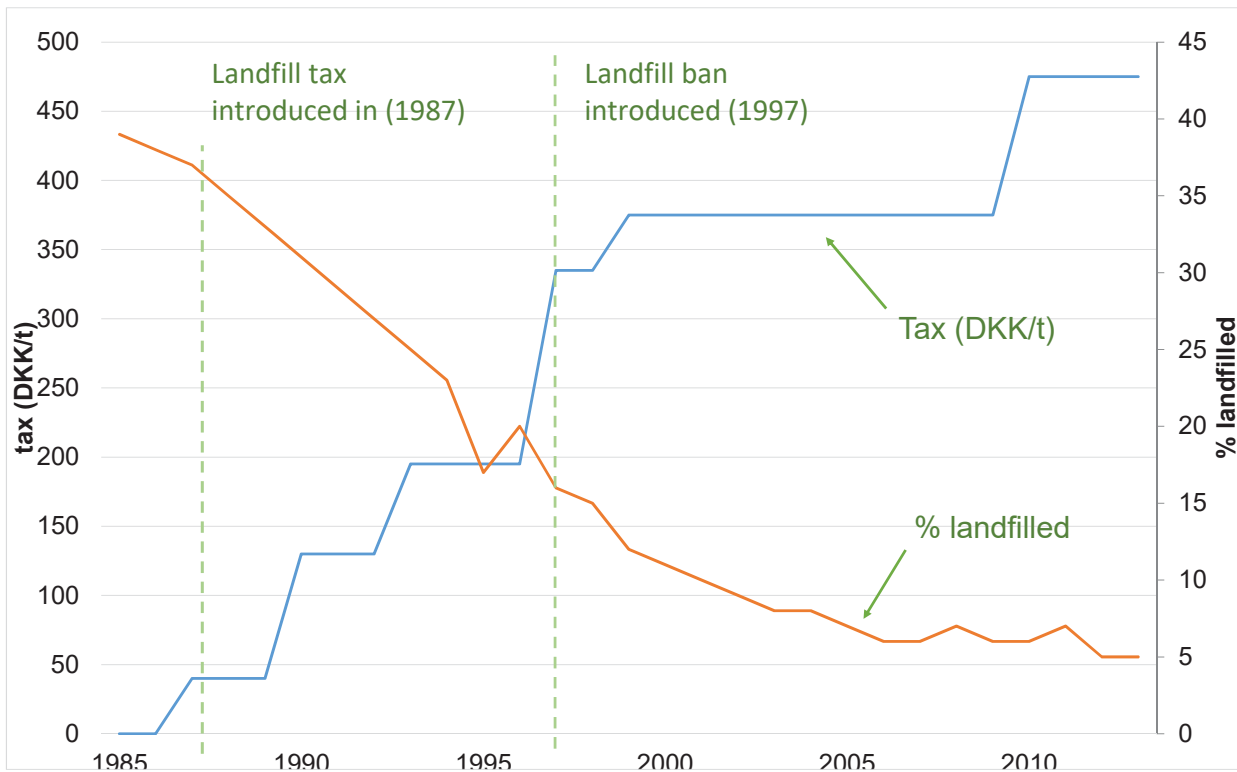
- Integrated planning of waste management in combination with **energy and district heat planning** has been practiced since 1987

Municipalities do the local planning to fulfil the national targets

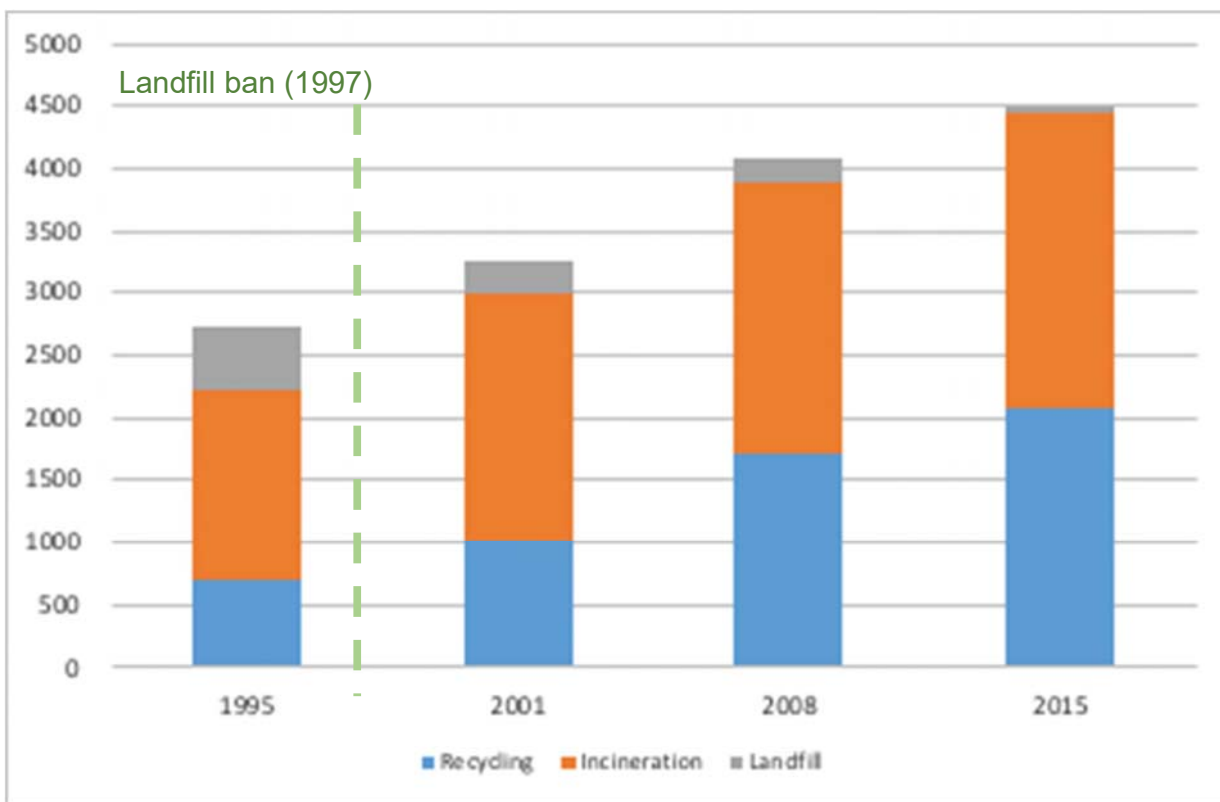
- Many municipalities have organised joint municipal companies (running incineration plants, landfills etc.)
- Recycling capacity is in many cases secured by agreements with private recycling companies or through inter-municipal companies



Amount of landfilling in relation to landfill tax



Treatment of municipal solid waste





The Danish solutions



The Danish system is based on a myriad of SME's and a few larger entities

Danish businesses can offer solutions within the entire value-chain:

- Planning and digitalisation
- Collection
- Pre-treatment for recycling
- Reuse and recycling
- Incineration with energy-recovery
- Sanitised landfilling

BUT

- 75 % are small or medium-sized enterprises
- Only few operators can deliver “complete” solutions. Most deliver components or parts to the system






Collection from households

- The Danish businesses and municipalities deliver a high level of separate collection at household level
- 60% of Danish household waste is delivered to local recycling stations in more than 50 different fractions
- 75-80% of the waste from these stations is recycled
- Increasing amounts of food waste is collected separately



Recycling solutions

- Pre-treatment solutions are very advanced, and the solutions result in clean valuable output
- Recycling solutions provide a high level of automation and high standards for occupational health and safety.
- High quality and sustainable waste management is provided by good logistics as well as technological and digital solutions for optimising collection, sorting and separation of waste

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Fundamentals of recycling

– never better than the alternative!

- The success of recycling is completely dependent on the underlying waste management system!
- To make high quality in recycled products, you need an appropriate alternative!
- Recycling therefore starts with the opposite:
Proper management of the residual waste!





Incineration of today

- Most of the 27 Danish plants are owned by municipalities or joint municipal companies
- Energy efficiency is 90 – 99 %
- 100 % of slag and aggregates are recycled
- Hazardous substances are concentrated in small amounts of fly ashes
- Accepted in the neighbourhoods!!!!

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Landfilling

- More than 90 % of landfills are publicly owned
- We only landfill waste, which is not suitable for recycling or incineration

Future priority:

Stop thinking about disposal and start thinking about landfills as **storage** for materials with a (future) resource value



What's the future?





Highlights from the future EU legislation

- Increased focus on waste prevention
- 65% recycling target for municipal waste in 2035
- 65% recycling of all packaging in 2025 and mandatory EPR
- Separate collection of bio-waste in 2023
- Separate collection of textiles in 2025
- Max of 10% landfilling by 2035

In summary

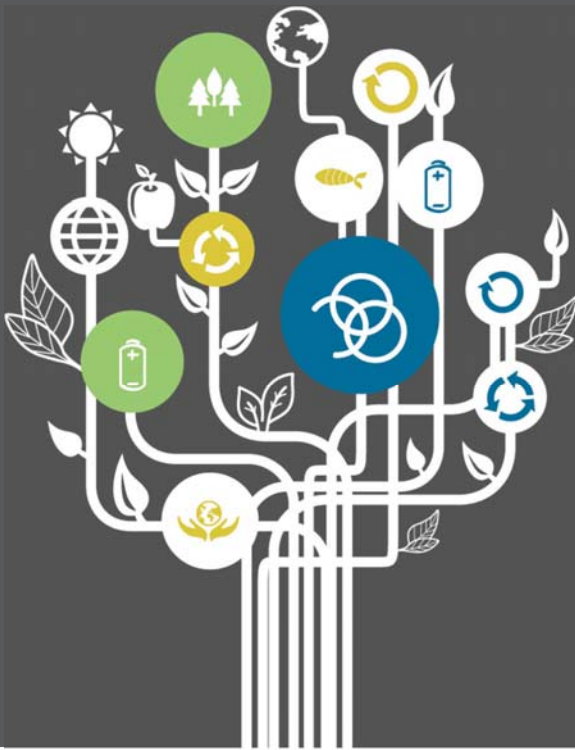
The combination of:

- national initiatives and legislation (landfill ban, waste taxes, strategies)
- sustainable municipal waste treatment logistics and treatment capacity
- an innovative private sector to develop and assist
 - has paved the road for the Danish system

The future for Denmark is circular!

– including necessary capacities for waste treatment as long as it is necessary!





QUESTIONS?

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