

Audebo Miljøcenter
- ARGO

AIKAN®

POWERED BY SOLUM

CIRCULAR ECONOMY SINCE 1986

Development Director Morten E. Gyllenborg // September 25th.
2019

SUSTAINABLE DEVELOPMENT GOALS





Solum

The Solum Group was founded in 1986, thus having more than 30 years of experience in recycling and circular economies. Today, almost all types of waste are treated, except toxic waste. Circular economy and sustainability is, and always has been, the core DNA of the company.

The group is Denmark's largest supplier of compost, growth media and grass nurturing products. We create value by integrating waste handling, bioenergy production, nutrient recovery and production as well as counselling regarding soil improvement products and sustainability.

The group's activity is dispersed in all of Denmark, several of the Nordic countries, and in projects around the globe.





Aikan®

In the beginning of the millennium, the first Aikan® installation was created. Aikan® is a combined waste-to-X technology for food waste and other organic material. The technology is specifically designed to handle complex dry waste streams but can also handle wet organic material. Never the less, the technology is known as Dry Anerobic Digestion. The Danish installation near Copenhagen is 100% owned by Solum A/S.

Aikan® is waste handling, recirculation, climate protection and bioenergy without the need of mowing large amounts of water. Hence, the amount of transport pr. produce is much smaller than traditionally wet-based technologies. **As such, Aikan® yields larger CO2-equivalent reductions than wet digestion technologies as well as creating a cleaner fertilizer.**



Iceland – Next generation recirculation by Aikan®

In the fall of 2018, the construction of the so far largest delivery of Aikan® technology for processing and recirculation of food waste and similar into energy and organic fertilizer commenced. The facility is created in a cooperation between several municipalities in the capital area in and around Reykjavik in Iceland, and will handle all food waste etc. from the partners, **covering close to three quarters of the entire country's municipal food waste resource.**

The entire process in Iceland is constructed under solid roofing, and the biogas is cleaned and upgraded to natural gas quality (known as RNG or CBG) and is used for transportation. The facility is due for operation in the beginning

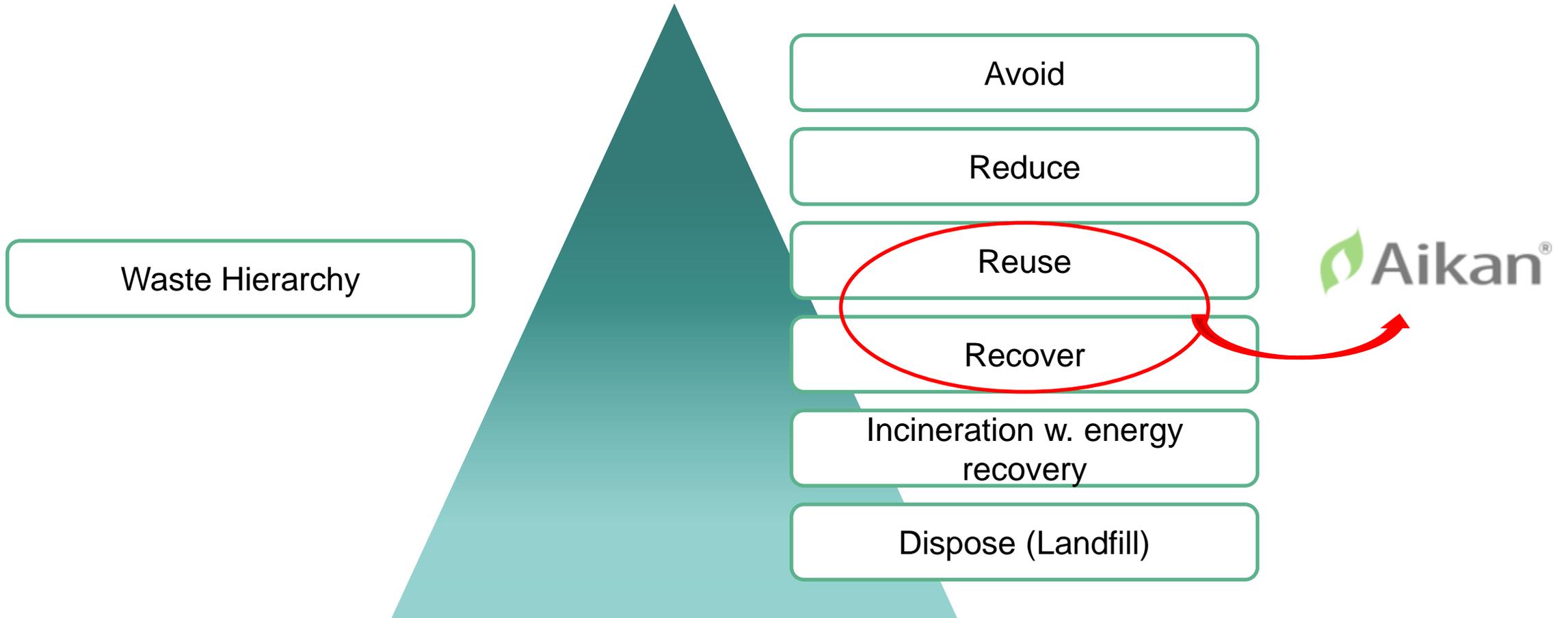


Aikan® unique features

The Aikan® technology stands out as a in several ways:

- The fundamental idea has always been to keep it simple. As such, **the running cost of an Aikan® installation can be extremely low**, albeit with more manual labour.
- **Aikan® is extremely durable and robust to impurities.** Almost any sort of dry waste stream can be handled; mixed waste, food waste, crop residues, biodegradable packaging etc. If it is stackable and contains organic matter, it can be treated by Aikan®, **as impurities are removed after the decomposition.**
- **High amount of product** (energy and fertilizer) compared to the amount of input, and a **high quality, clean fertilizer.**

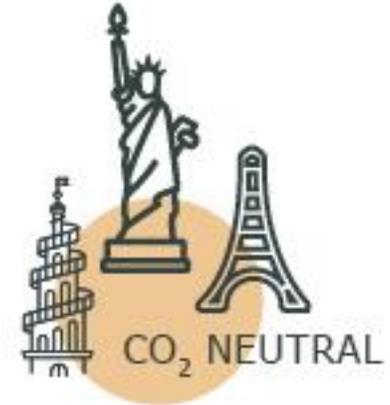
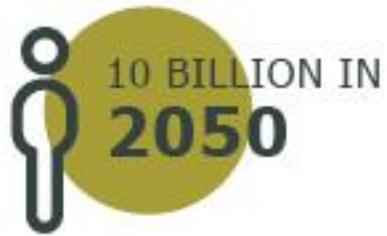
Aikan leaps upwards in the Waste Hierarchy



AIKAN **CIRCULAR** **CITY CONCEPT**

**City-integrated biogas and
composting plant of tomorrow**

Sustainable Cities



Core Resources

Core Products

Waste resource



Biogas resource



Compost resource

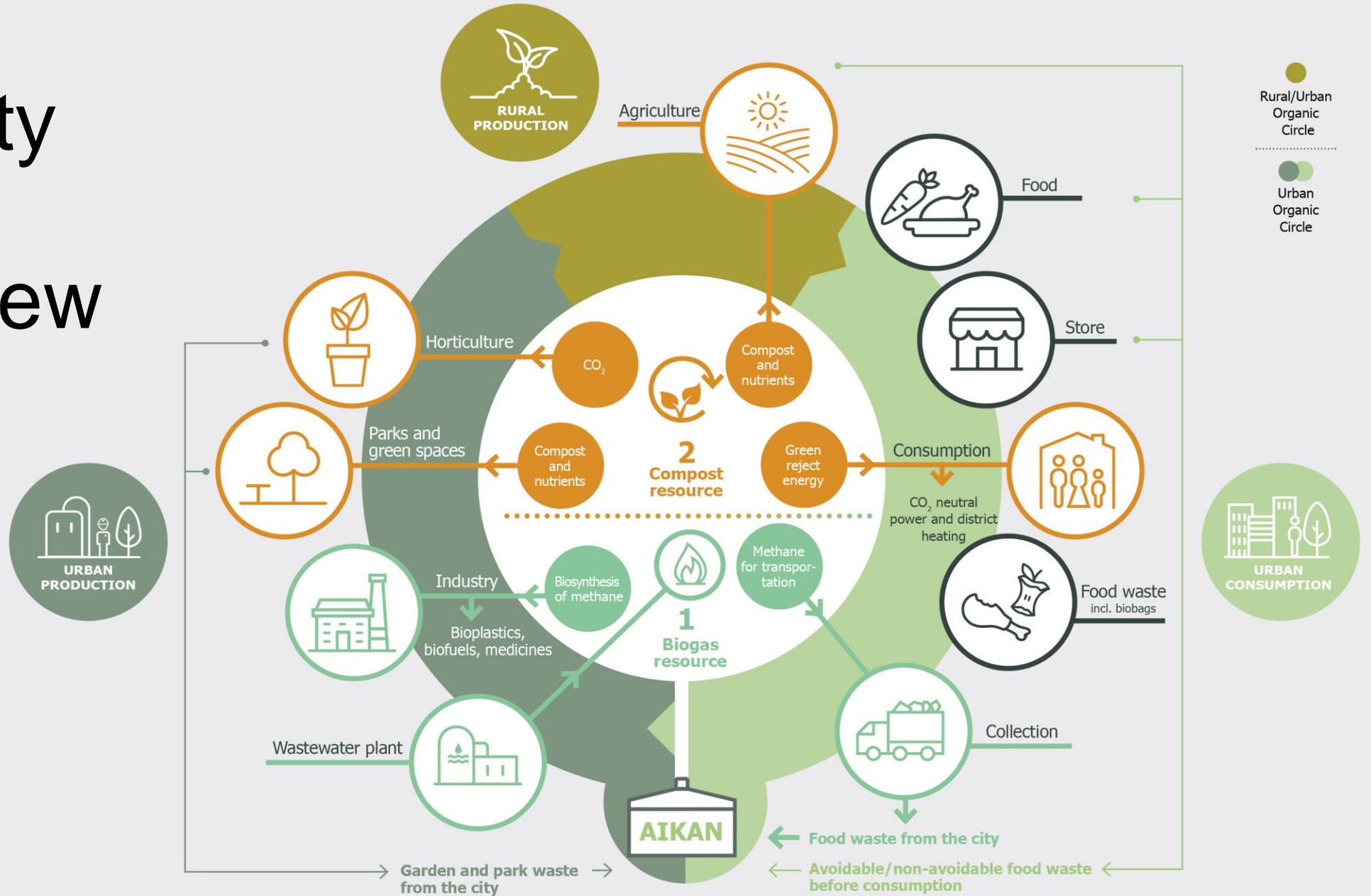


CO2 resource

Water resource



Full City Circle Overview



The Aikan® Technology

Robust and flexible

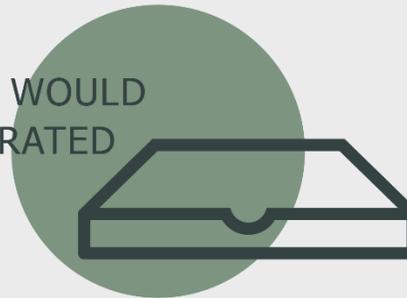


BIOPLASTIC BAGS,
WHICH ARE SEGREGATED
IN OTHER PLANTS



WASTE PAPER FROM THE
KITCHEN, SUCH AS COFFEE
FILTERS, TEA BAGS, AND
TISSUE PAPER

PIZZA BOXES, WHICH WOULD
OTHERWISE BE INCINERATED

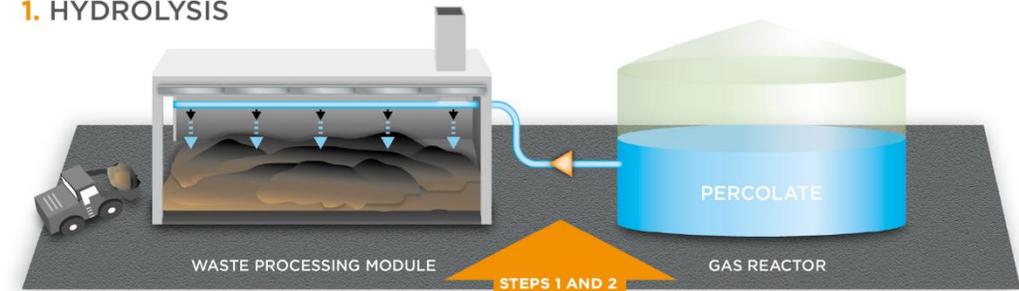


POTTED PLANTS
AND MULCH

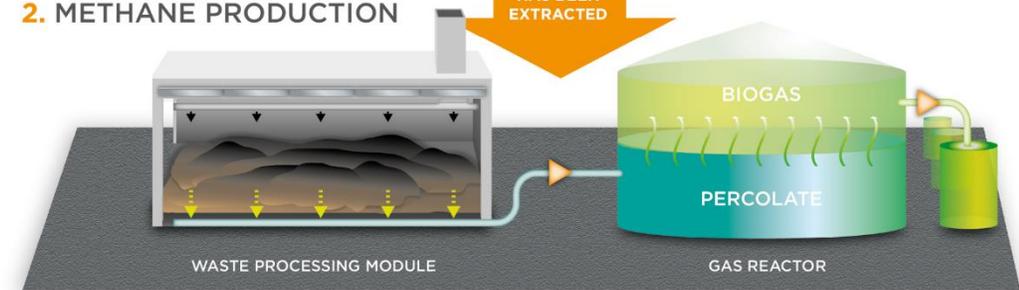


The Aikan 3-step process

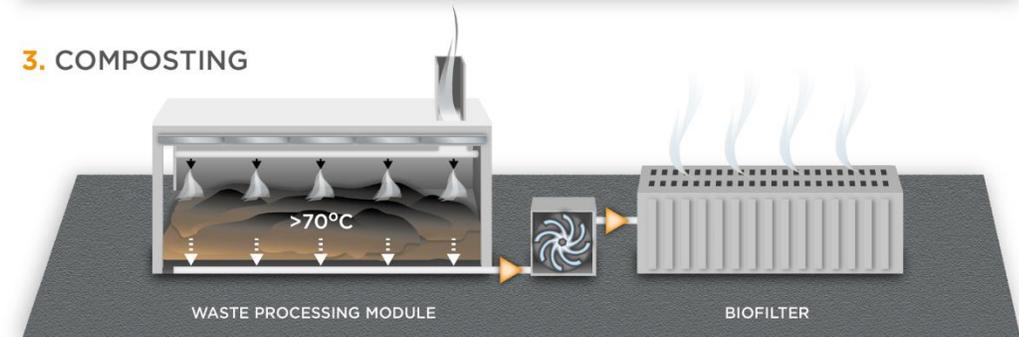
1. HYDROLYSIS



2. METHANE PRODUCTION



3. COMPOSTING



Fundamentally – ask the simple questions

For instance:

- Why do we use something durable for short term, single use?
- Why should or shouldn't we use resources already at hand?

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