

REnescience

MORE ENERGY, LESS CO₂ AND MORE RAW MATERIAL

The objective of the REnescience project is to upgrade household waste for optimum utilisation of its content of energy and minerals – with the smallest impact possible on the environment. As part of the project a pilot plant has been built at Amagerforbrænding – Waste-to-Energy Plant. The first results prove that this is both technically and financially feasible.

When household waste is processed, minerals such as glass, iron and other metals can be extracted and recycled and fertilisers are preserved and can be utilised in the fields. This is a great advantage to the environment. And by utilising the energy content of the waste, we can reduce the use of the fossil fuels; coal, gas and oil.

REnescience is revolutionary

- The input is unsorted household waste, which the REnescience process separates into organic and inorganic fractions, which each are utilised to the environmental optimum.
- The output will be energy in the form of biogas, bioethanol, petrol, power and heat – all in accordance with market demand – and the products metal and glass.

Waste refinery

Technology potential

- Conversion of household waste into products, which can be used in a number of processes; for instance, production of biogas or co-firing in existing power plants.
- Recycling of metals and glass in the household waste.
- Recycling of fertilisers.

Technological status

- A pilot plant for continuous treatment of 800kg waste per hour has been developed.
- The plant will be commissioned in December 2009.
- Patent has been taken out for equipment and processes.

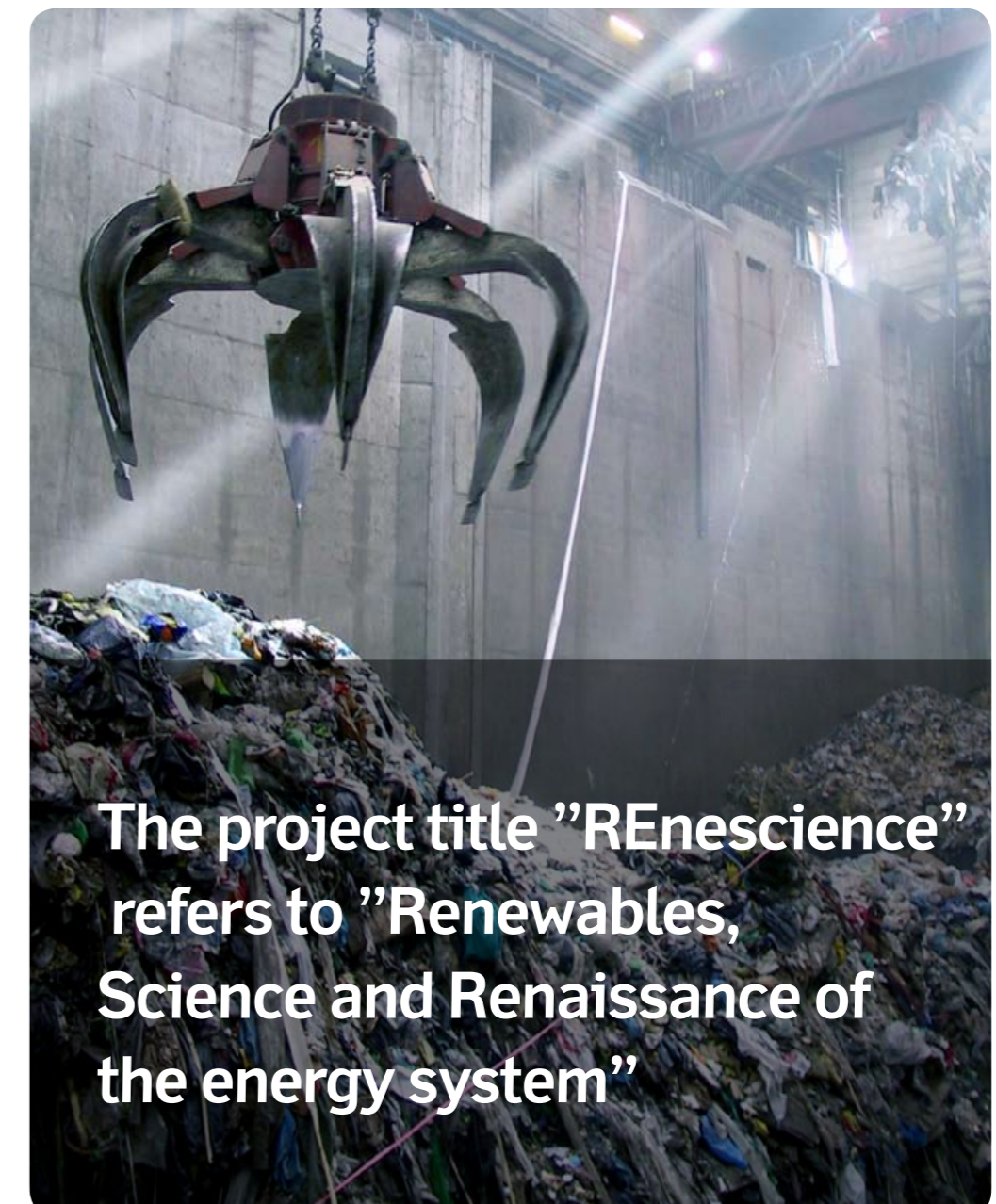
Business concept

- Maturing and upscaling of the technology
- Design, construction and operation of waste refineries.
- Worldwide license for equipment and processes.

REnescience has enormous advantages

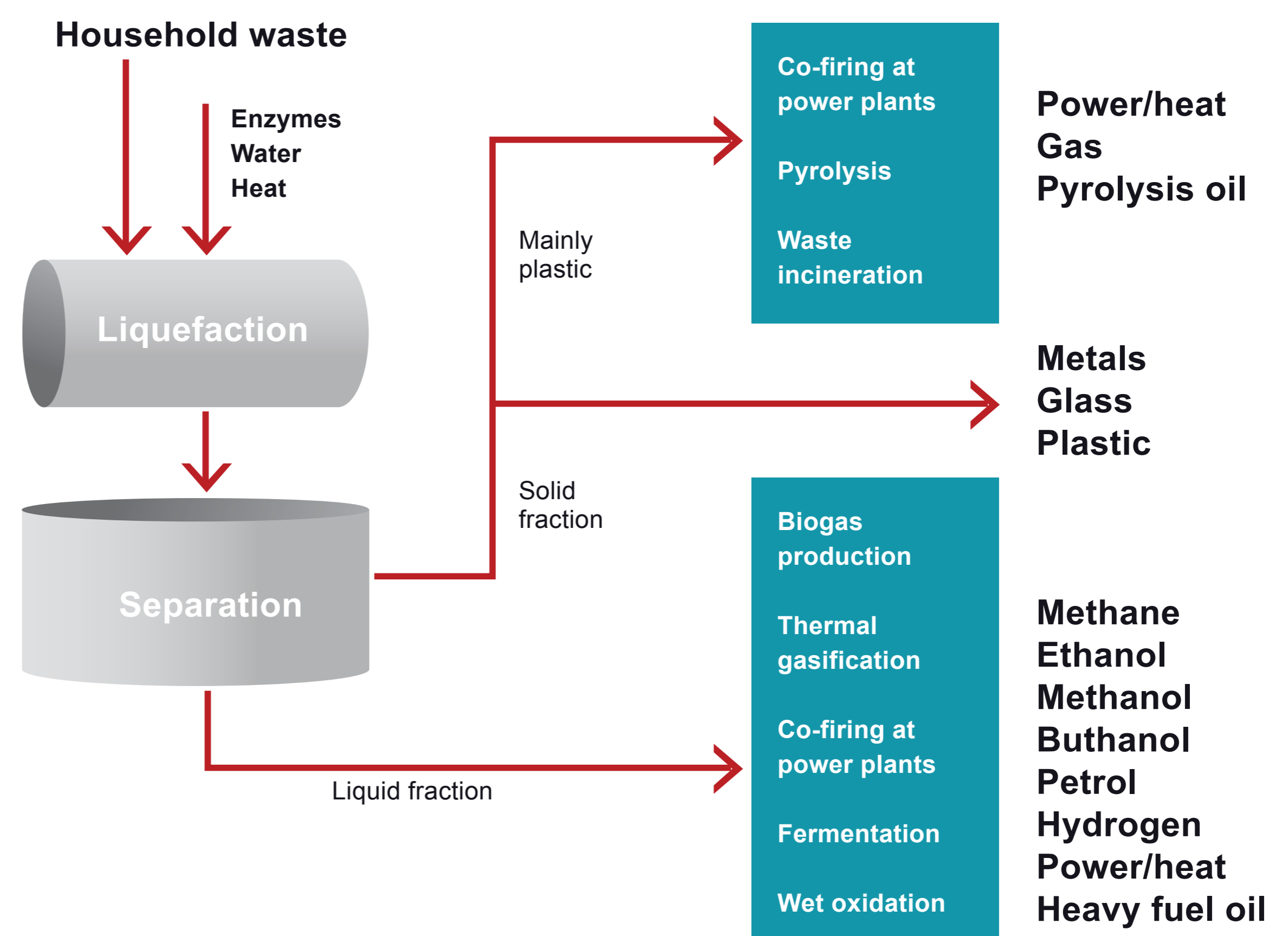
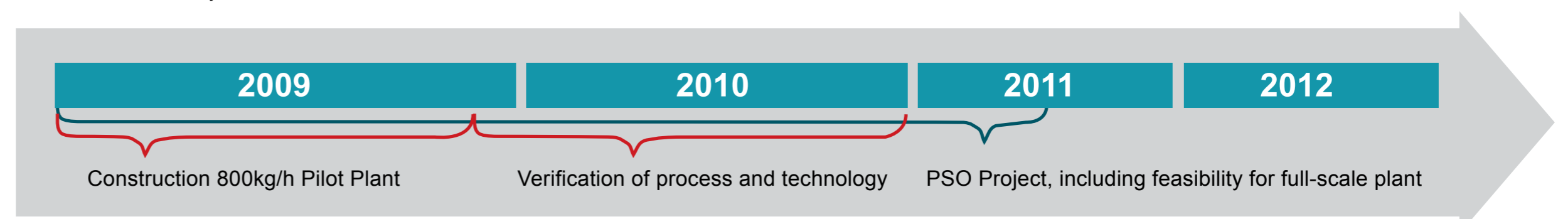
REnescience is flexible in terms of input and output and may in the future become the starting point for production of power, heat or fuel for the transport sector – according to what will be needed in the very fluctuating energy system of the future.

REnescience is the way to improved sorting of waste, more recycling and a cleaner combustion process with extremely high power efficiencies – 47% against approx 25% for conventional combustion. This will have great significance in countries without district heating.



The project title "REnescience" refers to "Renewables, Science and Renaissance of the energy system"

Road Map



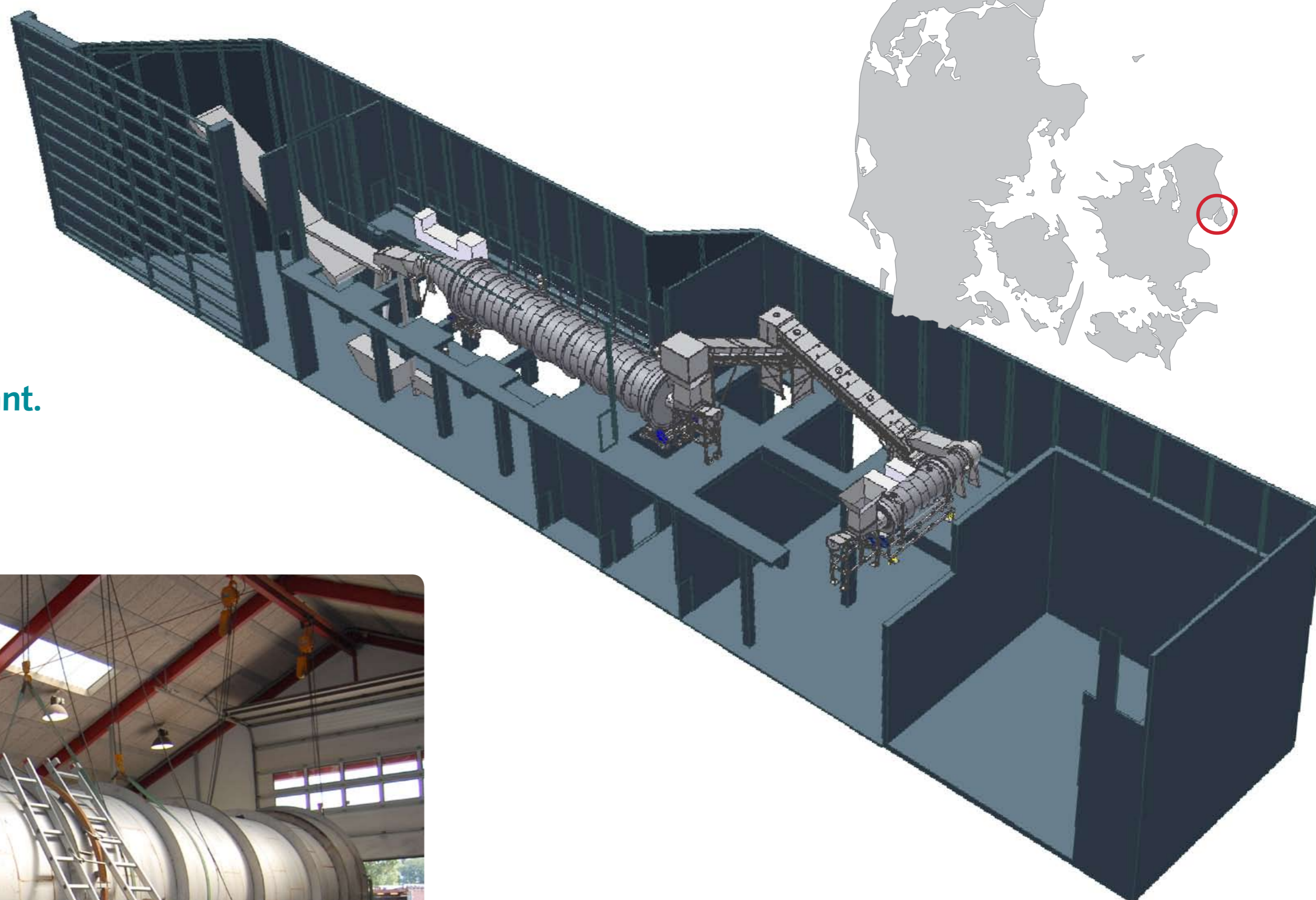
PILOT PLANT

ENZYME TREATMENT OF UNSORTED HOUSEHOLD WASTE

A pilot plant for continuous treatment of 800kg/h of waste has been developed.

The plant will be commissioned in December 2009.

The plant is located at the Amagerforbrænding – Waste-to-Energy Plant.



The enzyme reactor is 16m long and has a diameter of 2.5m



In the boiling reactor the waste is prepared for enzyme addition

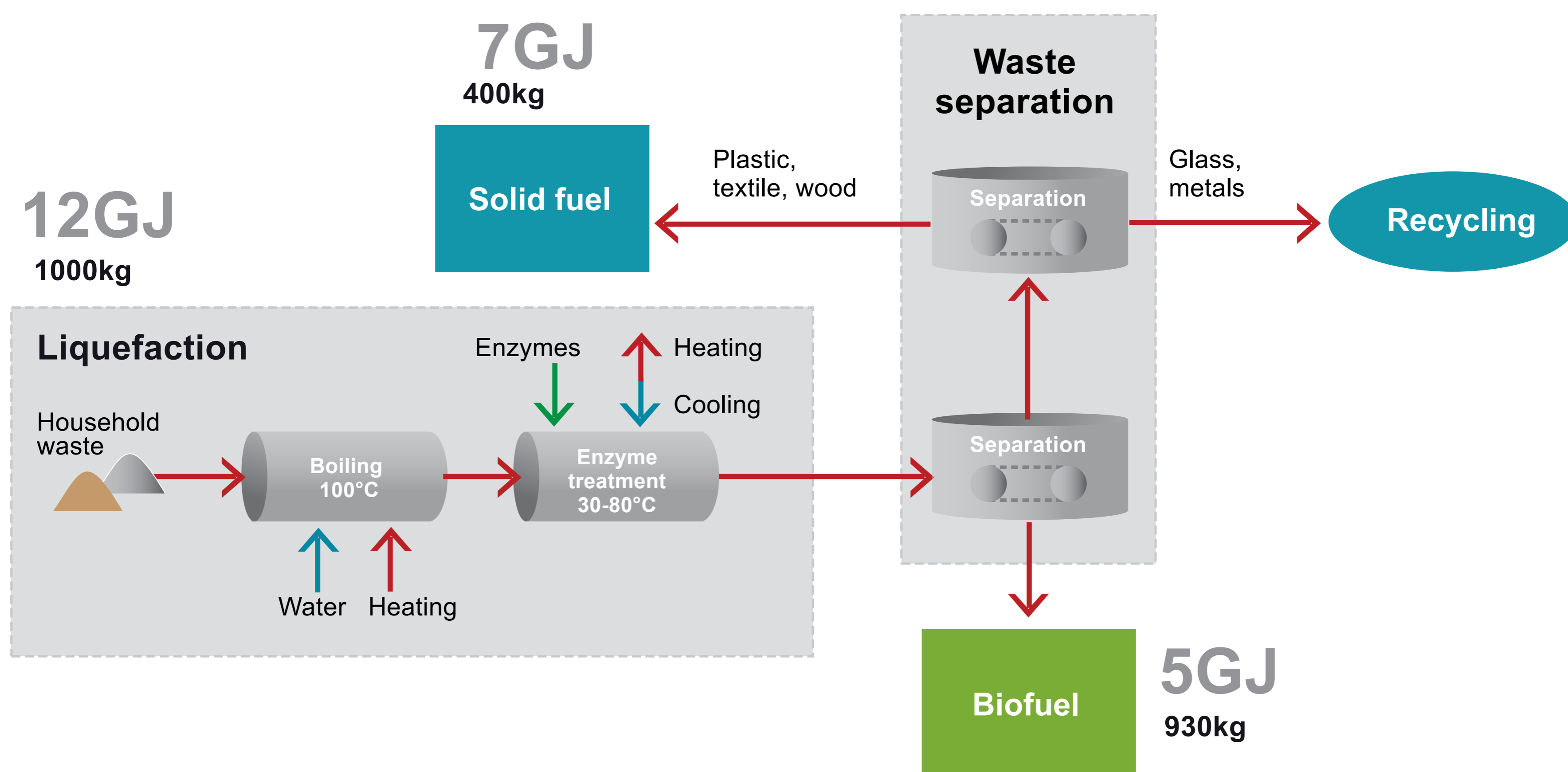


Vibrating separator for separation of the liquid and the solid fractions

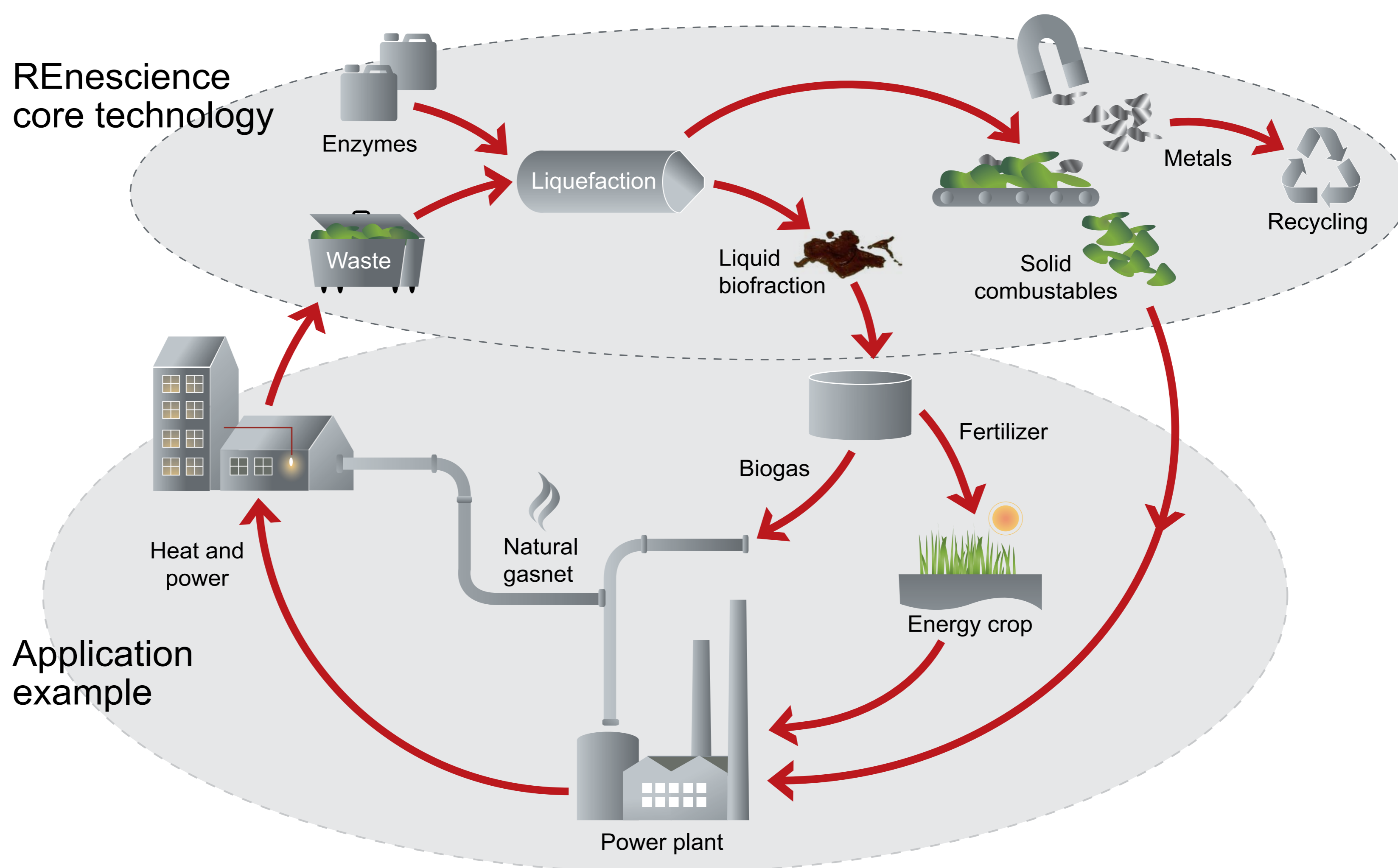


The plant can treat waste coming directly from the refuse collection lorry

WASTE REFINERY PROCESS



MSW IN A SUSTAINABLE CYCLE



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