

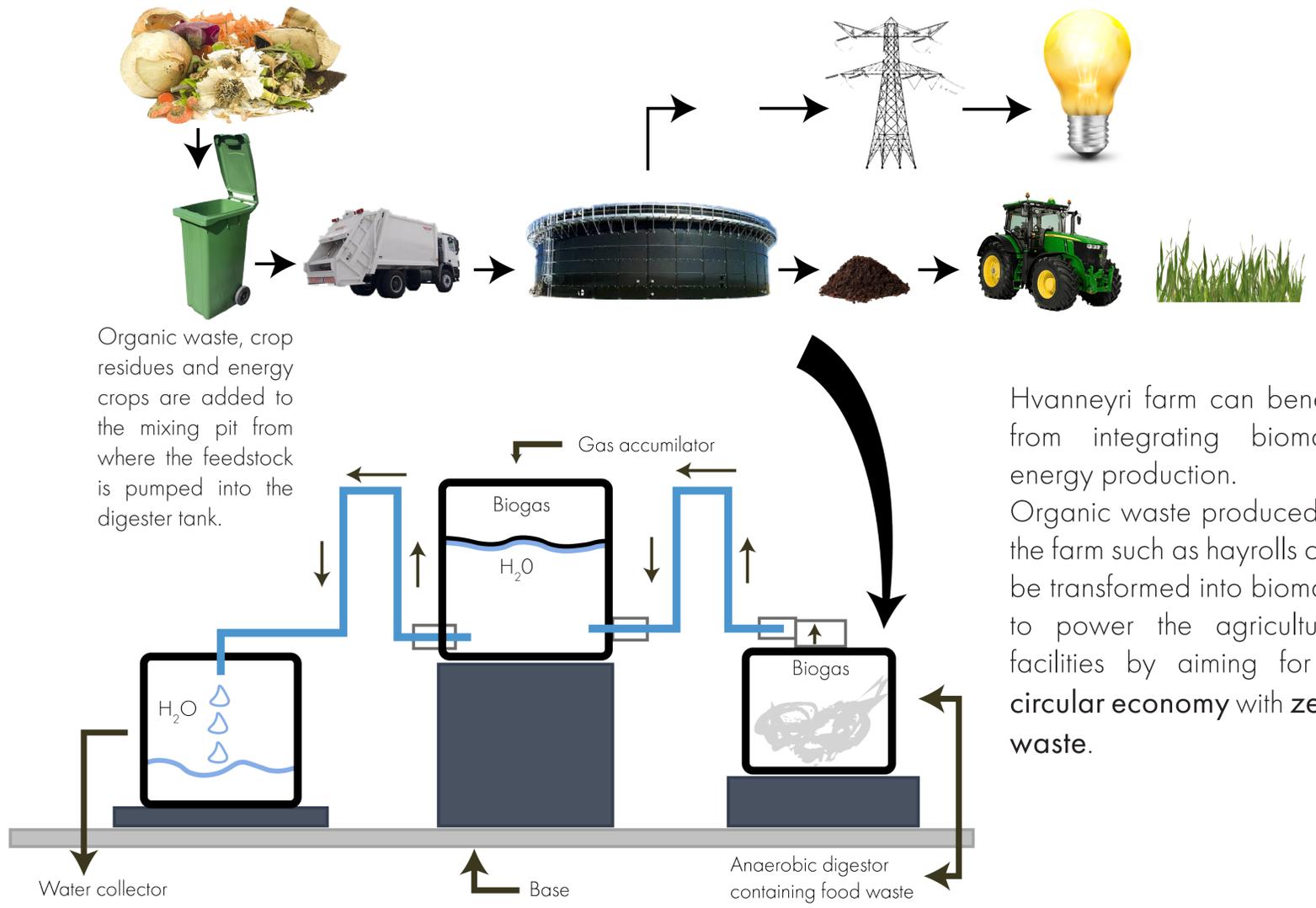
BIOMASS ENERGY PRODUCTION

Analysis

THE CYCLE OF ANAEROBIC DIGESTION

WHAT IS BIOMASS

Biomass is an organic material that comes from a **living organism**, such as plants and animals. The most common biomass materials that are used to **form energy** are **plants, wood, and waste**.



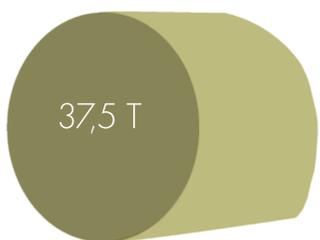
Hvanneyri farm can benefit from integrating biomass energy production. Organic waste produced in the farm such as hayrolls can be transformed into biomass to power the agricultural facilities by aiming for a **circular economy with zero waste**.

KEY PLAN

Amount of organic waste collected every year from Borgarbyggð



ORGANIC WASTE

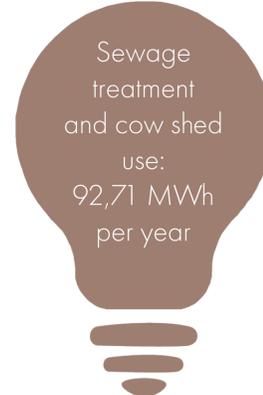
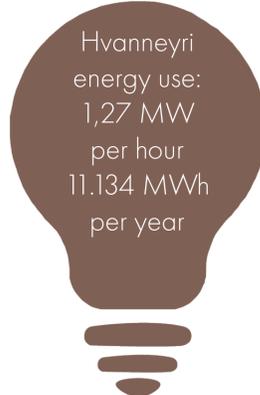


37,5 tonnes of hay rolls are collected yearly

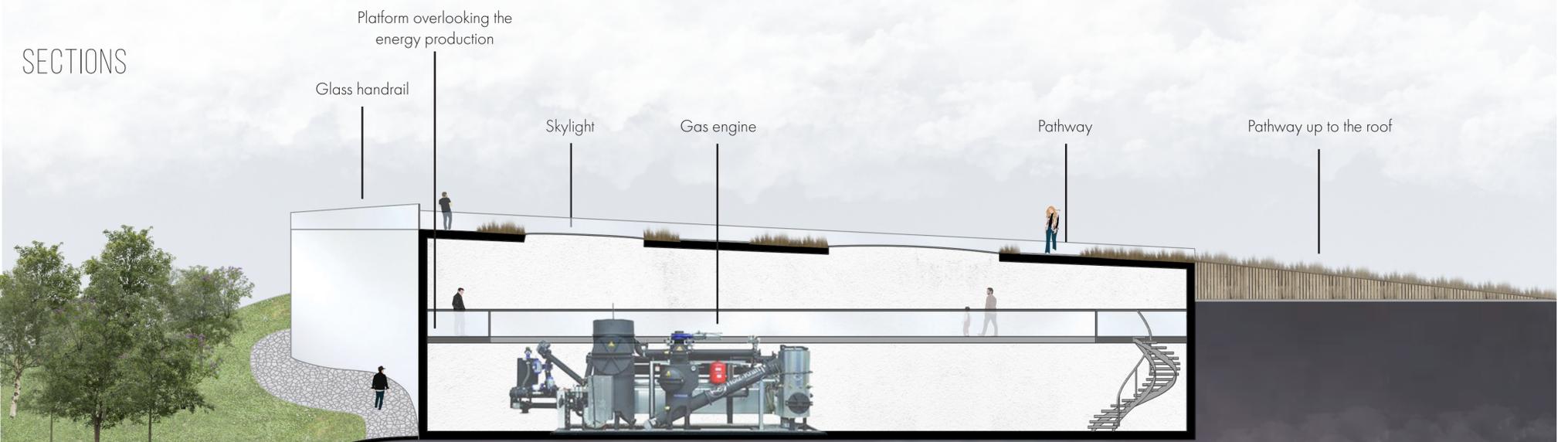


130 T of organic waste is collected yearly from Borgarbyggð

ENERGY USAGE



SECTIONS



Section B - B¹
1:200

PERSPECTIVE



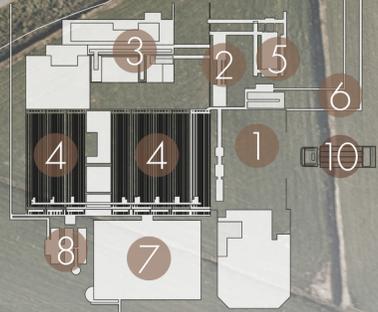


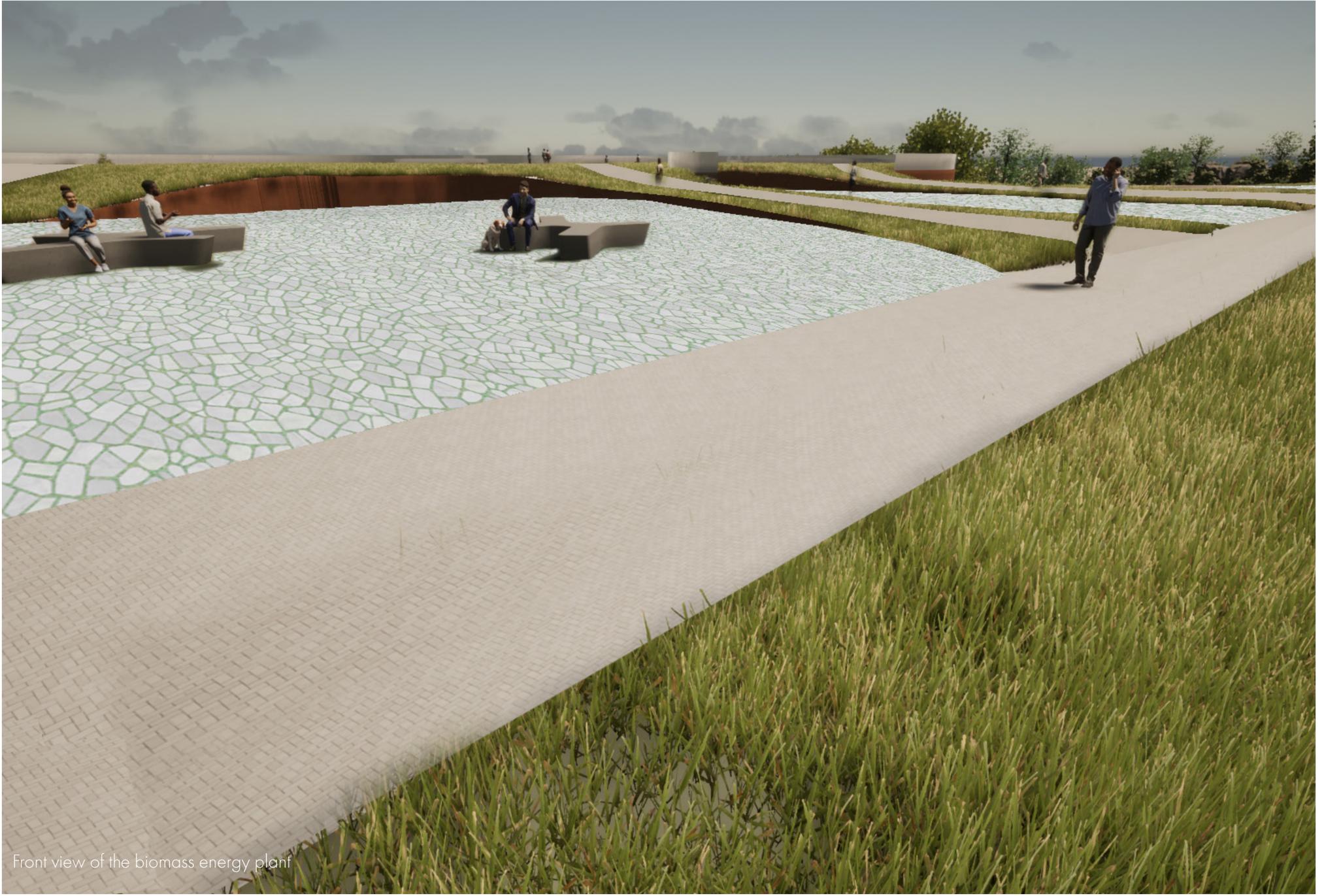
SCALE:
1:1000

HOW THE PLANT PROCESSES THE ORGANIC MATERIAL

- 1 Reception area
The organic materials are delivered here before being moved on for processing
- 2 Organic material processing area
The organic material is prepared for further treatment here
- 3 Digester
This is where the biogas is produced
- 4 Composting tunnels
Low-energy organic materials and the moist, fully fermented digestate from the digester are placed in these tunnels – for composting and drying
- 5 Compost processing area
The decomposed material is screened (three-stage process) and fed through an air separator to produce high quality compost
- 6 Storage hall
The storage hall is used as a temporary store for the quality-assured compost products
- 7 Biofilter
This system biologically cleans all waste air
- 8 CHP
The biogas is transformed into electricity in the combined heat and power units (CHP).
- 9 Biogas store
This is for storing any surplus biogas which can be used to generate electricity later

- Grass roof
- Office
- Platform overlooking the biomass power plant





Front view of the biomass energy plant



Inside the biomass park