



**BETTER
THAN
AVERAGE**



LABIO OY A RELIABLE AND RESPONSIBLE PARTNER IN WASTE MANAGEMENT

Labio Oy offers biowaste and sewage sludge treatment services to the industry, shops and wholesalers, waste management operators and communities. We produce renewable biogas from waste at our production and processing plant in Kujala, Lahti. The cornerstones of our operations are reliability, environmental friendliness, operational reliability and customer orientation. Welcome to get to know our processes, services and products!

LABIO OY IN FIGURES

- established in 2003
- owners: Lahti Aqua Oy 60%, Salpakierto Oy 40%
- employs 15 professionals
- waste treatment capacity 80,000 tons per year
- the Labio process has been functioning without interruption since 2005, without a single shutdown day!

The Kujala partstream digestion plant is one of the largest production and refining plants for biogas in Finland.

Read more www.salpakierto.fi/in-english/kujala-waste-centre



WIDE RANGE OF SERVICES

Our versatile equipment enables the processing of even the most challenging fractions efficiently and in an environmentally friendly way.

The materials we receive include, for example, grain cleaning fractions, all kinds of wastage, slaughter waste and products to be destroyed under customs control.

The plant is able to process class 3 animal by-products, manure from farm animals (class 2) and digestive tract content (class 2).

Our service allows reception 24 hours a day, 7 days a week.



Commercial and industrial biowaste can also be delivered in packagings that are separated and delivered for energy recovery.



**SKILLED EMPLOYEES
ARE A COMPANY'S
GREATEST ASSET**



LAHTI | HELSINKI | PORI | KOUVOLA | TAMPERE | OULU | SEINÄJOKI | VAASA | KOTKA | TURKU

AMIKO.FI/EN
Work with passion

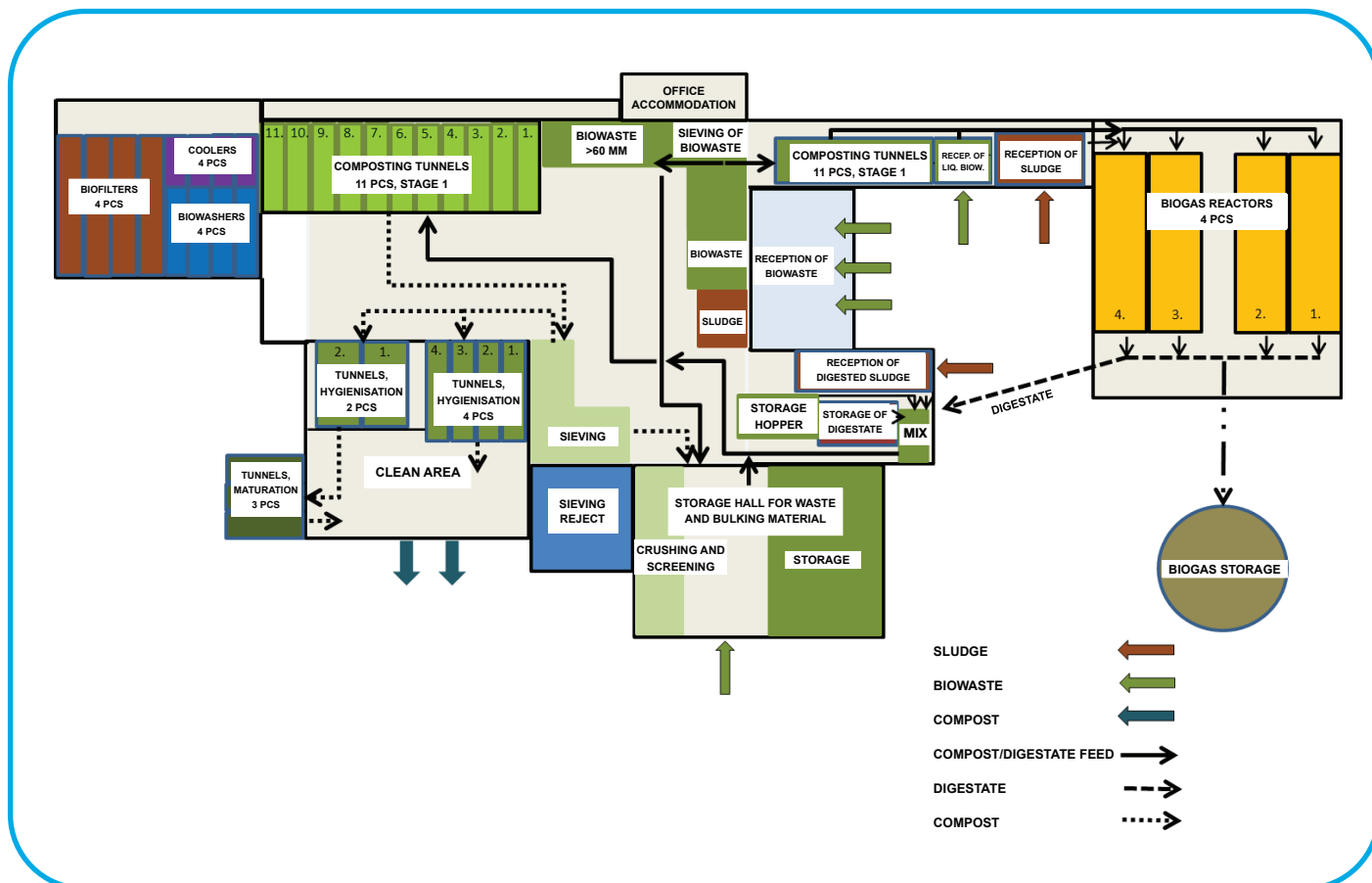
WASTE TREATMENT PROCESS

From the incoming waste, our plant produces annually approximately 22,000 tons of compost, which is delivered in its entirety to downstream users. We handle separately collected biowaste, commercial and industrial biowaste as well as side streams, digested and undigested sewage sludge, green biomass and wood chips used as bulking material for composting. We treat biowaste and sewage sludge according to strict environmental criteria.

1. Biowaste and sludges are weighed at the weigh station of Salpakierto Oy.
2. The waste is received at the facility; several possible discharge points are reserved for each waste fraction.
3. The biowaste is crushed and separated with a screw screen into two fractions: over and under 60 mm. The of less than 60 mm fraction is routed through an interim storage to the biogas plant feed.
4. Undigested sludges are discharged into a hopper equipped with screw conveyors, from where they are fed for digestion to the dry digestion process. Undigested sewage sludge can also be directed directly to composting.
5. The duration of the dry digestion process is 30 to 36 days at 42 degrees. The digestate is then pumped to a composting plant.
6. The over 60 mm biowaste mixture, digestate and digested sewage sludge are mixed together with the bulking agent to form a composting feed mixture which is fed to stage I composting tunnels for composting.
7. After stage I of composting step (1 week), the compost is sieved with a 12 mm sifter. At the same time, plastic and other contaminants are removed. Screen underflow of less than 12 mm is transferred for hygienisation to stage II composting tunnels, where the temperature of the compost mass is raised above 70 °C for at least one hour. The overflow is reused as bulking agent for composting.
8. Hygienized compost can be matured in separate maturation tunnels, after which the compost mass is transferred to outdoor piles for 4-12 months. In order to ensure the hygienic quality of the compost mass, the plant is divided into the so-called dirty area and clean area.
9. Our facility has buffer capacity for waste storage for several days.

Cleaning of the odorous gases removed from the plant takes place in a three-stage process. The odorous gases to be treated are first fed to a cooler. The cooled gas is then passed to a biowasher and then through a biofilter to the outside air.





JN-HYDRO OY

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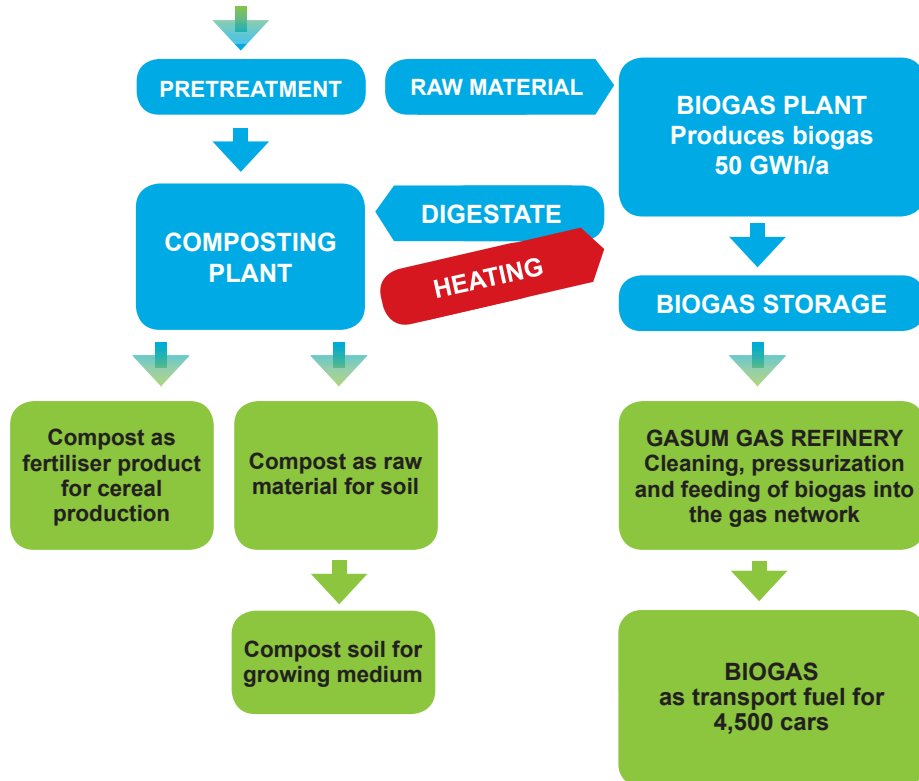
Vuokrataan

**PIENKUORMAAJAT, MINIKAIVURIT,
PERÄKÄRRYT, VAIHTOLAVAT YMS.**

www.volttihuolto.fi



RAW MATERIALS:
biowaste and sewage sludge



PÄIJÄT-HÄME WASTE
MANAGEMENT
IS NOW
SALPAKIERTO!

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FI-15160 Lahti, Finland
salpakierto.fi

Customer service:
+358 3 871 1710
open Mon-Fri 9am-3pm



**SALPA
KIERTO**

ENVIRONMENTALLY FRIENDLY PRODUCTS

Owing to the combined gasification and composting process, we are able to utilize a staggering 98% of the material delivered as raw material. The end products end up being 100% utilized as either compost products or renewable energy.

BIOGAS - PURELY DOMESTIC ENERGY

Biogas produced from domestic and renewable raw materials is the lowest-emission and cheapest biofuel for transport. We produce up to 50 GWh of biogas annually, which is equivalent to the annual fuel consumption of 4,500 cars. We deliver the produced biogas for processing to the Gasum refinery, which is responsible for the distribution and sale of the Swan-labelled gas.

Read more about the benefits of biogas at

www.labio.fi/en/products/biogas

GROWTH POWER FROM COMPOST PRODUCTS

Our high-quality compost products include fresh compost product called Kujala Cultivation Compost, and one called Kujala soil improvement compost, as well as, seasonally, Kujala bio-based organic fertilizer. The compost products are delivered through our partner network for utilization, for example in agriculture or the production of growth substrates. Ask about the product fiches and availability of composts: valvomo@labio.fi

Read more about our products at

www.labio.fi/en/products/compost-products





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**reliable
partner**

Labio Oy has a plant approval in accordance with the Animal By-product Act (EC) 1069/2009 and the Fertilizer Product Act 539/2006. The approval number of the plant is FIC3-002 / 762/2004. Labio Oy has environmental permit no. 86/2014/1, dno. ESAVI/179/04.08/2012 for the treatment of all types of biowaste materials and sludges on the market.



4 DRY DIGESTERS



BIOGAS UPGRADING

**Progressive and Innovative
Waste Treatment Solutions**



HSY ÄMMÄSUO
– Pyrolysis Pilot Plant



RAB was established in 1994 and is an independent and internationally active consulting and design company. We have a wide range of experience in all aspects of waste management, with a history of wide-ranging demands from different projects in Europe and worldwide.

RAB's major goal is to provide progressive, innovative and trendsetting engineering solutions for environmental technologies, by applying our expert's knowledge and experience.

Our main fields of activities are planning and design of mechanical and biological waste treatment plants, biogas-plants, biogas upgrading, thermal waste treatment processes, pyrolysis and various other kinds of recycling processes, waste-logistics, exhaust air filter systems, consulting for operation of waste treatment plants and operation optimizing and innovative R & D projects.

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