

WASTE MANAGEMENT FOOD PRODUCTION



VACUUM CONVEYING
WASTE TO ENERGY
WASTE WATER



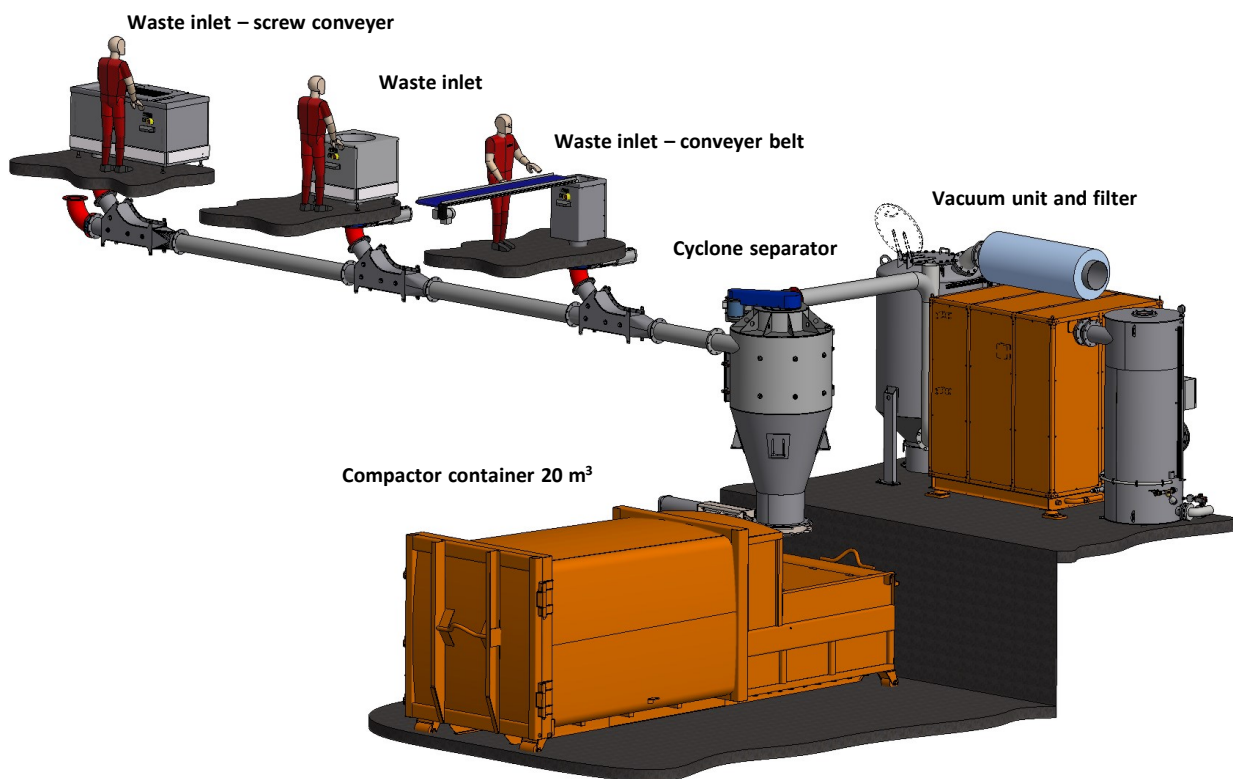
ELKUCH GROUP



- Automatic
- Easy to extend
- Hygienic
- Efficient
- Economical
- Ergonomic

Improving your business with vacuum conveying

Elkuch Waste Solutions provides waste & by-product handling solutions for a wide range of businesses globally. With the daily capacity of 100 tons or more, this system has no limits and offers a reliable solution for fish processing plants, abattoirs, poultry processing plants, vegetable processing plants, professional kitchens and other industries.



Improved logistics and profitability, lower processing costs.

No more need to move waste and by-products through the production area in bins. No more load peaks, as the vacuum system feeds material in even batches, leaving the area free of accumulating waste and by-products.

Improved hygiene. The waste is instantly removed from the working area where it is generated.

Prevents cross contamination. No cross contamination between clean and dirty area. High hygiene solutions available for edible products.

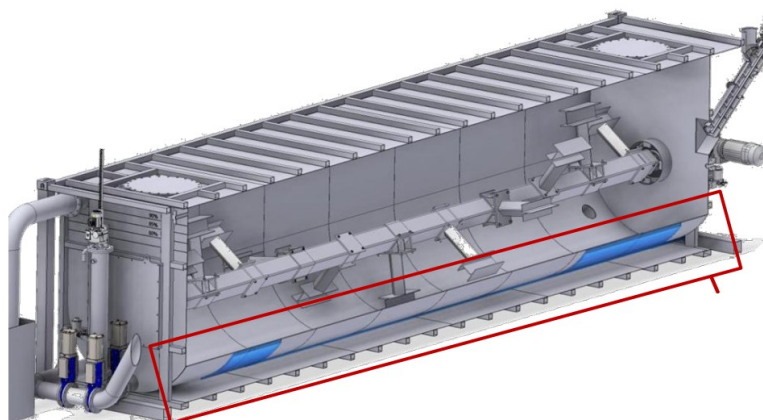
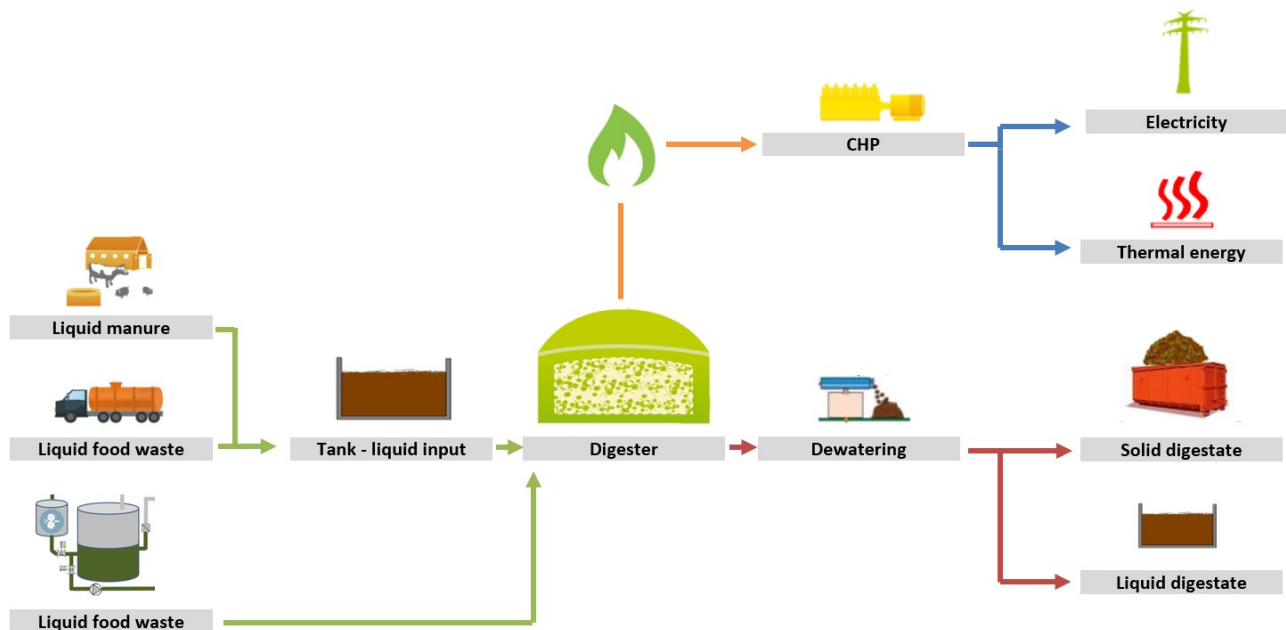
Excellent ergonomics and working safety. The waste inlets can be located where the work is carried out, reducing the need for operatives to lift or stretch out for anything.



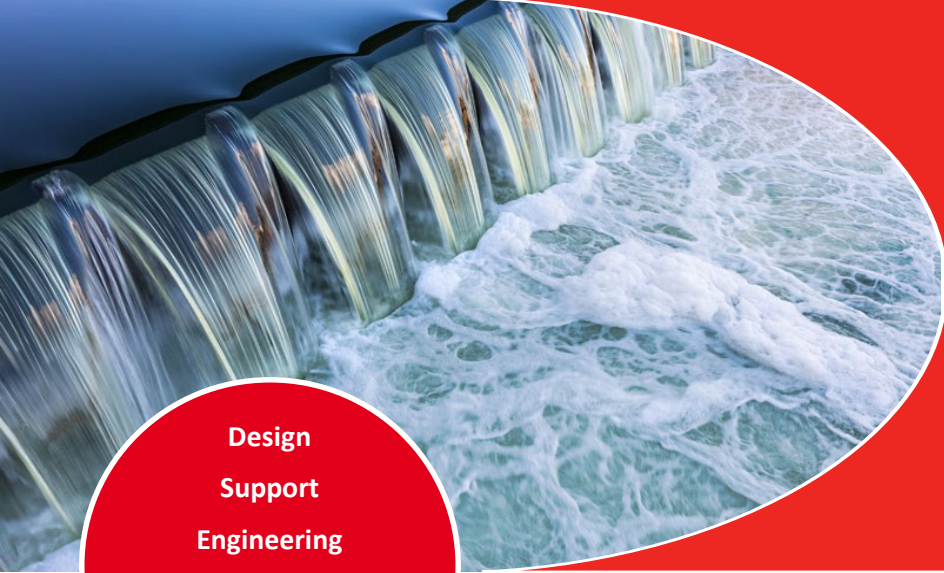
Waste to Energy

Use the potential of organic waste

Organic waste harbours great potential for energy and thermal recovery. Elkuch Waste Solutions and our selected partners take this waste and treat it, returning clean energy into your business or society and restoring other valuable materials to the ecological cycle. From your idea to build a biogas plant up to the realization of it you will have a competent partner with us and our cooperating companies.



Small scale container digester. In cycles the organic waste can be fed into the special designed high solids TTV digester. For smaller amounts of difficult materials, this solution provides efficient and robust anaerobic conversion into bio gas. The technology runs 24/7, automatically and maintenance free. An annually output of 130'000 m³ of biogas which can be produced out of 2 tons from organic waste and transformed into heat and power gives great added value to food productions. Additionally, solid and liquid digestate can be used as natural fertilizer containing high amounts of nutrients enhancing growth of crops.

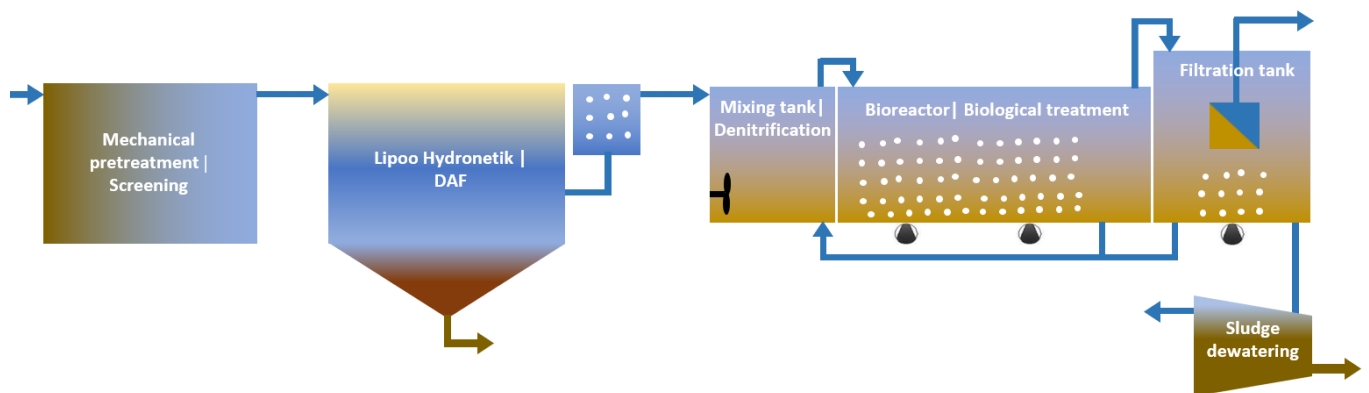


Waste water treatment

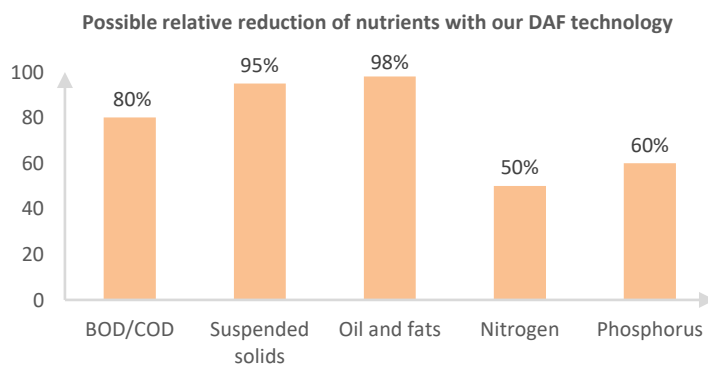
- Design
- Support
- Engineering
- Manufacturing
- Assembly
- Maintenance

A better world with clear water

Waste water from the food production industry is usually characterized by high loads of COD, BOD5, fat and solids. These parameters decisively determine the amount of waste water fees and heavy polluter surcharges, which are expected to increase even further in the coming years. The aim must therefore be to reduce and treat the waste water as well as possible on site in order to meet the lowest possible loads, or even meet the direct discharge criteria. Elkuch has developed a specific concept to solve any wastewater problem for the food production industry.



Screening - DAF - MBR. The wastewater from the production area is usually collected in a collection shaft. From there, the wastewater is pumped over to the screening plant, removing solids like hair, fruit pieces, rice, packaging material and fine broken glass. The mechanically pre-treated wastewater is then fed to our DAF technology. It can be operated with or without chemical stage, depending on the requirements. The chemical storage tanks, the flocculant preparation station, as well as dosing systems can also be supplied by Elkuch. Depending on the requirements of the waste water treatment plant, the waste water can now be



fed into the public waste water treatment plant. With the membrane activated sludge process, Elkuch also offers a compact and efficient treatment stage. The wastewater is biologically treated and separated from the activated sludge by means of an ultrafiltration membrane, so that direct discharge quality can be achieved without any problems. The flotage sludge mixture can be dewatered to a dry matter content of up to 35 % and the volume or weight of the flotage sludge is greatly reduced. The disposal costs are thus decisively minimized.



Waste water
treatment

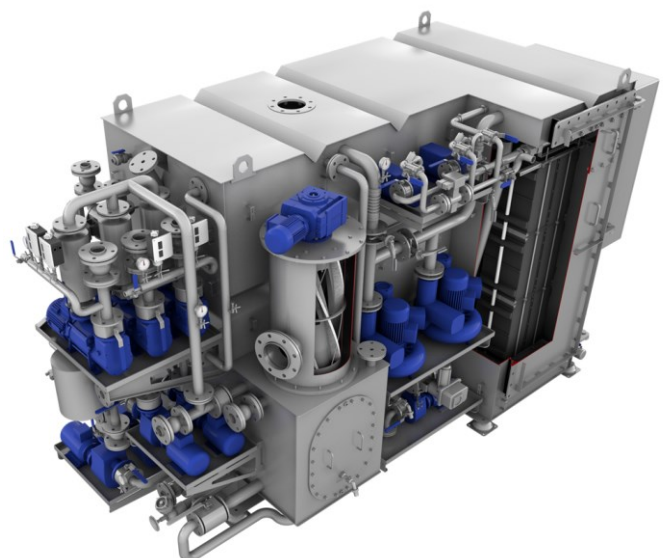
High quality products for your needs

Elkuch Systems have a compact design and are bespoke solutions, tailored to the individual requirements of each production facility. Our range of engineered and manufactured waste water treatment systems provides a superb effluent quality, reducing BOD/COD, suspended solids, oil and fats, nitrogen and phosphorus. Our project teams and cooperating partners support you throughout the entire process lifecycle: from feasibility study, pre-planning, construction and building phase through to commissioning. Elkuch is also your partner for world wide service and maintenance.



Dissolved air flotation. Impressively efficient, is a 3-stage process where the waste water is fed directly into the holding tank where low dense particles are separated by gravity and the sludge retains at the bottom of the tank until they are disposed. The newly integrated dissolved air flotation system draws emulsions and suspended solids into the high performance separator where micro air bubbles attach and clean the waste water. Since the water content in the holding tank is constantly reduced during the process, water disposal costs are reduced and better efficiency is reached for biogas production. Odor neutralization or lifting units can be installed additionally.

Membrane bio reactor. Membrane bio reactor processes combine the biological treatment stage with a downstream filtration unit, which eliminates the need for a conventional secondary sedimentation tank. In the activated sludge stage, bacteria first decompose the organic pollutants and substances of the mechanically pre-treated wastewater under aerobic conditions and convert them into biomass. In the downstream high quality ultrafiltration membranes with a pore size $< 0.1 \mu\text{m}$ separate the clear water fraction from the activated sludge. The membrane acts as a physical barrier, almost all germs and bacteria are reliably removed from the membrane. From a hygienic point of view the permeate obtained is odourless and free of particles, and can therefore be reused.





Waste Solutions

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