



- a strong solution for the environment



Customer case:
VIVAB, Sweden, October 2020



Pre-treatment plant: From food waste to biogas

Vatten och Miljö i Väst AB (VIVAB) has since 2009 been running the waste companies in Varberg and Falkenberg municipality. VIVAB is not only responsible for ensuring that citizens have access to clean and fresh water, but also has the responsibility for processing the increasing amount of waste from manned recycling stations and from households.

So, when VIVAB went looking for possible solutions to improve the waste management, it was a requirement that there had to be sufficient capacity to handle any future changes in the quantity of the waste flow and at the same time CO₂ emissions had to be reduced.

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Based on this, VIVAB decided to build a completely new waste facility and reloading station from the bottom, which is located in direct connection with the existing biogas plant in Gødastorp in Falkenberg. The new waste facility consists of two parts:

- A transfer station where household inflammable waste from both Varberg and Falkenberg are collected (before they were two separate stations). The garbage trucks come here to empty their contents, after which it is transferred to larger containers and transported away for combustion
- A pre-treatment plant for food waste and packaged foodstuffs, where the organic food residues are processed

Quality and capacity

In 2020, ReTec delivered the new Smicon pre-treatment plant to VIVAB consisting of a reception ramp, the pre-treatment machine itself, pumps and tanks. The entire facility should i.a. comply with the quality requirements of SPCR 120, which ensures that the incoming "raw materials" are under control as well as a high level of mechanical processing of the raw materials.

The waste plant processes approx. 4,000 tonnes of food waste and 23,000 tons of residual waste per year. "The pretreatment machine from Smicon processes the food waste so that its output has a very high pulp quality. That makes it easier to produce biogas. At the same time, it has a capacity of 10,000 tonnes of food waste per year, and that is plenty for VIVAB's needs, also in the event of any future changes," Daniel Gunnarsson says, sales consultant at ReTec in Sweden.

Local food waste becomes local production of biogas and biofertilizer

In the pre-treatment plant, the food waste is pre-treated, i.e. that unwanted material such as paper and plastic packaging is sorted out and sent for incine-

ration in the incinerator, while the remaining organic material is broken up by being flung up against a screen. Water and/or liquid fat waste is then added as a lubricant, so that it forms the so-called "slurry".

Using pumps, the slurry is pumped into tanks, before it is converted into biogas in the biogas plant itself.

The biogas produced can be used to burn in a boiler just like oil and natural gas, as propellants in certain types of vehicles or it can be used to make electricity and district heating. The fermented slurry that remains after the biogas process can be used as a fertilizer for agricultural crops and entails thanks to the "improvement" fewer odor nuisances and significantly fewer greenhouse gases when the slurry is spread on the fields.

Reduction of CO2 emissions

In addition to converting food waste into biogas being good for the environment, it is also good for CO2 emissions: In the past the food waste was transported to Jönköping, approx. 160 km away, to be converted into biogas. The reduced transport now means a reduction of approx. 2800 tonnes CO2 per year.

"For us here at ReTec, helping to deliver a complete plant from scratch contributed to further experience in the delivery of pre-treatment plants for food waste. And you can't avoid becoming a little bit proud when you subsequently learn that you have participated in influencing the environment so positively", Daniel concludes with a smile.



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