

RECYCLING USED COOKING OIL AT THE HALL IN TYROL FRITZENS WASTEWATER ASSOCIATION WITH A FLOTTWEG TRICANTER®

The Hall in Tyrol Fritzens Wastewater Association (Abwasserverband Hall in Tirol Fritzens) was founded in 1985 and is located about 15 kilometers / 9.3 miles from Innsbruck. Every day, this wastewater treatment plant processes more than 16 million liters / 4.2 million gallons of wastewater, which is fed in by 16 surrounding communities. But in addition to treating wastewater, the Wastewater Association is also committed to another task: Using its own collection system, this wastewater treatment plant recycles used cooking oil from the region. With Flottweg separation technology, the plant kills two birds with one stone by removing oil from the wastewater and then recycling this oil, reusing it as a raw material for the biodiesel industry.

Used oil causing problems

Together with Tyrol Mitte Waste Management (Abfallwirtschaft Tirol Mitte), the Wastewater Association launched the ÖLI project in 1999, a collection system for used cooking oil. The goal of this project is to collect the region's used cooking oil, then recycle it for reuse somewhere else. This way, cooking oil will not be disposed of with wastewater, which can cause blocked pipes or broken pumps. For the Wastewater Association, this meant that malfunctions and unexpected maintenance were just another part of their day-to-day business. However, the disposal of used oil also represents a major financial burden for local municipalities, which is where the oil collection system comes in.

The Wastewater Association Fritzens started a collection system for used cooking oil in 1999 to relieve the wastewater treatment plant.



The ÖLI campaign initially started in the region, with almost 100 Tyrolean communities, and then became more and more popular: „We wanted the general public and the food service industry to work with this collection system equally“, explains Christian Callegari, Managing Director of the Wastewater Association. „We were successful with this, and we now use cooking oil from one million people, which is around 2.5 million kg / 750,489 gal of used cooking oil per year. This is because more and more municipalities and companies understand the ecological and economic importance of the ÖLI bucket.“ Because of growing success in recent years, the Wastewater Association built a new treatment plant to process cooking oil in 2020. The entire process is now handled here: from delivering, emptying, and cleaning the oil containers, to processing the used cooking oil and removing the recyclable material.

Used cooking oil as a raw material for biodiesel

In addition to the benefits of extracting cooking oil from the wastewater, the processed cooking oil can also be reused as a preliminary product for manufacturing biodiesel. „It is important for us to collect the used cooking oil and process it into a workable material“, explains Managing Director Callegari. This recycling process does not dispose of the cooking oil, but instead creates a sustainable and efficient supply of energy. This approach enables the Wastewater Association to respond to the increased calls for sustainability, and is already reflected in the wastewater treatment plant's processes. „Sustainability is an important part of the Wastewater Association's philosophy – which is reflected both at our wastewater treatment plant and in our recycling process for used cooking oil. We want to help make driving a vehicle more sustainable with biodiesel“, explains Callegari. This is because biodiesel has a 90% better CO2 offset compared to conventional diesel thanks to the reprocessing of used cooking oil.

The Flottweg Tricanter® at the heart of processing used cooking oil

The Wastewater Association divides the recycling process for used cooking oil into two primary steps: First, the cooking oil is passed through coarse and fine screens in order to filter out any food residue and undesirable foreign bodies. Then the used cooking oil is separated into water, residual sediment, and oil using a three-phase decanter. For Callegari, the focus is on quality and yield: „The purpose of the entire process is to achieve the highest possible yield of cooking oil for the biodiesel industry, and to ensure that



The Tricanter® is the heart of systems used to process cooking oil, separating the old cooking fat into water, oil, and solid particles.

as little cooking oil as possible ends up in the wastewater.“ Since April 2021, the Wastewater Association has been using a Flottweg Tricanter® for the three-phase separation step necessary to recycle used cooking oil. In a single step, the Flottweg centrifuge separates the used cooking oil into three components: water, oil, and solid particles. This means that a continuous process can be used, without any additional separation stages required.

At first, the Wastewater Association utilized static decantation to recycle used cooking oil, but this still left too much oily residue in the wastewater entering the treatment plant. This led the Wastewater Association to ultimately look for an alternative solution for this process. In Callegari's opinion, Flottweg's Tricanter® was the most expedient solution since it could be integrated into the existing process seamlessly: „After several tests, we were convinced of Flottweg's separation solution, so we decided to purchase a Tricanter®.“ Callegari describes the Flottweg Tricanter® as the „heart of treatment“ and a decisive factor for the quality of their processed cooking oil. This system made it possible to set corresponding quality requirements for further processing of the cooking oil used for biodiesel, since otherwise it would not be possible to use the raw material recovered.

Convinced by the Flottweg partnership

However, it is not only the Tricanter® that convinced Managing Director Callegari. The partnership and service provided by Flottweg were also instrumental: „Working with Flottweg was wonderful. There was always a vigorous ex-

change of data, both during commissioning and after, while our personnel operated the system." And whenever the Wastewater Association encounters difficulties, Flottweg is always ready to help, providing targeted and effective solutions: „As soon as there was a problem, we were always able to find a solution together. As a result, the process is currently running perfectly. We have no issues with our customers when placing the treated used cooking oil in the premium segment.“

The ÖLI – A good choice for the Wastewater Association and the environment

Looking back, introducing the ÖLI collection system was the right decision for the Wastewater Association: „The increasing involvement on the part of municipalities and the food service industry is a success that demonstrates clearly that we took the right step more than 20 years ago,“ recalls the Managing Director. „With this initiative, we have not only found a fix for wastewater treatment, we are also doing something good for the environment by recycling used cooking oil.“



The Fritzens Wastewater Association is convinced by the cooperation and service, which is provided by Flottweg.



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