Refugee camps

ECOLOGICAL WASTEWATER CLEANING AND RECYCLING

Easy-to-deploy wastewater treatment plant for up to 10,000 people
Quick and functional solutions for sudden needs

Clewer’s wastewater treatment plants can be adjusted to the needs of as many as 10,000 people.

In refugee camps, efficient wastewater treatment is of utmost importance in supporting health and preventing the spread of diseases. Clewer provides tested and proven solutions for effective and environmentally friendly wastewater treatment.

Clewer’s wastewater treatment plants are modular and scalable. Thus, the equipment can be adapted to changing amount of population in camps. The installation of each wastewater treatment plant is customized according to specific site requirements as well as local climatic conditions.

Containerized, closed reactors ensure the safety of the wastewater treatment plant. Furthermore, the equipment is easy to store and to transport to the final location. The installation of the plant is quick and low-cost. If necessary, Clewer’s wastewater treatment plants function as a long-term infrastructure.
Clewer's wastewater treatment plants provide cost-effective, functional and environmentally friendly solutions. **Take a look at the advantages of Clewer’s system!**

### Why choose Clewer?

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<td><strong>Easy to store, transport and install</strong></td>
<td>The equipment is placed inside containers, which ensures safety and helps to maintain hygienic conditions.</td>
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<td><strong>Modular system to fit all locations</strong></td>
<td>The modularity of the wastewater treatment system enables various possibilities for installation and allows customized solutions.</td>
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<td><strong>Closed process</strong></td>
<td>The wastewater cleaning process is hygienic and safe – no odors.</td>
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<td><strong>Cost-efficient in use</strong></td>
<td>The wastewater treatment plant is simple to maintain: no need for constant maintenance and cleaning.</td>
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<td><strong>Tested and proven, reliable technology</strong></td>
<td>The system is based on Clewer’s patented Rotating Bed Biofilm Reactor (RBBR) technology.</td>
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<td><strong>Environmentally friendly solution</strong></td>
<td>The system meets the requirements of the strictest legislation.</td>
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Clewer’s wastewater treatment plants use a Rotating Bed Biofilm Reactor (RBBR), a patented next-generation biofilm reactor developed in Finland. RBBR technology is a new innovation in the cleaning system market. Traditional biological wastewater treatment is based on an activated sludge process. RBBR technology is based on an efficient and stable biofilm that is farmed when microorganisms attach to the surface of the carrier.

As much as 90% of the bioreactor volume is filled with carrier material. The carrier material provides a large surface area, in which the water cleaning bacteria is able to grow. The bacteria—a mixture of natural bacterial strains—will create a biofilm on the surface of the carrier material.

Air is blown into the bioreactor. It generates a rotating movement, which helps to oxygenate the water and keep the reactor clean. In addition, the RBBR keeps the tank clean without wear or friction. Thus, reactor maintenance can be carried out easily.

Clewer’s wastewater treatment system is both efficient and reliable.
This is how the patented Rotating Bed Biofilm Reactor technology works

1. As the wastewater enters the system, a pre-screening device removes, collects and stores suspended solid materials.

2. The wastewater flows into the equalization tank, from where it is pumped to the rotating bed biofilm reactors.

3. The bioreactors are filled with a high proportion of carrier material. Active bacteria establish a stable biofilm on the surface of the carriers and clean the water very effectively. Air is blown into the bioreactors. It oxidizes the wastewater and creates a rotating movement that mixes the water and keeps the bioreactor clean.

4. In the flotation unit, impurities are separated from the wastewater. Air bubbles lift them to the surface of the water. The sludge is removed with a mechanical scraper.

5. The sludge enters the sludge tank and the clean water exits the system.
Depending on the climatic conditions and the environment, solar panels or electric generators can be used as an alternative source of energy.

In setting up the wastewater treatment plant, each solution is carefully planned and implemented in order to achieve as effective and cost-efficient results as possible.

Clewer’s wastewater treatment plants are energy efficient due to the RBBR technology.
Remote control and monitoring system

Each wastewater treatment plant is equipped with a remote monitoring system. It enables the monitoring and controlling of the entire process.

Various operations can be executed through the remote control and monitoring system, including the adjustment of the chemicals, and modifying power output and energy consumption according to the amount of wastewater in the treatment plant.

Remote monitoring and control system adds to the cost-effectiveness of the wastewater treatment plant.

Sludge dewatering unit

A compact, containerized sludge dewatering unit can be added in every Clewer plant. After dewatering, the dry matter content of the sludge is approximately 17%.

The sludge is ready for composting or other utilization. Additionally, excess sludge can be hygienized and stabilized for further use.
We have years of experience in providing environmentally friendly solutions for efficient water recycling and re-use around the world. Take a look at some of our projects!
Housing sewage treatment plant, Örö, Finland

Wastewater treatment plant for British American Tobacco factory, Russia

Private crayfish farming, EU-Interreg program, Latvia
Cleantech for wastewater cleaning

Clewer is Finnish Cleantech company, a leading developer of patented wastewater cleaning technology. We create environmentally friendly solutions for more efficient water recycling and re-use worldwide. Clewer provides ecological wastewater treatment systems for industry and communities as well as recirculating aquaculture systems for urban protein production.

We have implemented various types of wastewater treatment plants around the world, from the islands of the Finnish archipelago to the deserts of Algeria. Clewer’s larger systems provide efficient and safe wastewater treatment for communities, up to thousands of people in size.

Read more at www.clewer.com
COMMUNAL SOLUTIONS

AQUACULTURE

CAR WASH

INDUSTRIAL SOLUTIONS

LOCAL WASTEWATER TREATMENT PLANTS
Clewer provides ecological wastewater treatment systems for industry and communities worldwide. We create environmentally friendly solutions for more efficient water recycling around the world.

Industries - Cities and communities - Single households
- Modern wastewater cleaning and recycling
- Recirculating Aquaculture Systems

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