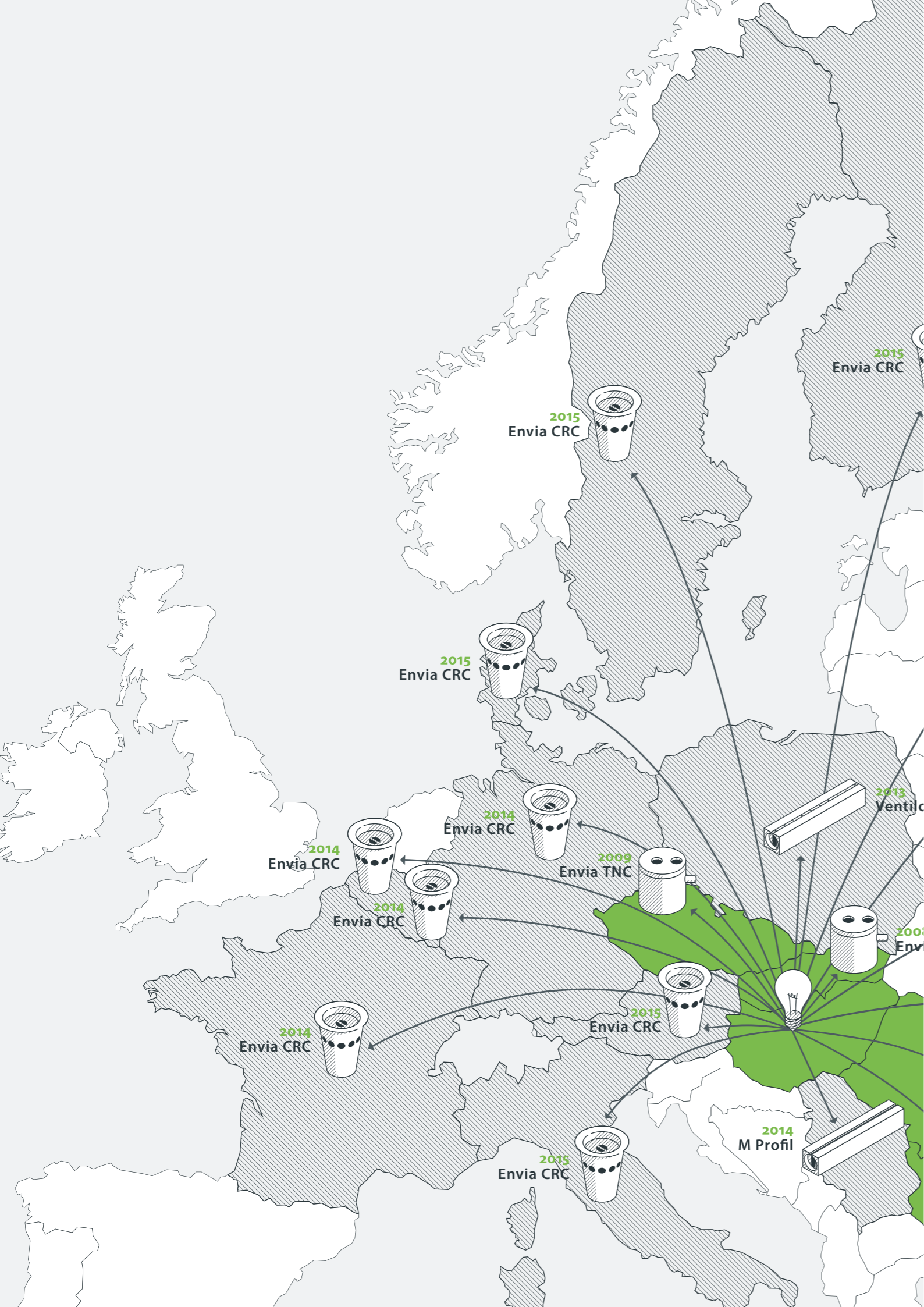


The Pure Eco

# We Respect Water

PURECO   
THE PURE ECO





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**PURECO**  
THE PURE ECO







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CEO  
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Chairman, Hungarian  
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Vice president, ASEM Water

## WE RESPECT WATER

We design-build, operate and maintain water and wastewater treatment facilities with special devotion and professionalism in the fields of **drinking water purification, communal and industrial wastewater and landfill leachate treatment, stormwater management and air treatment**, while respecting site environments, whether it is natural or urban.

Pureco and its partners strongly **believe** that the best solution can be born with a strong **cooperation** and collaboration. We are also giving priority not only to our projects, products but on training programs as well in order to help the local people to operate and maintain our systems, providing not only clean water but jobs and educational supports. This philosophy and our excellence, reliability, professionalism let Pureco to be unique in the market and provide a fully customized and innovative solutions in all aspects of water management.

We know and highly respect water. We develop optimal and cost-effective, long-life solutions in order to keep our waters safe, focusing on added value and sustainability. We are an **international** company with several offices in Central & Eastern Europe and we are also present in Asia, Africa and Middle-East throughout our projects.

Our growth and success are represented with our **increasing** revenues which is around **20% annually** in the past five years. Besides, Pureco is one of the founding members of the Hungarian Water Partnership, the Hungarian multi-stakeholder platform and network on water established to provide innovative solutions for water challenges.

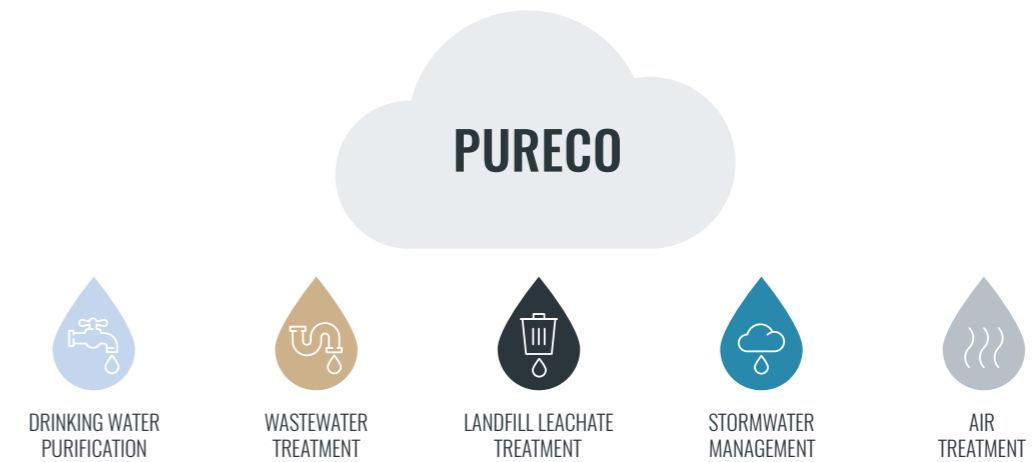
Our experts in the different segments of the water industry possess an outstanding professional and innovative knowledge, which have been known and recognized in many parts of the world. Our CEOs play important roles in national and international organizations, e.g. **past-president of European Water Association, vice president of Eurasian ASEM Water Academic Development Committee**, member of the steering group of European Innovation Partnership on Water and have been working for several years for the worldwide recognition of the Hungarian professional knowledge in the field of complex water management.

*international projects / serving almost one million people worldwide / cooperation, added-value, innovation / fully customized solution*



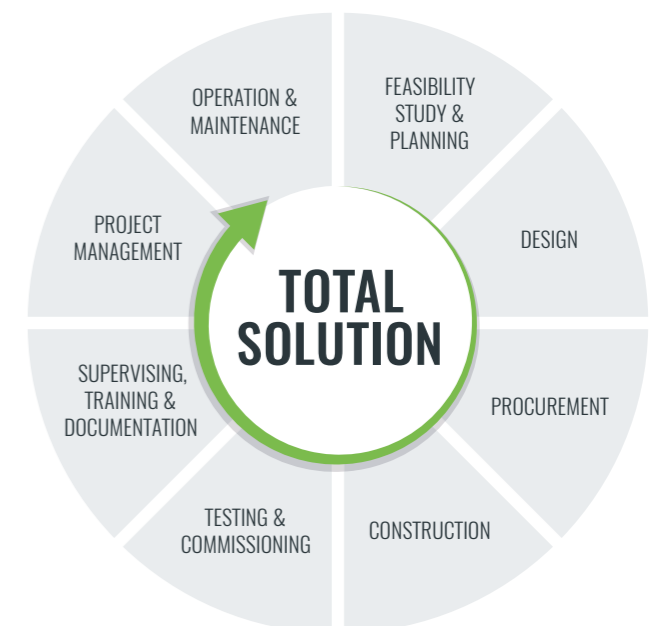
## PURECO SOLUTIONS

We believe in people; with our highly qualified and experienced colleagues we are able to provide customized solutions in order to bring you the **added value** in the following core fields of water management:

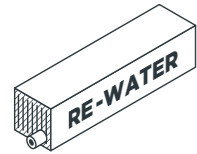


PURECO is offering a variety of **tailored service levels** in the view of the importance of the **integration**.

We work with you, focusing to keep your system running at **maximum performance** and at the **lowest cost of ownership** from the raise of your idea, through design, implementation, operation and maintenance.







## CONTAINERIZED WATER TREATMENT SYSTEMS

Clean drinking water for everyone! There are several ways to protect and conserve existing water resources and to provide potable water. From engineering perspective, this task is primarily about developing sustainable, efficient and environmentally friendly water management designs, technologies and solutions.

Pureco offers containerized, mobile water treatment systems that are optimum, fast and highly flexible ways to provide drinking water from any kind of surface water or recycle and reuse secondary water sources for agricultural or industrial applications.

Systems are either modularly mounted on skids or fully integrated in 20' or 40' ISO containers - in both cases, the system can be easily transported. Each treatment plant is a unique system proposed and manufactured according to the particular specification and requirements of the customer.

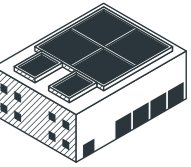


- in case of emergency, disaster or at temporary camps
- to grant sanitized potable water under increasing water scarcity
- in rural, isolated or less accessible areas
- at institutions (hospitals, hotels, schools, etc)
- if no electricity is available (diesel generators, alternative power supply)
- providing drinking water from any kind of surface freshwaters (rivers, wells, lakes , etc.)
- ensuring potable water even from treated wastewater
- producing industrial water
- providing high quality water for industries

*drinking water purification / design-build and operation / latest technological developments / special training programmes / new jobs created*



## WATER-PURIFICATION AND SERVICE SYSTEM CONSTRUCTION IN VIETNAM



The aim of the Central Vietnam, Quang Binh province water treatment project was the construction of water intake and water management structures to provide the region with healthy drinking water. There are over a 100,000 people living in the service area, north and south of the Gianh River. The project contributed to the increase of the quality of life of the low-income households and families, and to the development of basic infrastructure. The project was about a 22,000 m<sup>3</sup>/day capacity surface water intake structure had been built on the Rao Nan River, which serves as the main water base.



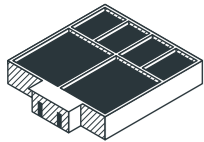
The 22,000 m<sup>3</sup>/day capacity water intake structure serves a 10,000 m<sup>3</sup>/day capacity water treatment plant, constructed in the first phase and a 12,000 m<sup>3</sup>/day capacity water treatment plant that is currently developed in the second phase of the project.

We have also offered our special training program to the Vietnamese colleagues in order to teach them how to operate and maintain this system. We are glad and very proud because our systems work perfectly, several new jobs were created meanwhile more than hundred thousand people enjoy the advantages to have clean water at their home. Besides the engineering work, PURECO helped the Government of Vietnam secure financing for the project in the form of Tied Aid Loan from the Hungarian Government.



*clarification and sand filtration / surface water intake from river / 22,000 m<sup>3</sup>/day drinking water network*





## COMMUNAL WASTEWATER TREATMENT

Based on our expert knowledge and our products, we offer the reconstruction of outdated sewerage treatment plants, or the construction of new systems - treating either seweraged wastewater or septic waters. Additionally we provide supporting services for the companies who are dealing with operation and maintenance of the systems.

We developed a sustainable and unique solution for Kumasi, Ghana for treating the generated sewerage and wastewater in an efficient and environmental friendly way. In-line with the local conditions and needs we design and build a tailor-made wastewater treatment plant in Kumasi not only providing optimal technological solution but giving priority to trainings as well for the operation and maintenance. By establishing the new, sustainable wastewater treatment plant with the capacity of 1,000 m<sup>3</sup>/d, the livelihood of more than 100,000 people will be improved as they can live in a healthier environment.



**43**  
WASTE WATER TREATMENT  
PLAN BUILT WORLDWIDE

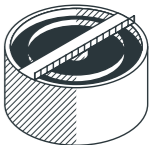


**40k**  
CUBIC METRE / DAY WATER  
CLEANED WORLDWIDE



**420k**  
PEOPLE SERVED  
WORDWIDE

*municipal wastewater treatment / optimal solution /  
training programs for local people*



## INDUSTRIAL WWTP

Industrial wastewater treatment is a complex methodology as the characteristics of liquid waste generated from industrial production are very different. There is a wide range of methods available for purification of industrial wastewaters and Pureco offers complex, safe and efficient solutions.

We successfully delivered and commissioned a three-staged wastewater treatment plant to a duck slaughterhouse in Mélykút, Hungary. The technological steps are as follows:

- Coarse and fine screening, flocculation and flotation as physico-chemical pre-treatment,
- biological treatment based on the activated sludge process,
- effluent polishing with sandfilter and activated carbon filter.

The flow rate is 1,600 m<sup>3</sup> on a daily base, the high concentration of non-dissolved materials like suspended solids, oil and grease are successfully removed due to the dissolved air flotation unit (DAF). Organic materials and nutrients are eliminated by the microorganism in the biological reactors. Effluent polishing is required because of the strict effluent discharge limits.

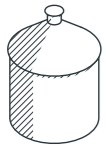
	Design values ppm	Effluent requirements ppm	Effluent measurements* ppm	Removal efficiencies %
<b>COD<sub>cr</sub></b>	2,300	< 50	< 30	> 99,0%
<b>BOD<sub>5</sub></b>	1,560	< 15	< 5	> 99,5%
<b>TSS</b>	1,400	< 30	< 5	> 99,5%
<b>TN</b>	125	< 15	< 5	> 96,0%
<b>TP</b>	56	< 0,7	0,1	> 99,5%
<b>FOG</b>	390	< 2	< 2	> 99,0%

\* in the end of Trial Period



*industrial waste water treatment plants / biological  
treatment chemical flotation / excellent effluent quality*

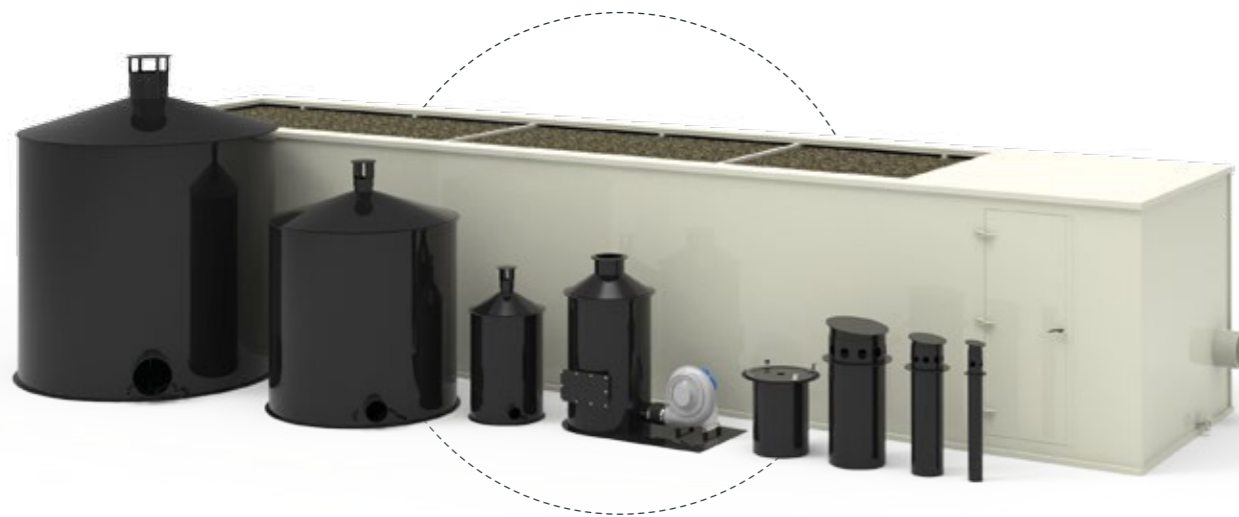




## AIR TREATMENT FOR ODOURLESS INDUSTRIAL ACTIVITIES

The unpleasant odour and smell are often associated with industrial activities, especially within the area of municipal wastewater collection and treatment, at wastewater treatment and sludge treatment plants, near sewerage systems, at landfills and composting plants, during food or chemical industry. The VENTUS Biofilter system, using the biodegradability of microorganisms, is an environmentally friendly, sustainable and safe solution to eliminate odour problems.

Systems from VENTUS Bidesodor family are available in different types (active, passive, with activated carbon), different sizes and 3-100,000 m<sup>3</sup>/h air treatment capacity, with purification efficiency of nearly 100%.

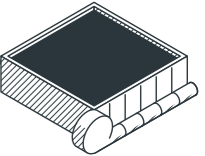


Believing in complex solutions we offer not only the biofilter system but several optional components such as gas scrubber, dust separator, air distributor (for multi-unit units) and optimisation of the operating cost (container units can be individually connected).

*odourless industrial activities  
/ air treatment / VENTUS Biofilter*



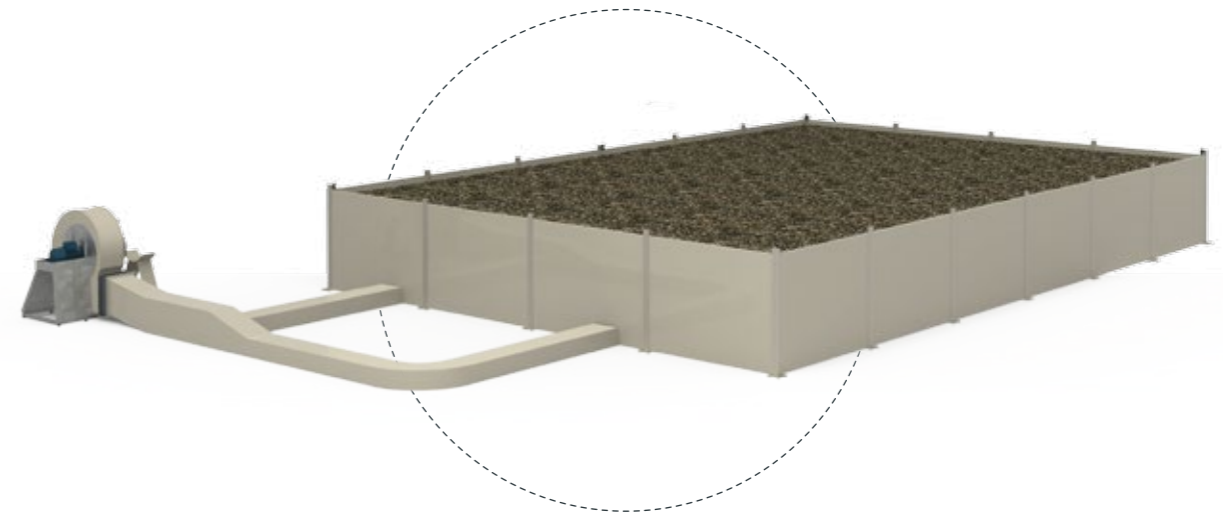
## VENTUS BIOFILTER SYSTEM IN SUBOTICA



The regional waste management centre in Subotica, which will be finalized in 2018 is located halfway between Békova and Orom. The new development is ready to manage the waste produced by 260,000 people in the region, focusing on the long-term goal generating a new approach towards waste management that enables economic re-evaluation of waste while at the same time ensuring the highest level of health and environmental protection for people.

As a result of the investment, we completely solved the air treatment of the pre-sorting building of the regional landfill. Our system with dust bag separator first removes the dust from the air, and the built-in VENTUS L, 20,000 m<sup>3</sup> / h biofilter cleans the resulting odour air.

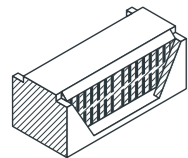
Our VENTUS L system's UV stable PP sandwich panel frame provides sufficient strength to store the equipment needed to clean the larger air stream. Cleaning 20,000 cubic meter polluted air per hour does not mean that a huge concrete equipment was placed by the works of art, VENTUS L needs only the flat concrete basement and other installations can be built up several days later. The newly developed wall system can set up fast, it is not only quick but it looks better than the ordinary concrete system. We use stainless steel posts for the wall and EPSDM sealing to make it airtight. The system is working automatically, only supervision is required.



*industrial waste water treatment plants / biological  
treatment chemical flotation / excellent effluent quality*





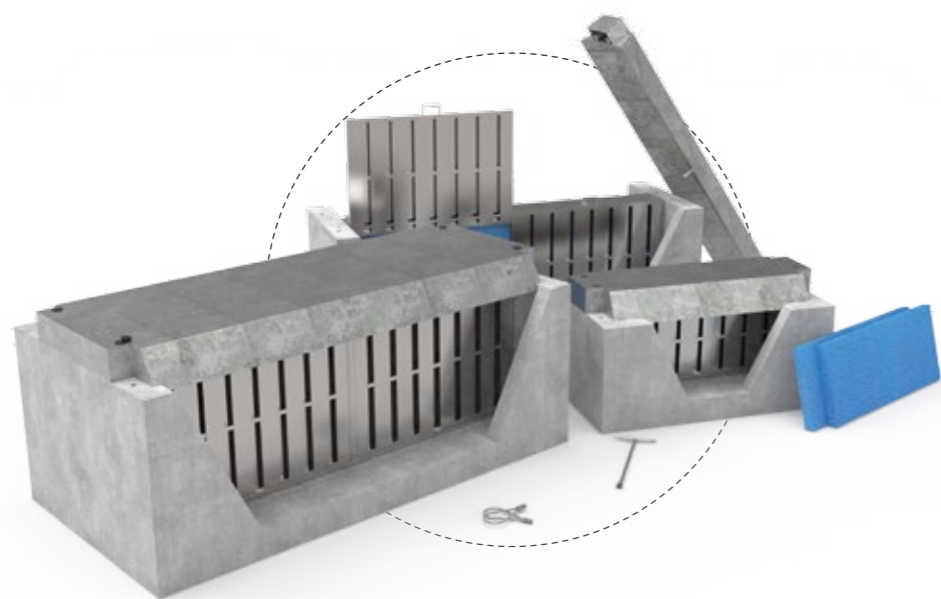


## STORMWATER MANAGEMENT

The rainfall once on the surfaces often gets contaminated - just think of the pollutants on the paved surfaces - so the challenge is not only the collection and the possible recycling/reuse of the storm water, but the cleaning and infiltration of the not utilized water is also crucial. Our goal to preserve the environment and to properly manage storm waters successfully can only be realized through complex solutions. Our patented product, ENVIA TRP is a sustainable and efficient solution developed for filtering and retaining the contaminants washed away by stormwater, flowing down from linear engineering structures and paved surface such as roads, motorways, parking lots. This uniquely developed technology is in compliance with the contamination types, economical to install, simple to operate, as well as the retained materials are economically removable.

### Fields of application

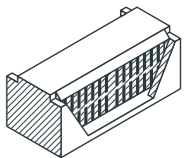
- installable in open-surface ditches made for the drainage of stormwater coming from linear traffic facilities
- applicable to control the discharge and/or overflow of small reservoirs or lakes, that in case of overflow should retain possible floating contaminants



*85,000 l/s treating capacity oil / separators sold by every year / complex stormwater management at Airport of Budapest, Hungary*



## PATENTED SOLUTION FOR RAINWATER TREATMENT



### Arad bypass highway construction work for water management – ENVIA TRP

Due to the erosion caused by high-intensity rainfalls and pollutants washed off of paved surfaces, today the runoff water can only be introduced into the recipient after a proper pre-treatment when the water quality reaches the required levels.

The Arad bypass was completed in 2012 in Arad County, Romania. Pureco proposed a special solution for the treatment of the rainwater, collected from approximate 12 km of the highway: the ENVIA TRP® drift and light liquid separator installable in open-surface stormwater drainage channels. In this project, we have used 50 pieces of different sizes of equipment, between 60 and 225 l/s nominal flow capacity.

### Debrecen M35 motorway bypass – water management construction work – ENVIA TRP

The newly built junction was realized at a small area of the existing M35 road, Hungary, at the intersection of the railway, the road and rail overpass, and of natural waters. According to the original plans, the stormwater would have been infiltrated into a basin and vaporized, but due to the risk of the road and rail embankment soakage leading to deterioration of stability, this solution was not feasible. The new concept sees the pre-treated water being deposited into the Tóció-stream.

### Budapest Airport – stormwater treatment

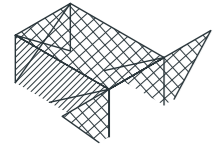
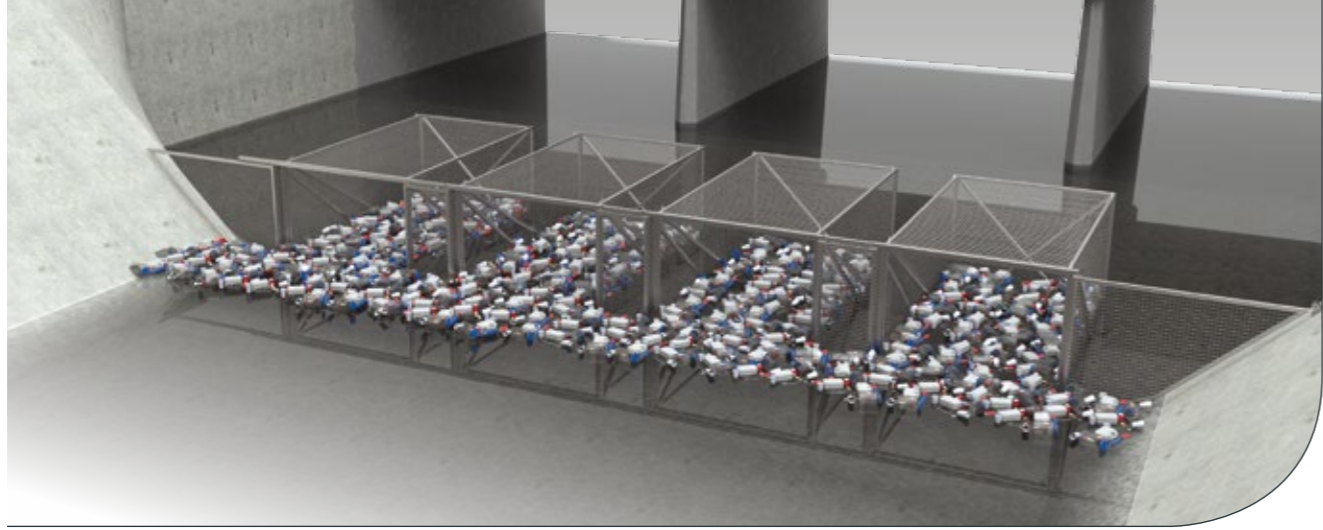
Due to the Budapest Airport's (Hungary) environmentally conscious attitudes over the past few years, several improvements have been made in order to protect the natural environment around the airport. In the frame of this initiative the stormwater treatment of the airport's runways, taxiways, other traffic and technical areas, paved walkways, roads, parking areas with polluted river channels was developed, and an accident emergency system was created with Pureco solutions.

As part of the project, nearly thirty open trench ENVIA TRP sludge and oil separation equipment were installed, with a total of 5,800 l/s cleaning capacity. In order to clean the contaminated stormwater.



*5,800 l/s purification / 1,400 l/s flow / installed in open-surface stormwater channels / treated stormwater is natural-safe*



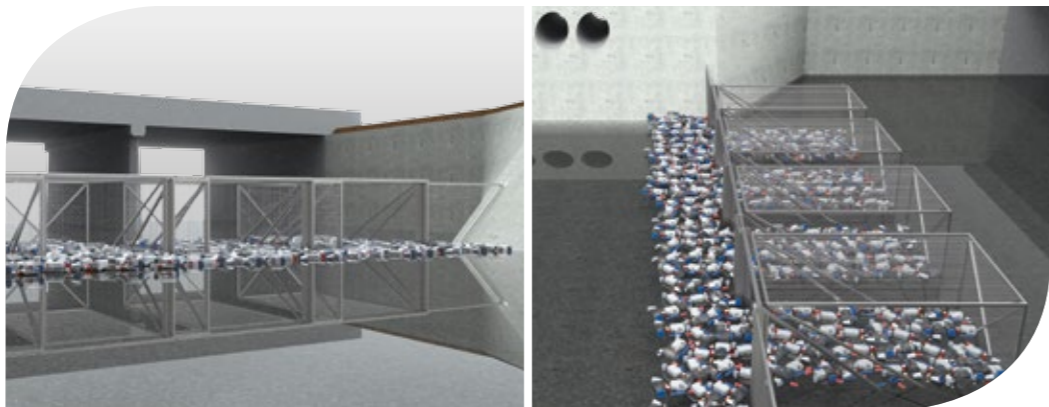


## GARBAGE REMOVAL WITH PURE WASTE GATHERING CAGE (WGC)

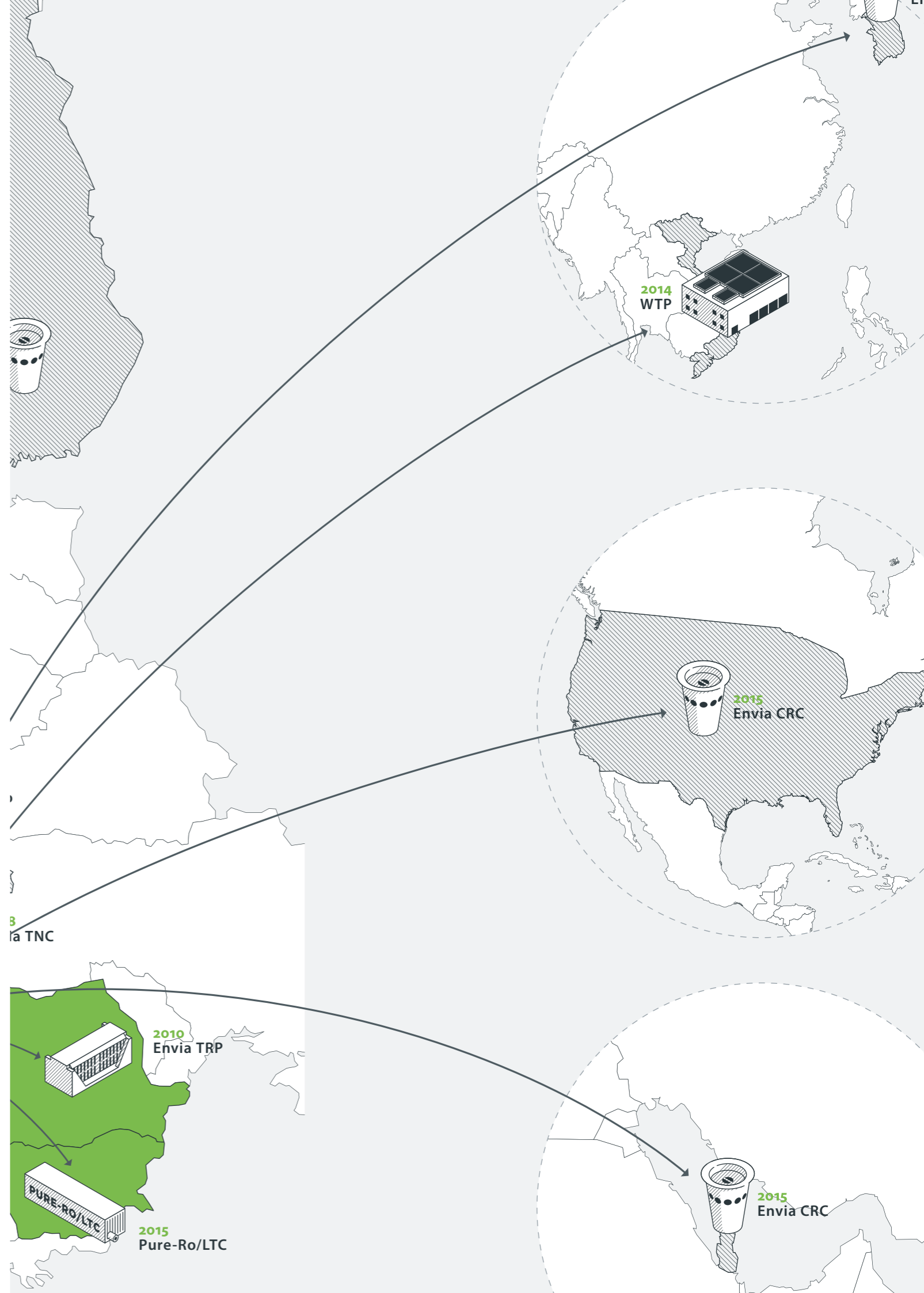
Stormwater runoff is rain or water that runs off of streets, parking lots, lawns, and other surfaces into drains that flow directly into local waterways. When garbage and pollution enter the waterway, it can cause significant human and animal health risks. Water that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing and drinking. PureWGC is engineered to capture gross pollutants such as plastics, organic materials and handle powerful stormwater runoff at urban areas, captures litter and debris in stormwater runoff and prevents gross pollutants from entering a river, stream or lake by catching the pollutants in reusable nets.

### The system of PureWGC (Waste Gathering Cage):

- can be used to reduce and eliminate waste from drainage systems
- prevent pollutants and solid waste, carried by storm water from the local paved surfaces, from flowing into the nature
- cost-effective and environment friendly solution to collect waste from drainage systems
- easy to install, operate and maintain. When they get full, they are picked up with manual labour or a crane
- recyclable/non-recyclable materials can be easily separated from the collected waste
- minimal cost of maintenance
- short delivery time, instant impacts



*drainage systems to separate garbage from water / prevents gross pollutants from entering a river*







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**Believing in**  
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