



# FAECAL SLUDGE MANAGEMENT PLANTS IN GHANA

Healthier environment for Ghanaian people





# BETTER SANITATION FOR GHANAIAN PEOPLE

BROUGHT TO YOU BY THE STRATEGIC PARTNESHIP OF







The purpose of this document is to introduce a sustainable and unique solution developed for those regions where the level of sewerage is low or does not exist, for treating the sewerage and wastewater in an efficient and environmental friendly way.

Based on ongoing successful professional and technical Ghanaian-Hungarian cooperation and fruitful dialogue between Pureco Ltd. and Sewerages System Ltd., a subsidiary of the Josping Group of Companies, this unique partnership have set the objective of building a state-of-the-art, fully customised wastewater treatment plants (WWTP) to solve the environmental and sanitation problem in Ghanaian cities. In the three biggest cities of Ghana, with more than 5 million local people, only 7–10% of the wastewater is adequately treated. Urgent development of wastewater treatment is indispensable both for the environment and for human health. The solution we provide solves the treatment of the collected faecal sludge in a self-manageable way.

In-line with the local conditions we designed and built the tailor-made wastewater treatment plants in Ghana in a way that provides optimal technological solution for the cities and can be operated with trained local staff. Beside high level engineering solution we organise training programs in order to build capacity and help the local people to operate and maintain the system. Thus we offer not only treated wastewater but jobs and educational supports for the citizens of cities in Ghana.

By establishing the new, sustainable wastewater treatment plants the livelihood of more than 5,000,000 people was improved. Their environment is healthier while the ecological footprint is reduced. This helps achieving the Sustainable Development Goals (SDGs) of the United Nation.

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### OBJECTIVES AND GOALS:

- To construct greenfield faecal treatment plants in Ghana providing healthier environment for more than 5,000,000 citizens in Kumasi, Takoradi and Tamale
- To establish the plant with the consideration of the local conditions and needs (customized solution)
- To remarkably reduce the impact on the environment as well as hazards on health
- Providing new jobs through the training programmes (knowledge transfer)



BEFORE

AFTER





# GHANAIAN-HUNGARIAN WATER RELATED PROFESSIONAL PARTNERSHIP

## PURECO LTD. (DESIGN, PLANNING AND CONSTRUCTION)

PURECO Limited is a Hungarian water resource technology engineering firm with international experience and exposure. We design-build, operate and maintain water and wastewater treatment facilities that combine technical and economic performance, while respecting site environments, whether it is natural or urban.

Special devotion and professionalism are applied during our work, which is in the fields of drinking water purification, communal and industrial wastewater and landfill leachate treatment, ground water remediation, storm water collection and treatment.

PURECO and its partners believe that the best solution can be born with a strong cooperation and collaboration. This philosophy and our excellence, reliability, professionalism let PURECO to be unique in the market and provide fully customized and innovative solutions in all aspects of water management for our wide range of public and private clients.

PURECO has exceptional and significant references in the field of municipal wastewater treatment (200-18,000 m<sup>3</sup>/d) in Hungary and also abroad.



## SEWERAGE SYSTEMS GHANA LTD. (CONSTRUCTION AND OPERATION)

SSGL, a subsidiary of Zoomlion Ghana Ltd., is an engineering, construction and procurement specialist that focuses on the provision of efficient liquid waste treatment technologies. Our mission is to provide efficient, sustainable and environmentally friendly treatment of effluent and faecal sludge in Ghana and beyond. We aim to provide the good people of Ghana, with a decent and cost-effective means of disposal of effluent and human sludge and to ensure the financial sustainability of the business. With the local

experience SSGL has the understanding and know-how to be the most suitable local partner in the successfully planned and realised operation of the faecal sludge treatment plants.

SSGL builds on the environmental sanitation experience of Zoomlion with the requisite expertise, technical and managerial competences as well as resources to support government, and local authorities to clean up cities and towns, improve the environmental quality.





## SEWERAGE SYSTEMS GHANA LTD. – PURECO LTD. A SUCSESFUL PARTNERSHIP

SSGL and Pureco strongly believe that the best solution can be born with a strong cooperation and collaboration. This common business philosophy and the excellence, reliability, professionalism in the field of water treatment helped us to build a fruitful partnership in Ghana, where we worked together to develop new wastewater treatment

facilities for handling the sewerage and wastewater of the biggest cities in an efficient, sustainable and environment friendly way.

SSGL and Pureco as partners have already provided a fully customized and innovative solution for the people of Ghana.

SOD CUTTING AND OPENING CEREMONIES OF WWTP PLANTS



COMMISSIONING

## NEW WWTP IN KUMASI, TAKORADI AND TAMALE

In 2015 PURECO, Sewarage Systems Ltd., and Zoomlion Ltd. launched the negotiations about the necessary sanitation projects in Ghana. The challenge was to treat 1000m<sup>3</sup> wastewater a day in each city. We believe that our state-of-the-art technologies and solutions combined with the international experience led to the successful projects now in 3 cities in Ghana. Beside professional engineering, the local conditions and needs, were always in focus that contributed to the success of the projects.

This behaviour helped the local governments in improving the sanitation and health objectives that were set out by the new administration.

PURECO, Sewarage Systems Ltd., and Zoomlion Ltd. strongly believe that with our common projects we brought a new era in Kumasi in terms of effective wastewater treatment, facility development and improvements, while creating hundreds of new jobs.







# FAECAL SLUDGE TREATMENT WITH SEPTOPURE® TECHNOLOGY

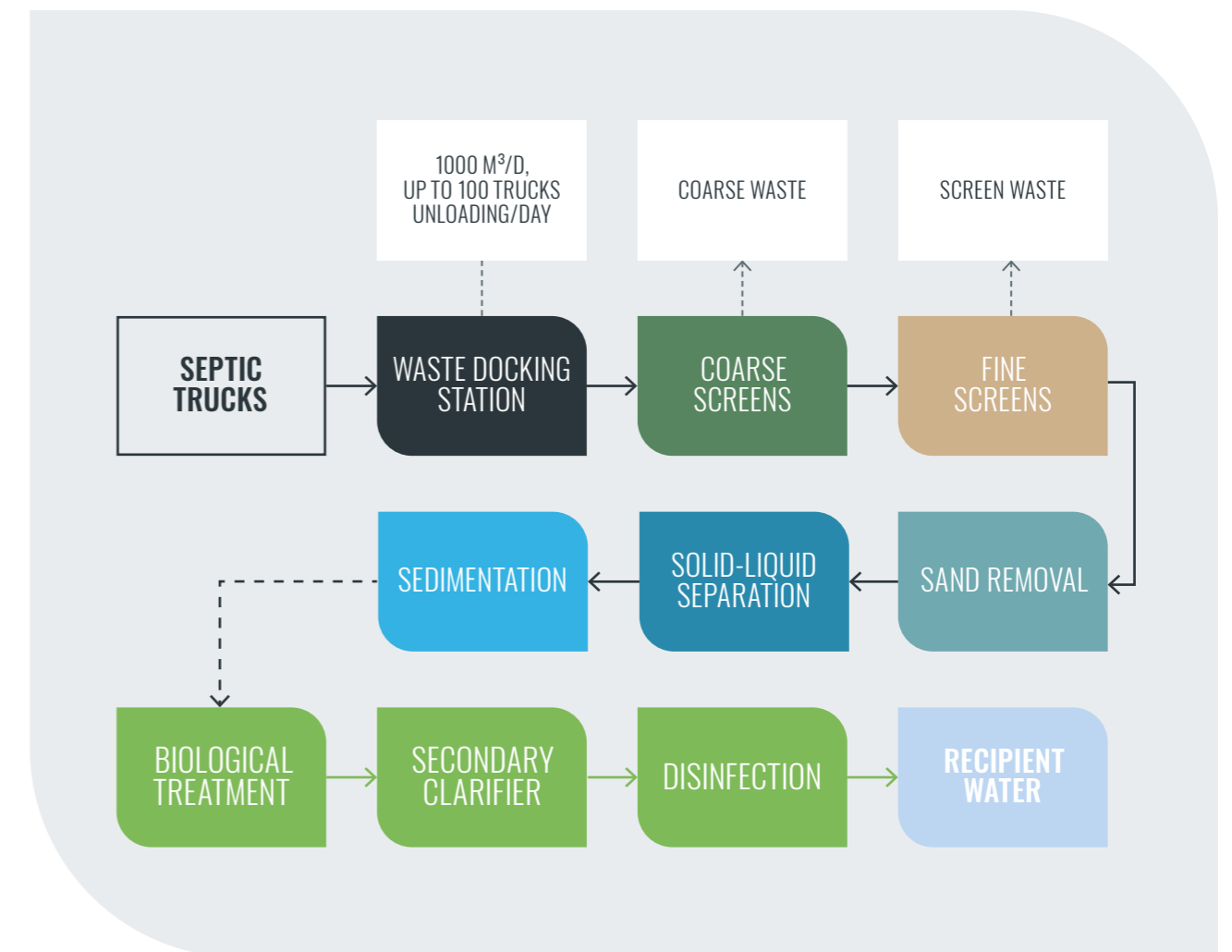
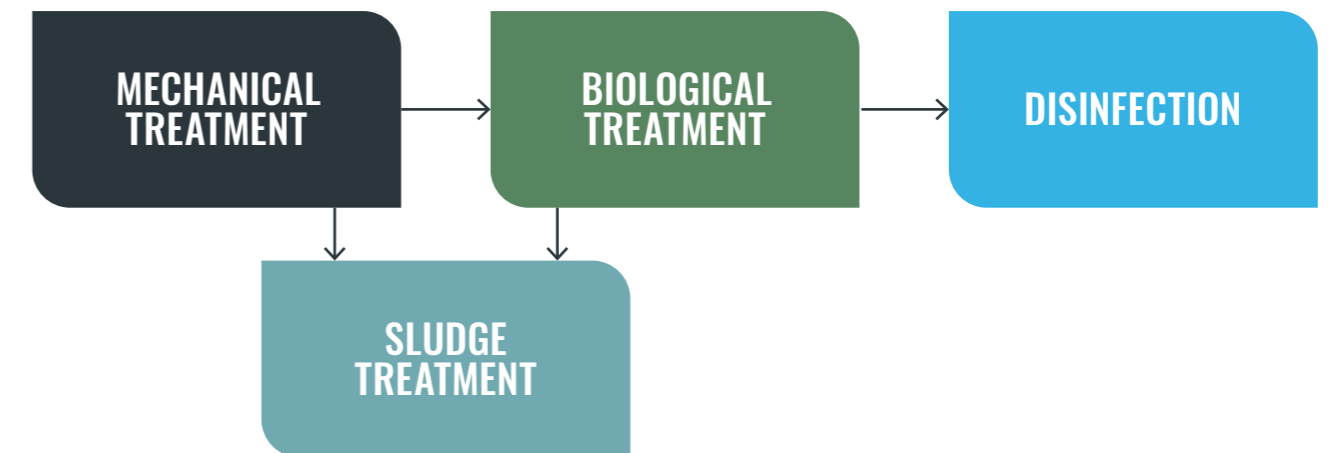
Due to the relative variation and wide range of pollutant concentration, a massive mechanical treatment was designed.



The Septopure® technology was developed to treat 100% liquid waste (faecal sludge). We offer a unique treatment solution to solve environmental and health problems in settlements without sewerage networks. The main objective of Septopure® is to reduce environmental impact and treat sewage sludge in a safe, but affordable and sustainable way. Liquid waste contains very high concentrations of pollutants, which can vary widely. Septopure® is a flexible, continuous-flow, suspended growth process with alternating anaerobic/aerobic/anaerobic/aerobic stages (both for nitrogen removal and enhanced phosphorus removal) that can be adapted to changing loading

conditions. Mechanical pre-treatment is followed by flow, quality equalisation and pH adjustment. After the enhanced primary treatment, the effluent is sent to the biological process, which provides specific conditions for the removal of both nitrogen and phosphorus. Secondary treatment facilities are used to remove settling solids. Depending on the sludge's potential for further use or disposal, sludge treatment may involve a combination of thickening, digestion and dewatering processes. The treated wastewater is discharged into recipient, partial flow can be used as process water in the process after further treatment (filtration).

## THE TREATMENT PROCESS







WWTP UNDER CONSTRUCTION



SEPTOPURE® FAECAL SLUDGE TREATMENT PLANT



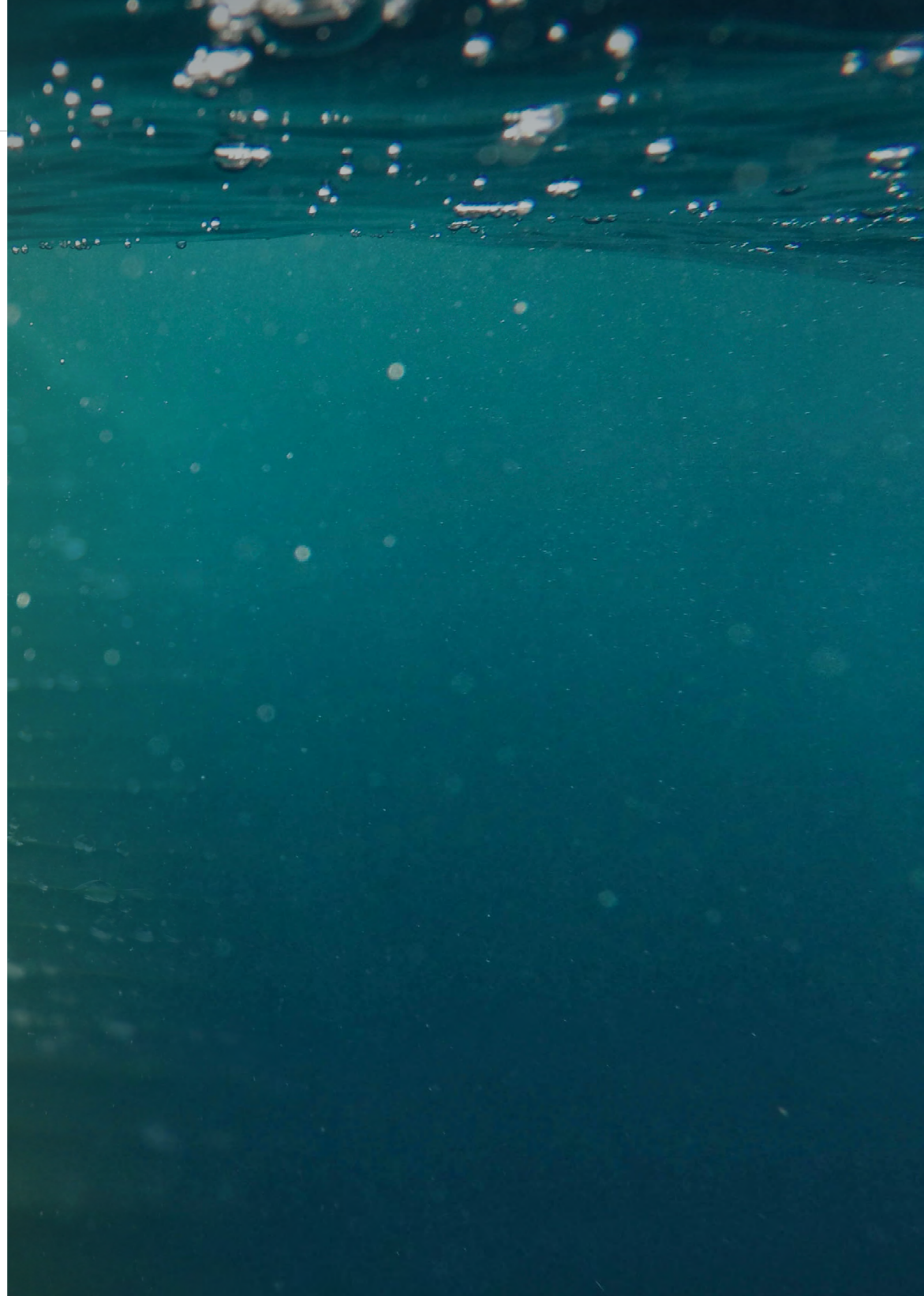


Considering the challenges in terms of wastewater treatment, PURECO, Sewerage Systems and Zoomlion **could together build an effective, affordable, sustainable system** with know-how and technology-driven solutions **and provided a customised project for 3 cities in Ghana.**

The new, reliable wastewater treatment systems meet the increasing demands of the rapidly growing cities in Ghana. With the professional training programs we can provide the necessary knowledge for the local staff and new jobs for them.

Our aim was to contribute to the Ghanaian environmental development via creating something new and remarkable in the field of wastewater treatment. We do believe that together we can build and bring **new values** into the life of the great people of Ghana!

**Sanitation for All together!**





**WE BELIEVE IN  
THE HEALTHIER  
ENVIRONMENT FOR THE  
PEOPLE OF GHANA**

