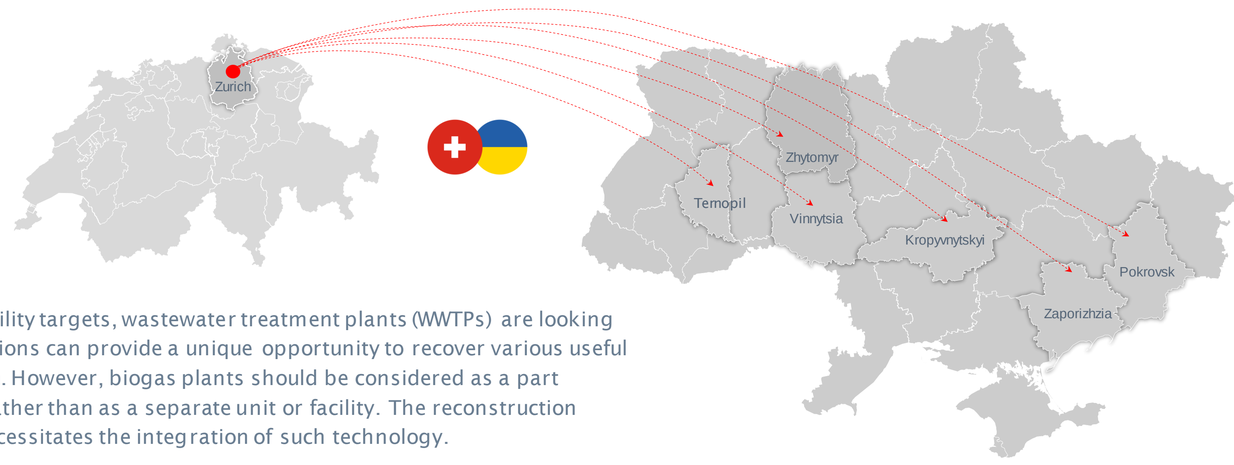
Sustainable biogas production
in municipal wastewater treatment plants in Ukraine

The aim of the project is to establish pilot cooperation and knowledge exchange between UC "Zhytomyrvodokanal" (**City of Zhytomyr**) and Waste disposal and Recycling/ERZ (**City of Zurich**) in the field of sewage sludge utilisation for energy production (biogas) for further implementation in Ukrainian wastewater treatment plants.



Treating municipal wastewater is a complex and costly process. With rising energy costs and sustainability targets, wastewater treatment plants (WWTPs) are looking for alternatives to reduce operating costs and carbon dependency. Advanced wastewater treatment options can provide a unique opportunity to recover various useful resources such as energy (biogas), fertilizers, minerals and metals embedded in the wastewater stream. However, biogas plants should be considered as a part of the municipal WWTP, ensuring proper sludge handling and thus avoiding environmental pollution, rather than as a separate unit or facility. The reconstruction plan for Ukraine in the context of transition towards sustainability and energy security after the war necessitates the integration of such technology.

Why biogas technology?

1. Diversification of energy sources through on-site renewable energy production and reduction of grid energy consumption
2. Reduced volumes of primary sludge, waste activated sludge and carbon emissions
3. Improved living conditions for communities near the sludge deposits
4. The biogas plant is expected to reduce the energy consumption of the wastewater treatment plant by producing renewable energy from waste

Project Objectives

Establish and facilitate cooperation and knowledge exchange between Swiss and Ukrainian water utilities and other stakeholders

Promote innovation and best practices for sustainable development and carbon footprint reduction in water and wastewater treatment in Ukraine

Identify and highlight the potential for the use of sewage sludge for energy production in Ukraine

Main Stakeholders

Communal Utilities for water and wastewater treatment

UC "Zhytomyrvodokanal"
UC "Vinnytsiaoblvodokanal"
RUPC "Dnipro-Kirovohrad"
UC "Ternopilvodokanal"
UC "Vodokanal", City of Zaporizhzhia
UC " Pokrovskvodokanal"

Municipalities and communities

Municipality of Zhytomyr city
≈ 260 000 inhabitants

CAS Rebuild Ukraine,
Bern University of Applied Sciences

Association of water utilities of Ukraine "Ukrainian Association of Water Supply and Sewerage Enterprises "Ukrvodokanalekologia"

Ministry for Communities, Territories, and Infrastructure Development of Ukraine

City of Zurich
Urban Development (STEZ)
Waste disposal and Recycling (ERZ)

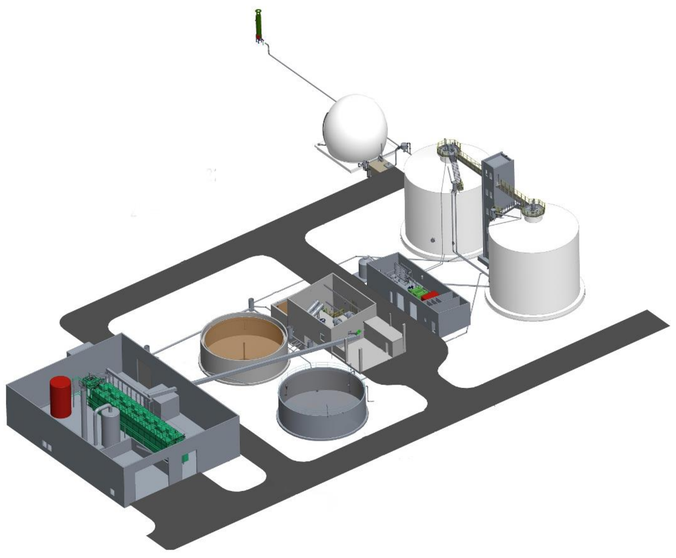
Expected outcomes

Establish international cooperation and partnerships between the City of Zurich and the City of Zhytomyr, as well as other cities and regions in Ukraine and Switzerland.

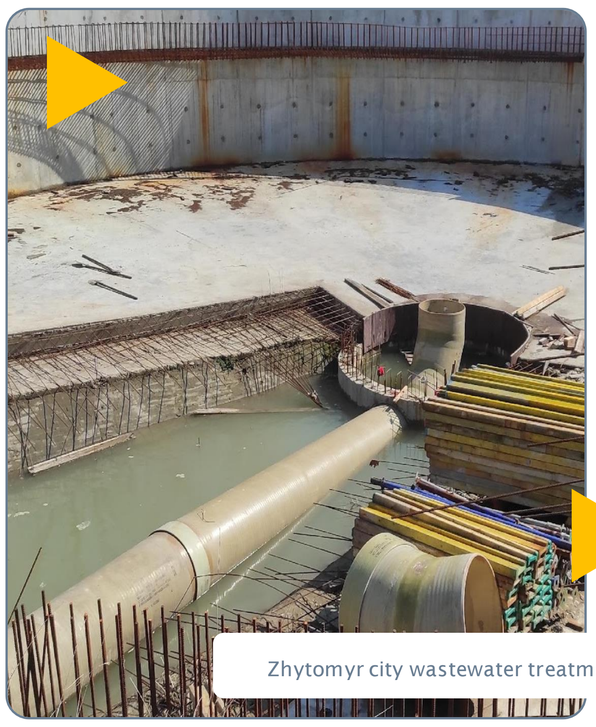
Create opportunities for Ukrainian partners to implement new sustainable technologies and business models by learning best practices from Swiss partners.

Raise awareness among Ukrainian partners on how to diversify energy sources and reduce greenhouse gas emissions.

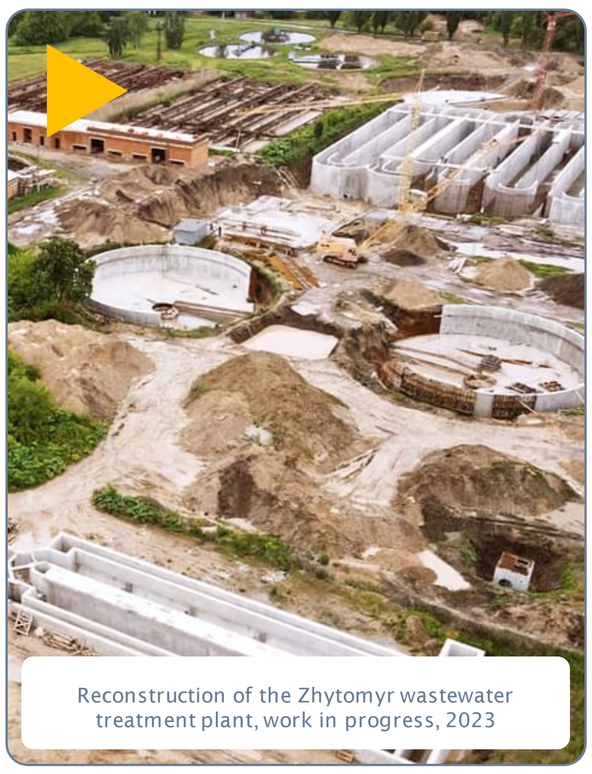
Develop a network and identify potential investors for the implementation of a biogas project in the city of Zhytomyr.



Biogas production plant
visualization of Zhytomyrvodokanal



Zhytomyr city wastewater treatment plant, work in progress, 2023



Reconstruction of the Zhytomyr wastewater treatment plant, work in progress, 2023

Reached Milestones

- **Potential and feasibility analysis of biogas production within Ukrainian infrastructure for wastewater treatment was made, research of applicable technology enrolled**
- **Mutual confirmations concerning participation in the cooperation are received from:**
  - City of Zhytomyr / UC "Zhytomyrvodokanal"
  - City of Zurich / Urban Development (STEZ), Waste disposal and Recycling (ERZ)
- **Network for knowledge exchange and capacity building has been created**
  - Association of water utilities of Ukraine "Ukrainian Association of Water Supply and Sewerage Enterprises "Ukrvodokanalekologia»
  - UC "Vinnytsiaoblvodokanal"
  - RUPC "Dnipro-Kirovohrad"
  - UC "Ternopilvodokanal"
  - UC "Vodokanal", City of Zaporizhzhia
- **The date of kickoff meeting with ERZ was confirmed**
  The first workshop agenda was developed

More about
CAS Rebuild Ukraine

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