

## 4<sup>th</sup> Newsletter

DECEMBER 2022

### Demonstration of an advanced technique for eliminating coal mine wastewater (brines) combined with resource recovery

### 2<sup>nd</sup> Stakeholder Consultation Event

On June 23 2022, the 2<sup>nd</sup> Stakeholder Consultation Event of the project took place in Poland. Representatives from all the Polish coal mine companies, public sector bodies (ministries, water supply companies) and universities visited the LIFE Brine-Mining demonstration plant. They were updated on the project progress, results and benefits, such as the recovery of clean water from coal mine brines (environmental), the expected income rise in coal mine revenues by the exploitation of coal mine wastewater (economic), and the associated creation of new job opportunities (social) from the project implementation. In total, 55 participants joined the event.



The LIFE Brine-Mining consortium and the Stakeholders of the project during the site visit for the demonstration of the pilot system by the pilot plant operators

#### Coordinating Beneficiary



GREECE



NATIONAL  
TECHNICAL  
UNIVERSITY OF  
ATHENS (NTUA)

#### Associated Beneficiaries



POLAND



Silesian University  
of Technology

SILESIAN  
UNIVERSITY  
OF TECHNOLOGY



POLSKA GRUPA  
GÓRNICZA

POLSKA GRUPA  
GÓRNICZA S.A.  
(PGG)



Research  
Institute

GŁÓWNY INTYTUT  
GÓRNICZWA (GIG)



THE NETHERLANDS



LENNTECH



SEALEAU B.V.



TITAN SALT B.V.



TITAN PROJECTS



GREECE



NEVIS - NOVEL  
ENVIRONMENTAL  
SOLUTIONS S.A.



THERMOSSOL  
STEAMBOILERS S.A.



## 2<sup>nd</sup> Stakeholder Consultation Event



The LIFE Brine-Mining 2<sup>nd</sup> Stakeholder Consultation Event took place in the premises of the Ziemowit mine, owned by PGG, in Poland



Prof. Loizidou, Coordinator of the LIFE Brine-Mining project, National Technical University of Athens, Greece



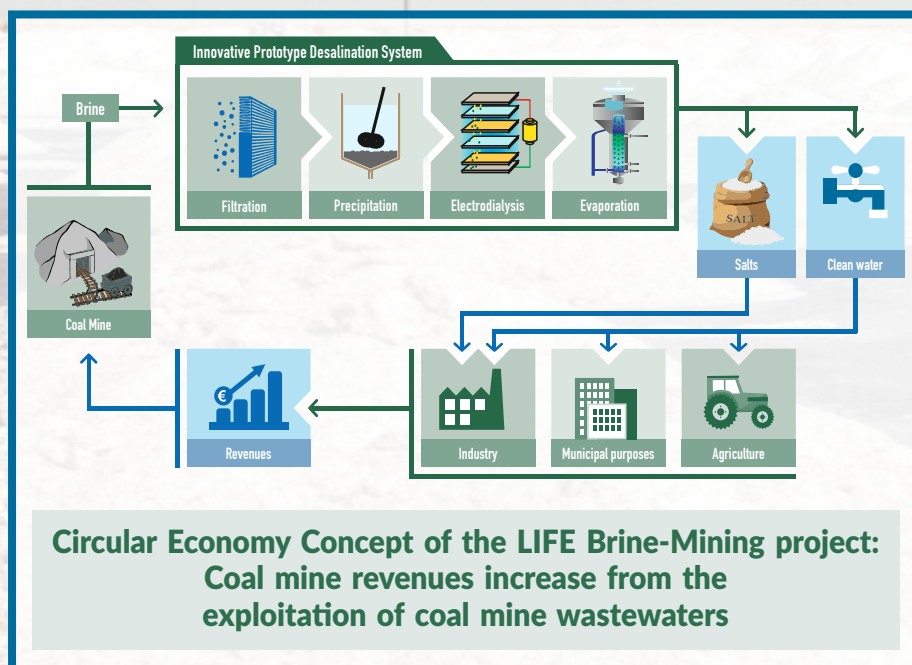
Dr. Grzegorz Gzyl, Associate Professor, and Dr. Anna Skalny, Environmental Management Specialist, both from the Central Mining Institute (GIG), Poland



Mr. Bogdan Wawro, the Vice-Director of Operational and Technological Restructuring Bureau of PGG, Poland



Miss Christina Xenogianni, Managing Director of THERMOSSOL, Greece



## Project Benefits

Environmental Economic Social



## 2<sup>nd</sup> Stakeholder Consultation Event - Project benefits

### Environmental Benefits

Avoid discharge of thousands of m<sup>3</sup> of brine per year into surface water

Recovery of thousands tons of clean water per year-suitable for irrigation and industrial use

Hundreds of tons of minerals/salts will be recovered per year, without the use of fossil fuels and the CO<sub>2</sub> emissions that accompany their industrial production

Hundred tons of CO<sub>2</sub> emissions savings

### Economic Benefits

Job opportunities will be offered to new professionals. Two (2) full-time operators will work at the LIFE Brine-Mining plant

The recovered materials will be promoted to the industrial market, boosting the coal mine income (€90,000/year by the Brine-Mining full-scale implementation)

At the same time, the recovered materials' prices will be lower than the commercial, making them more attractive to the market

The coal mine sector will save money by paying less fees to the government, due to less discharged brine in the aquatic environment

### Social Benefits

Incentives for local job opportunities, as more mines can follow the Ziemowit mine initiative

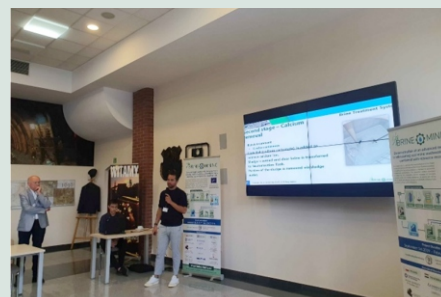
The recovered clean water can be used for municipal purposes, like irrigation of playgrounds

Rise of the environmental profile and status of the area, where the mine is located

Public health protection



Dr. Dimitris Xevgenos, Innovation Manager of the LIFE Brine-Mining project and CEO of SEALEAU, Netherlands



Dr. Niels van Linden, the R&D coordinator of LENNTECH, Netherlands



Miss Dionysia Diamantidou, Process and R&D engineer of LENNTECH, Netherlands

The project Stakeholders and members of the consortium visited the LIFE Brine-mining site after the Stakeholder Event, for the pilot system performance demonstration.



The project Stakeholders and members of the LIFE Brine-Mining consortium at the pilot system plant



Demonstration of the LIFE Brine-Mining pilot system to the project Stakeholders



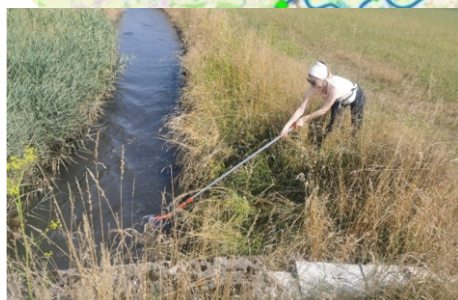
Dr. Krzysztof Mitko, Assistant Professor at the Silesian University of Technology (SUT), Poland, demonstrating the pilot system to the project Stakeholders

# Life BRINE MINING

## 3<sup>rd</sup> sampling campaign in the project target area



On July 22, 2022, the 3<sup>rd</sup> sampling campaign took place in the project monitoring area, which comprises the Goławiecki Stream and the Small Vistula River zone, where the Stream flows into. The project consortium continues assessing the stream and river water quality every six months to evaluate the impact of the full project implementation in the target area ecological status. The taken samples were delivered for chemical and biological analysis in the Silesian University of Technology by the team of the Central Mining Institute, who were responsible for the sampling campaign.



Sampling point in the Goławiecki Stream, near the Brine-Mining pilot plant



Sampling point in the Vistula River, before the Goławiecki Stream estuary into the River



Sampling point in the Vistula River, after the Goławiecki Stream estuary into the River

## Events

### Participation in the Melpro Conference - September 2022

From the LIFE Brine-Mining project consortium, LENNTECH participated in the MELPRO Conference, which was held in the Czech Republic. From September 18<sup>th</sup> until September 21<sup>st</sup>, 2022, LENNTECH had the opportunity to share with the Conference participants the project results, with regards to the use of membrane technologies for the recovery of clean water from coal mine brines.



Dr. Niels van Linden, representative of the LENNTECH team, in the Melpro Conference in the Czech Republic

### 3<sup>rd</sup> Project Meeting - October 2022

On October 11, 2022, the Brine-Mining 3<sup>rd</sup> project meeting was held in the premises of NTUA, in Athens, Greece among the project consortium members. The progress of the project Actions, the difficulties and the milestones achieved since the last project meeting were discussed by the participants.



The project consortium members in the NTUA Library & Information Center, in Athens, Greece



## Events



### Participation in the Conference: Challenges in water management during the transition process - October 2022

On October 12, 2022, the Central Mining Institute (GIG) participated in the Polish conference entitled *Challenges in water management during the transition process*, co-organized by the Polish Chamber of Ecology and the Central Mining Institute. Mr Piotr Zawadzki, the GIG representative, presented the Brine-Mining pilot plant as an innovative system for water management in the coal mine sector, dealing with the recovery of clean water and valuable minerals/salts from coal mine brines.



Piotr Zawadzki, representative of the GIG team in the Conference, in Poland

## Upcoming Events



### Workshop - Early 2023

An online workshop is planned in the following months, focusing on the importance of brine treatment in the EU area today. Current energy demand situation, due to the war, turns again coal into a dominant resource for electricity production, despite the EU strategy towards cleaner energy production. Coal-mine brine treatment will be necessary to avoid environmental pollution in land and waterways in the EU territory. The environmental issues in river Odra indicate the necessity to expand the project's proposed technologies operation in other industrial sectors, responsible for the generation of saline wastewaters and the salinization of rivers and lakes. Representatives from European Projects, institutes, and companies will be invited to the workshop to share their knowledge in membrane and evaporation technologies for the elimination of brine discharge in the environment.



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