

Four ambitious local communities - **Heerlen** (The Netherlands), **Zagorje** (Slovenia), **Czeladz** (Poland) and **Bourgas** (Bulgaria) – use, respectively plan to use locally available renewable energy sources, specifically energy from mine water for the heating and cooling of buildings. The system is based on low energy principles – in this context also called ‘energy’ – and is facilitated by an integrated design of building and energy concepts. The communities’ demonstration sites feature new houses and non residential new buildings as well as existing residential buildings to connect with the mine water grid.

As the success of the pilot schemes very much depends on the motivation, collaboration and commitment of each community’s inhabitants, plans for information, communication, education and participation will be prepared for Heerlen and Zagorje. This way, knowledge of renewable energy sources and options is no longer just the privilege of the professionals. All parties, including the end-users, are able to participate in the process.

Contact

Cauberg-Huygen Consulting Engineers BV
 PO Box 480, NL-6200 AL Maastricht
 Phone + 31 43 3467842
 Fax + 31 43 3476347
 Email: p.optveld@chri.nl

The REMINING LOWEX consortium is composed of various expert organisations and the four pilot locations:

Coordinator:
Cauberg-Huygen R. I.
 RAADGEVENDE INGENIEURS BV
 (Netherlands)



Heerlen Council
 (Netherlands)



Bourgas Council
 (Bulgaria)



Czeladz Council
 (Poland)

Univerza v Ljubljani
 Fakulteta za strojništvo



Municipality Zagorje
 ob Savi (Slovenia)



EURACOM
 (EU)



University of Ljubljana
 (Slovenia)



University of Silesia
 (Poland)



Fraunhofer Institute
 Fraunhofer Institute
 Science (Bulgaria)



Technology for Ecology and Economy
 Coal Mining Restructuring and Economy (Belgium)



Climate Alliance



Weller Women
 (Netherlands)



Redevelopment of European Mining Areas into Sustainable Communities

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www.remining-lowex.org

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With mine water against climate change

Due to climate change there is an undisputable need for more efficient energy use and reduction in CO₂ emissions. A huge effort must be made to conserve high quality and primary energy resources. The REMNING LOWEX approach provides an important contribution to these objectives. This will be achieved by exploitation of geothermal energy from mine water and by making use of these large volumes of water for heating and cooling.

Contributing to European Climate Protection Targets: 20 + 20 + 20 by 2020

REMNING LOWEX contributes to the comprehensive EU climate and renewable energy package. It is designed to reduce carbon dioxide emissions (by 20 percent), increase the share of renewable energy in the energy mix (by 20 percent), and improve energy efficiency by 20 percent by 2020. Through CONCERTO best practice examples are created on a community level that go well beyond the agreed 20 / 20 / 20 targets.



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Participating in REMNING LOWEX

The objective is to involve local stakeholders and citizens in municipal energy policy-making and to share a common vision. The main advantage lies in the fact that it yields better results: actions are developed and implemented in a concerted and coordinated way. This participative approach promotes a more effective political decision-making process, encourages energy citizenship and stimulates the market for sustainable energy. Since women and men seem to use energy in a different way, REMNING LOWEX particularly motivates women to take part in the process to include their needs and expectations.

Heating and Cooling with Mine Water

In the REMNING Project heat from water in abandoned mine shafts is used for the heating of houses and other buildings. Water from shafts located closer to the surface is used for the cooling of buildings in summer. A number of new innovative technologies will be demonstrated, not as "single components" but as rational and crucial parts in an entirely integrated energy concept. This concept provides a chain: from source to distribution to building to end-user. It uses locally available renewable and sustainable energy sources on a community-wide scale by building and retrofitting the built environment to suit the use of energy from mine water.



The entirely integrated approach is innovative and completely unprecedented on this scale.

Benefiting

- REMNING LOWEX contributes to improving the quality of life in mining and former mining areas in Europe with:
 - technologies with potential for lowering energy consumption in built-up environments and therefore lowering costs for the end-users,
 - improvement of indoor air quality, provision of thermal comfort (365 days/year, winter and summer conditions) and supply of security, contribution to CO₂ reduction and this way to climate protection plus adaption to climate change with buildings equipped for possible heat waves.

Being informed

In order to use mine water, buildings and residences must be adapted to the new source of energy. To help end-users make use of mine water and thus improve their life quality, occupants will be adequately informed about the consequences for their accommodation and living environment. Information will be provided via a website, info displays, brochures,

personal advice and guided tours.

To support key actors on their way to energy transition, an advanced training course will be organized by REMNING LOWEX.

