

REMINING-Lowex Minutes 3rd Meeting

Date: 2008 October 15 - 17

Place: Czeladz/Sosnowiec, Poland

Day 1: Czeladz

1. Visit to Saturn mine

The 3rd REMINING-lowex meeting started with a excursion to the Saturn mine in Czeladz. During this excursion the underground pumping installations were visited at a level of approximately 200m underground.

After the visit to the mine an introduction was given by CZOK on the drainage of the abandoned Silesian mines and the specific geological and geothermal properties of the Silesian mines.

The Central Mine Dewatering System (CZOK) is located in Czeladz. It has been established on 1st January 2001 as the Coal-Mines Restructuring Company (SRK). Basic objectives are :

- protection of mines in operation from water hazard by drainage of adjacent abandoned mines
- modernization and simplification of drainage system through liquidation of shafts, tunnels, intermediate pumping stations etc. in order to costs and technical infrastructure reduction.

There are 28 pumping stations including 20 stationary stations equipped with 101 pumps and 8 deep-well stations equipped with 19 pumps , with a total capacity of 80M m³ mine water/year.

Temperatures vary from 14.8 to 29.2^o C depending on the depth of extraction (~200 – 800 m). The capacity/pump varies from 120 – 600 m³/h. The mine water is now discharged to surface water (rivers). The operational costs are approximately 60 M Zloty/year for pumping costs and 6M Zloty/year for environmental costs.



2. Welcome and opening of the meeting

The meeting continues in Czeladz in the building 'Palace under pillars'. Mayor Marek Mrozowski opens the meeting and welcomes all the delegates.

3. Procedures and administrative matters

3.1. Announcements

No announcements have been made.

3.2. Agenda, structure and objectives of the 3rd meeting

Peter Op 't Veld presents the final agenda, given in Appendix 1, modified during the meeting and the structure of the meeting.

The participant list is given in Appendix 2.

The 3rd meeting is structured as follows:

Day 1:

- Update of the activities in the CONCERTO communities, Heerlen and Zagorje
- Update of activities in the associated communities Czeladź and Bourgas
- Working session on Training

Day 2:

- Lectures on Silesian University
- Working session on Risk assessment
- Update of the work packages
- Separate working session on geology.

Day 3:

- Joint meeting with interested Polish partners, organised by SRK
- Administrative matters, management and communication issues
- Dissemination actions
- General summing up, conclusions and actions to next meeting

The specific objective of the third meeting are:

- the implementation of the REMINING-lowex project in Czeladź and possible extensions to Upper Silesia and collaboration with new regional partners.
- the implementation plan for the next 18 months.

4. Update on the locations (work packages 2 and 3)

4.1 Heerlen, the Netherlands

Presentation by Joep van Wijk

The presentation starts with an overview of the activities, carried out since the signing of the Interreg contract in November 2004. Five wells have been realized from 2005 to 2007 and 8 km of pipelines (3 pipes system cold, warm, return) have been established from 2007 to 2008. Three pump tests have been carried out in 2005 and in 2008 to measure the minewater capacities (m³/h), the water quality and the temperatures. The total capacity of the system has been engineered.

The Interreg project was finalized with the Minewater conference in October 2008 with the official opening of the Energy station in Heerlerheide

The plans for the next 18 months is to activate the participation in Reming Lowex and to re-organize the project. Activities that are planned on the short term are the funding of Corio Energy for the production of minewater. It includes exploitation of the system, acquisition for new customers and establishing contracts, maintaining the system and optimizing the system. For 2008 also is planned the connection of the first building (Heerlerheide), installing well pumps and a pump-management system.

4.2 Zagorje, Slovenia

Presentation by Jure Vetršek

Jure Vetršek explains the content of the latest research reports:

- Analysis of biomass district heating systems in Slovenia.
- Energy analysis of public buildings in Zagorje.
- Guidelines for energy conservation in public buildings
- RES potential in Zagorje.
- Recommendations for energy retrofit of all public buildings
- Economical and environmental evaluation of public buildings retrofit

Activity 1: Enlarging biomass district heating

- Analysis of district heating systems in Slovenia
- Data acquisition about characteristics, production end energy supply and price from existing biomass district heating system in Zagorje
- Suggestions for district system enlargement
- Activities coordination with system manager representative
- Cooperation with experts for hydraulical analysis and balancing of large systems (University of Maribor)
- Excursion to biomass district system with ORC CHP in Lienz.

- Setting up a draft model for district system numerical analysis with integration of demand side dynamics and decentralized solar heating systems.

Activity 2: Low energy buildings with connection to mine water

- Simulation of ex-miners bathrooms heat response.
- Feasibility study of large solar system for sanitary water and heating support.
- PV feasibility study.
- Local geology conditions overview
- The building of the swimmingpool to be connected to mine water is postponed.

Activity 3: Retrofitting residential buildings and connection to biomass grid

- Indoor climate measurements,
- Blower door tests,
- interview with retrofit initiators.
- Large solar system feasibility study for sanitary water,
- Thermograph of selected multi family buildings.

Activity 4: Energy monitoring and certification of public and CONCERTO buildings

- Public buildings in municipality Zagorje were examined.
- Measurement of indoor environment have been carried out in 11 buildings.
- Thermography of 19 buildings.
- Calculation of buildings energy performance.
- Retrofit suggestions for individual buildings.

The proposal for future work for the coming next 18 months is:

- Web portal for public buildings energy monitoring (confirmed)
- Municipality selects 2 to 3 buildings foreseen for retrofit, detailed analysis and measures simulation, 25% RES share.
- Support about district system enlargement and heat storage installation in combination with solar energy exploitation (confirmed)
- Education about new national rules for building energy use. (confirmed)
- Support of ex-miners bathrooms energy retrofit with mine water exploitation by the use of advance technologies.
- Initiation of multi-family buildings retrofit

4.3 Czeladz, Poland

Presentation by Rafal Kost, Katarzyna Pilc, Joanne Wewoicz.

Rafal Kost starts with a general presentation of Czeladz town

The impact of mining on social and economic life in Czeladz is summarised. Czeladz has an outmoded and subordinated town economy and there is a similar situation in whole Upper Silesia region. Hence time is needed to transform the economy and shift the society. Current trends are a decreasing of social safety, need for awareness of ecology and environment issues, unemployment which will lead to unavoidability of changes

Then the local energy policies in Czeladz were discussed. As usual it is first of all based on law and regulations, but there is also access to alternative energy sources. The municipality acts as a regulator in case of market units' lack with as background the environmental tendencies, and the liquidation of CO2 emissions. One of the problems is the system of financing. Also there is still the lack of awareness and often the question is if saving energy is considered as a pre. There are typical local circumstances and project issues. Since the closure of the mining in 1996 there are still dehydration actions necessary. The wasted mine water is led into the Brynica river. Lots of post-mining property are out of use but, from the other hand, there are plans to use mine buildings. In this framework Czeladz municipality considers to take-over some of the post mining properties. In addition, the probable use of mine water to heat and cool buildings in the town is considered now with as main questions is it technically applicable and economically feasible?

Then a presentation follows on the implementation of Remining-Lowex in Czeladz, starting with the history of the Saturn mine, mining in Czeladz in general and the situation nowadays.

First the plans for the premises of the Saturn mine were explained, starting with an inventory of the characteristics of the technical state, varying from (very) good to poor to the technical condition of the mine. The plans for the redevelopment of this area were presented starting with a short SWOT

analyses. Strengths are the keeping in good condition and complete Polish hard bituminous coal mines from the 19th/20th century and the beneficial localization. Opportunities are the the possibility of recruiting union means and investors and the structure of the new road to Katowice.

The functional and special conception includes:

- an educational and conference centre
- a school
- a business centre
- an administrative centre
- the technical back
- a centre of crafts
- the power station gallery and Saturn museum
- a forum
- and remaining objects such as a hotel, restaurant, main gate and the housing estate Saturn

Costs of the revitalization of the Saturn Mine (the Mine of the Science and Culture) are estimated at appr. 100M Zloty.

Then some new building plans were presented. The total surface area of the new housing estate is 3,5 ha with an expected number of inhabitants of 950. In total a number of 260 apartments will be built with a total area of 20.280 m². The average area of apartments is 78 m². Further more 1200 parking places and a total market area of 2.500 m² is planned. The heat power needed is 2.500 kW and the optimal power acquired is 7.500 kW.

4.4 Bourgas, Bulgaria

The progress of technical work was presented by Klara Bojadgieva

An overview is given of the technical work for VKA IV during the first year:

- Regional and local geological maps and profiles have been drawn up.
- Available geochemical data on water samples taken from prospecting wells and coal mines during the period of exploration and have been summarized.
- General information on mines surface and underground conditions have been collected.
- Preliminary ground water modeling of Chernomore mines has been done.
- Possible end users were selected and general assumptions for water applications have been presented.

Following problems were encountered

- Difficulties (technical, financial, administrative) encountered in organizing pumping test in "9.IX." vertical shaft during the first reporting period.
- Lack of formation temperature measurements inside the studied area before the mine exploitation.
- Insufficient data on water temperature distribution inside the Chernomore mines.
- Lack of own software for modeling hydrothermal processes in the mines. Data processing will be carried out together with the colleagues from Poland using their software. An extra working meeting is planned with University of Silesia in conjunction with the 3rd meeting.

Following knowledge dissemination took place:

- Presentation of an article on the International Conference - SGEM/08 (Albena resort, Bulgaria, June 2008) - "Potential Use of Geothermal Energy from Abandoned Coal Mines (Remining-Lowex Project)" - P.Opt'Veld, E.Roijen, K.Bojadgieva, A.Benderev, V.Hristov, T.Kehaiov
- Article, submitted for publication in Bulgarian scientific magazine (Minno delo i geologia) - "Water in abandoned coal mines - source of geothermal energy (Remining-Lowex project)" - K.Bojadgieva, A.Benderev, V.Hristov, T.Kehaiov and H.Hristov
- Project announcement in an article: "Status and outlook of geothermal development on the Balkan Peninsula" K.Bojadgieva. Presented on the Geothermal Conference in Reykjavik, Iceland, 23-27 August, 2008.
- Current update of the Chernomore Web Site (Geological Institute, Bulgarian Academy of Sciences).

Some possible projects to be connected with mine water are discussed:

1) Private Furniture Company (ABV&SON): this building is located at about 160m from the vertical shaft. The building is insulated according to the requirements for low exergy heating. The existing internal installation could also be used after doubling the number of the available heating units. A conventional fossil fueled boiler is currently used for heating. The preliminary estimated heat load is about 70 - 80 kW.

2) Cherno More mining village: Cherno More village is located at about 1 - 1,5 km north of the vertical shaft. It has several public buildings – school, kindergarten, post office and village municipality that are potential targets for the use of minewater. However, these buildings are old and need major retrofitting. The cost of connection pipeline between the vertical shaft and the village will raise considerably the total cost of the project.

3) Cherno more - mine (in operation): Mine water is initially collected in an underground reservoir at a depth about 300 m and then is pumped out to the surface and disposed in a small basin at a distance of 70m to the office buildings. The temperature of the disposed water was 26.50 C (July 10, 2008) and remains above 15⁰ C during the winter season. The quantity of pumped mine water per day is about 600 m³. The buildings are very old and need major retrofitting.

The progress of the work by Bourgas Municipality was presented by Velichka Velikova During the first year regular working sessions were held with scientific partner BAS-GI and experts and managers of “MINA Cherno more” EAD (Ltd.) in connection with the geologic researches and the mayor of Cherno more village. Partners and potential customers for minewater are “Mina Cherno more” EAD, “AVB & SON”, “Gazstroimontazh” AD /Gasbuiltinstalling PLC and others.

Following public announcement and info to the media has been released:

- First press-release in the media and on the official web-page of Burgas Municipality – in the beginning of the year.
- Second press-release in the media and on the official web-page of Burgas Municipality – August, 2008.
- Local newspaper “Chernomorski far” – copy 161, 20 August, 2008
- National newspapers “24 chasa” /24 hours/ - 21 August, 2008
- “Dnevnik” appendix “Morski dnevnik” – 22 August, 2008
- As well as by internet

Next to it preparation of promotional materials took place such as a brochure and poster, draft in Bulgarian language

The internal timetable is that between 27 October and 20 November, 2008 a public dispute will be held with stakeholders, target groups, potential partners/third side in Cherno more village.

Considering dissemination, an ICLEI Book is released with the topic “The City of Burgas’ approach to sustainable energy”

The current situation and problems encountered are particularly the interest of partners and consumers and the low interest of private sector and citizens.

Forthcoming planned includes:

- Organization of the public dispute/hearing next month
- Organization of the meeting in Burgas next year
- Supporting and assisting GI, BAS
- The Business case and the Implementation plan will be elaborated during the 2nd year.
- Dissemination:
 - o Third press-release in the media and on the official web-page of Burgas Municipality October-November, 2008 before the conduction of the public dispute;
 - o Forth press-release in the media and on the official web-page of Burgas Municipality – after the meeting in Burgas next year.

5. Work package 6, Working session on Training

Day one ends with a training session on Low Exergy principles presented by Christina Sager and Kirsten Lück. The presentation contains an elaboration of work package 6, task 6.3: Preparation and implementation of advanced training modules / seminars for researchers including the following issues:

- Introduction
- Current state: Energy
- Thermodynamics
- Exergy in buildings
- Simulation and Calculation tools
- LowEx on Community Level

The session is very comprehensive and at a good and understandable level. It can be used as a base for a further dissemination and for further training events. For the next meeting (4th working meeting) it is decided to develop a similar training on lowex components and concepts.

Day 2: Sosnowiec

6. Visit to deep-well drainage pump system

Day two started with a visit to a deep-well drainage pumping station in Sosnowiec where the pumps and monitoring system could be seen. The pumping capacity is 420 m³/h with a nominal power for the pumps of 820 kW. The water is pumped from 300m and then transported to the river for 800m.



7. Lectures on University of Silesia and presentation of the (other) work packages

7.1 Welcome at the university of Silesia

The second day at the University of Silesia in Sosnowiec was opened by a welcome speech by the dean of the faculty. The university is mentioned as a possible building to be connected to mine water as the building is located very near a mine water well.

7.2 WP 2: Research, Geology of abandoned coal mine fields

Zbigniew Małolepszy, University of Silesia, gives an extended lecture on the geology of abandoned mine fields in Europe.

The flooded, abandoned deep underground mines form low-temperature geothermal reservoirs, characterized by the site-specific geological, hydrogeological, and technical conditions of mining fields. The large volumes of underground open spaces with high permeabilities that are left after mining activity in areas with relatively high geothermal gradients may be considered as man-made reservoirs of (warm) mine water.

Water reservoirs can be found in almost all kinds of underground mines after termination of exploitation and abandonment of mine workings.

The mine water reservoirs characteristics are explained:

Lithology:

Rock formations of coal fields generally consist of a variety of thin intercalated layers of terrigenous deposits which are horizontally bedded in most cases. Claystone, siltstone, and sandstone rather than conglomerates are characterized by low porosities and permeabilities.

Hydrogeology:

Abandoned workings of individual coal mines contain tens of millions of cubic meters of warm waters. High permeabilities and porosities of man-made reservoirs in the mine.

Geothermics:

Temperatures of water in flooded mines reach more than 45°C at depths of up to 1000 m. However, it is known from some European coal fields that formation temperatures at this depth exceed 50°C. The rate of cooling of the rock mass during mining activity and the time for thermal recovery to natural, undisturbed thermal conditions can be modelled.

In general all European mining areas are very well mapped. Underground mapping survey work at the large scale of 1:1000 gives very detailed documentation on the abandoned workings of every extracted coal seam. A difficulty however is the transformation of these maps as several coordinate systems are used, this is a difficult and specialised job.

The water reservoirs in abandoned mines are very accessible. Many of the vertical shafts remain for mine de-watering or other technological purposes and give access to deep levels of the mines where geothermal reservoirs can be located. Some of the wells drilled from the surface down to coal seams can still be recovered for use as production or injection wells. Considering the accessibility the scheme of the closing of mines (in Silesia) should be taken into account.

Then the presentation focuses specifically in the Silesian situation and the characteristics of the mines, temperatures and geothermal gradients. In general the water is about 14°C with a total capacity of 23 m³/min.

Finally, a good overview is given of the geological characteristics of the four REMINING locations:

Location	Dewatering	Open to surface	Voids	Existing wells	Water quality	Type of reservoir
Heerlen	no	no	flooded	no		galleries
Zagorje	no	no	backfilled shafts	yes		
Bourgas	no	yes	flooded	yes (?)		
Czeladz	yes	yes	flooded/ open	no	500-2000 mg/l	

This overview is discussed and it was suggested to add also water quality and type of mining (old/new).

7.3 WP 2: Research, Regional conditions in renewable energy systems

Then a presentation was given by Rafal Kost on the regional conditions for renewable energy systems. It starts with a view from the past with the burning of hard coal and lignite, causing severe pollution and so called black smoke (30% sulphur). Now there several options for renewables:

- biomass and biogas - effect of scale
- wind electricity plants (mills)
- solar systems
- heat pumps
- role of self governance (municipality as a promoter)
- political interest - critical mass vs lobbies
- interest of energetic and financial sector

The interest for renewables has increased as the over the last three years the prices of energy in Poland have been doubled. As for the use and exploitation of mine water in Czeldaz: There are two mines with and two possible locations for installation. There is an extended mine dehydrating plan and the amounts of waste water, geological and physical conditions and temperatures are known. Exploitation must be considered in relation to local economic conditions.

7.4 WP 1, task 1.4 Working session on Risk analyses

The working session starts with an introduction by Joep van Wijk, Heerlen.

A mine water project is not a common RES project and the risks are not fully known. That is why it is important to make the risks visible. A number of possible risks are mentioned. Risks must be made visible before any risk mitigation can start. As many disciplines play a role in establishing a mine water project it is important to work with multidisciplinary teams.

Then Peter Op 't Veld shows a method to make risks visible in terms of risk chances and risk impact with the following steps:

Step 1: Definition of risks

Step 2: Assessments of risks:

- Change *low* < 10%; *middle* 10 - 30%; *high* > 30%
- Results or impact

Step 3: Classify the risks

Then the risk scan be listed in a matrix representing the chances versus the impact from low – middle to high. Filling in the matrix it gives an overall view of the risks in a project. Then a plan for risk mitigation can be made where a balancing should take place between the costs for mitigation and the ration of risks that is acceptable.

The next steps are:

Step 4: Definition of measures for risk mitigation

Step 5: Make a new assessment of risks after mitigation

Step 6: Make a new classification

Then an interactive exercise was done with this method. The participants were asked to mention at least 10 important risks. These risks were assessed in terms of chances and impact. Then a mitigation plan was made after which a new assessment and classification took place.

7.5 WP 4: Energy Exploitation

Work package leader: Weller (not present), presentation by Erwin Roijen of CHRI on the progress in the pilot Heerlen.

The objectives of WP4 are:

- The assessment of the feasibility of (private) energy exploitation for the four communities
- foundation of a (Minewater) Energy Exploitation Companies (MEC's) including the assessment of financial exploitation parameters
- negotiations and contracting with customers
- putting up a structure for billing and customers care

Work package 4 has following tasks:

- Task 4.1 Exploitation parameters assessment
- Task 4.2 Feasibility
- Task 4.3 Financial parameter assessment
- Task 4.4 Mine water energy exploitation company
- Task 4.5 Contracting

Erwin Roijen presents a sensitivity study on economical and energetic parameters of mine water as an energy source (method, preliminary results) focussing on direct heating and cooling buildings by mine water versus minewater as a thermal half fabricate, which needs post processing. The presentation shows the overall energy costs and performance of heating and cooling with mine water, compared to traditional solutions (based on fossil fuels).

Sensitivity study on economical and energetic parameters of mine water has been carried out as an energy source by Cauberg-Huygen (method, preliminary results). The energetic and financial performance of minewater as an energy source depends on a variety of parameters.

Important parameters are:

- direct or indirect heating and cooling by minewater (preference: direct heating and cooling / practice: mix of systems)
- effectiveness of pumping and distributing the mine water
- type of ownership of the wells and/or the buildings
- cost of capital for the investments
- cost of fossil energy (natural gas versus electricity) and their future price development

suggestion is given to look at the outcome of the joint session between Interreg en REMINING partners in BRE Watford UK 13 December 2007.

Task 5.6 however is more generic on comparative law. This task should be coordinated by Euracom. The first step is the making of a template for questionnaire. This questionnaire should be sent out to a number of countries in and out the REMINING consortium. The outcome should be (just) a condensed overview of 1 to 2 A4's

Task 5.7 then is an analyses of this survey.

It is decided that during the next meeting (4th working meeting) the overview of task 5.6 will be completed followed by a presentation. The analyses will follow later in the project, also taking into account the legal experiences of the pilots.

Planning for the second period of 18 months:

	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
work package 5																									M5
Task 5.1 Support on Licences																									
Task 5.2 Support on Tendering											D5.1														
Task 5.3 Support on Ownership relations																									
Task 5.4 Support on Risk Assessment																									
Task 5.5 Support on Contracting																									
Task 5.6 Study on Comparative Law in mining areas																									
Task 5.7 Impact of comparative law on sustainable development of mining areas																									

7.6 WP 7: Network and Dissemination

WP leader: Climate Alliance, no specific presentation is given but the tasks are reviewed by Andreas Kress.

The objectives of work package 7 are:

- To make an inventory of mining areas in Europe, emphasizing their characteristics and significance for local energy infra structures using low exergy principles, integrated urban planning and building design
- The promotion of energy transitions in mining areas
- To establish links with existing networks for dissemination

Work package 6 has following tasks:

Task 7.1 Inventory of mining areas in Europe

Task 7.2 Developing design tools for low-ex energy infrastructures in mining areas

Task 7.3 Preparation and realization of a European LowEx conference

Task 7.4 Promotion of energy transition in mining areas

Task 7.5 Linking of the REMINING project with existing networks on mining and ECO buildings/low exergy

Task 7.6 General implementation plan for application of low valued energy with mine water as source in EU mining areas

In relation to dissemination also work package 3, task 3.1 Occupants is discussed, more in particular the presentation on dissemination material. A proposal for a flyer for locations was discussed.

As for task 7.2 there was a discussion about the relation of task 7.2 in relation with WP2, tasks 2.1 and 2.2, the lowex guide and lowex tool. Currently some new activities on tools and instruments for community planning have been started up (Dutch EOS Long Term research project TRANSEP-DGO, and IEA ECBCS Annex 51)

Task 7.3, the Lowex Conference was discussed in relation to the organisation of such event. The idea is to link it with other occasions (instead of a conference on its own). Some possibilities are:

- 2010 a joint event in Germany together with the conference on IEA ECBCS Annex 49
- For municipalities during annual CA conferences

A discussion on target groups, however, no decision were taken yet.

In relation to task 7.4 new contacts with other mining areas (Russia, Belgium, Spain); coordination of the contact will take place in collaboration with Euracom.

Planning for the second period of 18 months:

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	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
work package 7						M7.1																		
task7.1 Inventory of mining areas in Europe																								M7.
task7.2 Developing design tools						D7.2																		
task7.3 European LowEx conference						D7.3																		
task7.4 Promotion of energy transition in mining areas																								
task7.5 Linking of the REMINING project with existing networks																								
task7.6 General implementation plan for application of low valued energy with mine water as source in EU mining areas																								

7.8 WP 2: Working session on geology

The geological reports from Heerlen have been distributed to BAS and UoS. Explanation was given by Peter van Tongeren on the storage well in Heerlen (warm well HH2) and the role of the intermediate well HLN3 (position, depth, purpose). Also an explanation is given why the geological part of the project in Heerlen is executed the way it is (why drilling in stone drift and not in a shaft, why the specific locations, avoiding of shortcuts etc.). Also discussed is the opportunities of mines still in use. It has many benefits to consider post mining use in order to make underground adaptations for later use of mine water.

Day 3: Czeladz

8. Discussion on implementation of REMINING-lowex in Silesia

After a visit to the Czeladz town hall a joint meeting with interested Polish partners, from different Silesian mining communities, organised by SRK. Peter Op 't Veld starts with a short introduction to the REMINING-lowex project. Then a discussion follows on the possibilities of using mine water for heating (and cooling) of buildings and the specific technologies that are necessary to use low temperature supply for heating of buildings. From the discussion it became clear that there is a lack of knowledge about the application of low valued energy and low temperature heating in buildings. As training is foreseen in the REMINING programme it was decided to organise a training on technologies in 2009. In order to make good customised and tailor-made training modules Peter Op 't Veld suggest to organise a workshop in January 2009 with all interested regional actors and interested parties to make an inventory of the specific needs on training. The date for this training is settled now on January 21, 2009.

9. WP 1: Management and administrative issues

Work package leader: CHRI, presentation by Peter Op 't Veld

The main objectives of work package 1 are:

- To establish an efficient project management to ensure an effective project implementation and exploitation of results.
- To build a project organization with 7 horizontal work packages, and 5 vertical key actions including elaborated project management and dissemination.
- To do a (top-down) monitoring of the project work, results and progress, creating conditions for harmonization of the decentralized activities and exploitation of results and dissemination.
- To organize internal communication, interim and final reports both for internal use and for the Commission,
- To organize meetings, overhead activities and assisting Key Action Managers
- Central budget registration, financial reporting and safe guarding

The project coordinator and the financial manager have a secretarial function (meeting reports, financial reports, website management, information collection and distribution).

The tasks of work package 1 are:

Task 1.1 Preparation: The preparation and organization of the project and the editing of a detailed work plan before the starting of the other activities of the project; this done

Task 1.2 Project Secretariat; this is established

Task 1.3 Installation of the Project Advisory Committee.

Task 1.4 Risk analyses on VKA I and II including Risk mitigation

Task 1.5 Project Communication: creating a website including electronic discussion platform.

Task 1.6 Publication of public documents/tools etc.

Task 1.7 Monitoring

Ad task 1.2: Reporting

In the Contract following reporting periods are mentioned:

- P1: from M01 – M12
- P2: from M13 – M24
- P3: from M25 – M36
- P4: from M37 – M48
- P5: from M49 – M60

The 1st reports had to be produced in June 2008 and to be submitted within 45 days after M12, i.e. before August 1 2008. There is some delay in this work but all reports will be finalised in next week after the 3rd meeting. The new deadline set by the Commission is October 24.

Following reports have been produced until now:

- Period activity report with an overview of activities, progress toward the objectives and milestones, problems encountered > *coordinator*
- Plan for using and dissemination of knowledge (separate part of report)
- Periodic management report including:
 - Justification of resources (linked with activities)
 - Financial statement – Form C
 - Summary financial report
- Report on the distribution between contractors of Community financial distribution

Ad task 1.5: project communication:

CONCERTOplus:

All information on the CONCERTO initiative and CONCERTO projects can be found on the website www.concertoplus.eu. All participants confirmed that they have received codes to log in on the members section (from Concertoplus).

Own REMINING-Lowex website:

Our 'own' website www.remining-lowex.org is almost completed. It contains the following possibilities:

- Project communication by the members section of the website: Members section login with 'test'
- Discussion topic can be posted on the discussion board
- (working)documents can be uploaded under documents
- There is the possibility to do it yourself or that it is handled centrally by the coordinator
- Final deliverables can be uploaded under deliverables Working documents
- Information on meetings (agenda, minutes), deliverables, other general info under member section
- General public documents (English) under results
- General news issues under news
- Specific project information, photos, news (native language) etc. for the REMINING locations under locations. The Polish participants ask if it is possible to have the location description also in native language. This is approved by the rest (i.e. location pages in English and Native language by participants).

The lay out of the home page is shown. The assembly suggests to add also a picture representing 'new energy' or sustainability. Also a suggestion is given to include a small database of articles.

Logo:

Although the general assembly has accepted a logo during the 2nd meeting the logo was rejected by Heerlen Council after the meeting. Although this is in breach with the consortium agreement the coordinator has decided to develop a new logo. The proposal for the new logo is presented and is accepted by the Assembly.

Consortium evolution:

Following partners requested to join the REMINING-lowex consortium:

- ABP, Heerlen the Netherlands, owner of the ABP building and responsible for the investments for retrofitting. Discussions between Heerlen, ABP and coordinator in progress.
- VITO, Belgium, responsible for the geological research in Heerlen and role in collaboration and knowledge transfer to the other geological experts in REMINING. Work description and estimation of resources and costs are submitted to the coordinator.
- RCR, Slovenia, will take over (part of) the work load and possible investments of Zagorje Council. Peter Op 't Veld has made a visit to Zagorje and RCR on April 1 2008 to discuss and establish the

contracts. A proposal for an implementation plan by RCR has been sent to the coordinator on October 8, 2008.

10. Dissemination and publicity

No specific dissemination actions are mentioned till next meeting.

In the Polish news paper Polska Dziennik Zachodni an article was dedicated to the visit of the REMINING-lowex team to Czeladz and the discussion on the use of minewater (see Annex 3)

11. General remarks, summary, and actions to the next meeting

Updates on locations:– WP2/3

Heerlen:

Drillings and primary grid are completed

Buildings: Heerlerheide centre in progress, culture cluster and energy station and apartments are completed. ABP in progress; ABP is still intending to be a new partner. The building of the 'Maankwartier' is still uncertain. The old CBS building is still waiting. The new CBS building (newly added to the project) is fully in progress and will be completed by 2009.

Zagorje:

There are still uncertainties on some investments. RCR sent implementation plan for involvement

An update is given on the research activities, these are on schedule:

- Expansion biomass grid: retrofitting track, new connections
- Retrofitting existing buildings: one building is completed ; thermographic scans, no data for energy consumption IAQ measurements
- Energy certification: 21 buildings completed

All reports have been submitted

Czeladz:

Detailed data of mining area and properties of mine water (T, V) are available. Operational costs for dehydration are relatively high: 60 M Zl/y pumping costs, 6M Zl/y environmental permits.

Two new building plans have been presented: the building of a real estate complex with 260 apartments and the re-development of the Saturn mine complex. In general there are favourable conditions for connection to minewater.

CHRI will take the real estate complex for a quick scan for connection with minewater and lowex solutions and present this on 4th meeting.

Bourgas:

Last meeting: overview of the geological conditions, also aquifers, no hydraulic connections to shaft, focussed on the use of the shaft. Important to have some ideas about the buildings to connect: some proposals for buildings connect (thermal insulation OK, capacity of emission systems to be doubled) Research reports on geology have been submitted

Knowledge exchange on modelling with UoS has been established.

Update WP2 general

Task 2.4 to be completed half way the project when geological analyses are completed.

Tasks 2.1 and 2.2 (lowex guide and lowex tool) to be considered in relation with WP 7 task 7.2

New activities on tools/instruments for community planning in other projects that will be considered. (Dutch EOS LT TRANSEP-DGO project, Annex 51)

WP 4: Exploitation

Sensitivity study on economical and energetic parameters of mine water as an energy source by Cauberg-Huygen (method, preliminary results). The energetic and financial performance of minewater as an energy source depends on a variety of parameters. The overall performance of the pumping and distribution of minewater can be improved by a turbine in the injection well (generates electricity from the falling water, more study needed). The unit pricing of the minewater can either be put in the volume consumption (m³ of minewater) or the extracted energy (GJ) from the minewater.

The supplier of minewater energy can state a fixed standing right to cover up his capital costs and a variable price (€ per GJ or m³) to cover up the pump- and distribution costs.

There are quite some economical barriers such as high investments for infrastructure (wells and distribution system), hardly any GJ's to sell for heating in very energy efficient buildings. This will lead to a shift from selling GJ's to connection fees and/or one-off contribution fees. HT Cooling can give more profits. Cost for electricity (pumps, heat pumps) are still substantial

General recommendations are:

- A small as possible distance between the minewater source and energy demander
- Matching temperatures for minewater versus building services
- A clear business model appoints the economic and energetic return of the system

WP 5 Legal issues

Heerlen mentions problems of human resources to fulfil task as WP leader. Tasks 5.1 – .5 are supporting tasks: questions 'centralised': to be sent to Heerlen (not directly solved but directions how they were solved in the mine water project and/or how to proceed and solve. Suggestion is given to look also at the outcome of the session in BRE Watford UK December 2007

Study on Comparative law will be coordinated by Euracom. 1st Step is the making of a template for questionnaire, to be sent out to a number of countries in and out the REMINING consortium, just a condensed overview of 1 to 2 A4's. Task 5.7 is an analyses of this survey.

Next meeting an overview of task 5.6 is completed and presented, analyses will follow later (also taking into account experiences of pilots).

WP 6 Training

Training on expert level (researchers) for the REMINING group on 'basic' principles on energy, exergy and 'low-ex' approach. Now to be continued for the 'low-ex' technologies, to be presented in the next meeting. There is lack of knowledge on low-ex technologies on locations. Once internal training OK then stepping out and give training on locations.

WP 7 Network and dissemination

Presentation on dissemination material (flyer for locations)

Discussion on task 7.2 > see WP2

As for the Lowex Conference: try to link it with other occasions such as in 2010 during a joint event in Germany with IEA Annex 49. For municipalities during annual CA conferences

New contacts with other mining areas (Russia, Belgium, Spain); coordination with Euracom

11. Next meetings

The workshop on Training for Poland will take on January 21 2009, organisation by SRK.

The 4th working meeting takes place in Bourgas: May 13 – 15 2009

12. Closing of the meeting

Peter Op 't Veld closes the 3rd meeting on October 17 2008, 12.30, thanking all the participants for their contributions and thanking Czeladz municipality for their excellent arrangements and their warm hospitality.

Appendix 1 Agenda Meeting 3

REMINING-Lowex

Agenda 3rd Working Meeting

Date: 2008 October 15 -17

Place: Czeladz/Sosnowiec, Poland

15 October - day 1 Palace Under Pillars, Czeladz	
Transportation from hotel to Czeladz mine	8.55
Visit to Czeladz mine (exploitation of warm water)	9.30 – 12.00
Opening meeting - Welcome and meeting with the mayor of Czeladz - Announcements and introduction to the meeting	12.00 – 12.30
Update on the Concerto locations: - Heerlen - Zagorje	12.30 – 17.00
Update on the Associated locations - Czeladz - Bourgas	
Work Package 6 Training working session (Fraunhofer)	17.00 – 19.00
Closing day 1	19.00
<i>Dinner</i>	<i>19.00</i>
16 October - day 2 University of Silesia, Sosnowiec	
Transport from the hotel to deep-well pumping station	8.30
Lecture on the geological and mining conditions in Silesia (UoS)	9.30 - 10.30
Silesian mine water - a waste or a mean of energy? Lecture and discussion	10.30 – 11.30
Work Package 5 Working session on legal issues (Heerlen)	11.30 – 12.30
Working session and discussion on Risk Assessment (Czeladz, Heerlen)	12.30 - 13.30
Work Package 4 Exploitation - Pilot Heerlen, experiences, business cases, opportunities and constraints (Heerlen, Weller, CHRI) - Renewables in Silesian region - system of financing (Czeladz)	14.30 – 16.30
WP 7 Dissemination (CA) - WP presentation - Interest/collaboration with other mining areas	16.30 – 17.30
Working session on Geology	16.30 – 17.30
Closing day 2	17.30
17 October - day 3 Palace Under Pillars, Czeladz	
Transport from the hotel to Czeladz, visit to town hall	8.30
Collaboration with new Polish partners (SRK)	10.00 -11.00
WP1 Management: Administrative issues (CHRI)	11.00 – 11.30
Dissemination actions	11.30 – 11.45
General summing up and actions to the next meeting	11.45 – 12.15
Next meetings	12.15 – 12.30
Closing of the meeting	12.30

Appendix 2 Participants list Meeting 3

	Participant name	Persons	15-10	16-10	17-10
1	Cauberg-Huygen R.I.	Peter Op 't Veld Erwin Roijen	x x	x x	x x
2	Heerlen Council	Joep van Wijk	x	x	x
3	Municipality Zagorje ob Savi	-			
4	Czeladz Council	Rafal Kost Malgorzata Osowska Malgorzata Skiba Katarzyna Pilc Joanne Wewoicz	x x x x x	x x x	x x x
5	Bourgas Council	-			
6	Weller Wonen	-			
7	Rijksgebouwendienst	-			
8	Mining Zagorje	-			
9	University of Ljubljana	Jure Vetrsek	x	x	x
10	University of Silesia	Zbigniew Malolepszy	x	x	x
11	Bulgarian Academy of Science	Klara Bojadgieva Vladimir Hristov Peter Gerginov	x x x	x x x	x x x
12	Climate Alliance	Andreas Kress	-	x	x
13	EURA COM	Patrice Delattre Anne-Catherine Michel Carolina Morilla Pawel Mocek	x x x x	x x x x	x x x x
14	Fraunhofer IBP	Christina Sager Kirsten Lück	x x	x x	x x
15	KOP Public Municipal Services	-			
16	Coal Mine Restructuring Company Inc. (SRK SA)	Marek Tokarz Iwona Krol	x x	x x	x x
	VITO	Peter van Tongeren	-	x	-

Appendix 3 Article in Polska Dziennik Zachodni

12 | 16 października 2008 | Polska Dziennik Zachodni

www.polskatimes.pl/dziennikzachodni

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Ogrzeje nas woda z kopalni?

► Naukowcy i urzędnicy zjechali do szybu

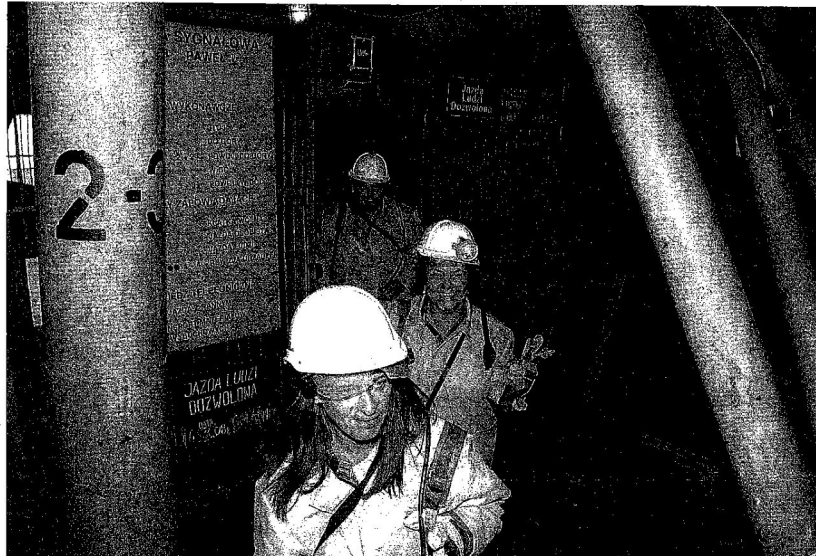
► Kopalniane wody będą nowym źródłem energii

Magdalena Nowacka
Czeladź

Wczoraj grupa kilkunastu naukowców z Holandii, Niemiec, Francji, Hiszpanii, Bułgarii i Słowenii oraz z Uniwersytetu Śląskiego w Katowicach zjechała do czeladzkiego szybu Paweł. Sprawdzali, czy wody kopalniane nadają się do wykorzystania ich jako źródła ogrzewania budynków np. pobliskiego osiedla Piaski.

Na głębokości 210 metrów w rejonie byłej kopalni Saturn mieści się obecnie Centralny Zakład Odwadniania Kopalni. Goście oglądali komory pomp stacjonarnych z wyposażeniem oraz ujęcia wody, która wypływa ze zlikwidowanych wyrobisk. Spotkanie naukowców pozwala na wymianę doświadczeń w zakresie projektu Remining Lowex, współfinansowanego przez Komisję Europejską. Dotyczy on prac badawczych nad możliwością wykorzystania wód dołowych kopalni w Czeladzi na potrzeby ogrzewania budynków mieszkalnych.

Grant komisji pozyskany w ubiegłym roku pozwolił na współpracę ze specjalistami z Wydziału Nauk o Ziemi Uniwersytetu Śląskiego sporządzić analizę i studium wykonalności dla wód dołowych kopalni Czeladź i Saturn.



Wczoraj naukowcy w czeladzkim szybie sprawdzali, czy można wykorzystać kopalnianą wodę do ogrzewania mieszkań

70 tys. złotych wynosi grant na badania przyznany miastu przez UE

– Nad możliwościami wykorzystania wód kopalnianych pracujemy tak naprawdę od piętnastu lat. Brakuje jednak pieniędzy na realizowanie naszych projektów. Dlatego wyprzedzili nas Holendrzy, którzy

zaczęli później od nas, a już to wdrażają – mówi dr Zbigniew Małolepszy z Wydziału Nauk o Ziemi Uniwersytetu Śląskiego. – Czeladź jest jednym z pierwszych samorządów lokalnych w Polsce, który zdecydował się wziąć udział w pilotażowym programie pozyskiwania ciepła ze źródeł kopalnianych.

Jak podkreśla doktor Małolepszy, szukanie zamiennych źródeł energii to już nie wymysł, a wręcz wymóg unijny. A profitów jest wiele.

Oprócz ekologicznych, także ekonomiczne. – Część energii po prostu mamy za darmo – mówi naukowiec.

W przyszłym roku ma powstać studium wykonalności wykorzystania energii wód kopalnianych.

– Będziemy je opracowywać wspólnie z naukowcami – mówi Zofia Gajdzik, kierowniczka Wydziału Rozwoju Miasta i Inżynierii Miejskiej UM w Czeladzi. – Wiemy już jednak, że w tym przypadku najlepiej będzie wykorzystać ten sy-

stem ogrzewania dla odbiorcy, który jest najbliższy, czyli w tym przypadku dla mieszkańców osiedla Piaski – dodaje Gajdzik.

Nie jest jednak wykluczone, że to źródło energii wykorzystane zostanie do ogrzewania także np. pobliskiej galerii Elektrownia.

Teraz my

► Czeladzcy samorządowcy podpatrzyli nowoczesne technologie za granicą.

Będąc w Austrii i Słowenii, mieli już okazję obserwować, w jaki sposób stosuje się instalacje grzewcze wykorzystujące wody termalne (tak było na przykład podczas wizyty roboczej w Słowenii).

W Gleisdorfie natomiast, oglądali urządzenia do ogrzewania budynków z wykorzystaniem pompy ciepłej.

Tym razem naukowcy zagranicą będą sprawdzać u nas, jak można wykorzystać energię z dawnych kopalni.

W planach na kolejne dni pobytu są też odwiedzić sosnowieckiego szybu Szczepan. Swoimi spostrzeżeniami podzieli się podczas spotkania i konferencji w Uniwersytecie Śląskim w Katowicach.

Woda byłaby podgrzewana do wymaganej temperatury elektrycznie. Teraz woda w kopalni ma około 13-14 stopni Celsjusza. Może być źródłem ciepła dla specjalnej pompy ciepła i wymienników, z których można uzyskać ciepło np. do ogrzewania podłogowego lub centralnego.

Co o tym sądzisz? Skomentuj na: www.polskatimes.pl/dziennikzachodni lub m.nowacka@dz.com.pl