New Mining Concept for Extracting Metals from Deep Ore Deposits using Biotechnology

Fact Sheet

Project Information

BioMOre
Grant agreement ID: 642456

Project website

Status
Closed project

Funded under
H2020-EU.3.5.3.

Overall budget
€ 8 564 961,75

EU contribution
€ 8 564 961,75

Coordinated by
KGHM POLSKA MIEDZ SA
Poland

Start date
1 February 2015

End date
31 July 2018

Objective

BioMOre describes a “New Mining Concept for Extracting Metals from Deep Ore Deposits using Biotechnology”. The concept is to use hydrofracturing for stimulation and bioleaching for winning of ores. The final process will consist of a so-called doublet, which is two deviated and parallel wells.

In order to avoid high costs for drilling from the surface, the BioMOre approach is divided into two phases. Phase 1 will be research on the intended bioleaching process whereas phase 2 will aim at a pilot installation to demonstrate the applicability of the process in large scale including hydro-fracturing and access of the deposit from surface.

The first phase should cover the intended work of the current BioMOre approach without drilling from surface.
The BioMOre project aims at extracting metals from deep mineralized zones in Europe (Poland-Germany, Kupferschiefer deposit as a test case) by coupling solution mining and bioleaching. Selected sustainability indicators based on regulatory requirements of the European Commission will be applied for feasibility considerations.

The main objective of the BioMOre first phase is to design and build an underground test facility for testing the concept of combined hydro-fracturing and bioleaching. The test facility will comprise a 100 m² ore block, where boreholes will be drilled horizontally using standard equipment. All necessary equipment for testing different parameters of the intended bioleaching process will be established underground. The intention is to test the bioleaching process in high detail in an in-situ environment at the same time avoiding time consuming and risky permission procedures. On the other hand, the application for the permission of underground test operation must contain detailed information about monitoring of tests and all material controls. No harmful substances will remain in the mine after the tests are completed. Further to that, predictive numerical modelling of a pilot installation should be done.

Field of science

/engineering and technology/environmental biotechnology/bioremediation/bioleaching
/engineering and technology/environmental engineering/mining and mineral processing
/natural sciences/chemical sciences/inorganic chemistry/metals

Programme(s)

Topic(s)

Call for proposal

H2020-SC5-2014-one-stage

Funding Scheme

RIA - Research and Innovation action

Coordinator

KGHM POLSKA MIEDZ SA
## Participants (23)

<table>
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<tr>
<th>Organisation</th>
<th>Activity type</th>
<th>EU contribution</th>
<th>Address</th>
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<td>Mineral Industry Research Organisation</td>
<td>Other</td>
<td>€ 301 164,98</td>
<td>Copt Heath Drive 78 B93 9PB Solihull</td>
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<td>AKADEMIA GORNICZO-HUTNICZA IM. STANISLAWA STASZICA W KRAKOWIE</td>
<td>Higher or Secondary Education Establishments</td>
<td>€ 69 365</td>
<td>Al Adama Mickiewicza 30 30-059 Krakow</td>
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<tr>
<td>BANGOR UNIVERSITY</td>
<td>Higher or Secondary Education Establishments</td>
<td>€ 407 293,75</td>
<td>College Road LL57 2DG Bangor</td>
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<td>BUNDESANSTALT FUER GEOWISSENSCHAFTEN UND ROHSTOFFE</td>
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Contact the organisation [link]
€ 308 852,50

**Address**

Stilleweg 2
30655 Hannover

**Website**

Contact the organisation

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**BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES**

**France**

EU contribution

€ 360 000

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3 Av Claude Guillemin
45060 Orleans

**Activity type**

Research Organisations

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**COBRE LAS CRUCES SA**

**Spain**

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€ 170 148,75

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**CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS**

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Contact the organisation

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**DMT GmbH & CO. KG**

**Germany**

EU contribution

€ 651 853,75
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<td>Vuorimiehentie 5 02151 Espoo</td>
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<td><strong>HATCH ASSOCIATES LIMITED</strong></td>
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<td><strong>HELMHOLTZ-ZENTRUM DRESDEN-ROSSENDORF EV</strong></td>
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