Search for sustainable way of exploiting black shale ores using biotechnology

BIOSHALE is a European project that aims at developing Biotechnology for a sustainable exploitation of “Kupferschiefer” - black shale ores for metal production (Cu, Zn, Ag, Pt, ...)

The black shale ores are typically poly-metallic ores with a variable proportion of sulphidic components. Three black shale deposits, under natural conditions (Talvivaara-Finland), during mining (Lubin-Poland) and after mining (Mansfeld-Germany) have been chosen as targets for the project in order to evaluate all potential impacts of a mining project treating with black shale ores.

The main tasks of the project are:
- Evaluation of the geological resources (geological modelling);
- Selection of metal-bearing components & biological consortia;
- Assessment of bioprocessing methods and determination of complementary hydrometallurgical processing routes;
- Risk assessment relative to wastes management of the new processing routes;
- Techno-economic evaluation of new processes from mining to metal recovery including social and environmental impacts.

The different topics taken into account by the project should help to demonstrate the reliability of biotechnology for a cleaner, safer and more eco-efficient production of strategic metals for Europe.

The project ambition is also to reinforce the participation of the mining industry to the European policy of sustainable development and to have a long-term impact with regard to the challenge of creating knowledge-based industries.