



Sustainable energy harvesting systems based on innovative mine waste recycling

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SHORT DESCRIPTION OF THE PROJECT

The START project proposes a unique technological solution based on the transformation of mining waste into materials for waste heat recovery, thus contributing to an efficient use of resources while promoting the use of green energy harvesting through thermoelectric systems. This will be achieved by producing advanced thermoelectric materials that will incorporate discarded mining waste present in European mining sites, to replace the tellurium-based thermoelectric materials.



WHY IS IT IMPORTANT?

From steel and food production to electronics, manufacturing processes and machines generate heat (also known as "waste heat"), which should not be wasted and lost. The EU co-funded START project will capture and directly convert waste heat into electric power. This will be achieved by developing sustainable thermoelectric systems, with the further added value of exploiting European mine wastes for the thermoelectric materials, thus bypassing the supply of critical raw materials from third countries. Overall, the START concept represents a major opportunity to improve the overall energy efficiency and to increase resource productivity and reduce resource dependence and waste, in line with the objectives of the Green Deal and the EU Critical Raw Materials and Circular Economy Action Plans.













