Enhanced Landfill Mining in the EU-28 & recovery of critical raw materials

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Meeting Operational Groups EIP Raw Materials (14-4-2016, Plaza Hotel, Brussels)
EURELCO is an open, quadruple helix network that supports the required (...) innovation with respect to Enhanced Landfill Mining within the context of a transition to a resource efficient, circular, low-carbon economy. [www.eurelco.org](http://www.eurelco.org)
Has the Commission performed any calculations on the future remediation costs for the EU-28? **NOT YET**

Has the Commission performed a mapping of the resource potential of its 150,000 to 500,000 landfills? **NOT YET**

Does the Commission plan to support R&D and/or pilot activities, as well as demonstration projects, which explicitly address Enhanced Landfill Mining? **NOT YET**
> 500,000 landfills in EU-28

90% = “non-sanitary landfills”, preceding Landfill Directive

60-100% = Urban Solid Waste landfills

0-40% = industrial waste landfills

“Classic remediation” cost for EU-28 “guestimated” to be 0.1 - 1 trillion euro

ELFM + Remediation → resource + land recovery, reduced remediation costs, job creation
Improved inventories of Europe’s landfills are required in view of risks and resource recovery potential

- USW landfills
- Monolandfills containing mining waste & industrial residues incl. critical metals

A vision for managing and mining Europe’s landfills needs to be developed

Major attention should go out to develop and demonstrate a set of innovative technologies that deliver high added-value outputs from USW landfills

- Successful, iconic large-scale demonstration project is needed to cross the Valley of Death
- Require specific support instruments from EC/EP

Monolandfills: S/T challenges strongly dependent on residue type

- R&D and CSA projects
Mining waste and industrial process residues are ubiquitous

- Tailings, sludges, slags, ashes, drosses etc. have been historically stored in industrial mono-landfills and/or tailing ponds
- High volumes & homogeneous content & privately owned
- Large-scale mining of these landfilled residues is not happening yet

Commercialisation dependent on 4 key parameters: Volume, Performance, Cost, Risk

An example of the EU-wide character of mining waste & industrial process residue production/landfilling

(Source: infographic from MSCA-ETN SOCRATES proposal)
Economics can be improved if zero-waste concept is applied:

- Recovery of critical metals (e.g. Sc from red mud) & base metals
- Recovery of mineral matrices for construction applications

Major R&D efforts are required to:

- Develop new metallurgical systems for eco-friendly flow sheets
- Produce outputs with high quality standards at low cost

H2020 Coordination and Support Call?

Adequate policies to promote use secondary resources (EC COM(2015)614/2)