ECOLOGICAL METAL RECYCLING

ECOMETRE

Significant quantities of metal bearing waste are generated by the aerospace, automotive, printed circuit boards and metal finishing sectors without recovery of valuable materials from the waste streams. At the moment this is destined for landfill, squandering natural resources and having an impact on the environment in that more materials need to be extracted to replace those thrown away. By combining existing technologies, electro-coagulation, material digestion and electrowinning, the project has developed a metal recycling system to enable the specified industrial sectors to recover metal from primarily waste sludge. The project has implemented an initial industrial plant in a partner SME site (Promet), which operates a variety of finishing processes within the surface engineering sector, in order to proceed to a more efficient treatment of its primarily solid nickel bearing wastes. The targeted sectors are currently under extreme financial and environmental pressure both on raw material inputs and waste disposal and have been identified as important application areas for this eco-innovative material recovery (metal valorisation) process, in energy efficiency and economic terms

Benefits

Recovery of metal, particularly nickel, from waste which would otherwise be consigned to landfill and lost as a sustainable raw material resource.

Results

- An industrial scale unit matched to a typical metal finishing sector manufacturing plant; arising IPR; detailed trial data; techno-economic modelling for range of metals and a life cycle assessment to determine environmental impact. The main result indicators will be: high purity (and therefore good re-sale value) of recovered metal; high efficiency (low cost) of recovering extracted metal and low environmental impact.
- An important factor in the potential uptake of the developed technology is considered to be the increasing value of metals, which is projected to continue to rise inexorably due to escalating world demand. As a result, there is an opportunity for significant cost benefit via metal recovery from waste which would otherwise be consigned to landfill.
- Uptake of the technology will have environmental, economic and societal sustainability benefits by virtue of reduction in greenhouse gas emissions from virgin material displacement savings, cost benefits of recovered metal as a manufacturing overhead reduction and greater competitiveness for the targeted manufacturing sectors within Europe.

Partners and coordinator

Env-Aqua Solutions Ltd [1]	United Kingdom

AGUACURE [2]	United Kingdom
C-Tech Innovation Ltd [3]	United Kingdom
ACONDICIONAMIENTO TARRASENSE ASSOCIACION [4]	Spain
Protection des Métaux [5]	France
Union des Industries de Traitement de Surfaces [6]	France

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Budget

Overall budget: 1.241.567,00 € (EU contribution: 59,00 %)

Key documents

- ECOMETRE Layman Report [7]
  PDF 672.37 KB
- Project Fact File [8]
  PDF 104.23 KB

In brief

Sector: Recycling

Duration: *13/06/2009* to *12/12/2012*

Contract number: ECO/08/239037

Website: http://www.ecometre.eu/

Tags:

metal

recycling
sludge

Related projects

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- [AGRIPORT [11]] Agricultural Reuse of Polluted Dredged Sediments
- [BIOLIX [12]] Bio-hydrometallurgical beneficiation of non-ferrous concentrate from...
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- [RECYCLED FIBER [14]] Bringing recycled fiber products to market based on composites waste
- [RECYCLEDPALLETSYSTEM [15]] Closed loop pallet system – production, implementation and recovery of...
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- [CAPS [17]] Conversion of paper mill sludge into absorbent
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- [SATURN [38]] Sensor-sorting Automated Technology for advanced Recovery of Non-Ferrous...
- [STAREC [39]] Shredder residue and Tar-containing Asphalt RECycling
- [NATSTOCER [40]] Sludge free-process for the production of innovative natural stone-like...
- [SUPERPET [41]] Super-Clean PET flake process for high quality recycling of PET bottles

- [SUPERTEX [42]] Sustainable Flame Retardant Technical Textile from Recycled Polyester
- [T4T [43]] Textiles for Textiles
- [THE DIAPERS PROJECT [44]] THE DIAPERS PROJECT - A ZERO EMISSION GREEN PLANT
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- [RECTYRE [46]] USED TYRES VALORISATION AS LIGHTWEIGHT FILLER FOR EMBANKMENTS
- [WS-REC [47]] WS-REC - DESIGN AND CONSTRUCTION OF A WINDSCREEN RECYCLING LINE

Links
[1] https://ec.europa.eu/environment/eco-innovation/projects/en/partners/env-aqua
[2] https://ec.europa.eu/environment/eco-innovation/projects/en/partners/aguacure
[3] https://ec.europa.eu/environment/eco-innovation/projects/en/partners/ctech
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