Bio-hydrometallurgical beneficiation of non-ferrous concentrate from shredder residue

BIOLIX

Consumers' goods such as end-of-life vehicles and waste electric & electronic equipment are typically recycled using shredding facilities in which most of metals are recovered. Nevertheless, a significant ultimate metal fraction of shredder residues remains landfilled. The BIOLIX project is an efficient solution for the selective recovery of purified metals out of low grades polymetallic materials coming out of shredding/recycling facilities all over Europe. A first bio-hydrometallurgical unit will be erected by 2014, downstream the PST strategic facilities located in Obourg-Mons (Belgium), nearby France, UK, the Netherlands and Germany. The process is based on bacterially-catalyzed reactions involving low consumption of soft chemicals and energy. This first industrialization will be able to process 4,000 t/y to produce copper cathodes, precious metals concentrate, lead/tin powder and zinc sulphates. The main outputs of this environmentally friendly process give a real added value to the treated materials. Additionally, some strategic metals unrecovered so far by pyrometallurgical plants (rare earths for instance) will be captured and upgraded by this process. That’s why BIOLIX development complies closely with EU raw materials policy.

Benefits

Efficient recovery of highly strategic metals such as copper, zinc, lead, tin, precious metals & rare earth elements

Results

- Consolidation of urban mining in Europe and improvement of raw material independence over non-EU countries;
- A first industrial application of an innovative, clean & cost-effective technology for the treatment of low grade metallic material;
- A significant increase of Shredder Residues recycling efficiency and associated reduction of ultimate wastes landfilled;
- Technology bridging the gap between current recycling rates and goals set by EU directives (2000/53/EC and 2002/96/EC);
- Duplicable technology adapted to the fast growing shredder residues and related markets, doped by upcoming EU regulations.

Partners and coordinator

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Budget

Overall budget: 2.080.297,00 € (EU contribution: 50,00 %)

Key documents

- Project Information Sheet
  PDF 105.53 KB

In brief

Sector: Recycling
Duration: 01/10/2012 to 30/09/2015
Contract number: ECO/11/304470
Website: http://www.comettraitements.com/biolix

Tags:
recycling

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