Objective

The ambition of Composite Recycling Ltd is to establish its patented PCBRec process, as a cost and environmentally preferred process for the treatment of all types of waste printed circuit boards (WPCBs). Every year about 400,000 tons of WPCBs are generated in Europe of which over 90% are land filled or incinerated; resulting a large loss of valuable metals such as copper, gold, silver, solder, indium etc. Printed circuit boards are used in almost all electronic equipment such as televisions, computers or mobile phones. Hence PCBRec is an important contribution of solving a large EU and indeed global solid waste problem.

The PCBRec technology disrupts the WPCB recycling market by offering many significant advantages over current technologies:

- Yields: over 95% recovery rate of copper, steel and solder as established by
• Yields: over 95% recovery rate of copper, steel and solder as established by laboratory and pilot plant trials, which showed that the PCBRec process greatly exceeds the yields of current technologies of about 70-80%.
• Critical metals: for the first time critical metals may be recyclable from WPCBs.
• All types of PCBs: not just high value WPCBs.
• Scalability: the technology is modular, allowing capacity increases in a systematic fashion.
• Simple reactor from established industries (hot dip galvanising): no moving parts minimising capital costs.

The IRR of a PCBRec plant is estimated to be over 15% for low value and 80% for medium value WPCBs. These IRR figures exclude recovery of precious metals such as gold or silver. Over 15 plants with throughputs of 15-20,000 t/y and CAPEX of €8.5 million are required in Europe. Worldwide some additional 40 plants are required resulting, overall, in a large market.

In Europe significant regulatory drivers exist for the further development of the PCBRec technology in form of the WEEE Directive and the drive towards the circular economy. Many US states, Canada, Australia and Japan legislate WEEE similar to Europe, turning the PCBRec process into a global business opportunity.

Field of science
/socialeconomics and business/business and management/commerce
/humanities/arts/modern and contemporary art/radio and television
/natural sciences/chemical sciences/inorganic chemistry/inorganic compounds
/social sciences/economics and business
/engineering and technology/electrical engineering, electronic engineering, information engineering/information engineering/telecommunications/mobile phone
/engineering and technology/environmental engineering/waste management/recycling
/natural sciences/chemical sciences/inorganic chemistry/metals

Programme(s)

Topic(s)

Call for proposal
H2020-SMEINST-1-2016-2017

Funding Scheme
Funding Scheme

SME-1 - SME instrument phase 1

Coordinator

COMPOSITE RECYCLING LIMITED

<table>
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<tr>
<th>Address</th>
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<tr>
<td>The Rubicon Centre Cit</td>
<td>Private for-profit entities</td>
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<td>Campus Bishopstown</td>
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<td>T12 Y275 Cork</td>
<td>Establishments</td>
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Contact the organisation

Last update: 24 June 2019
Record number: 207940

Permalink: https://cordis.europa.eu/project/id/761495/

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