Setting the standard for Europe's circular economy

The EU's circular economy policy seeks to ensure growth while using resources in a smarter, more sustainable way.

The EU-based lead battery value chain is proven, economically sustaining and operates in a fully closed loop embracing circular economy principles. Approximately €2 billion worth of lead from recycled sources is used per year for EU lead battery production.[1]

Lead batteries are the gold standard in adopting circular economy principles, through an end-to-end recycling process which maintains the value of the materials and resources used in manufacturing, returning them into the product cycle at the end of their life.

The policy context

The publication of the EU's Circular Economy Action Plan[2] in 2015 sought to offer 'a new boost to jobs, growth and investment and to develop a carbon neutral, resource-efficient and competitive economy'. The circular economy aims to:

1: maintain the value of products, materials and resources for as long as possible by

2: returning them into the product cycle at the end of their use, while

3: minimising the generation of waste.

How lead batteries contribute to the circular economy

The lead battery industry already sets the standard for others to follow in the EU's circular economy. Thanks to its long-established collection and recycling scheme, almost all used lead batteries are collected at end-of-life for recycling - the highest of all battery technologies.

Lead batteries exemplify the fundamental principles of eco-design: they are designed to be recycled at end-of-life with more than 90% of their material being recovered. The average lead battery made in the EU today contains more than 80% recycled materials, and almost all of the lead recovered in the recycling process is used to make new lead batteries.

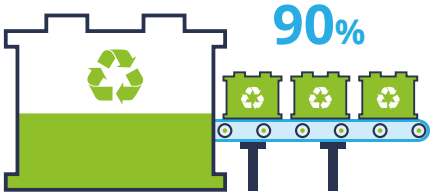
Lead batteries close the loop more effectively than any other battery technology. Lead can be recycled infinitely with no loss of quality or performance. Thanks to its closed-loop economy, the lead battery value chain generates billions of euros from its products at the end of life, conserving natural resources and minimising waste by returning the lead to the product cycle an infinite number of times.

The manufacturing stage of the lead battery lifecycle is one of the most environmentally sustainable of all battery technologies. Compared to other battery technologies, lead battery production has the lowest environmental footprint and lowest production energy and CO_2 emissions. The use of recovered lead to produce new batteries is less energy intensive than using primary lead, helping to conserve the finite natural resources needed to support a growing demand for advanced lead battery technology.

Lead battery recycling has the advantage of being economically self-sustaining. It requires no subsidies and is driven by the inherent value of the battery materials.

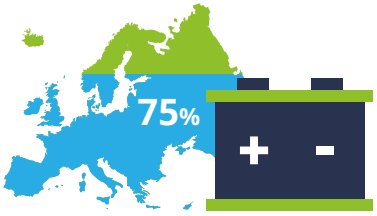
The high collection and recycling rate of lead batteries ensures Europe is secure in the raw material resources needed to meet future demand growth.

A self-sustaining, home-grown industry, the lead battery value chain boosts the EU's economy by providing jobs for more than 20,000 people across 15 member states.[3]



90% of a lead battery is recycled at end of life[4]: and nearly all of the lead recovered is re-used in batteries[5] – creating a circular product cycle that minimises the generation of waste.

A new lead battery is made up of more than 80% recycled material.[6]



75% of lead in European lead batteries is now produced from recycled sources.[7]

An established collection scheme and state-of-the-art recycling process means more than 100 million[8] lead batteries are kept out of Europe's waste stream and are used to provide raw materials to make new batteries.

Lead from lead batteries can be infinitely recycled with no loss of performance. Coupled with the high recycling rate of lead batteries, this minimises the need for the mining of virgin materials[9] – which is the most significant lifecycle stage contributor towards the total environmental impacts of any type of battery.[10]

References

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