



# BLACK MASS RECYCLING: A SUSTAINABLE SOLUTION FOR THE BATTERY MARKET

MET63 designed and engineered a ~50 t/annum modular pilot plant aimed at Lithium extraction from recycled motor vehicle batteries

## THE CHALLENGE

The demand for electric vehicles is booming, establishing a growing interest in the production of battery grade minerals. To supplement the growing demand of the EV industry, new sources of battery materials should be investigated.

Shredded Lithium-Ion battery cells, referred to as black mass, are an explorative source, containing large quantities of base metals utilized in the production of cathode active materials (CAM).

## OUR APPROACH

MET63 developed a flowsheet targeting the recovery of high-purity base metals (Copper, Cobalt, Lithium and Nickel) from black mass.

A pre-feasibility study (PFS) and Front-End Engineering Design (FEED) study was conducted by MET63 for a semi-continuous hydrometallurgical modular pilot plant at a scale to treat ~50t/annum of dry black mass.

## RESULTS

The PFS and FEED studies conducted by MET63 included complete integration of unit operations from various suppliers. The studies were also completed according to the client's internal standards and requirements.



## PROJECT HIGHLIGHTS

- MET63 adapted to stringent European standards to cater for the client's needs
- Hydrometallurgical process to produce CAM and Pre-CAM from black mass
- Fully modular plant to be built in South Africa and shipped to Europe
- Use of exotic materials of construction to overcome harsh process conditions