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THE PROBLEM OF ELECTRIC VEHICLES CHARGERS RECYCLING AND THREATS TO ENVIRONMENT

Today, batteries do not carry a huge noticeable harm to our habitat, but this is until we take this issue seriously. We can see lithium-ion batteries everywhere from small-scale products of everyday life to large-scale vehicles; we can observe lithium-ion batteries in our phones, remotes, wall clocks and batteries of modern electric cars. This problem will become more evident in the future, as most non-recycled batteries will contaminate and spoil our food and water supplies. Then there is a need to recycle batteries right now.

There are not many lithium-ion battery-recycling plants in the world, just about 5%. Earlier, a large battery processing plant operated on the territory of Ukraine, its work was not so productive, but at least somehow it processed everything. Unfortunately, by 2018 the Argentum plant was closed. It worked according a simple scheme, the battery was amenable to heating and precious metals such as Nickel, Cobalt and Copper were fused from it, and the rest was considered slag and was

thrown into a landfill. This method was dangerous, as there was a high emission of carbon dioxide into the air and the formation of toxic fluorine compounds.

Fortunately, our world is constantly evolving and today there is a much more productive method of battery recycling. For example, we can take Duesentfeld (Fig.1).

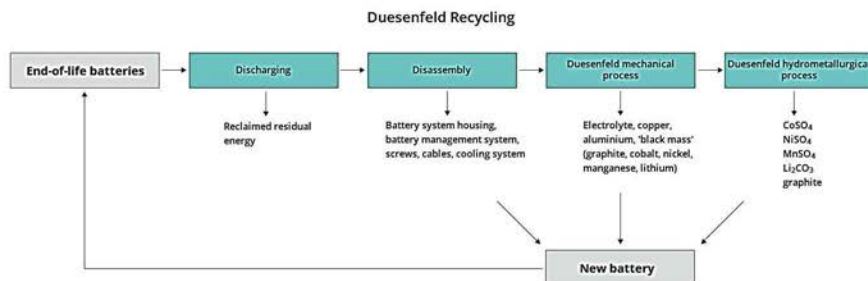


Figure 1 – The Duesentfeld scheme of battery recycling

The company has recently proven that its recycling method is more efficient as it allows 96% of the battery to be reused. Unlike primitive heating, its method is cooling and crumbling.

Duesentfeld battery recycling mechanics includes the following steps:

1. Batteries are discharged and sorted;
2. They are cooled with nitrogen;
3. They are ground under pressure;
4. The contained electrolyte is then recovered and stored as a liquid;
5. The rest is all precious metals that are easily reused.

The main advantage of this method is not so much the amount of substances that can be reused, but the fact that this method is environmentally friendly. This processing does not emit huge amounts of CO₂ and does not generate toxic waste, as in the heating method.