

# HOW WOULD I EXCAVATE MY NEXT LANDFILL?

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## **Abstract**

Landfills contain large amounts of potentially valuable materials. This is also recognized by the European Innovation Partnership who has confirmed that Landfill Mining (LFM) fulfils the criteria to be recognized as “Raw Material Commitment (RMC)”. RMC has to deliver innovative products, processes, services, technologies, business models or ideas that can be brought to the market or that would bring wider societal benefits. To be able to handle LFM as a bank of materials, one must critically review previous experiences in full-scale excavation works.

At Kudjape landfill, Estonia, about 55 000 m<sup>3</sup> of previously disposed waste was excavated and screened to extract fine fraction as final cover material. Coarse material was used in various experiments as waste-to-energy in Tallinn mass-burn incinerator, waste-to-solid recovered fuel for Kunda Cement factory, waste-plastic-to-oil, and also waste-plastic-to-plastic products. The project was developed according to all legal rules for public procurement, well documented and monitored, and also three years of aftercare has passed. The aim of the current study is to critically review the lessons learned during all steps of project development. Administrative, technological, financial, environmental and personal risk, as well as innovation aspects will be discussed.

## **Keywords**

Landfill mining; Leachate; Stormwater; Landfill gas; Emission; Methane degradation layer; Safety; permits; Authority