

## BACKGROUND AND AIM OF THE RESEARCH

The behaviour of aluminium items when processed in waste incineration plants as a part of the Residual Waste (RW) stream has been extensively studied in recent years

A significant amount of the input material is found in the bottom ash, and this is true also for <u>thin items</u>, such as most of the packaging materials (<u>pure aluminium</u> or <u>poly-laminated foils</u>)



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Recovery of aluminium from bottom ash has become mainstream, with some advanced plants entering into operation in many European countries, equipped with Eddy Current Separators (ECS) for non-ferrous extraction, and sometimes with further upgrade of aluminium from the heavy non-ferrous fraction



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## BACKGROUND AND AIM OF THE RESEARCH

The amount of aluminium potentially recoverable from bottom ash (BA) has been estimated for the specific case of Italy, by applying a Material Flow Analysis (MFA) to the aluminium items that end up in the municipal waste stream, including the source separated fractions as well as the incinerated residual waste

**RESEARCH QUESTIONS** 

→ How much additional aluminium packaging (and nonpackaging) material can be recovered from incineration BA in Italy?

 $\rightarrow$  Can this play a role in fulfilling the targets set by the Circular Economy Package?

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## MATERIALS AND METHODS

Another aspect that adds uncertainty to the estimate is the amount of aluminium items that are not tracked because they don't fall under the formal definition of "packaging", although they are (for examples the trays when they are sold in a bunch and not for the purpose of containing something)

The fact that such streams are not subjected to the Extended Producer Responsibility (EPR) contribution makes their tracking nearly impossible, then it is necessary to use some estimation

On the other hand, when they end up in the waste stream, it is not possible to distinguish whether they are part of the EPR scheme or not, thus making the matching between input and output more difficult

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RESULTS				
Contribution of aluminium from BA to the EU recycling targets				
Target: 65% municipal waste reuse and recycling @2035 → Negligible (0.1 percentage points on average)				
Target: 60% aluminium packaging recycling @2030				
Most probable scenario (BAU)				
Aluminium from IBA	2017	2020	2030	
Excluded	33.9%	46.4%	47.1%	
Included	53%	60.6%	65.7%	
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