

Magaldi Insight Ash Unit

Driving Sustainable Innovation



Wednesday, October 7, 2026



Spain's WtE market situation



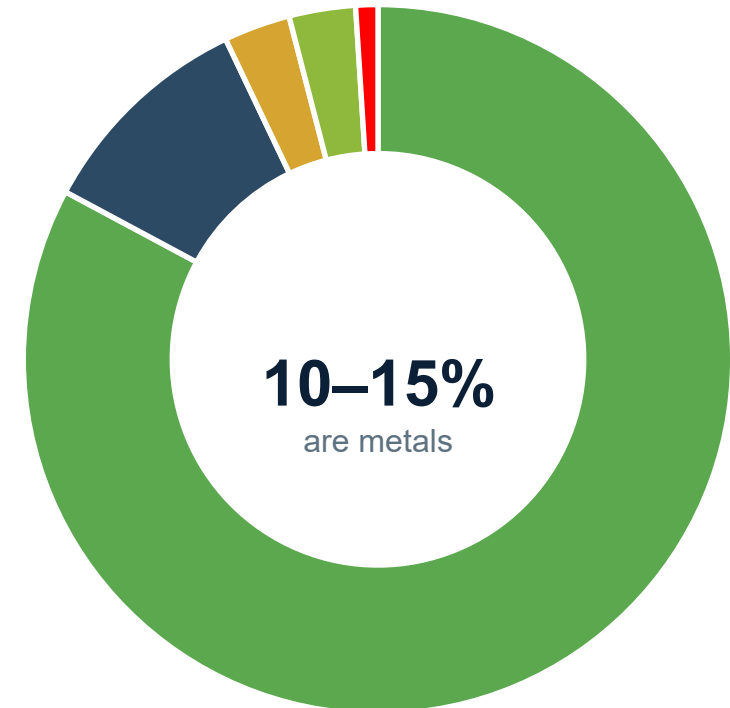
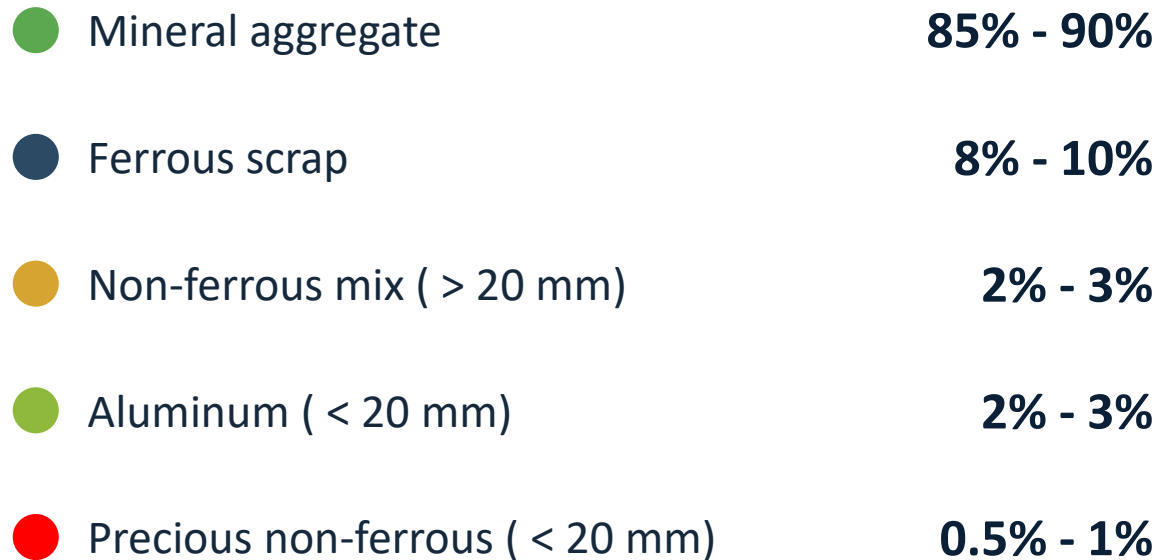
2,500,000 t – 3,000,000 t
of waste incinerated each year



~ 600,000 t of bottom ashes produced
each year

IBA valorization - ash becomes a resource stream

Ash is a valuable resource. Once separated and treated efficiently, ash is not longer a waste but a wide range of valuable secondary product which replaces the primary production.



Non-Ferrous metals gets increasingly valuable.



What recovered metal is worth - a real reference plant

Reference: ZAV Recycling AG, Switzerland - full-year 2025. The first dry IBA treatment plant in large-scale.



141,000 t

of bottom ash treated in 2025



18,500 t

of metals recovered in 2025



€26.7 M

revenue from metal recovery in 2025

≈ €189 of recoverable metal value in every tonne of bottom ash realized in 2025.

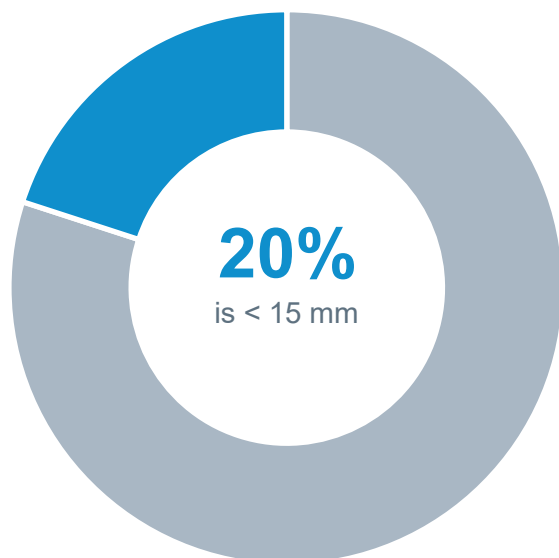
**Revenue are realized based on global metal prices in the year 2025.*



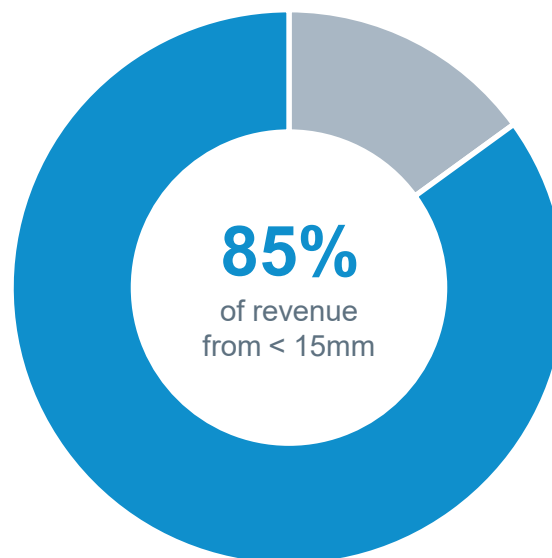
The value that conventional methods have difficulties to extract

Split the same recovered metal by particle size and a striking pattern emerges - the fine fraction of ash carries almost all the value.

METALS BY MASS



METALS BY REVENUE



Fine metals are only 20% of the total mass recovered - but generate 85% of the revenue.

Wet plants struggle most exactly here.
MADAM's dry solution targets the fine and precious fraction, the part that pays.

Source: ZAV Recycling AG, annual report 2025 (141,000 t IBA).



Dry or wet extraction - which system fits our plant best and why might the conversion to dry IBA extraction make sense?



Are we overpaying third parties for our ash disposal?



What would our business case for an own ash management look like?

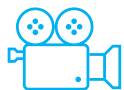


Could there be an economic & ecological benefit of treating our IBA on-site?

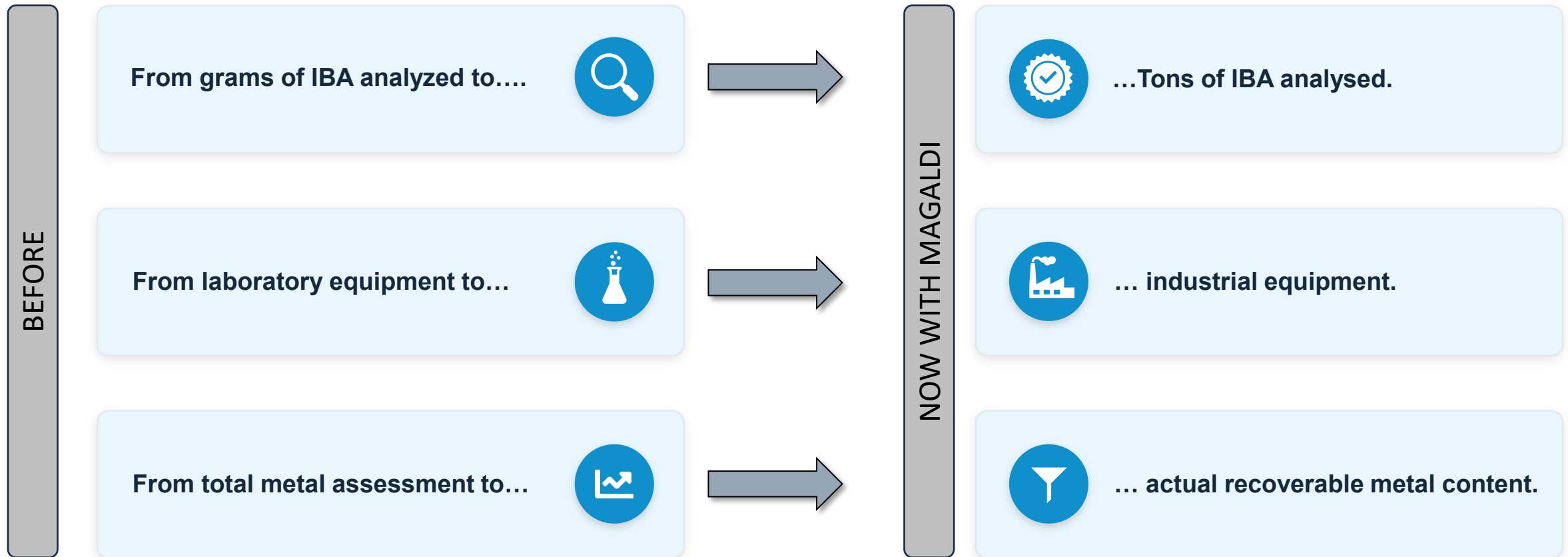


THE HIDDEN TREASURE

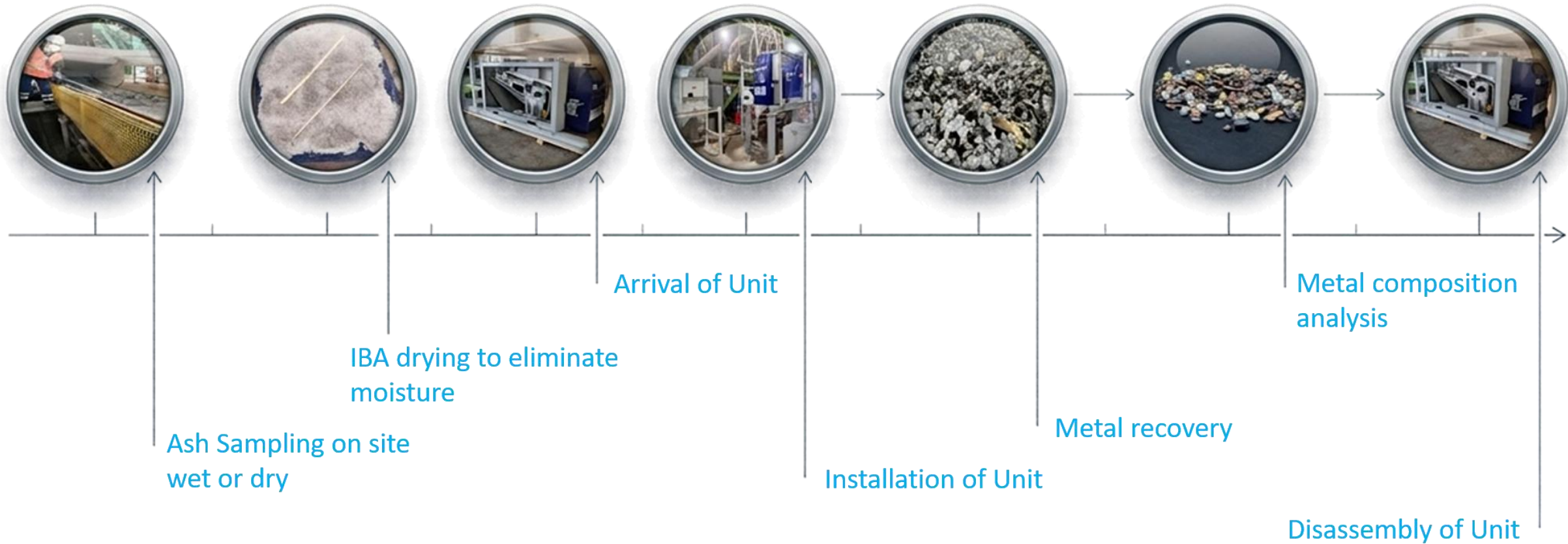
Ash Insight Unit - video



Increasing the order of representativeness

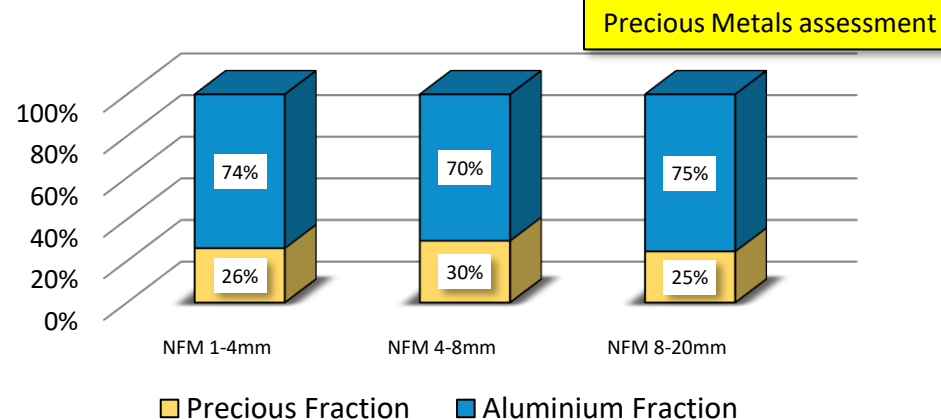
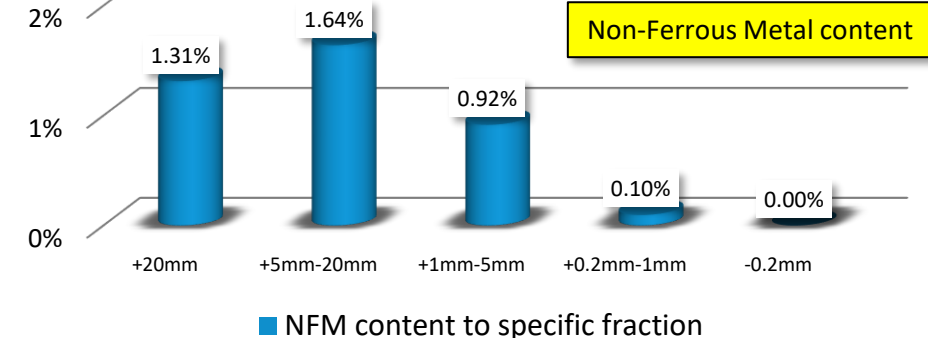
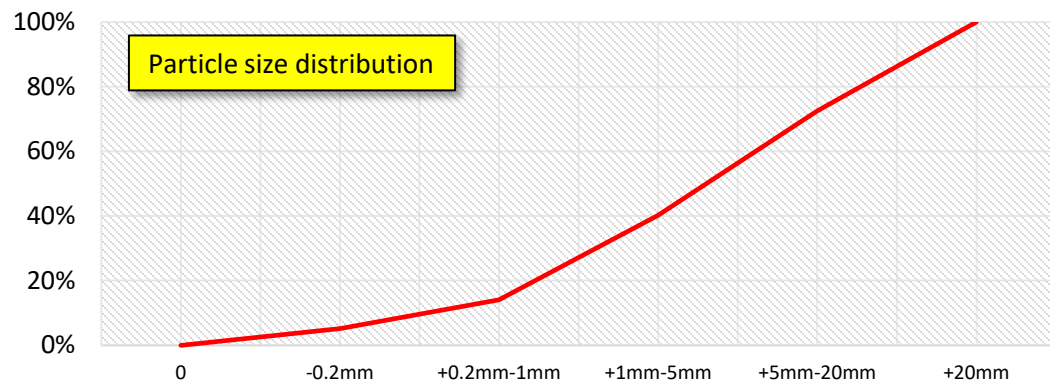


Activities from start to finish



2-3 weeks from the unit arriving on site, to processing your IBA, to disassembling and removing it.

Parameters for your Business Case



Results of analysis in original state:

Parameter	MW	Unit	Norm / Method	Status
Au	114	g/t	IMG: House method	Not accredited
Ag	3004	g/t	IMG: House method	Not accredited
Pd	8,9	g/t	IMG: House method	Not accredited
Cu	59,70	w%	IMG: House method	Not accredited
Al	6,03	w%	IMG: House method	Not accredited
Pb	3,03	w%	IMG: House method	Not accredited
Zn	22,29	w%	IMG: House method	Not accredited

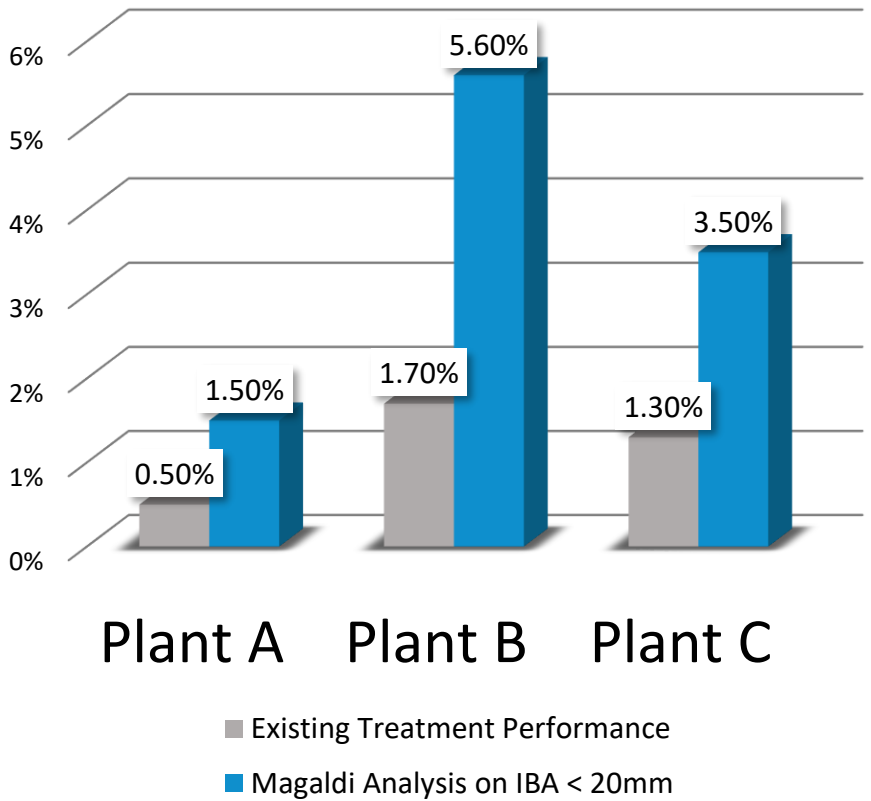
Abbreviations: MW = Mean value

Precious Metal composition

Executing the IBA analysis for your ash means understanding in detail what is inside.



Customer Success stories



Yearly Produced IBA Quantity	Yearly Economic Value (NFM content 1.3%)	Yearly Economic Value (NFM content 3.5%)
30,000 tpy	€2.325 Mio.	€6.27 Mio.
50,000 tpy	€3.875 Mio.	€10.45 Mio.
100,000 tpy	€7.75 Mio.	€20.90 Mio.

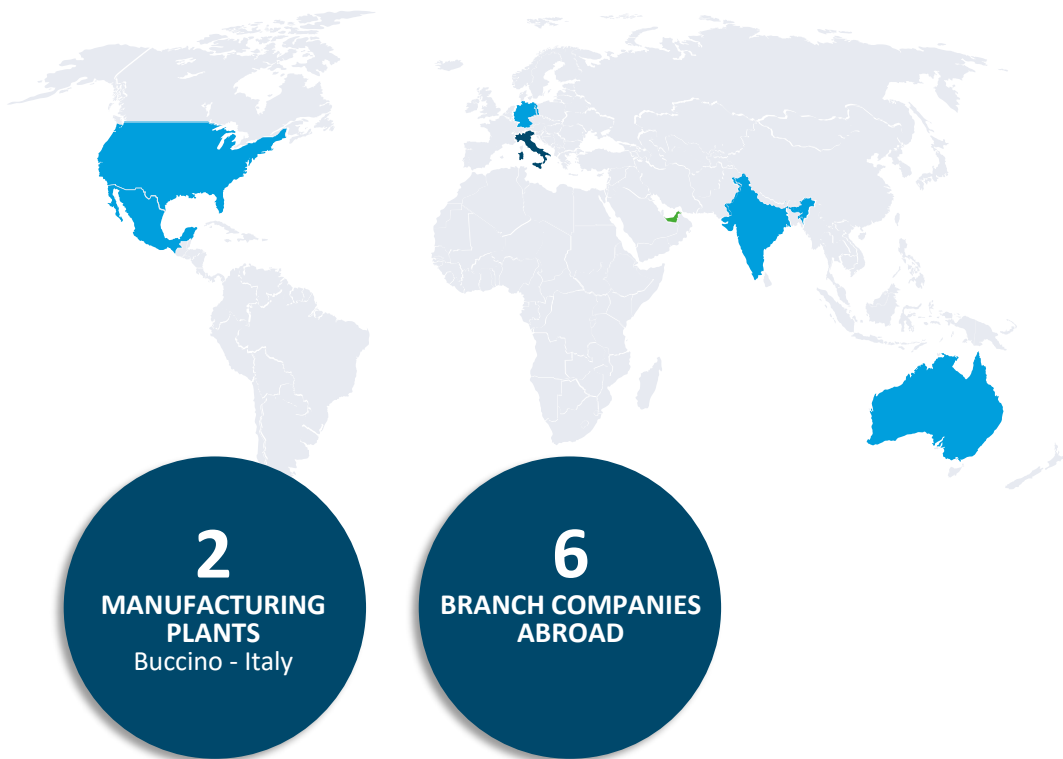
**Estimated revenues refer to the metal revenue generated by a reference plant in 2025.*

Up to 300% higher non-ferrous metal potential was proven in some IBA analyses



Magaldi Group - A century of dependable industrial engineering

Magaldi is a global leader in bulk-material handling.
We industrialised dry bottom-ash handling long before it
became the sustainable standard. Today we bring that
expertise to waste-to-energy.



95+

years of industrial excellence



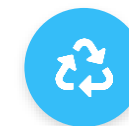
1800+

bulk-material handling systems
worldwide



250+

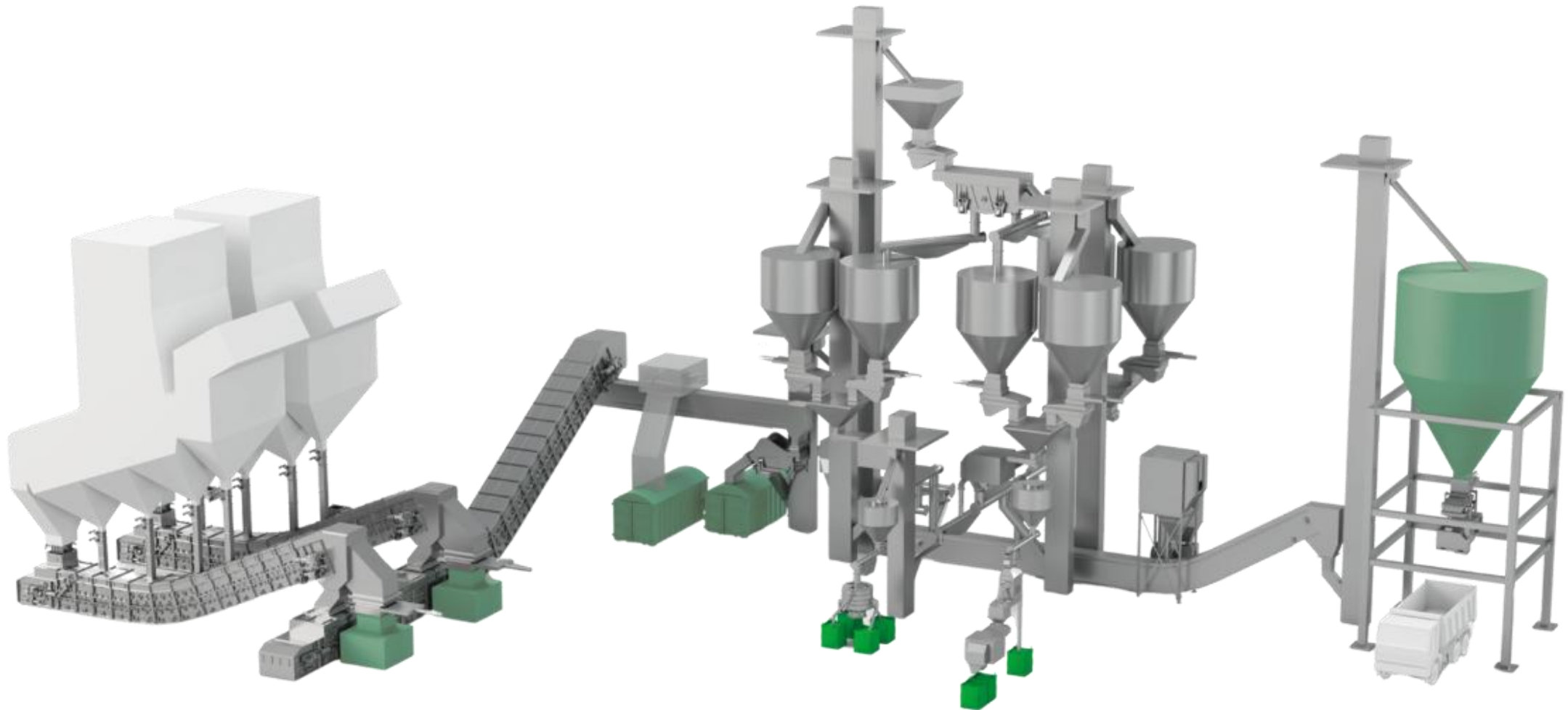
employers worldwide



35+

incinerator bottom-ash (IBA) systems

Ash management in the Waste-to-Energy





Magaldi's services to the client

From feasibility studies, ash analysis to execution and supporting the customer in running the plant - Magaldi supports you the whole journey.



Thank you for your attention.

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