

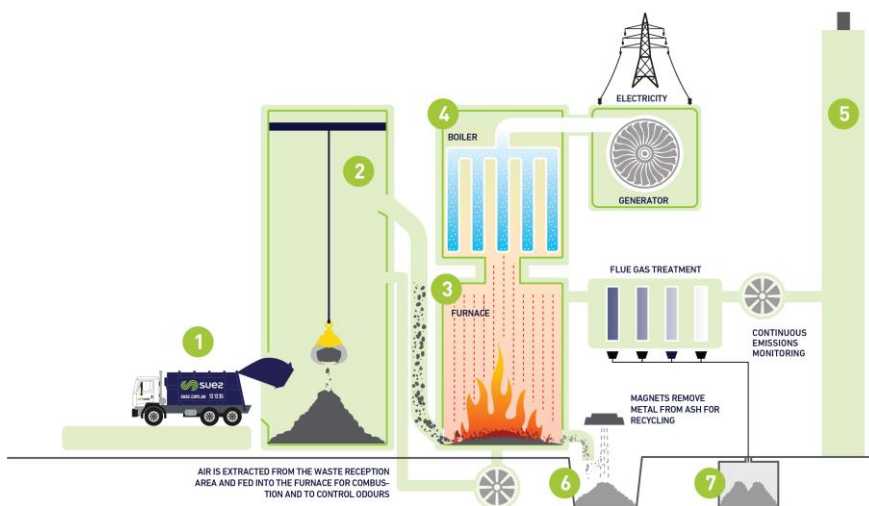
Maryvale Energy from Waste Project

Bottom Ash Recycling Overview

The Maryvale Energy from Waste (EfW) project is extending its sustainability credentials and alignment with the principles of the Circular Economy by investigating options to further reduce by-products generated from the EfW process.

The Maryvale EfW facility will process residual waste from Councils and businesses, diverting it from landfill and recovering valuable energy that would otherwise be lost. From the process, ash residues in the form of Incinerator Bottom Ash (IBA, #6 in the diagram below) and Flue Gas Treatment residues (FGTr, #7 in the diagram below) are generated as by-products. To avoid these by-products ending up in landfill, we are exploring innovative solutions for the recovery and recycling of IBA.

Residual waste feedstock contains ferrous metals such as steel and non-ferrous metals such as copper, aluminium, brass and gold, which are extremely difficult to recover prior to the EfW process. After combustion, the metals are separated from other materials and they can be recovered from the ash and then recycled.



Case Study

Location: Wallonia, Belgium
Customer: Wanty Construction
Project: Baccara Road Roundabout
Supplier: SUEZ Valomac

Highlights:

- ✓ 5,000 tonnes of CE2+* certified aggregates
- ✓ Long-term quality supply for over a decade
- ✓ Cost savings over traditional virgin aggregates

* CE is the abbreviation for 'Conformité Européenne' in French, which translates as European Compliance. It indicates that a product meets the stringent technical specifications required by European regulations.

Optimised facility design

IBA is commonly processed internationally to recover metals for recycling and to generate recycled aggregates. SUEZ operates 26 IBA recycling facilities worldwide and has an IBA Centre of Excellence in Belgium. With this international know-how, SUEZ has specified the necessary functionality for the proposed Maryvale IBA Recycling facility to achieve an optimised performance. Metals will be recovered from the ash and sent for recycling, with the remaining aggregates recycled as commonly used construction materials, such as road base. Across Europe, millions of tonnes of ash aggregates are used in construction each year.

The IBA Recycling facility will be an indoor facility similar to the image on the right. With about 65,000tpa of IBA material expected to be produced from the EfW process, the IBA Recycling facility aims to recover 10% (~6,000tpa) as metals, with the remainder of the material being repurposed as recycled aggregates - Incinerator Bottom Ash Aggregate (IBAA). A small fraction of organic materials (< 3%) will be removed from the process and returned to the EfW facility for energy recovery.

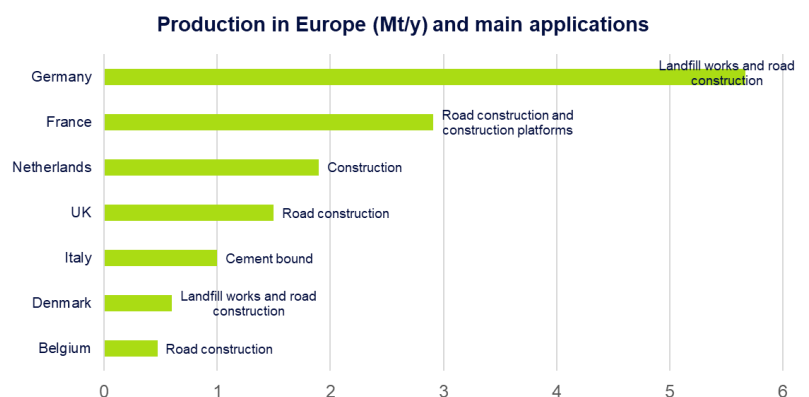


Network of experts

During the feasibility study, the EfW consortium engaged HRL Technology Group to undertake extensive waste sampling and has now further commissioned a research and development program with Monash University to assess the feasibility of using IBAA materials in a range of construction applications. The work with Monash University aims to validate the proven applications common across Europe and adapt requirements to suit the Australian context.

The EfW consortium has also engaged an independent researcher to undertake a recycled aggregates market assessment for Gippsland and metropolitan regions. This study assessed the current market scale and price and confirmed there is an increasing demand for recycled aggregates in the market.

A range of potential off-takers have been approached, including regional recyclers, aggregate providers and major construction companies. It is anticipated that contracts will be developed to re-use this material subject to final environmental and technical approvals.



If you are interested in learning more, or are interested in using IBAA as part of your supply chain, please contact us at:

The Creating Energy from Waste Information Centre, 1 Monash Way Morwell, open 10am – 3pm (subject to COVID restrictions) or email: creatingenergy@australianpaper.com.au

Or visit our website: <https://opalanz.com/future/energy-from-waste/>