**Incinerator bottom ash aggregates (IBAA) are sustainable aggregates produced from the bottom ash output from energy from waste municipal incinerators.**

1.0 **IBAA:**

The viability and sustainability of Municipal Solid Waste (MSW) incinerators are strongly influenced by the options available for the incinerator bottom ash (IBA) resulting from the incineration process. The amount of IBA produced averages around 25% by mass of the waste input into the incinerator.

The quality managed processing of IBA into IBAA is carried out in conformity to harmonised Construction Products Regulation British/European Aggregates Product Standards. This includes weathering, screening, metal recovery and grading to produce a range of grades of IBAA.

IBAA’s engineering properties mean it is suitable for use in construction in accordance with relevant engineering specifications, primarily in civil engineering applications such as pipe bedding, sub base, engineering fill, concrete blocks, and asphalt.

2.0 **Energy from Waste MSW incinerators**

2.1 **Government policy**

England needs to reduce the amount of waste going to landfill to help ensure the UK meets the EU Landfill Directive targets for 2020. England will need to reduce to amount of Biodegradable Municipal Waste (BMW) it sends to landfill each year, to no more than 10.2 million tonnes.

To meet these targets Defra is investing some £3 billion of grant funding in a number of waste infrastructure projects. These will help reduce the amount of waste sent to landfill, improve recycling and boost economic growth. This grant is paid over the 25-year operating life of each project.

2.2 **Incineration infrastructure**

MSW incinerators generate energy from the residual waste that would otherwise have gone to landfill. Investment in incineration infrastructure has resulted in a significant growth in capacity over recent years:

![Grundon’s Lakeside Incinerator, Colnbrook](image)

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Modern incinerators are designed to optimise recovery from the waste stream:

<table>
<thead>
<tr>
<th>Residual Waste Treatment Capacity (ktpa)</th>
<th>2011</th>
<th>2014</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational</td>
<td>7,000</td>
<td>9,900</td>
<td>15,800</td>
</tr>
<tr>
<td>Under Construction</td>
<td>3,300</td>
<td>7,100</td>
<td>5,300</td>
</tr>
<tr>
<td>Other Committed Capacity</td>
<td>-</td>
<td>700</td>
<td>400</td>
</tr>
<tr>
<td>Total Committed Capacity</td>
<td>10,300</td>
<td>17,700</td>
<td>21,400</td>
</tr>
</tbody>
</table>

Modern incinerators are designed to optimise recovery from the waste stream. Over 3,000,000 tonnes of aggregates will result from the waste annual processing capacity of the 2017 operational infrastructure shown in table 1 above.

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Data taken from Eunomia Residual Waste Infrastructure Review Issue 12 July 2017

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2 Data taken from Eunomia Residual Waste Infrastructure Review Issue 12 July 2017
3.0 The processing of IBA to produce IBAA

The treatment of IBA for the recovery of metals and aggregates is classified as a waste recovery operation. These operations are permitted under the Environmental Permitting Regulations either as an activity that forms part of a waste incineration installation or as a separate waste activity, depending upon the location and purpose of the treatment process.

3.1 IBAA production

The processing of IBA to produce aggregates requires complex material handling plant.

The operation of the plant is controlled by a quality management scheme structured to conform to the Factory Production Control requirements of harmonised Construction Products Regulation British/European Aggregates Product Standards.
Procedures include weathering, screening, metal recovery, aggregate particle size grading and product testing to produce a range of IBAA products meeting civil engineering specifications.

4.0 Examples of the uses of IBAA in construction

Client: Lidl

Project: New Lidl Store, Southampton

Application: Unbound subbase to road network and site infrastructure

Tonnage supplied: approx. 55,000 tonnes
Client: Poole Borough Council

Project: Twin Sails Bridge, Poole

Application: Unbound subbase for road construction and embankment to the bridge crossing

Tonnage supplied: approx. 30,000 tonnes

Client: Olympic Delivery Authority

Project: 2012 Olympic Logistics Centre, Chigwell

Application: 0/10 mm aggregate for cement bound material (CBM)

Tonnage supplied: approx. 10,000 tonnes

Client: EDF Energy Networks

Project: Installation of electricity cables, Dagenham

Application: Subbase for utility trench reinstatement

Tonnage supplied: approx. 1,600 tonnes