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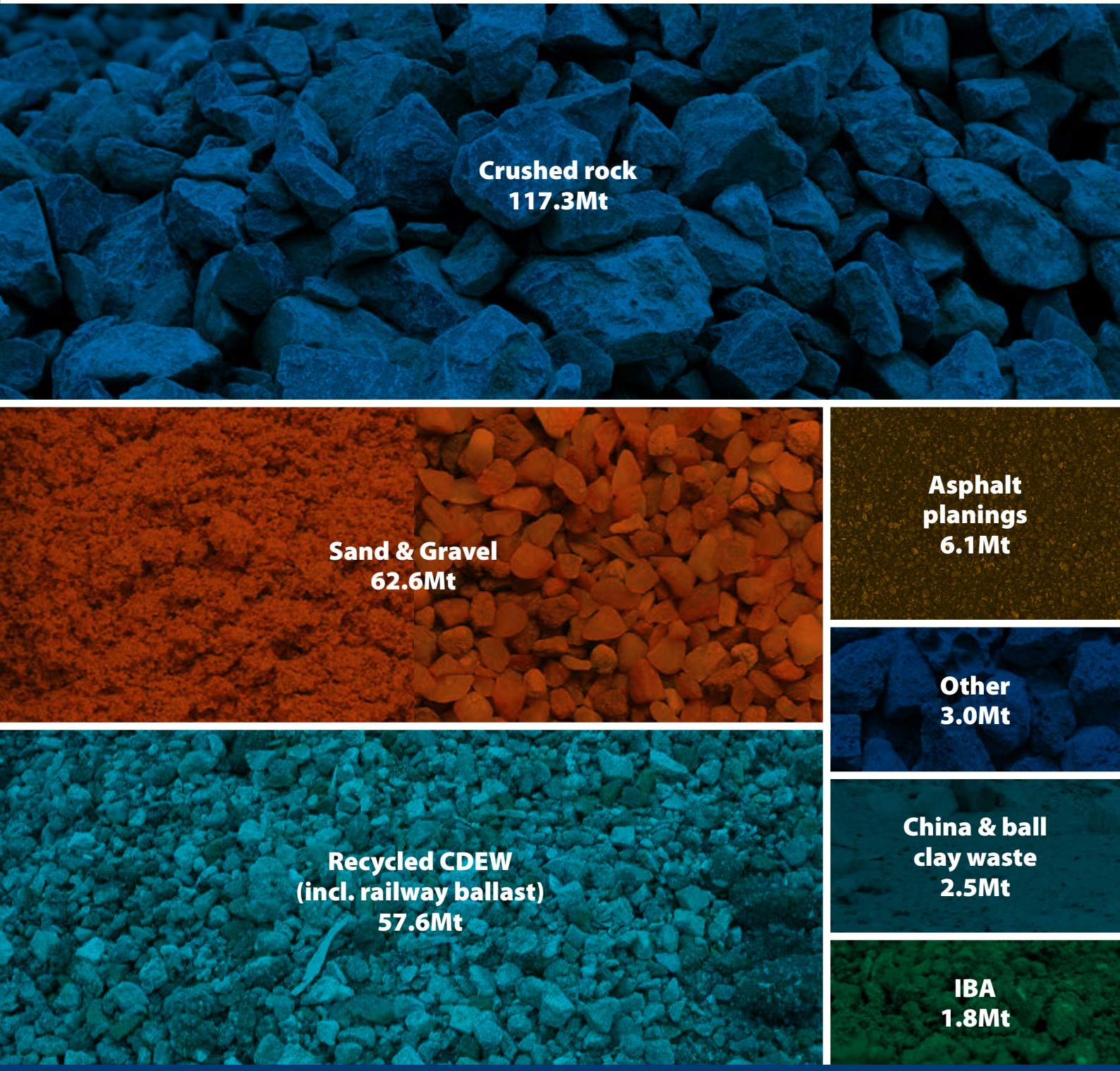


The Contribution of Recycled and Secondary Materials to Total Aggregates Supply in Great Britain in 2018

make the link
to mineral products

Overview

Introduction

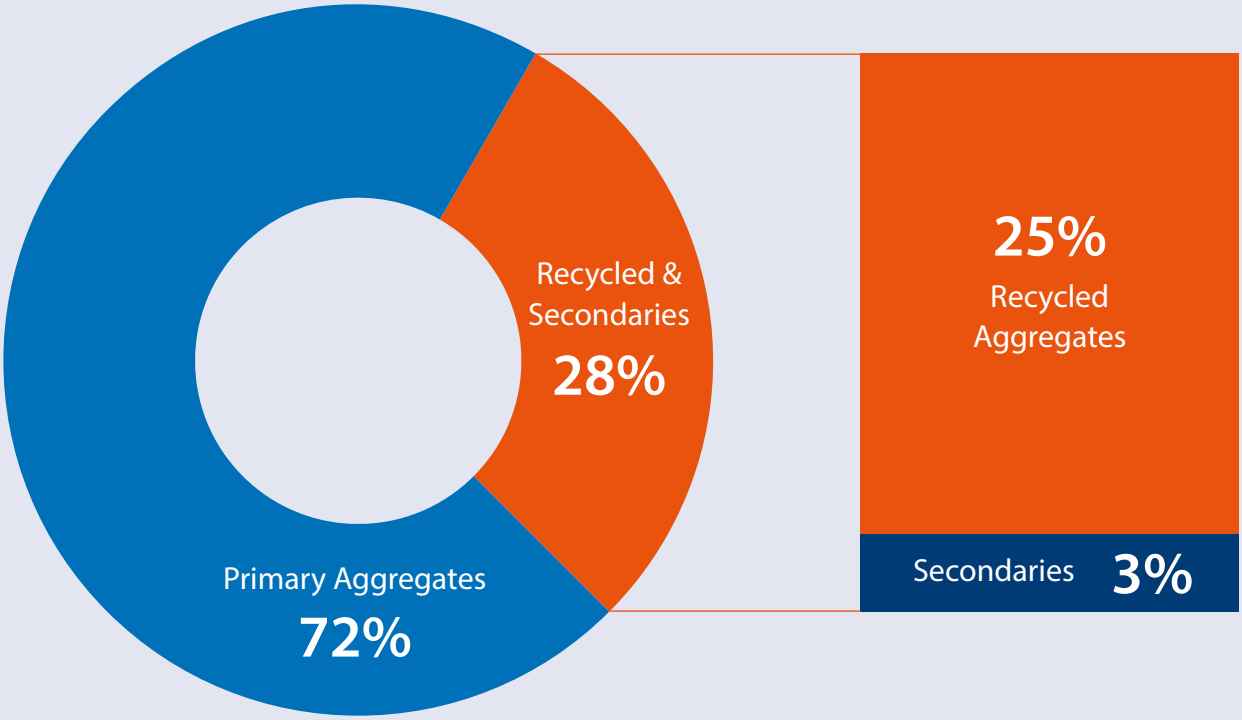
Construction aggregates are essential for housing, infrastructure including transport and energy networks, commercial and industrial buildings, utilities, schools and hospitals.

The main components of aggregates supply are primary aggregates, meaning quarried crushed rock and both land-won and marine dredged sand & gravel. Aggregates can also be obtained from the recycling of Construction, Demolition and Excavation Wastes (CDEW), or derived from other industrial, production or extractive processes, referred to as secondary aggregates. Secondary aggregates can include furnace ash and slag from iron and steel production and are defined as manufactured aggregates within the BS EN aggregate product standards.

In 2018, a total of 180 million tonnes of primary aggregates were produced by the mineral products industry in Great Britain, together with an estimated 71 million tonnes from recycled and secondary sources. Recycled and secondary materials accounted for 28% of the total aggregates supply, which has put Great Britain in a leading position internationally in the use of recycled and secondary aggregates for many years, well ahead of the European average.

Despite this strong performance, the general paucity of regularly collected and compiled statistics, especially regarding recycled and secondary aggregate use at all scale, can make it challenging to track the industry's continuing progress. In response, MPA has developed a methodology to track the contribution of recycled and secondary aggregates to overall aggregates supply, with the aim of addressing this data gap. The methodology used is based on published statistics from third parties whenever possible, combined with a number of tried and tested material-specific assumptions.

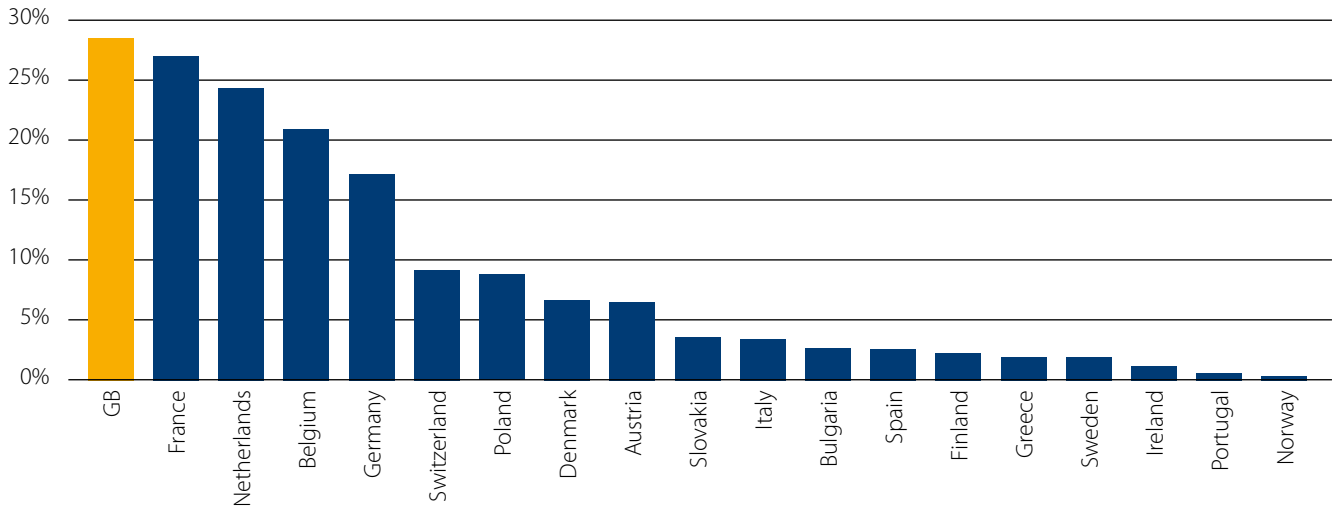
Figure 1. Share of total aggregates supply in GB, 2018



Front cover: Total aggregates supply in GB, 2018 (million tonnes)

Overview

Figure 2. Share of recycled and secondary materials in total aggregates sales, 2018.



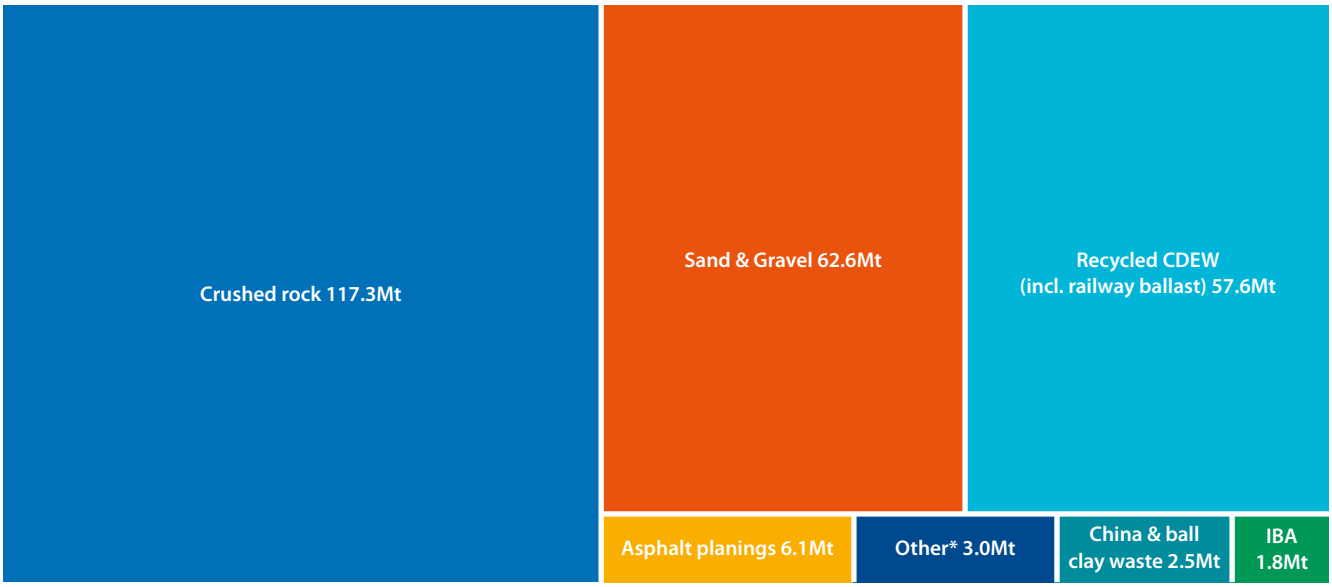
Note: Includes manufactured, recycled (fixed and mobile) and aggregates re-used on site
Source: UEPG, MPA calculations

Table 1. Total aggregates supply in GB (million tonnes)				
	2015	**2016**	**2017**	**2018**
Crushed rock	108.2	113.9	114.5	117.3
Sand & gravel	61.8	63.0	61.8	62.6
Total Primary Sources (P)	**170.0**	**176.8**	**176.3**	**179.9**
CDEW (incl. railway ballasts)	52.3	54.3	57.5	57.6
Asphalt planings	5.8	6.0	6.1	6.1
Total Recycled Sources (R)	**58.1**	**60.3**	**63.6**	**63.7**
China & ball clay waste[1]	2.0	2.0	2.5	2.5
Colliery spoil	0.3	0.0	0.0	0.0
Furnace bottom ash (FBA)	0.7	0.8	0.1	0.2
Incinerator bottom ash (IBA)[2]	1.6	1.9	1.8	1.8
Fly ash	1.0	1.1	0.4	0.4
Iron & steel slag	1.4	0.9	1.1	1.2
Slate waste	0.5	0.6	0.6	0.6
Clay & shale	0.7	0.2	0.2	0.1
Chalk	0.4	0.5	0.5	0.5
Total Secondary Sources (S)	**7.9**	**7.8**	**7.1**	**7.3**
Total Aggregates (AGGS)	**236.0**	**245.0**	**247.0**	**250.9**
Share of R&S in AGGS	**28%**	**28%**	**29%**	**28%**

Notes: Totals may not add up due to individual rounding. [1] Devon and Cornwall. [2] England and Wales.
Source: MPA calculations

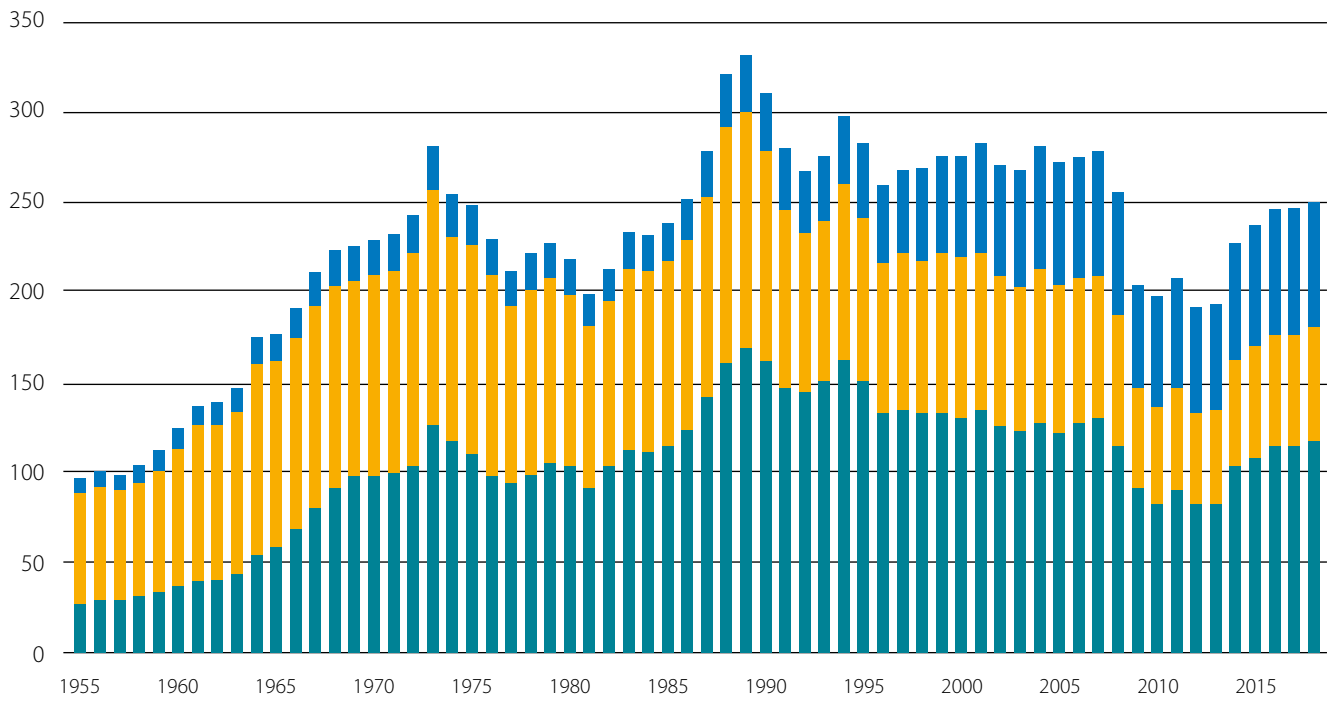
Overview

Figure 3. Total aggregates supply in GB, 2018



* Includes iron & steel slag, clay & shale, slate waste, chalk, fly ash, FBA and colliery spoils.
Source: MPA calculations.

Figure 4. GB aggregates market by sources of supply, 1955-2018



Source: ONS, BGS, MPA calculations. Crushed rock Sand & gravel Recycled and secondary materials

Definitions & Methodology

Definitions and terminology

Primary aggregates are minerals that are extracted for aggregates use. Minerals can only be dug where they lie. Crushed rock represents 65% of the total volume of primary aggregates produced, alongside contribution from sand & gravel quarries and marine dredged sand & gravel.

This broad breakdown disguises the fact that local and regional markets may be highly dependent on a particular type or source of aggregate as a consequence of the geographic availability or the market demand for particular products. The market is mostly supplied from UK sources and aggregates exports and imports account for less than 5% of the domestic market in volume terms.

Recycled aggregates are materials derived from construction, demolition and excavation activities which are reprocessed and/or re-used as an aggregate for construction purposes whenever possible. The MPA definition focusses solely on 'hard' inert materials, defined as the non-hazardous materials which would generally be suitable for recycling into aggregates. This definition includes railway ballast but excludes asphalt planings, which we account for separately. The 'soft' non-hazardous CDEW recovered as recycled soils are entirely excluded. WRAP (2010) identified 43.5 million tonnes of hard inert CDEW recycled in England in 2008 alongside a further 9.2 million tonnes of soils.

Secondary aggregates are by-products of other industrial, production or extractive processes, which can be used as an aggregate for construction purposes. These include blast furnace iron and steel slags, incinerator bottom ash (IBA), fly ash, furnace bottom ash (FBA), china clay, slate and chalk waste, as well as colliery spoils. Collectively, these materials make an important contribution to total aggregates supply and depending on their quality and composition can be used as replacement construction aggregates, in the manufacture of concrete and concrete products and a range of other construction applications. It should be noted that secondary aggregates are defined as manufactured aggregates within the BS EN aggregate product standards.

Methodology and assumptions

All estimates for CDEW and secondary materials are based on historical data resulting from research commissioned by the Ministry of Housing, Communities & Local Government (MHCLG, formerly DCLG) and WRAP, which provided data for the years 2005 and 2008.

It is generally assumed that all CDEW which can be recycled as aggregates is being used, with limited opportunity for a significantly higher share of CDEW in aggregates markets. Research by MHCLG into CDEW markets suggests that this was already the case in 2005, indicating that "very little evidence was found of hard C&D waste which could be recycled into aggregate being landfilled as waste".

Using the information available, MPA has been estimating market sizes from 2009 onward, based on a range of material-specific assumptions and data sources. It should be noted that the devolved administrations may publish recycling data based on activities in their own jurisdictions. As a consequence, locally reported recycling rates may differ from the GB figures presented in this document.

Constituents of Supply - Primary Sources

Primary aggregates (crushed rock and sand & gravel, including marine)

The 'Annual Mineral Raised Inquiry' (AMRI) surveys, previously carried out by the Office for National Statistics (ONS), provided data on non-energy mineral production in GB. This included data on extracted sales of chalk, clays, crushed rock, dolomite, granite, limestone, peat, ore minerals, salt, sandstone, sand & gravel, slate and other minerals, together with employment for each quarry type. The last annual survey available covers data for the year 2014 when government withdrew funding for this survey, and no further annual surveys are currently planned.

The 4-yearly Aggregate Mineral (AM) survey is prepared by the British Geological Survey (BGS) for MHCLG. This survey provides national and regional sales patterns, inter-regional flows, transportation, consumption and permitted reserves for primary aggregates in England and Wales published in 2016, providing 2014 market data.

Given the lack of more recent data, MPA estimates primary aggregates sales post-2014 using the trend in its members' aggregates sales volumes. The MPA sales volumes survey is carried out on a quarterly basis, providing volumes of primary aggregates sales in GB, based on a consistent sample of MPA members which together represent 75-80% of the total aggregates market. Given the significant representation of the MPA survey in the overall GB primary aggregates market, trends in MPA sales should be a reasonably representative indicator of overall aggregates sales in GB.

Overall, in order to build a dataset, MPA used the total primary aggregates sales as published in the AMRI surveys up to 2013 (GB), a combination of the AM (England & Wales) and AMRI (Scotland) surveys for the transitional year in 2014. The trend in MPA members' aggregates sales is then used to estimate the total size of the primary aggregates market over 2015-18 (GB).

A reconciliation of the MPA members' trends and the AM survey data will be carried out as and when the next 4-yearly survey is made available.

Table 2. Primary aggregates in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Crushed rock (Mt)	121.9	115.1	91.1	82.3	90.9	82.9	82.4	102.3	108.2	113.9	114.5	117.3
Sand & Gravel (Mt)	82.4	72.1	55.7	54.3	55.0	50.0	51.9	59.6	61.8	63.0	61.8	62.6
Total (Mt)	**204.3**	**187.2**	**146.8**	**136.6**	**145.9**	**132.9**	**134.4**	**161.9**	**170.0**	**176.8**	**176.3**	**179.9**

Source: ONS, BGS, MPA calculations.

Constituents of Supply - Recycled Sources

CDEW (incl. railway ballast)

Historical estimates for England for the years 2005 and 2008 are available from MHCLG (DCLG, 2007a) and WRAP (2010). According to these two reports, the total production of recycled aggregates in England reached 42.07 million tonnes in 2005 and 43.52 million tonnes in 2008. These tonnages include 'hard inert' CDEW, including only materials which would generally be suitable for processing into aggregates. This definition includes railway ballast but excludes asphalt planings (which are accounted for separately) and recycled soils.

Table 3. EWC codes included in the definition of hard inert CDEW

EWC code 1	EWC code 2	EWC code 3	Description
12.1	12.11	17.01.01	Concrete
12.1	12.11	17.01.02	Bricks
12.1	12.11	17.01.03	Tiles and ceramics
12.1	12.11	17.01.07	Mixture of concrete, bricks, tiles and ceramics
12.1	12.11	17.05.08	Track ballast
12.5	12.51	10.12.08	Waste ceramics, bricks, tiles and construction products (after thermal processing)
7.1	7.12	17.02.02	Glass waste
12.8	12.81	19.12.09	Minerals (e.g. example sand, stones from waste treatment)

Source: WRAP

To build a GB estimate for CDEW in 2005, MPA used the England data (42.07 million tonnes) and scaled it up assuming that 4 million tonnes of recycled aggregates produced in Scotland and 3 million tonnes in Wales, resulting in a total of 49.1 million tonnes for GB. For the year 2008, we assume that total production of recycled aggregates in GB followed the trend seen in England over 2005-08, resulting in a total production of recycled aggregates of 50.8 million tonnes.

To our knowledge, there has been no further information published on recycled aggregates at national level since the WRAP (2010) report. **As a proxy to project 'hard inert' CDEW from 2009 onward, MPA assumes it follows the trend in general construction activity**, as measured by ONS. The logic for this assumption is that changes in construction output should be a reasonable proxy for changes in the amount of demolition work, and therefore of the generation of CDEW.

Table 4. Hard inert CDEW in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Construction output (%Y)	-2.4%	-2.6%	-13.2%	8.5%	1.4%	-7.3%	1.7%	10.0%	4.0%	3.9%	5.9%	0.0%
Hard inert CDEW (Mt)	**49.1**	**50.8**	**44.1**	**47.8**	**48.5**	**44.9**	**45.7**	**50.3**	**52.3**	**54.3**	**57.5**	**57.6**

Source: WRAP, ONS, MPA calculations.

Asphalt planings

According to the European Asphalt Pavement Association (EAPA), *'Asphalt materials are almost unique among construction products in that they can be 100% recycled, and in many cases re-used directly back into the application and even the site from which they have been extracted'.* The availability of asphalt planings is therefore closely linked to general road maintenance.

The MHCLG (DCLG, 2007b) report estimated that 8 million tonnes of asphalt arisings were available in the UK in 2005, 70% of which occurred in England. To obtain a GB total, MPA assumed an equal split of the difference between the UK and England to represent Scotland, Wales and Northern Ireland (0.8 million tonnes each), meaning total arisings of 7.2 million tonnes in GB in 2005.

No further direct sources of information on the size of the asphalt planings market at national level could be identified. As a result, from 2008 onward, MPA assumed total asphalt planings to follow the trend in MPA asphalt sales, a proxy for general road maintenance activity.

Table 5. Asphalt planings in GB (million tonnes)

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
MPA Asphalt sales (%Y)	3.6%	-4.0%	-17.5%	6.0%	4.2%	-16.9%	3.9%	8.8%	6.5%	3.5%	0.2%	0.7%
Asphalt planings (Mt)	**7.2**	**6.4**	**5.3**	**5.6**	**5.8**	**4.8**	**5.0**	**5.5**	**5.8**	**6.0**	**6.1**	**6.1**

Source: DCLG, MPA calculations.

Constituents of Supply - Secondary Sources

China & Ball Clay waste

A major source of secondary aggregates are the by-products derived from the extraction and processing of china and ball clay. To obtain one tonne of saleable china clay, up to nine tonnes of other materials are generated. Most of this waste can be used as general fill for both engineering purposes or to recycle land, or as other aggregate uses after crushing and screening, such as in concrete and as building sand. MHCLG (DCLG, 2007b) provided an estimate of 2.6 million tonnes of china clay and ball waste used as aggregate in England in 2005, 13.4% of total arisings (19.6 million tonnes).

The BGS provides annual estimates on china and ball clay sales in England and indicates that there are no china or ball clay workings in Wales, Scotland and Northern Ireland. BGS (2020) estimates that a total of 1.9 million tonnes of china and ball clay were sold in England in 2018. As this data is for total sales, not just for waste materials, an estimation of china and ball clay waste production is therefore needed.

The Kaolin and Ball Clay Association (KABCA) indicates that the ratio of waste to ball clay production is variable, but generally in the order of 1 to 1.5[1], whilst each tonne of china clay typically produces up to 9 tonnes of waste arisings[2]. Using this information, it is possible to estimate the size of china and ball clay waste between 2005 and 2015, using an average 'waste to ball clay ratio' of 1.25:1 and a 'waste to china clay' ratio of 9:1. However, the production of secondary aggregates from clay waste also involves the processing of historic stockpiles. Consequently, a direct relationship between the rates of primary clay production at any one time and the production of secondary aggregates cannot be assumed. Furthermore, not all of the waste will necessarily be suitable for aggregate usage.

An alternative basis for the estimation of china and ball clay waste used as aggregates is therefore needed. The majority of clay arisings in England occur in two counties, Devon and Cornwall. In addition, in their latest yearbook, BGS (2020) indicated no ball or china clay workings exist in Wales, Scotland or Northern Ireland. As a result, we reviewed the annual Local Aggregate Assessments reports for Devon and Cornwall and used the published sales data to estimate the total tonnage of re-processed clay waste that enters the aggregates market each year.

In Devon, an estimated 0.558 million tonnes of secondary aggregates were sold in 2018, 95% of which originated from china and ball clay workings, the remaining from slate waste. In Cornwall, a total of 2.08 million tonnes of secondary aggregates were sold in 2018, 96% of which were derived from clay waste. Overall, this indicates that, in 2018, approximately 2.5 million tonnes of clay waste were used as aggregates in GB.

Table 6. China & ball clay waste used as aggregate in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Clay waste used as aggregate (Mt)	**2.6**	**2.8**	**1.7**	**1.6**	**2.1**	**2.0**	**2.1**	**2.0**	**2.0**	**2.0**	**2.5**	**2.5**

Source: DCLG, Devon County Council, Cornwall Council, MPA calculations.

Colliery Spoil

Historically, colliery spoil has been used as a source of secondary aggregates, mostly as fill for engineering purposes or to reclaim land. It is generally obtained from deep coal mining. MHCLG (DCLG, 2007b) provided an estimate of 1 million tonnes of colliery spoil used as aggregates in England in 2005.

The last deep coal mine in the UK, Kellingley Colliery in North Yorkshire, closed in December 2015.

There is no other information available on which to form a view of the size of the market at GB level rather than in England. A conservative GB baseline is therefore to use the England estimate for 2005 and project the volumes forward to 2018 using the trend in deep mined coal production, as published by BEIS. Production of deep mining coal ceased in 2015.

Table 7. Colliery spoil used as aggregate in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Deep mined coal output (%Y)	-24%	5.0%	-7.1%	-1.7%	-1.1%	-15.9%	-33.6%	-9.9%	-24.5%	-	-	-
Colliery spoil used as aggregate (Mt)	**1.0**	**0.8**	**0.8**	**0.8**	**0.8**	**0.6**	**0.4**	**0.4**	**0.3**	**0.0**	**0.0**	**0.0**

Source: DCLG, BEIS, MPA calculations.

[1] https://kabca.org/what-is-ball-clay.php [2] https://kabca.org/what-is-kaolin.php

Constituents of Supply - Secondary Sources

Furnace Bottom Ash

Furnace bottom ash (FBA) originates from the combustion process at coal-fired power stations. It can be used as a lightweight aggregate in the manufacture of building blocks and structural lightweight fill material.

Annual data for total FBA arisings is provided by the UK Quality Ash Association (UKQAA). Whilst their data is for the UK as a whole, the survey does not identify any operational coal-fired power stations based in Northern Ireland, so the actual coverage is GB alone. According to the UKQAA, there were approximately 1.2Mt of total FBA arisings in GB in 2005. MHCLG (DCLG, 2007b) also reported that 90% of total arisings are used as aggregates, resulting in 1.1Mt of FBA used as aggregates in GB in 2005. The same ratio is applied to the UKQAA annual sales statistics up to 2017. For the years where annual data is missing, MPA provided an estimate based on the assumption that FBA for construction uses follows the general trend in construction activity. It is noted however that there is likely to be a continual decline in the production of FBA in GB in line with coal power station closures, with low output offset by some imports. For the year 2018, the UKQAA estimated that 0.2Mt of FBA was produced in GB and used as aggregates, down from 0.9Mt used in 2013.

Table 8. FBA used as aggregates in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
FBA: arisings (UKQAA) (Mt)	1.2	0.9	0.7	0.7	0.8	1.0	1.0	0.8	-	-	0.1	0.3
Used as Aggregates (90%) (Mt)	1.1	0.8	0.6	0.6	0.7	0.9	0.9	0.7	-	-	0.1	0.2
Construction output (%Y)	-2.4%	2.2%	-2.6%	-13.2%	8.5%	1.4%	-7.3%	10.0%	4.0%	3.9%	5.9%	0.0%
Total FBA used as aggregates (Mt)	**1.1**	**0.8**	**0.6**	**0.6**	**0.7**	**0.9**	**0.9**	**0.7**	**0.7**	**0.8**	**0.1**	**0.2**

Source: DCLG, UKQAA, ONS, MPA calculations.

Incinerator Bottom Ash

Incinerator bottom ash (IBA) is the output of municipal solid waste incineration. It may contain glass, ceramic, brick, concrete, grit and stone in addition to clinker, ash and metals. It is generally recycled in a number of construction applications to replace primary aggregates, including as fill material or for road paving, concrete or construction blocks.

The Environmental Services Association (ESA) indicates that approximately 1 million tonnes of IBA are produced in England and Wales each year. In 2011, about 86% of IBA was reused as aggregate, with the remainder including the recovery of metals and hazardous materials. This means that there were approximately 0.9Mt of IBA arisings in England and Wales reused as an aggregate in 2011. With no further information available, this estimate is used for the years 2005-12.

From 2013, it is possible to use information published as part of the Environment Agency's Pollution Inventory reports for England and Wales. Focussing on *"wastes transferred off-site for disposal or recovery"*, and consolidating data available for non-hazardous bottom ash and slag results in about 1.2Mt of IBA produced in 2013, 86% of which (1.1Mt) is assumed to have been reused as aggregates. This methodology is applied up to 2018.

Table 9. IBA used as aggregate in England & Wales

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
IBA (ESA) (Mt)	1.0	1.0	1.0	1.0	1.0	1.0						
Non-hazardous bottom ash & slag* (Mt)							1.2	1.6	1.8	2.2	2.1	2.1
IBA used as aggregates (Mt)	**0.9**	**0.9**	**0.9**	**0.9**	**0.9**	**0.9**	**1.1**	**1.3**	**1.6**	**1.9**	**1.8**	**1.8**

**Includes European Waste Codes 10 01 01, 10 01 15 and 19 01 12.*
Source: DCLG, ESA, Environmental Agency, MPA calculations.

Constituents of Supply - Secondary Sources

Fly Ash

Fly ash is the output from the combustion process at coal-fired power stations. As a fine material, fly ash can be used in the manufacture of concrete and cement, as well as an unbound secondary fill material, such as for the construction of embankments.

The production of fly ash is linked to the UK's energy mix, increasing when more coal is burnt, and levelling off or decreasing when other energy sources take primacy, such as gas. Between 4 and 7 million tonnes of fly ash were produced each year between 1999 and 2014 and there are believed to be significant deposits of this material located adjacent to traditional coal-fired power station sites.

Annual data for ash production and utilisation in the UK is provided by the UKQAA. As for furnace bottom ash, the UKQAA surveys do not identify any operational coal power stations based in Northern Ireland, so volumes are for GB. Out of the total ash production, the aggregate use is defined as fill material or construction blocks.

Table 10. Fly ash used as aggregates in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fly ash production (Mt)	6.2	5.5	4.5	5.0	5.3	6.0	5.8	4.6	-	-	1.8	1.7
Used as aggregates* (Mt)	29.0%	17.9%	22.0%	26.3%	11.7%	13.8%	17.3%	21.2%	-	-	21.2%	21.2%
Construction output (%Y)	-2.4%	2.2%	-2.6%	-13.2%	8.5%	1.4%	-7.3%	10.0%	4.0%	3.9%	5.9%	0.0%
Fly ash used as aggregates (Mt)	**1.8**	**1.0**	**1.0**	**1.3**	**0.6**	**0.8**	**1.0**	**1.0**	**1.0**	**1.1**	**0.4**	**0.4**

Note: For blocks or fill materials. Due to data availability, the 2014 share of aggregates use in total fly ash production was applied to compute the 2017-18 tonnages.

Source: UKQAA, ONS, MPA calculations.

Iron and Steel Slag

MHCLG (DCLG, 2007b) indicated that 1Mt of iron and steel slag were used as aggregates in England in 2005. Total production in England accounts for two thirds of the UK production, leading to an estimated 1.5Mt of material used as aggregates in the UK in 2005.

For more recent years, some data is available as part of a survey carried out by Euroslag every two years from 2008, for which the MPA collects UK numbers from its members. For the missing annual data, it is assumed that the volumes are equal to the average of the previous and following years.

The survey provides information on the total production of iron and steel slag as well as on end uses. This analysis focuses on the slag used as aggregates for road construction; other end uses include cement production, hydraulic engineering, fertilisers, uses in metallurgy and other uses such as for glass making.

All numbers provided are for the UK rather than GB, but there are no significant steel making works in Northern Ireland.

Table 11. Iron and steel slag used as aggregate in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Iron & Steel Slag used as aggregate (Mt)	**1.5**	**1.8**	**1.4**	**0.9**	**1.1**	**1.3**	**1.6**	**1.8**	**1.4**	**0.9**	**1.1**	**1.2**

Source: DCLG, Euroslag, MPA calculations.

Constituents of Supply - Secondary Sources

Slate waste

Information is available on slate deliveries for fill and other construction uses in GB, as published by the Department for Business, Energy & Industrial Strategy (BEIS).

Table 12. Slate waste for fill and other uses in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Slate waste for fill & other uses (Mt)	**0.9**	**0.7**	**0.6**	**0.6**	**0.7**	**0.6**	**0.7**	**0.6**	**0.5**	**0.6**	**0.6**	**0.6**

Source: BEIS.

Clay & Shale

Information is available from BGS and includes clays and shale for constructional and other uses up to 2018.

Table 13. Clay and shale for constructional and other uses in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Clay & shale for construction & other uses (Mt)	**1.2**	**1.5**	**1.1**	**0.8**	**0.7**	**0.5**	**0.9**	**0.6**	**0.0**	**0.2**	**0.2**	**0.1**

Source: BGS.

Chalk

Tonnages are provided up to 2014 in the AMRI surveys and include chalk for construction use in England, excluding cement uses.

Information on the origin of these sales volumes show that only the parts of GB that actually produce chalk were identified, so that the England volumes are in fact a GB total.

From 2015 however, as no other information is available, it is assumed that volumes follow the trend in general construction activity.

Table 14. Chalk for constructional use in GB

	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2017
Chalk for constructional use (Mt)	0.8	0.5	0.5	0.3	0.3	0.3	0.3	0.4				
Construction output (%Y)									4.0%	3.9%	5.9%	0.0%
Clay & shale for constructional use (Mt)	**0.8**	**0.5**	**0.5**	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**

Source: BGS, ONS.

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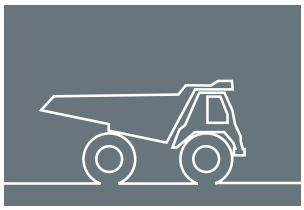
The mineral products and quarrying industry contribution to the UK:



390mt

GB production of aggregates and manufactured mineral products

4 times

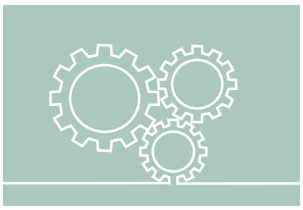
The volume of energy minerals produced in the UK including oil, gas and coal

£18bn

Annual turnover for the Minerals and Mineral Products industry

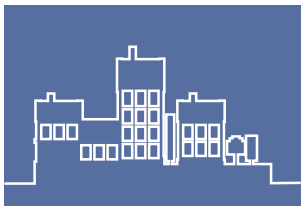
£6.8bn

Gross value added generated by the industry



£513bn

Annual turnover of the industries we supply

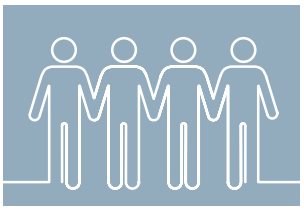


£152bn

Value of construction, output, our main customer

74,000

People employed in the industry



3.5m

Jobs supported through our supply chain

The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

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