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The role of imports to UK aggregates supply

BRITISH GEOLOGICAL SURVEY

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The role of imports to UK aggregates supply

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Preface

This report was produced by the British Geological Survey for the Office of the Deputy Prime Minister (Minerals and Waste Planning Division). It forms part of a number of reports, leaflets and mineral planning factsheets prepared under the ODPM-BGS Joint Minerals Programme that, among other objectives, seeks to present factual and authoritative data on the extent, availability, production, trade and use of minerals that are of economic importance to the UK. Much of this information is made available on the BGS minerals website: www.mineralsUK.com

Summary

Annual consumption of primary or natural aggregates in Great Britain is about 204 million tonnes. The UK is a net exporter of primary aggregates. This is mainly through the landings of marine-dredged sand and gravel in Europe, amounting to 6.1 million tonnes in 2003, and also exports of crushed rock from Glensanda, Britain's only coastal superquarry. Official statistics indicate that the UK is a small, net exporter of crushed rock, with exports being 3.2 million tonnes in 2003 against apparent imports of 2.6 million tonnes. Of imports, roughly half were from Norway and consist of both crushed rock and armourstone. Most of the imports are landed in South East England, including London. Currently imports account for only about 1% of total aggregates demand in Great Britain.

Preliminary HM Customs & Excise statistics for 2004 indicate that UK imports of aggregates have increased to 3.1 million tonnes and total exports have increased to 12.2 million tonnes, of which 4.4 million tones was crushed rock.

The next four-yearly Aggregates Minerals Survey is scheduled for 2005. This will provide an update of inter-regional flows of aggregates and also imports from outside England and Wales. **It is recommended that, if confidentiality considerations can be overcome**, **material landed from Scotland, Northern Ireland and Europe is separately identified and quantified.**

1 Introduction

The UK has large resources of material suitable for use as aggregate. Historically, therefore, the UK has been self-sufficient in the supply of primary or natural aggregates (crushed rock, and sand and gravel). However, the distribution of these resources is uneven. In particular, there is an almost total absence of hard rock suitable for crushed rock aggregate in southern and eastern England, where demand is high. Consequently there is substantial, and increasing, movement of aggregates within the UK and especially to these areas by rail and road. To a more limited, extent there is also shipment by sea from Scotland and, on a lesser scale, from Wales and Northern Ireland. There are also imports from outside the UK, mainly from Norway, but also France and Ireland.

This paper provides a strategic overview of the role that imports from outside the UK (Europe) contribute to overall supply. It uses publicly available information to provide a broad assessment of the current position.

It is hoped that the report will stimulate awareness of, and debate on, the role that imports play in the strategic supply of aggregates to the UK, and England in particular. Comments are invited and if sufficient new, comprehensive information comes to light the report will be revised.

2 The supply of aggregates

About 204 million tonnes of primary aggregate were extracted for sale in Great Britain in 2003, of which 34% was land-won sand and gravel, 6% was marine-dredged sand and gravel and 60% was crushed rock (Office for National Statistics, 2004). These primary (or natural) aggregate supplies are being increasingly supplemented by both recycled aggregates, such as construction and demolition waste, and secondary aggregates, such as industrial by-products, for example slag, and also mineral wastes produced from working other minerals, notably china clay but also slate. In 2003 the total supply of these alternative aggregates in Great Britain is estimated at 64.5 million tonnes. In addition, small amounts of primary aggregate (about 3 million tonnes in 2004) are imported from outside the UK. Most of this is landed in England.

3 Classification of official UK trade in aggregates

UK external trade (imports and exports) in aggregates is recorded by HM Customs & Excise. The principal heading under which natural aggregates are (or should) be recorded is:

> **Combined Nomenclature (CN) Code 25.17** 'Pebbles, gravel, broken or crushed stone, of a kind commonly used for concrete aggregates, for road metalling, or for railway or other ballast, shingle and flint whether or not heat-treated; macadam of slag, dross or similar industrial waste, whether or not incorporating the materials cited in the first part of the heading; tarred macadam; granules, chippings and powder of stones of heading 25.15 [marble] and 25.16 [igneous rock and sandstone], whether or not heat-treated.'

Total UK trade under this overall heading in 2003 was;

- Imports 1 327 049 tonnes £18.9 million
- Exports 11 349 089 tonnes £48.9 million

The UK is, therefore, a significant net exporter of aggregates. This is mainly due to exports of marine sand and gravel dredged on the UK Continental Shelf but landed at European ports, principally in the Netherlands and Belgium. Landings are typically between 6-7 Mt/y, about one third of total marine-dredged production.

CN code 25.17 is further broken down into a number of other detailed (eight digit) codes, including one for 'gravel' (but not sand) and also 'tarred macadam' and 'slag and other industrial waste'. To exclude these, the BGS have used in the *United Kingdom Minerals Yearbook* a combination of codes to arrive at a figure for apparent trade in 'crushed rock aggregate'. These code descriptions are summarised as follows;

- 2517 10 20 Limestone, dolomite and other calcareous stone broken or crushed
- 2517 10 80 Other broken or crushed stone
- 2517 41 00 Granules, chippings and powder – of marble
- 2517 49 00 Granules, chippings and powder – of other stone.

Imports of 'crushed rock' under this combination of codes are relatively modest, e.g. 633 000 tonnes in 2003, of which 194 000 tonnes was limestone, dolomite etc and 249 000 tonnes 'other' stone, e.g. igneous rock. However, it is likely that a significant proportion of UK imports of hard rock will be in the form of armourstone for coastal defence work and landed directly onto beaches. This material, mainly imported from Norway and consisting of igneous rock, is believed to be classified under a trade heading normally used for monumental or building stone. The description of this code is;

- 2516 11 00 Granite, porphyry, basalt, sandstone and other monumental or building stone, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape – granite crude or roughly trimmed.

Imports of 'crude granite' under this heading have been consistently over 1 Mt/y in recent years and almost entirely obtained from Norway.

For trade in 'sand and gravel' the following combination of codes has been used;

- 2517 10 10 Pebbles, gravel, shingle and flint
- 2505 90 00 Natural sands of all kinds, whether or not coloured, other than metal-bearing sands and other than silica sands and quartz sands.

Total UK trade under these derived headings for 'sand & gravel' and 'crushed rock' are shown in Table 1. For comparison figures for marine-dredged landings at foreign ports are also shown. Official trade figures for sand and gravel exports are some 2-3 Mt/y higher than marine-dredged landings, which are difficult to explain in total. However, reported exports of sand and gravel to Ireland are nearly 2 Mt/y and are assumed to be from Northern Ireland. Imports of 'crude granite' are also shown as they account for what is believed to be the largest proportion of total imports of hard rock aggregate.

Natural Aggregates	Thousand tonnes						
EXPORTS	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004 (p)**
Sand & gravel	8 423	8 907	9 932	9 872	8 881	8 420	8 173
(Marine S & G)	7 047	7 227	7 315	6 993	6 191	6 096	na
Crushed rock	2 812	2 982	2 403	3 367	3 594	3 188	4 156
Total Exports	**11 235**	**11 889**	**12 334**	**13 239**	**12 475**	**11 608**	**12 331**
IMPORTS							
Sand & gravel	473	221	168	362	414	861	942
Crushed rock	349	459	347	409	573	633	634
'Crude granite'	534	987	787	1 057	1 012	1 090	1 558
Total Imports	**1 356**	**1 667**	**1 302**	**1 828**	**1 999**	**2 584**	**3 135**

P preliminary / na not available

Table 1. UK: Imports and exports of natural aggregates, 1998 - 2004
Source: HM Customs & Excise and The Crown Estate Commissioners

The UK is thus a significant net exporter of aggregates (approximately 9 Mt in 2004), the principal element of which is marine-dredged sand and gravel to Europe. Exports of crushed rock are likely to be principally derived from Glensanda, Britain's only coastal superquarry located on Loch Linnhe in western Scotland. Total imports of aggregates (2.6 million tonnes in 2003) consist of both crushed rock and armourstone. Preliminary data for 2004 (Table 1) show that total imports have increased to 3.1 million tonnes and exports to 12.3 million tonnes. Excluding marine-dredged sand and gravel, the UK still remains a net exporter of natural aggregates.

A significant amount of limestone is also exported under the following trade code;

- 2512 00 00 Limestone flux and calcareous stone commonly used for the manufacture of lime and cement.

In 2003 exports under this heading were 247 665 tonnes, and it is assumed that this material was for industrial applications.

The above discussion relates to primary or natural aggregates. CN heading 25.17 also includes a code that may contain secondary aggregates. The code is;

- 2517 20 00 Macadam of slag, dross or similar industrial waste, whether or not incorporating the materials cited in subheading 2517.10 (i.e. 'gravel or broken or crushed stone.')

Imports under code 2517 20 00 in recent years have been almost nil. This does not mean that imports of, for example, slag has not occurred. Granulated slag is imported under another code (2618 00 00) possibly for use in cement manufacture. Imports were 159 000 tonnes in 2003 entirely from EU-countries, mainly Belgium.

4 Imports of natural aggregates by country of origin

The country of origin of UK imports of natural aggregates can also be determined from trade accounts. Imports of 'crushed rock,' 'crude granite' (crude or roughly trimmed) and 'sand and gravel' are shown in Table 2 by the principal country of origin.

Natural aggregates	2002		2003		2004 (p)	
IMPORTS	**Tonnes**	**£000**	**Tonnes**	**£000**	**Tonnes**	**£000**
Crushed rock – Total	**572 971**	**9 083**	**632 792**	**10 064**	**634 104**	**10 828**
Of which from: Norway	96 245	1 265	55 747	900	109 611	1 998
Ireland	77 989	689	136 617	695	27 251	735
France	8 464	472	213 240	3 105	377 808	3 681
Italy	234 325	4 161	92 264	3 364	60 033	1 800
Granite – 'crude' – Total	**1 012 016**	**10 836**	**1 089 575**	**9 651**	**1 558 207**	**13 777**
Of which from: Norway	784 470	6 748	1 076 055	8 089	1 501 876	11 027
France	186 992	1 903	12 496	483	21 152	1 001
Sand & gravel - Total	**413 922**	**9 453**	**861 438**	**11 406**	**942 403**	**14 713**
Of which from: Norway	62 322	603	187 998	1 205	44 087	1 540
Ireland	46 152	3 456	49 643	2 706	19 873	4 998
France	174 301	1 630	253 394	2 317	142 110	1 912
Denmark	113 837	1 497	185 783	2 156	312 095	2 766

P Preliminary

Table 2. UK: Imports of natural aggregates by principal country of origin, 2002- 2004 *Source: HM Customs & Excise.*

The data in places show considerable variations from one year to the next, both in terms of tonnage and value, which are difficult to interpret. However, it seems likely that the totals from some countries overestimate actual usage of these materials as aggregate. The estimation of 'crushed rock' used by the BGS in the *UK Minerals Yearbook* includes four separate trade codes, two of which cover material described as 'granules, chippings and powder of marble and other stone' (see Section 3). Some of this material will not be used as aggregate. For example, the significant imports of 'crushed rock' from Italy (Table 2) are probably marble for uses other than as aggregate, probably as white filler. However, overall the main points that emerge are that;

- Norway is the leading supplier of aggregate to the UK, accounting for 1.65 million tonnes under all three headings in 2004;
- imports of 'crushed rock' from Norway are apparently small;
- the main heading in which imports of natural aggregates occur is 'granite crude' and most of this material is from Norway (1.5 Mt);
- the unit value of this material is low (£7/tonne). It is, therefore, very unlikely to be monumental stone.

To corroborate the data, Norwegian trade accounts have also been used. Norwegian exports of natural aggregates are classified as 'crushed rock and gravel.' Exports to the UK under this heading are shown in Table 3 and it is assumed that this material consists entirely of hard rock and includes armourstone. Norwegian exports of sand to the UK are virtually nil.

Crushed rock and gravel	**Tonnes**					
Exports to UK	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
From - Norway	1 214 863	1 104 366	1 559 006	1 759 036	1 500 184	1 633 287

Table 3. Norway: Exports of natural aggregates to the UK, 1999 – 2004
Source: Statistics Norway.

These figures are larger than reported UK imports from Norway (see Tables 2 and 4). However, the difference in 2003 is less than 200 000 tonnes. The Geological Survey of Norway report that Norway exported about 10 million tonnes of crushed rock aggregate (including armourstone) and 0.17 million tonnes of gravel to Europe in 2003 from 20 coastal hard rock quarries and 3 sand and gravel producers in Rogaland county (Neeb, 2004). The hard rock quarries have annual outputs in the range 1-2.5 Mt/y, with the largest quarry (Jelsa) operated by Norsk Stein A/S having an annual production of about 3.5 million tonnes of screened aggregates. In 2003 the UK was the third largest importer of aggregate from Norway, after Germany (4.2 Mt) and Denmark (2.2 Mt).

Norway has extremely large resources of hard rock consisting of Precambrian and Palaeozoic igneous and metamorphic rocks, which are suitable for aggregate use. It has a long, indented and rugged coastline providing deep-water, well-protected and low-tidal range anchorages for medium-sized bulk carriers. Both national and local authorities are encouraging the development of the county's aggregate resources (Neeb, 2004).

UK imports of 'crushed stone and gravel' from France and Ireland are shown in Table 4.

Crushed rock and gravel	**Tonnes**				
Exports to UK	**1999**	**2000**	**2001**	**2002**	**2003**
From - France	481 515	562 305	702 857	519 047	489 322
From - Ireland	621 312	122 599	174 879	426 391	244 202

Table 4. France and Ireland: Exports of natural aggregates to the UK, 1999 – 2003

Source: United Nations. COMTRADE.

These figures show a considerable degree of variation from year to year. There is also a poor correlation between UK imports from France and Ireland and corresponding exports to the UK (see Table 2). The data for 2003, however, show a reasonable agreement.

5 Landings of natural aggregates from Norway by port

Norwegian exports of aggregate and armourstone to Europe have been steadily rising and have increased from 2.8 million tonnes in 1989 to 10 million tonnes in 2003 (Neeb, 2004). Total imports of natural aggregate into the UK are about 2.6 million tonnes (see Table 2) of which the

principal source is Norway (1.3 Mt in 2003), the other main suppliers being France and Ireland. For countries that are members of the EU, data on landings by port are not available. However, it is assumed that material from France and Ireland is mainly landed in the South East.

Data on imports from Norway by port are available from HM Customs and Excise and these are summarised in Table 5 by main port. Only a selection of ports is presented, as apart from London, these tend to change significantly from year to year.

Natural Aggregates	**Tonnes**			
IMPORTS	**2000**	**2001**	**2002**	**2003**
Crushed rock – Total	**347 048**	**409 174**	**572 971**	**632 792**
of which from: Norway into	65 033	106 589	96 244	55 747
London (incl Tilbury)	9 846	20 106	22 486	11 050
Ipswich	44 047	49 004	27 341	-
Medway	-	7 469	12 036	-
Leith	-	-	10 352	22 110
Granite – 'crude' – Total	**787 000**	**1 057 000**	**1 012 016**	**1 089 575**
of which from: Norway into	443 845	572 133	784 470	1 076 055
London (incl Tilbury)	292 382	266 405	520 643	733 366
Ipswich	-	73 426	4 828	-
Lowestoft	6 928	18 519	7 186	128 953
Medway	-	-	50 446	-
Scarborough	-	-	167 263	92 727
Felixstowe	-	10 876	42 163	-
Hull	-	-	-	82 878
Shoreham	-	18 613	-	27 810
Sand & gravel - Total	**168 358**	**362 076**	**413 992**	**861 438**
of which from: Norway into	22 403	11 727	62 322	187 998
Ipswich	-	11 395	15 105	90 877
Immingham	-	-	15 927	71 626
Shoreham	-	-	-	17 692
Leith	-	-	-	7 803
Total imports from Norway	**531 281**	**690 449**	**943 036**	**1 319 800**

Table 5. UK: Imports of natural aggregates from Norway by selected port of landing, 2000 - 2003
Source: HM Customs & Excise

For the main heading of 'granite crude' the main port of landing from Norway is the Thames, where it is assumed the material is landed at Tilbury in Essex and Red Lion Wharf at Northfleet. This material is probably crushed rock aggregate. For some landings, for example at Scarborough, this material is probably armourstone for coastal/port defence work. There are similar large landings for individual years at Whitby and Great Yarmouth to name just two.

The armourstone market is a very variable, with possibly large tonnages imported in one year at one port (or beach) and almost none in another. It is difficult to produce the large blocks of rock (10-20 tonnes each) required from UK quarries because the rock is often fractured and, in most cases, it is not possible to load directly into ships or onto barges. Armourstone is, however, shipped from Norway on barges carrying anything between 10-20 000 tonnes to as little as 1 500

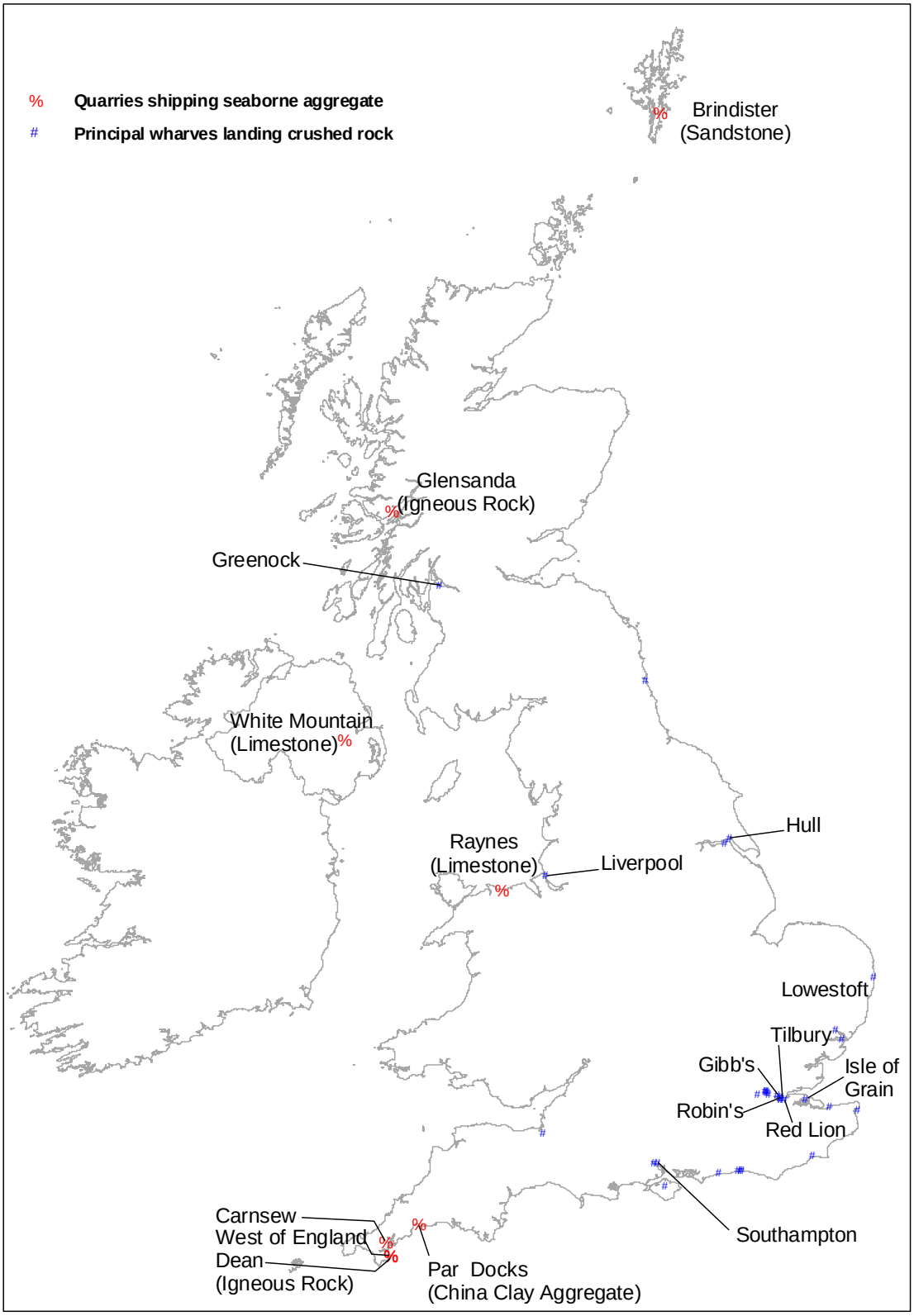

Figure 1. The location of quarries shipping seaborne aggregate and selected wharves.

tonnes. Although armourstone is classed as an aggregate use, it is unlikely that armourstone landed directly on the beach (as opposed to a wharf for onward sale) will be included either in annual Aggregate Monitoring Surveys carried out by the Regional Aggregates Working Parties or the four-yearly Aggregates Minerals Surveys. In a similar way, marine-dredged sand and gravel used for beach nourishment (normally about 1-2 Mt/y a year, although it can be much greater) is probably not recorded in official statistics because it will not be landed at a wharf.

Consequently the total market for primary aggregates in Great Britain is being somewhat under estimated.

Stema Shipping (UK) is the British arm of Norsk Stein, the leading exporter of both Norwegian aggregates and armourstone to the UK. The company operates a fleet of self-discharging ships with dead weights (cargo carrying capacity) of 10 000 to 27 000 tonnes. In Britain, the company operates four aggregate import terminals at Red Lion Wharf, Northfleet on the Thames, Tilbury also on the Thames, Lowestoft and Hull. The Port of London is the principal destination for rock exported from Norway (see Table 5). However, recorded landings in Hull and Lowestoft are smaller than might be expected.

The location of selected wharves for landing aggregates from outside and within the UK is shown in Figure 1.

6 Crown Estate data

The Crown Estate publishes statistics on marine-dredged sand and gravel landings, both in the UK and Europe, by wharf and area. As marine-dredged sand and gravel is the main element in UK exports of aggregates, as well as being an important source of aggregate, particularly for London and the South East, landings for 2003 are reproduced in Table 6. The total for landings at UK ports (excluding beach nourishment) was 14.01 million tonnes in 2003. This should be compared with a figure of 12.13 million tonnes recorded by the Office for National Statistics (ONS, 2004). The reason for the significant difference is not known with certainty. However, the ONS figure relates to 'sales' and the Crown Estate to 'landings.' This is likely to account for only a small difference. A further difference may be accounted for by the conversion of the Crown Estate landings in cubic metres into tonnes. Another possibility is that the Quarterly Sand and Gravel Survey carried out by the Office for National Statistics via the DTI Building Materials Inquiry may not be picking up sales from all wharves. The important issue is, however, which statistics are being used for evaluating consumption in a region and for projecting future demand. The reasons for the difference between the two sets of data needs further consideration.

Area	Tonnes
Humber	1 309 015
East Coast	154 968
Thames Estuary	7 239 296
South Coast	3 244 515
South West Coast	1 507 819
North West Coast	556 115
Exports to Europe	6 095 640
Total	**20 107 702**
Contract fill and beach nourishment	2 118 702
Total landed	**22 226 070**

Table 6. Landings of marine-dredged sand and gravel by area, 2003
Source: Crown Estate Commissioners

7 Inter-UK shipments

Crushed rock is also transported by sea from coastal quarries in the UK to destinations principally in England. The precise quantity of this trade is not known but is unlikely to exceed 3 million tonnes a year. Most involves shipment into the South East and London. Landings of crushed rock by Mineral Planning Authority in the South East are shown in Table 7. These figures include aggregate transported by sea from Scotland, Wales and Cornwall, as well as imports from outside the UK. Landings of crushed rock directly into wharves in London are shown in Table 8. Over 90% of the crushed rock is from outside England.

MPA	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
	Thousand tonnes									
East Sussex	83	68	167	134	142	67	164	37	176	176
Hampshire	c	c	c	c	161	193	306	328	436	385
Isle of Wight	na	na	c	c	c	c	c	c	c	c
Kent/Medway	1 583	2 180	1 683	2 034	1 804	2 071	4 326	3 159	3 142	2 973
West Sussex	171	155	111	86	123	285	365	236	264	223
Regional Total	**1 890 (e)**	**2 480 (e)**	**2 000**	**2 315**	**2 230**	**2 620**	**5 170**	**3 790**	**4 050**	**3 800**

(e) estimate
C confidential
Na not available
Totals are rounded.

Table 7. Marine imports of crushed rock into the South East, 1994 – 2003
Source: South East Regional Aggregates Working Party Report 2003

	Thousand tonnes			
London	**2000**	**2001**	**2002**	**2003**
Sales	835	958	1 012	1 149
% of total aggregate sales	18.5%	18.6%	20%	22.1%

Table 8. Marine imports of crushed rock into London, 2000 - 2003
Source: London Aggregates Working Party Report 2005

The major source of UK shipments of crushed rock aggregate (granite) to London and the South East is the Glensanda quarry in western Scotland, which is operated by Foster Yeoman Ltd. The operation is designed to produce up to 15 Mt/y but is currently producing about 6 Mt/y for shipment to markets in the UK and Europe. Aggregate is loaded directly into self-discharging ships with cargo capacities of up to 97 000 tonnes. Aggregate for the South East England market is discharged at a major terminal on the Isle of Grain in Kent, which is capable of handling over 2 Mt/y. Here a comprehensive range of products is produced through crushing and screening. Material is transhipped onto barges for transfer to Gibbs Wharf on the Thames in Essex, as well as other ports in southern and eastern England. As a consequence there is potential for double counting in Annual Monitoring Surveys. Other material is distributed by rail and road. Rock from Glensanda is also landed directly at Robins Wharf on the River Thames at Northfleet.

Other terminals for landing material from Glensanda include Liverpool, Greenock, Southampton and Great Yarmouth. However, the major proportion (about 70%) of the output at Glensanda is exported to Europe, through depots in the Netherlands, Germany, France and Poland.

A number of other quarries in the UK have access to marine wharves. Raynes quarry in North Wales supplies some crushed rock limestone into the South East and igneous rock from coastal quarries in Cornwall (West of England, Dean) also supply modest amounts to the South East. There are also shipments from Northern Ireland and the Shetlands.

A potentially large source of aggregate for London and the South East is china clay aggregate, shipped out through the port of Par in Cornwall. Shipments for the period 2002–2004 are shown in Table 9.

	2002		**2003**		**2004**	
	000 tonnes	***Vessels***	***000 tonnes***	***Vessels***	***000 tonnes***	***Vessels***
Total	**137**	**107**	**160**	**117**	**62**	**43**
Of which into the Thames	70	54	95	71	42	26
Portsmouth	19	15	12	8	14	12
Isle of Wight	18	11	37	25	6	5

Table 9. Shipments of china clay aggregate from Par, Cornwall, 2002 – 2004
Source: IMERYS Minerals Ltd

Shipments have declined significantly. This is due to the rising cost of sea freight, the cost of fuel and lack of available vessels. Original projections of growth (250 000 tonnes in 2004 and 750 000 tonnes in 2007) have not yet materialised and are unlikely to do so in the short term.

8 Trade in concrete products

The Aggregates Levy is chargeable on sand and gravel, and crushed rock for sale as aggregate, irrespective of whether the aggregate is imported or not. Aggregates contained in manufactured products, such as those made from concrete are, however, not subject to the Levy. Concern has been expressed by industry that this may lead to a rise in imports (and a decline in exports) of these products as UK producers are put at a competitive disadvantage due to the higher cost of the raw materials they consume. To address this issue, UK trade accounts have been evaluated to see if any marked change has occurred in UK trade since the Levy was introduced in April 2002.

Concrete products appear in a range of trade codes. These are grouped under the headings shown in Table 10 and each group consists of between one and six trade codes. Overall the UK is a net exporter of these products by a considerable margin. Both imports and exports have increased and a longer-term assessment is required before any firm conclusions can be drawn on the data. The major proportion of UK exports of all these products is to Ireland. Imports are from a range of EU-countries. Provisional trade data for 2004 indicate that overall net exports of concrete products increased by 61% by volume between 2001 and 2004, although only 11% by value.

	Tonnes				£thousand			
IMPORTS	**2001**	**2002**	**2003**	**2004 (p)**	**2001**	**2002**	**2003**	**2004 (p)**
Blocks, bricks, tiles, flagstones etc	70 866	67 798	62 487	46 740	14 075	14 127	17 451	15 493
Prefabricated structural components	11 466	17 071	28 682	37 373	7 859	5 161	11 254	17 204
Other articles of cement, concrete or of artificial stone	12 588	31 729	13 813	22 075	8 463	8 965	7 579	16 619
Mortars and concrete	7 335	14 895	22 273	21 187	2 297	5 075	5 069	4 955
TOTAL	**102 255**	**131 493**	**127 255**	**127 375**	**32 694**	**33 328**	**41 352**	**54 271**
EXPORTS	**Tonnes**				**£thousand**			
Blocks, bricks, tiles, flagstones etc	577 775	626 835	685 546	915 157	53 455	58 077	61 651	61 010
Prefabricated structural components	134 104	127 020	140 013	215 021	15 583	11 415	13 071	24 267
Other articles of cement, concrete or of artificial stone	61 315	60 674	95 328	88 619	17 457	20 184	29 431	28 609
Mortars and concrete	208 492	279 971	289 547	325 619	8 341	7 876	7 999	9 413
TOTAL	**981 686**	**1 094 500**	**1 210 434**	**1 544 416**	**94 836**	**97 552**	**112 152**	**123 299**
NET EXPORTS	***879 431***	***963 008***	***1 083 179***	***1 417 041***	***62 142***	***64 224***	***70 800***	***69 028***

Table 10. UK: Trade in 'concrete products', 2001 – 2004.

Source: HM Customs & Excise

9 Conclusions

Annual consumption of natural aggregates in Great Britain is about 204 million tonnes. Mainly through the landings of marine-dredged sand and gravel in Europe, amounting to 6.1 million tonnes in 2003, and exports of crushed rock from Glensanda, the UK is a net exporter of natural aggregates. Official statistics show that the UK is also a small, net exporter of crushed rock with exports being 3.2 million tonnes against apparent imports of 2.6 million tonnes in 2003. Of imports roughly half was from Norway and will consist of both crushed rock and armourstone. Most of the imports are landed in the South East, including London. Currently imports account

for only about 1% of total aggregates demand in Great Britain. There is some uncertainty about the accuracy of these import figures as Norwegian exports of aggregates to the UK are reported to be larger. However, the difference in 2003 is less than 200 000 tonnes. Similarly, there are discrepancies between UK imports of aggregates from Ireland and France and corresponding exports to the UK

Preliminary HM Customs & Excise Statistics for 2004 indicate that UK imports of natural aggregates have increased to 3.1 million tonnes and total exports have increased to 12.3 million tonnes, of which 4.2 million tones was crushed rock.

The Aggregates Levy is chargeable on imports of aggregates for sale in the UK and the possibility of obtaining information on total imports of aggregates by this route was also considered. However, it is understood that HM Customs & Excise do not separately record the amount raised by the Levy specifically from imports. Some statistics have also been obtained from port authorities for this study but these are commercially confidential and cannot be reproduced.

Whilst contributing to Britain's overall consumption of aggregates, it is unlikely that armourstone for use in coastal and port defences, and marine-dredged sand and gravel for use in beach nourishment, are included in current estimates of total demand for aggregates. Consideration should be given to whether this should be rectified.

This short review has not evaluated port infrastructure both for importing aggregates and, importantly, subsequently transporting the material to where it is required. However, there are likely to be infrastructure constraints on the extent that imports will be able to contribute to total aggregate demand in the future. It is, however, recommended that the survey of marine wharves and their capacity for use by the aggregates industry that was carried out by the South East Regional Aggregates Working Party in 2002 be updated and perhaps also extended to London and other regions. These data could usefully be held within a Geographical Information System as a future planning aid.

The next four-yearly Aggregates Minerals Survey is scheduled for 2005. This will provide an update of inter-regional flows of aggregates and also imports from outside England and Wales. **It is recommended that, if confidentiality considerations can be overcome**, **material landed from Scotland, Northern Ireland and Europe is separately identified and quantified.**

References

British Geological Survey, 2003. Collation of the results of the 2001 Aggregates Minerals Survey for England and Wales. *Commissioned Report CR/03/53N.*

Survey of marine wharves and rail depots in the South East Region – their capacity for use by the aggregates industry. *South East Regional Aggregates Working Party 2002.*

Norway's coastal aggregates. Production in 2003 and potential. P R Neeb. 2004. *Geological Survey of Norway.*

Guide to the classification for Overseas Trade Statistics. HM Customs and Excise Tariff and Statistical Office. *London: The Stationery Office, 2001.*

Overseas Trade Statistics. United Kingdom Trade with the Economic Community and the World. 2000-2003. HM Customs & Excise. London: *TSO, 2004.*

UKtradeifo. Trading with knowledge. HM Customs and Excise website.

http://194.223.26.31/wdsCustomsTRADE/eng/ReportFolders/Rfview/explorerp.asp

British Geological Survey, 2004. United Kingdom Minerals Yearbook.

South East Aggregates Monitoring Report 2003. *South East Regional Assembly. 2005*.

London Aggregates Monitoring 2000- 2003. *London Aggregates Working Party. In press.*

Office for National Statistics, 2004. Mineral extraction in Great Britain 2003. *Business Monitor PA 1007*. (Data on marine landings based on the DTI Building Materials Inquiry - Quarterly Marine Dredged Sand & Gravel).

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