



Anglo American/Lafarge Joint Venture

Main Parties' Initial Submission

30 September 2011

1 Executive Summary

1.1 Merger benefits / rationale

Anglo American and Lafarge (the **Parties**) seek to bring together their construction materials businesses in the UK (the **Proposed Transaction**) to form a joint venture (the **JV**). The Proposed Transaction takes place against the backdrop of an economic downturn since 2007 which has been longer and more severe than any experienced by the construction materials industry within the last thirty years. Industry forecasts do not predict any change in this trend before at least 2014¹ at which point demand is expected to be below levels seen in 2009 and any potential improvements will develop from a low base, resulting in sustained and significant levels of overcapacity.

1.2 [Confidential Business Secret]Unilateral Effects

The Parties make the following preliminary observations regarding consideration of the relevant local markets for aggregates, asphalt and RMX during the Phase I process.

The Parties note that the reference markets have never been the subject of a Competition Commission (**CC**) reference. During the Phase I process, the Parties made submissions based on the market share benchmarks adopted by the OFT in previous construction materials cases to give an indication of concentrations that should not give rise to competition concerns (so-called “safe harbours”). Whilst expedient in screening a large number of local markets in the context of the limited scope of a Phase I review, the Parties do not accept that those “safe harbours” are necessarily correct in terms of defining a substantial lessening of competition (**SLC**), in particular due to the high level of excess capacity present in the relevant product markets. Nor do the Parties accept that a SLC necessarily arises if those thresholds are crossed – indeed, such thresholds are by their very nature conservative, so higher thresholds, or indeed different intervention thresholds, may be appropriate.

In any case, the Parties note that the OFT decision² (**OFT Decision**) contains very little analysis in this respect. Accordingly, the reference will require the CC to give careful consideration to what the appropriate decision rules ought to be in relation to when an SLC might arise. For example, the Parties strongly believe that a “safe harbour” threshold of 33% is too low in markets in which products are undifferentiated (such as aggregates, asphalt and RMX).

In relation to cement, the Parties strongly disagree with the OFT’s unilateral effects analysis. At a national level, Tarmac is a very small player in the external market for bulk cement (accounting in 2010 for around [Confidential Business Secret] of external supply) and the change in horizontal structure resulting from the JV is small. As there are 8 non-integrated cement suppliers in Great Britain³ (**GB**) of which [Confidential Business Secret] had a larger or comparable presence to Tarmac, the JV does not significantly alter the alternatives open to non-integrated downstream customers.

¹ For example, MPA market outlook briefing (GB) September 2011.

² Proposed Joint Venture between Anglo American plc and Lafarge S.A, decision under section 33 of the Enterprise Act 2002, 2 September 2011.

³ Non-integrated cement suppliers are defined as suppliers with no presence in downstream RMX. The eight non-integrated cement suppliers are Armstrong, Channel, CMS, Cement Portland Valderrives (which operates in the UK through two subsidiaries Dragon and Southern), Morrissey, Titan and Quinn. The [Confidential Business Secret] cement suppliers with a larger or comparable presence to Tarmac are calculated on the basis of share of supply of GB bulk external cement. The Parties note that all non-integrated cement suppliers in GB supply imported cement.

In particular, the Parties strongly disagree with the OFT's conclusion that cement importers do not impose a competitive constraint on domestic producers. This conclusion is not supported by the evidence given that the share of supply accounted for by importers continues to grow.

At a regional level, Tarmac and Lafarge are not uniquely close based on geographical distance: Tarmac's is only one of five cement plants and six import terminals which compete with Lafarge within a **[Confidential Business Secret]** mile radius of Tunstead where Tarmac's sole plant is located. Accordingly, the reduction in competition is not significant.

1.3 Vertical Effects

It is uncontroversial that there are vertical relationships in the construction materials sector. In relation to the reference markets, aggregates are used in the production of asphalt and RMX; cement is used in the production of RMX. However, since the relevant sectors are already vertically integrated, the Proposed Transaction will only create additional vertically integrated scale, primarily by combining the cement business of Lafarge and the RMX business of Tarmac, in a number of local markets. The Parties provide reasons at 8.2 below why, in those markets, the Proposed Transaction will not substantially lessen competition.

1.3.1 No vertical concerns arise in relation to aggregates as an input for asphalt and RMX

It was noted in the OFT Decision that the OFT had not received significant specific concerns about vertical effects arising in the supply of aggregates.⁴ This is unsurprising, given that the market share data indicates that there is wide availability of aggregates supplies from third parties, and accordingly that vertical foreclosure is unlikely.

In addition, the Parties note that the Proposed Transaction:

- would not give the JV market power over non-vertically integrated purchasers of aggregates for use in downstream applications (because of the Parties' limited presence in relation to external sales of aggregates to non-vertically integrated asphalt and RMX producers); and
- would not result in a material change in the JV's ability to withdraw material volumes from integrated purchasers of aggregates for use in asphalt or RMX supply (since the Parties currently supply only a small amount of aggregates to vertically integrated competitors).

Given the absence of any ability to engage in vertical foreclosure strategies in relation to aggregates, a consideration of the JV's incentives to attempt such vertical foreclosure strategies is largely irrelevant.

⁴ OFT Decision, paragraph 259(a).

1.3.2 No vertical concerns arise in relation to cement as an input for RMX

The OFT noted in its decision that it believed that the JV would have the ability and potentially the incentive to fully or partially foreclose competing non-integrated RMX suppliers in certain local (albeit undefined) areas.⁵

The Parties submit however that, following a detailed local analysis, in all RMX markets in which additional vertical overlaps arise as a result of the Proposed Transaction, the JV would not have the ability to engage in input foreclosure, as RMX producers can switch to alternative cement suppliers including importers that have sufficient spare capacity.

These points are elaborated upon in the RBB Economics paper analysing potential vertical effects arising in the market for the supply of cement into RMX at Annex 1. In the absence of any ability to engage in vertical foreclosure strategies in relation to cement supplied to RMX producers, a consideration of the JV's incentives to attempt such vertical foreclosure strategies is largely irrelevant. The Parties would note, however, that the supply chain efficiencies (e.g. lower costs through more efficient logistics) are likely to benefit the JV substantially and, being marginal cost savings, are capable of being passed on to purchasers of RMX.

1.4 Coordinated Effects

There is no realistic prospect that price coordination would result from the Proposed Transaction given the high degree of market complexity (evidenced by the high degree of price dispersion that currently exists within each of the relevant markets) and the lack of price transparency, making the reaching and the monitoring of any common understanding extremely difficult. Nor would the Proposed Transaction give rise to a realistic prospect of non-price coordination on the basis of capacity restriction since the relevant markets are characterised by excess capacity (this was the case even in 2007, at the peak of demand in the last decade).

The OFT Decision raises potential concerns of coordinated effects in relation to the supply of cement. The theory of coordinated effects in relation to the supply of cement that the OFT appears to consider can be summarised as follows. Domestic cement producers use price announcement letters to coordinate price increases over and above the level warranted by changes in market conditions. However, as the OFT acknowledges, price announcements by themselves provide an insufficient basis for tacit coordination. This is particularly the case since actual transaction prices can be shown to vary considerably across customers.⁶

Adherence to the proposed tacit understanding relating to price announcements must therefore be monitored in some fashion. The monitoring mechanism proposed in the OFT Decision is one of customer allocation. It should be noted that the OFT Decision does not maintain that customers are allocated on a geographic basis – the facts would refute such an argument⁷ – but merely that some customers are considered to be allocated to a particular supplier. Monitoring whether “allocated” consumers switch between the alleged coordinating group indicates, according to the

⁵ OFT Decision, paragraphs 238 – 256.

⁶ The Parties draw attention to RBB Economics' detailed analysis of the scope for coordinated effects as a result of the Proposed Transaction. See Annex B6 to the Parties' First OFT Submission, 10 June 2011, a copy of which is reproduced as Annex 5 to this submission. That analysis shows that such price dispersion is observed in all the reference markets.

⁷ See RBB Economics Cement Analysis, 16 August 2011, submitted to the OFT, which provided evidence that shares of supply vary significantly over time and across regions, and no clear picture of players having strengths in particular regions. A copy of this document is reproduced as Annex 6 to this submission.

OFT's theory of coordinated effects, whether the tacitly agreed price increases announced in the price letters are implemented (at least in broad terms).

However, for the following reasons, the Parties do not consider that current competition can be characterised as tacitly coordinated. First, there have been significant changes in the customer bases of domestic producers since 2007, such switching is not consistent with coordination. Second, the growth of independent RMX players⁸ (i.e. the rapid growth of customers supposedly paying higher prices as a result of coordination) and the resilience of the share of cement held by importers⁹ provide strong evidence against a finding of collusion and coordination among domestic cement suppliers. Indeed, many of the independent RMX players source their cement requirements from importers and thereby have credible alternatives to an alleged coordinating group.

Further, there is also no serious prospect that the Proposed Transaction would enhance the prospect of tacit coordination,¹⁰ particularly because Tarmac's presence on the external market is minimal (its share of supply to non-vertically integrated RMX producers is only **[Confidential Business Secret]**). Even if it were to employ all of its excess capacity externally (which would be contrary to its business model of expanding for the purpose of self-supply), its share would remain very small at **[Confidential Business Secret]**.

Following completion of the Proposed Transaction, although the vertical combination of Tarmac's larger upstream aggregates and downstream asphalt and RMX operations with Lafarge's larger cement operations will provide a better balance to the merged entity, the JV will continue to be "long" in cement and as such will continue to have significant economic incentive to supply cement externally.

Given the vigorous level of competition across the industry, and the level of complexity and lack of transparency in the markets as evidenced by significant price dispersion, the Parties do not consider that coordinated effects (based on either price or non-price factors) are likely to arise as a result of the Proposed Transaction.

1.5 Remedies

Once the CC has determined what the appropriate decision rules ought to be in relation to when an SLC might arise, the Parties stand ready to propose suitable remedies (by way of divestment, or possible behavioural remedies) to address any such concerns on a proportionate basis. They remain confident that remedies will be capable of design and implementation to meet any findings of SLC by the CC.

2 Introduction and background on the Parties

2.1 Anglo American

Anglo American (www.angloamerican.com) is a company incorporated in England and Wales. It has its primary listing on the London Stock Exchange and secondary listings on the Johannesburg Stock Exchange, Swiss Exchange, Botswana Stock Exchange and Namibian Stock Exchange.

Anglo American Corporation was founded in 1917 to exploit the gold deposits east of Johannesburg. The Anglo American group has since expanded through acquisitions in the platinum group metals and diamond sectors, and now has significant interests in copper, iron ore,

⁸ See further RBB's paper entitled "Cement Analysis", section 4.1.1 (pages 23-24).

⁹ The Parties note that the number of independent bulk import facilities has increased over the past 3 years from 7 to 12.

¹⁰ See further RBB's paper entitled "Cement Analysis", section 4.4 (pages 33-36).

metallurgical coal, nickel and thermal coal, as well as a diverse portfolio of other mining and industrial businesses. In 2010, Anglo American's worldwide turnover was \$32.9 billion, of which approximately \$9.4 billion was generated within Europe.¹¹

Anglo American operates in Africa, Europe, South and North America, Australia and Asia. In the UK, Anglo American operates through various subsidiaries, including the Tarmac Group ("Tarmac"), which Anglo acquired in 2000. Tarmac comprises the group of companies of which Tarmac Group Limited¹² is the parent company, including Tarmac Building Products Ltd (TBP),¹³ which is not being contributed to the JV and the group of companies of which Anglo Industrial Minerals Holdings Limited¹⁴ is the parent company.¹⁵

Tarmac's principal UK businesses – the production and sale of aggregates, asphalt, cement, RMX, and including its activities in asphalt surfacing and maintenance services, and waste management services – will be contributed to the JV. The fiscal year 2010 turnover of the UK operations that will be contributed to the JV was approximately **[Confidential Business Secret]**.

2.2 Lafarge

Lafarge (www.lafarge.com) is a limited liability company incorporated in France and listed on the Paris Stock Exchange. It is headquartered in Paris, France. Lafarge is active in the production and supply of building and construction materials in 78 countries around the world. Its business is currently divided into three main divisions: (i) cement; (ii) construction aggregates and RMX; and (iii) gypsum. In April 2011, Lafarge announced the proposed sale of its gypsum business, which will not be contributed to the JV.¹⁶

In 2010, Lafarge achieved consolidated worldwide sales of €16.17 billion, of which approximately 27% was generated within Western Europe. Around 1% of Lafarge's global revenues (i.e., more than €150 million) is committed each year to research and development through its state-of-the-art research facility near Lyon, France.

Lafarge's cement division produces and sells an extensive range of cements and hydraulic binders for the construction industry. The cement business accounts for approximately 60% of its total worldwide sales. Lafarge's construction aggregates and RMX division produces and supplies a range of aggregates, concrete and asphalt. The construction aggregates and RMX division represented approximately 32% of Lafarge's worldwide sales in 2010. The construction aggregates, RMX and cement divisions in the UK are relevant to the Proposed Transaction.

The fiscal year 2010 turnover of Lafarge's UK operations that will be contributed to the JV was approximately **[Confidential Business Secret]** million. Following the Proposed Transaction, Lafarge will retain its current holdings in assets outside the UK, which will continue to operate in non-UK jurisdictions.

¹¹ Both figures are taken from Anglo American's Annual Report 2010 and have not been adjusted to account for disposals since 2010. European turnover relates to the European geographic area rather than the European Economic Area.

¹² Tarmac Group Limited is a holding company, with no commercial activities.

¹³ TBP is active in the production of heavy building materials, such as blocks, bagged aggregates, binding products, sports surfaces and foundry sands. Tarmac will have a supply agreement with TBP which will continue to apply in respect of the JV following the Proposed Transaction. (TBP is currently supplied by other Tarmac Group companies.) It is Anglo American's intention to divest itself of its interest in TBP once an appropriate sale can be agreed.

¹⁴ Anglo Industrial Minerals Holdings Limited is a holding company, with no commercial activities.

¹⁵ The Tarmac JV Assets are held by Tarmac Group Limited and Anglo Industrial Minerals Holdings Limited.

¹⁶ Gypsum wallboard (or "plasterboard") and other gypsum-based products (such as plaster, plaster blocks, and joint compounds) are used primarily to offer gypsum-based building solutions for construction, finishing or decorating interior walls and ceilings in buildings. Sale of Lafarge's Asian and Australian gypsum businesses was completed in July 2011. The company is in exclusive negotiations with Etex Group for the sale of its European (including the UK) and South American gypsum assets.

3 JV rationale and background

3.1 Economic context

The Proposed Transaction takes place in the context of an economic downturn which is longer and deeper than any experienced by the construction industry within the last thirty years.

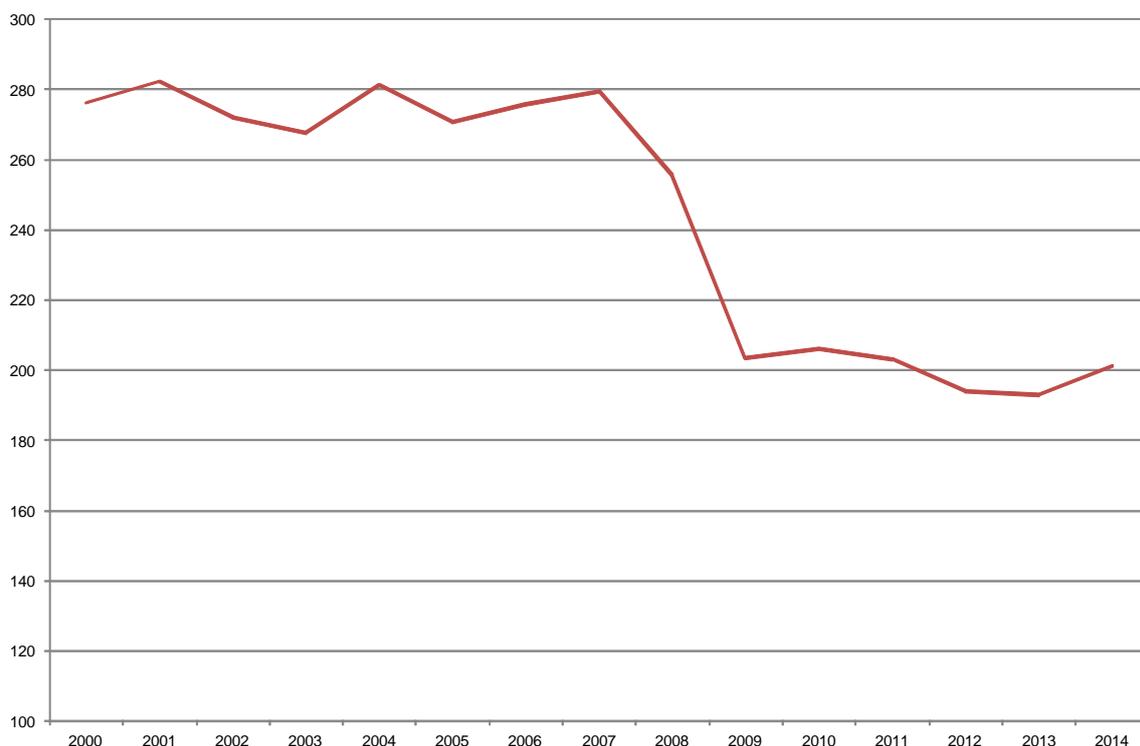
Figures 1 to 4 below illustrate, for each of aggregates, asphalt, RMX and cement, long-term trends in production volumes since 2000.¹⁷

3.1.1 Aggregates

The supply of aggregates in GB experienced consistent growth throughout the 1980s, peaking in 1989 at a total production volume of around 332 million tonnes. During the recession of the early 1990s, the industry experienced a sharp decline, then remained relatively static through to 2007. Between 2007 and 2009, demand for aggregates fell dramatically, from 280 million tonnes in 2007 to 203 million tonnes in 2009 (a decline of 27.5%). In 2010 demand was 210 million tonnes. Although there was a modest recovery in 2010 as seen above, this is forecast to be reversed in 2011 to 2013 with volumes falling below those seen in 2009.

Figure 1

Figure 1: Total aggregates demand in GB, 2000-2014 (million tonnes)



Source: ONS and MPA. Note: 2011-2014 figures are MPA forecasts, September 2011.

¹⁷ Data for primary aggregates (including marine aggregates) are sourced from the Office of National Statistics (“ONS”). Data for asphalt, RMX, cement and recycled aggregates are sourced from the Mineral Products Association (“MPA”) and are based on the MPA’s estimate of total market size. This data relates to GB only. The Parties note that the MPA information for RMX, while providing a useful measure of market trends, is less complete than the information collected and reported by BDS since it excludes production by smaller local RMX producers. The Parties note that the BDS information also understates volumes somewhat since the BDS data also does not cover all producers.

The market for the supply of construction aggregates has been characterised for at least two decades by overcapacity. The high costs of transporting aggregates and the terms of many lease arrangements which include minimum annual mineral lease payments has resulted in companies continuing to operate quarries throughout the term of that lease, with relatively little capacity having been removed from the market, despite total annual demand being substantially diminished.

Following the onset of the recession in 2007, the difficulties caused by this overcapacity have been further compounded by significant falls in demand from the construction sector as a result of the global financial crisis and the subsequent recession.

Aggregates producers have pursued a strategy of mothballing or closing high cost operations where possible. However, those sites which continue to operate also currently operate below capacity, and have scaled back production (by reducing staff and running plants for restricted periods) due to decreased demand.

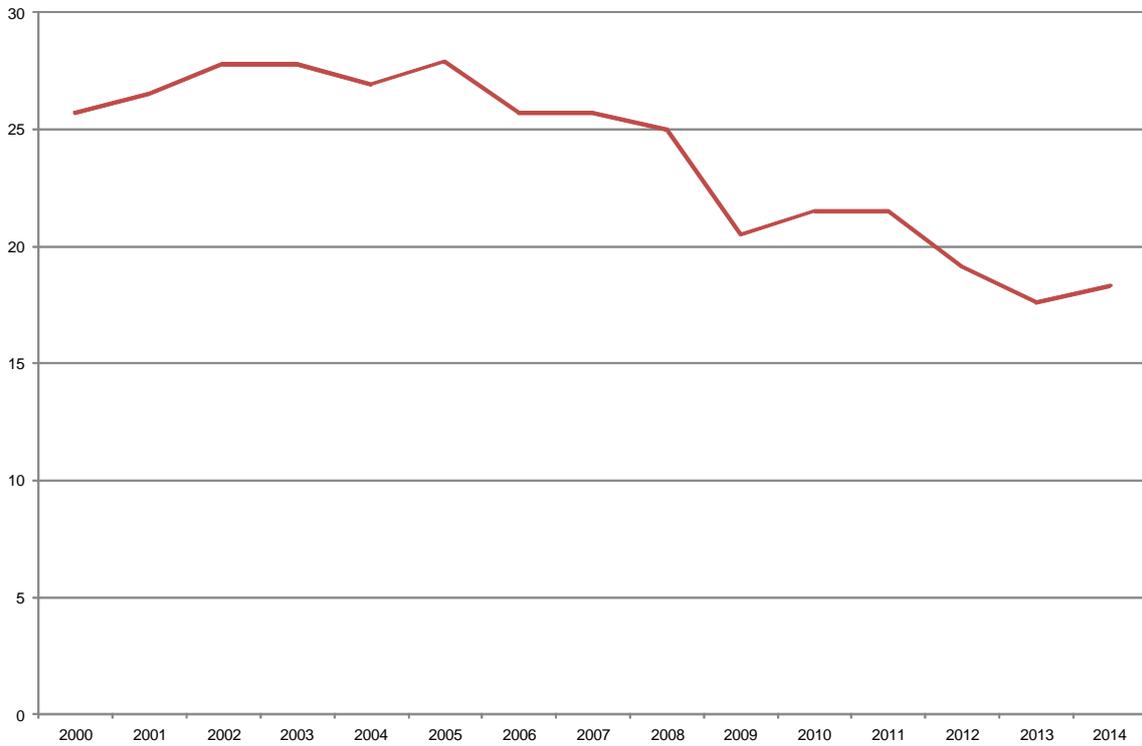
Both Lafarge and Tarmac estimate that they are currently operating at an approximate average capacity utilisation rate below **[Confidential Business Secret]** at a national (GB) level (including at operational and mothballed sites). The Parties consider that these figures are indicative of capacity utilisation figures in the industry as a whole.

3.1.2 Asphalt

With respect to asphalt, the industry saw fairly consistent growth throughout the 1980s and early 1990s, reaching a peak of 37.7 million tonnes in 1994. Since then, the reduction, particularly in national road building programmes, has led to a long-term decline in the industry. Between 2005 and 2009, asphalt production in GB fell from 27.9 million tonnes to 20.5 million tonnes, a reduction of 26.5%. This decline is expected to continue through to at least 2014 as a result of the Coalition Government's spending cuts, which have imposed significant restrictions on the budget available to the Highways Agency and local authorities for road construction and maintenance projects.

Figure 2

Figure 2: Total asphalt demand in GB, 2000-2014 (million tonnes)



Source: MPA. Note: 2011-2014 figures are MPA forecasts, September 2011.

A key market dynamic in respect of asphalt is currently the excess capacity in the industry. At present, the production capacity of asphalt producers outstrips demand by a considerable margin.

The Parties estimate that they are operating at an approximate nominal capacity utilisation rate of around **[Confidential Business Secret]** on a national basis.¹⁸

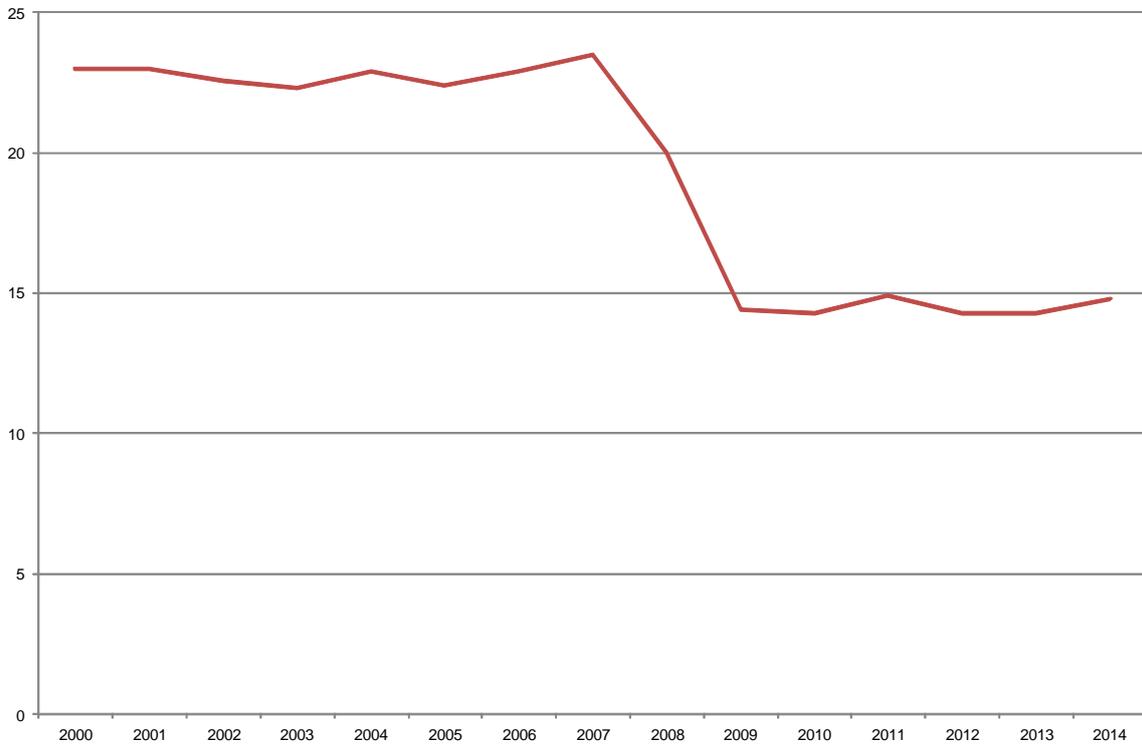
3.1.3 RMX

The market for the supply of RMX has seen similar trends, experiencing general growth to 1989, before falling dramatically between 1989 and 1993. From 1993 to 2007, demand levels remained relatively stable, before plummeting from 23.5 million cubic metres in 2007 to 14.3 million cubic metres in 2010 (a decline of 39%).

¹⁸ Based on a ten hour working day and 250 working days per year. Another way to demonstrate prevailing low capacity utilisation is to compare plant-level peak output during 2007-2009 (as a proxy for capacity) with that in 2009. For example, on average, third party plants that operated during this period produced at only 75% of the capacity proxy in 2009. Moreover, third parties were producing substantially below capacity even during the peak demand period around 2007; hence the capacity utilisation is likely to be significantly lower than 75%.

Figure 3

Figure 3: Total RMX demand in GB, 2000-2014 (million m3)



Source: MPA. Note: 2011-2014 figures are MPA forecasts, September 2011.

At present, RMX capacity exceeds demand by a considerable margin. Lafarge considers that it is operating at an approximate capacity utilisation rate of less than **[Confidential Business Secret]** at a national level, while Tarmac estimates its current capacity utilisation to be **[Confidential Business Secret]**. The Parties consider that these figures are indicative of capacity utilisation figures in the industry as a whole.¹⁹

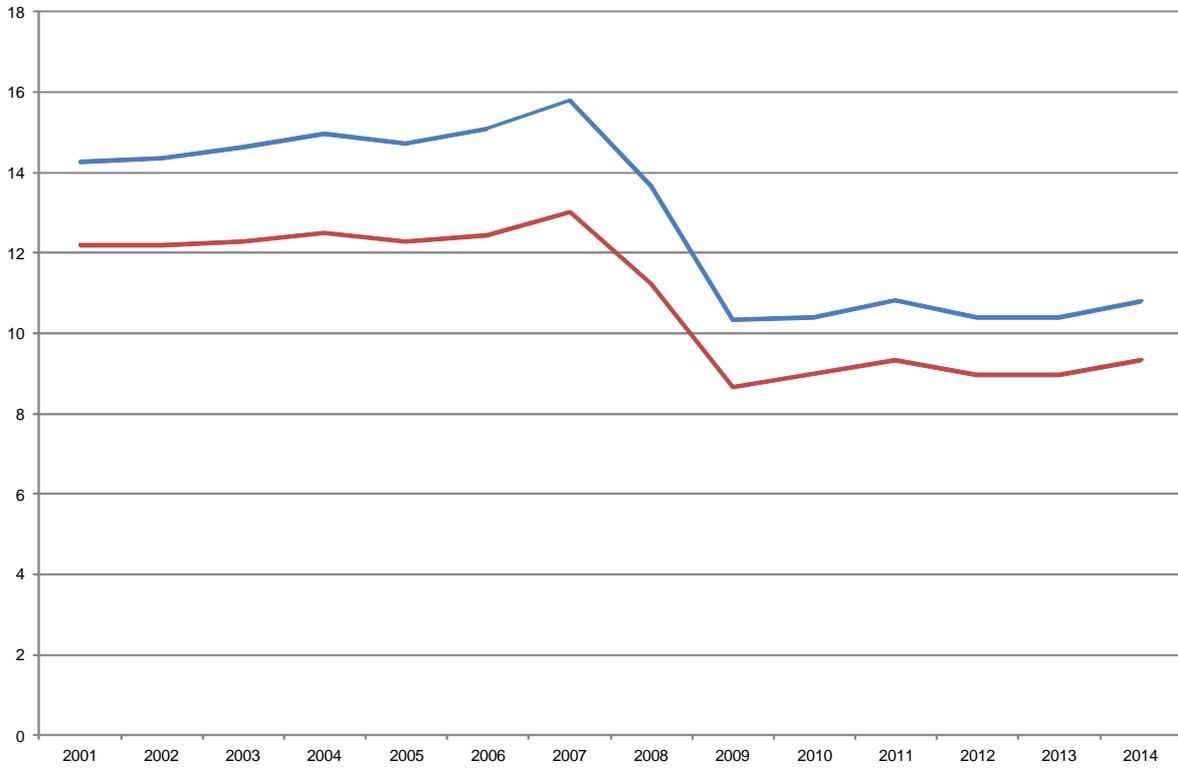
3.1.4 Cement

Finally, with respect to the supply of grey cement in GB, the industry experienced consistent growth through the 1980s, reaching a peak of 18.3 million tonnes in 1989. Demand then dipped dramatically between 1989 and 1992, falling by 34.3% in three years. From 1994 to 2007, the industry saw moderate growth, rising to a peak of 14.4 million tonnes in 2007 before again falling sharply in 2008 and 2009. Between 2007 and 2009, the GB production of grey cement fell by 4.7 million tonnes, a 32.8% decline.

¹⁹ A degree of excess capacity is typical for RMX plants: in order to meet demand at peak times of the day (since RMX has a shelf-life of around two hours and must be made to order). However, the Parties are currently operating at lower levels of capacity utilisation, and believe the rest of the RMX industry will be doing likewise as a result of which significant overcapacity is a feature of the GB market for RMX.

Figure 4

Figure 4: Total cement and overall cementitious demand in GB, 2001-2014 (million tonnes)



Source: MPA. Notes: (1) 2011-2014 figures are MPA forecasts, September 2011 (2) Blue line represents total cementitious demand i.e. grey cement + cementitious products, red line represents grey cement demand (3) MPA forecasts provided for cementitious (i.e. grey cement + cementitious products) products only; forecast growth rate for overall cementitious demand over the period 2011-2014 has been assumed for overall grey cement in the chart.

[Confidential Business Secret] However, industry forecasts²⁰ and the Parties expect that demand for cement will either fall, or stay flat at best, in 2012 and 2013, with a slow recovery in demand starting no sooner than 2014. Therefore, while all domestic producers have taken steps to rationalise capacity in response to these changed market conditions, the high degree of remaining domestic over-capacity – which the Parties expect will continue for a good number of years (the cement market is not expected to recover to its 2007 levels of 14 million tonnes until at least 2020, if ever) – means that the operational and commercial incentive of either of the Parties to expand domestic capacity is reduced.

3.2 Background and rationale for the Proposed Transaction

[Confidential Business Secret]

²⁰ MPA market outlook briefing (GB) – September 2011.

²⁸ An estimated 95% of aggregates are used for construction applications.

4 Overview and analysis of the relevant markets

4.1 Aggregates

4.1.1 All Aggregates

(i) Relevant product market for all construction aggregates

The Parties consider that there is a single relevant market for general construction aggregates, including sand and gravel (marine and land sourced), crushed rock, and recycled and secondary aggregates. However, the Parties recognise that there is specific demand for specialist and non-construction aggregates and have not sought to include these within the general construction-related market. Please see sections 4.1.4 to 4.1.6, which describe the relevant non-construction markets for rail ballast, high purity limestone and high polished stone value (**PSV**) aggregates.

(ii) Overview of construction aggregates types

Aggregates, namely crushed rock, sand and gravel (marine and land sourced), and their secondary and recycled equivalents, are primarily²⁸ used for construction purposes. Aggregates are also used for other purposes, e.g. for industrial purposes (e.g. flue gas desulphurisation (**FGD**)²⁹ at coal fired power stations), as rail ballast (**[Confidential Business Secret]**), in the production of cement and lime, high purity limestone used in chemical processes and for use in the agricultural and horticultural sector as a soil additive.

Primary aggregates comprise sand, gravel and crushed rock. Crushed rock is quarried from naturally occurring deposits of rock by blasting, crushing and screening. Sand and gravel are quarried from naturally occurring deposits and consist of particles which range in size from small sand grains to boulders. Primary aggregates may also be dredged from the seabed; products derived from these deposits are known as marine aggregates (see below).

Secondary aggregates are produced from the by-products of industrial processes. For example, secondary aggregates are produced from steel slag (a by-product of the steel manufacturing process) and blast furnace slag (a by-product of the iron manufacturing process). Secondary aggregates are also produced from china clay waste and slate mining waste.

Recycled aggregates are created from construction and demolition waste (concrete, bricks and tiles), highway re-surfacing (asphalt planings), excavation and utility operations. The input materials can be obtained from demolition sites or from public works, utilities operators and civil engineering activities undertaking repair and maintenance work.

(iii) Geology largely determines availability

The availability of aggregates types in a given location is dependent upon geology and also upon the availability of construction, demolition and industrial waste from which recycled and secondary aggregates are produced.

GB has a “rock line” running approximately from Weymouth in the south west to Kingston-upon-Hull in the north east. To the north west of this rock line (i.e. particularly in Scotland,

²⁹ Chemical stone is used as a purification agent in power stations to de-sulphurise flue gas. For this use, high purity limestone is used in powder form, which is then made into a slurry to de-sulphurise the flue gases. In order to produce the powder, limestone is crushed at the quarry site and then ground by the power stations.

Wales and the North of England), the local geology gives rise to large deposits of crushed rock. In contrast, to the south east of this line (in particular, in East Anglia and the South East) there are high levels of sand and gravel, but little or no crushed rock.³⁰

Sand and gravel is extracted from glacial and alluvial deposits and has broadly the same composition whether extracted from a sand and gravel pit or from the sea bed. Marine aggregates have been present in the UK market for many years. The choice between land-won and marine aggregates will be based on the comparative logistics cost with marine aggregates being the lowest cost source for many coastal areas and large cities with river access (e.g. London).

(iv) Demand side considerations

The Parties note that there is substantial overlap in functional substitutability of different types of aggregates – i.e. buyers can often meet the same grade requirements (in broad terms these fall into fine, coarse or granular grades) using sand and gravel, crushed rock, or secondary/recycled aggregates (or a blend of these). In practice, the choice of aggregate will depend on local availability (which in turn determines the relative prices of these aggregates).

Therefore from the customer perspective, the choice of aggregate materials for construction purposes is based upon the grade required (and not upon the geological composition of the material). For example, a customer may require graded aggregate of 10mm (as suitable for the intended application) and will be supplied with material of this type depending upon local availability. Sales teams generally receive enquiries for specific grades of aggregates. It is then the Parties' logistics teams that consider where those grades can be supplied from given the sources available in the local area.

As marine dredged sand and gravel has the same composition as land sourced sand and gravel, there is no specific demand for sand and gravel from either source. Suppliers choose between marine dredged and land sourced sand and gravel based on the comparative logistics costs and availability. Consequently, no distinction can be made between marine dredged and land won aggregates.

(v) Supply side considerations

Crushed rock can be crushed and screened into different grades (again, fine, coarse and granular). The material produced by any crushing process consists of a range of sizes which can then be separated by the screening process, such that it is not possible for a rock quarry to produce a single coarse or fine grade of product. Similarly, most sand and gravel sites also produce a range of fine, and coarse aggregates, through the process of washing and screening. These different grades are suitable for different applications. For example, granular products are typically used for sub-bases and structural fills. Coarse and fine grades are typically used in RMX, concrete products and asphalt.

(vi) Summary on product market

For any particular grade, demand side substitution means that all aggregates are usually substitutable – it is simply a matter of meeting the requirements of the grade. The choice of which product to use is then based on price (and is thus largely dependent on local availability). Supply side considerations mean that delineating a relevant market by grade

³⁰ Local anomalies exist, for example, in the Mendips, where there is a large limestone deposit, and in Leicestershire, which hosts a large granite reserve (which accounts for the presence of the Mountsorrel, Croft, Bardon Hill and Cliffe Hill quarries in that region).

is too narrow – the crushing and screening processes used in the production of aggregates necessarily entails the production of a spectrum of product grades from a single site.

(vii) Geographic scope of competition for construction aggregates

The Parties maintain that the starting point for the relevant geographic radials within which to assess the Proposed Transaction is set out in and justified by the evidence set out in Annex B3 to the Parties' Initial Submission to the OFT, namely 30 miles for aggregates. However, for specialist aggregates products (e.g. when considering rail ballast, high PSV and high purity limestone), the Parties submit that the relevant geographic markets are national.

4.1.2 Primary Aggregates

(i) Primary aggregates should be considered as part of a broader market for all construction aggregates

Contrary to the OFT's suggestion that it is appropriate to examine whether particular concerns arise in the supply of primary aggregates (i.e. excluding recycled or secondary aggregates),³¹ the Parties believe that such an approach does not reflect the dynamics of competition in the supply of aggregates, since recycled and secondary aggregates impose a direct and significant constraint on primary aggregates producers. Furthermore, the Parties do not consider that local shares of supply for primary aggregates should be considered separately from "all aggregates".

For that matter, if the CC were to define a relevant market to include primary aggregates only, they would nevertheless need to consider the role of recycled aggregates as a constraint from outside that market on behaviour within it. Similar points can be made about the interactions of various types of aggregate within that overall market.

(ii) Direct constraint imposed by recycled and secondary aggregates on primary producers

In particular, the fact that recycled and secondary aggregates can be produced more cheaply than primary aggregates (due to the fact that they are produced from waste materials and do not attract the aggregates levy) directly constrains the pricing of primary aggregates.

In the Parties' experience recycled and secondary aggregates are often used interchangeably by customers for economic reasons, with secondary and recycled aggregates often being favoured on grounds of price.³² Indeed, the Parties themselves also use recycled and secondary aggregates interchangeably with primary aggregates.³³ It is estimated that 28% of the share of supply of aggregates is accounted for by secondary and recycled aggregates.³⁴ The fact that the share of supply of recycled and secondary aggregates has grown to this extent at the expense of primary aggregates demonstrates that they are an important source of competition in this market. Figure 5 below demonstrates the growth of recycled and secondary aggregates as a proportion of total supply.

³¹ OFT Decision, paragraph 65.

[Confidential Business Secret]

[Confidential Business Secret]

³⁴ See <http://www.mineralproducts.org/sustainability/highlights.html>

Figure 5

[Confidential Business Secret]

(iii) Substitutability of recycled/secondary aggregates across a range of applications

As described above, customer choice for construction aggregates is dictated by the required grade for the particular application and local availability. Demolition waste and asphalt planings are most often used in structural fill and sub-base applications, given the size of the grade produced from this material. Recycled aggregates are therefore an important source of competition to primary aggregates for this application. Given that the structural fill and sub-base application is the most important end-use application in terms of aggregates volume (accounting for approximately 50-55% of aggregates use), recycled aggregates therefore impose a significant constraint on primary aggregates.

Recycled and secondary aggregates are also utilised across the other end-uses of aggregates, namely in the production of RMX, concrete products and asphalt. Despite the share of recycled and secondary aggregates for these applications being typically lower than in the case of sub-base and structural fill, this does not reflect the absence of a constraint placed by secondary and recycled aggregates in other applications.

Recycled and secondary aggregates can be produced from a range of different materials, such as slag, road planings, glass, slate and china clay. Recycled / secondary aggregates produced from these materials are easily processed into smaller grades and are therefore suitable for use in a variety of applications, including in asphalt, RMX and concrete products (as is the case for primary aggregates).

(iv) **[Confidential Business Secret]**

³⁶ The Parties note that High PSV stone may be delivered further distances than general construction aggregates: see section 4.1.6.

- (iv) As in the case of primary aggregates, local availability of source materials dictates use

The proportion of usage of secondary and recycled and primary aggregates is a function of availability. In locations close to construction activity, there will be greater availability of demolition and construction waste from which recycled aggregates can be produced. In the vicinity of steel works, slag aggregates will be available and close to china clay works, china clay secondary aggregates will be available, etc.

Therefore, the use of secondary and recycled aggregates will be greater than in some areas than others, reflecting the availability of source materials.

4.1.3 Crushed Rock

- (i) Crushed rock and sand and gravel are part of a relevant product market for all construction aggregates

Contrary to the OFT's suggestion that it is appropriate to examine whether particular concerns arise in the supply of crushed rock, the Parties do not consider it appropriate, in light of the delivery distances for crushed rock, to make a distinction between sand and gravel and crushed rock, for the reasons set out below.

Importantly, any particular demand for high PSV aggregates must be distinguished from crushed rock aggregates more generally.³⁶ Crushed rock aggregates include softer limestone and other rock types, in addition to high PSV aggregates, such as granite and gritstone.

- (ii) Crushed rock and sand and gravel are to a large degree used interchangeably depending upon the grade required and local availability

As explained above, customers will specify a particular grade requirement and aggregates of that specified grade will be supplied depending upon local availability. From the customer perspective, the geological source of the material is generally irrelevant.

The use of sand and gravel or crushed rock in a given area, is largely dictated by geological availability. South of the "rock line" there is no naturally occurring crushed rock, such that there is greater use of sand and gravel.

As demonstrated by the RBB Economics paper submitted to the OFT,³⁷ the share of each aggregate type used in RMX depends on local availability (e.g. sand and gravel being more likely to be used where crushed rock is relatively scarce, and vice versa). In Scotland, for example, **[Confidential Business Secret]**, whereas in the West Midlands, **[Confidential Business Secret]**. A similar degree of regional variability in the split between sand and gravel and crushed rock is observed for Tarmac's RMX production, where the use of sand and gravel varies from **[Confidential Business Secret]** in the North West to **[Confidential Business Secret]** in East Anglia. See tables 2 and 3 below.

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It is clear from the above that sand and gravel and crushed rock are used interchangeably in the production of RMX depending on location and that it is clear that sand and gravel and crushed rock impose significant competitive constraints on each other. Indeed, examples of RMX producers switching from aggregate plants which produce sand and

³⁷ Annex B1 to OFT submission 10 June 2011.

gravel, to quarries which produce crushed rock (and vice versa) depending on availability were provided in Section 3.1.4 of the Parties' response to the OFT's Issues Letter dated 17 August 2011.

(iii) Relevant geographic scope of competition for crushed rock

In assessing competition at the regional level for crushed rock aggregates, the OFT gave no weight to the fact that an analysis of the Parties' delivery distances shows that 80% of sales are made within a **[Confidential Business Secret]** mile catchment area of a production site. The Parties strongly believe that competition within the aggregates sector is local (with the exception of specialist products, which are considered separately).

4.1.4 Rail Ballast

Rail ballast is a particular type of crushed rock aggregate sold **[Confidential Business Secret]** for use as a bedding material under railway tracks.³⁸ Rail ballast has coarse physical properties which enable it to form a firm foundation for railway tracks and which prevent plant life from growing beneath the tracks.

The OFT has suggested that competition for rail ballast should be assessed separately on the basis that there are only approximately eight quarries in the UK with reserves of the relevant mineral.

On the basis that rail ballast is treated as a separate market, the Parties would agree with the OFT's assertion that the market for rail ballast is national.³⁹ However, it should be noted that rail ballast represents only a part of the output of the quarries from which it is sourced, again reflecting the multiple product grades that are necessarily produced through the blasting and crushing processes. Moreover, there is a particular demand for rail ballast from rail companies.

4.1.5 High Purity Limestone

High purity limestone is limestone with a calcium carbonate content of 95% or above which is used for its chemical properties. Quarries producing these products will typically also produce a range of construction aggregates from the same raw material as is the case at the Parties' Tunstead and Dowlow quarries. When sold for its chemical properties, high purity limestone is known as chemical stone.

High purity limestone can be used as chemical stone for the production of soda ash,⁴⁰ in relation to FGD, precipitated calcium carbonate⁴¹ and sinter.⁴² Limestone powders are also made from high purity limestone which is dried, crushed or ground.⁴³

From the supply side perspective, high purity limestone is a primary product, which is interchangeable for a number of different applications. Any aggregates producer with a quarry with geological reserves of limestone with a purity level of 95% or above can produce high purity limestone for most of the applications described above.

³⁸ In addition Tarmac has made a very small volume of sales of rail ballast to other railway and track operators.

³⁹ OFT Decision, paragraph 79.

⁴⁰ The primary use of soda ash (sodium carbonate) is in the production of glass.

⁴¹ PCC is a chemical-grade calcium carbonate created from high purity limestone. It is very reactive and is used for conditioning rubber (used on car doors) and as a filler in paper.

⁴² Chemical grade limestone is added to the sinter fed into the blast furnace. The heat in the blast furnace converts the limestone to quicklime, which then reacts with silica and alumina and converts into steel slag.

⁴³ Limestone powders are sold for a range of chemical and industrial uses, including carpet backing, animal feeds, and fertilisers. Some limestone powders are sold for specialist construction usages.

The OFT considered that the specific grade of high purity limestone used for FGD could possibly be assessed separately on the basis of its specific use in power stations to clean sulphur emissions.⁴⁴ However, the OFT noted that suppliers of limestone powders, such as Singleton Birch, market their product for FGD use. On the basis of supply-side substitutability, the Parties consider that high purity limestone and FGD should be assessed as part of a single relevant market.

The OFT considered the market for high purity limestone to be national.⁴⁵ The Parties' recent experience of customer consideration of imports may suggest that the relevant market is at least national (if not even broader).

4.1.6 High PSV aggregates

High PSV aggregates are construction aggregates with a specific application within asphalt road surfacing for highly trafficked, high speed roads, (motorways and dual carriageways) or accident risk areas such as school crossings, cambered roads and roundabouts.

The Highways Agency determines which particular specification of PSV is required for a surface type according to the criteria set out in the Highways Agency Design Manual for Roads and Bridges (the **Design Manual**).

The OFT has suggested that a distinct product market exists for the supply of high PSV on the basis of specific demand-side requirements such that high PSV is not interchangeable with other construction aggregates. The Parties accept that this is the case for certain Highways Agency and relevant Local Authority road surfacing projects.

From a supply side perspective, the Parties estimate that on average only around [**Confidential Business Secret**] of the aggregates quarried from high PSV sites are ultimately used as high PSV aggregates for road surfacing and the remaining volumes are used as general construction aggregates.

It is clear that high PSV aggregates are transported over greater distances than other construction aggregates. The OFT considered that the market is national;⁴⁶ whereas the presence of imports (e.g. from France and Northern Ireland) may suggest that the relevant market is even broader.

4.2 Asphalt

4.2.1 Relevant product market for asphalt

Asphalt is produced by heating and mixing aggregates and a viscous binding agent, usually bitumen (which, in the UK, is predominantly obtained from petroleum processing).

Its principal applications are in the surfacing of roads, car parks, footpath pavements and other surfaces. More particular applications include, for example, decorative and coloured mixes, asphalt mixes for high stress areas such as bus lanes, asphalt mixes for airport runways and asphalt mixes for sporting arenas. The specification of each type of asphalt is a function of the mix of aggregates, bitumen and additives, and is made according to a producer's proprietary design mix, to BS / EN standards, to specifications set by the Highways Agency or to one of a series of standard EU asphalt mix specifications. Since the production of all specifications of asphalt involves essentially the same raw materials and occurs at the same plant, there is complete supply-side substitutability between each specification.

⁴⁴ OFT Decision, paragraph 68(c).

⁴⁵ Ibid, 32.

⁴⁶ Ibid. 30

The Parties consider that there is a single product market for the production and supply of asphalt. In line with a consistent series of cases, the OFT determined that asphalt forms a single product market.⁴⁷ The Parties agree with this approach, and further note that suppliers of asphalt also compete with suppliers of other surfacing materials (such as block paving and concrete) for certain applications.

4.2.2 No distinction should be made for 24/7 asphalt plants

The OFT queried whether plants with planning consent for night time and weekend operating hours (**24/7 plants**) should be regarded as particularly close competitors for certain projects, but ultimately observed in the OFT Decision that it had not received compelling arguments to support such an alternative candidate product market.⁴⁸

The Parties note that there is a spectrum of possible operating permissions. Even where a site technically has permission to operate on a 24/7 basis, it may also be subject to noise level restrictions and restrictions on traffic levels visiting the site, which de facto prevent the site from operating around the clock. **[Confidential Business Secret]**. Therefore, although an asphalt plant may have 24/7 planning permission, it would not necessarily be able to operate around the clock without any restrictions.

In addition, many asphalt plants have planning authority permission to work through the night on a set number of occasions per year or have authority to work other times outside of normal hours but without completely unrestricted 24/7 permission. Such asphalt plants can compete to supply highway maintenance teams working overnight, even though they do not have 24/7 permission all year round. As overnight highway maintenance contracts only come up occasionally throughout the year, such asphalt plants are equally well placed to serve these customers.

Consequently, the Parties do not consider it appropriate to consider 24/7 plants as a separate delineation of the market for the production and supply of asphalt.

4.2.3 Relevant geographic market for asphalt

The Parties maintain that the starting point for the relevant geographic radials within which to assess the Proposed Transaction are set out in and justified by the evidence set out in Annex B3 to the Parties' Initial Submission to the OFT, namely 30 miles for asphalt.

4.3 RMX

4.3.1 Relevant product market for RMX

RMX is concrete that is manufactured at the supplier's site for delivery to a customer's construction site in a freshly mixed and unhardened state. RMX is manufactured by mixing highly specific quantities of cement and other cementitious products (e.g., ground granulated blast furnace slag (**GGBS**), pulverised fly ash (**PFA**)) with fine aggregates (sand, rock fines or china clay waste) and coarse aggregates (graded gravel, crushed rock, recycled concrete or slag), water and other additives. The RMX is then usually transported in a truck-mixer and placed at site. RMX is bought and sold by volume, and the specific composition can be customised to suit different applications. RMX can be either produced in a central plant and distributed to site by truckmixer or produced in a volumetric truck which carries the ingredients separately and mixes them on site.

All grades of RMX incorporate the same raw materials and are produced at the same plant. The specification of RMX is varied in order to achieve the properties required for each application.

⁴⁷ Ibid. 86 – 87

⁴⁸ Ibid. 87.

Different properties are achieved by varying the relative quantities of the different raw materials (in particular the cementitious content) in the most economical way possible to achieve the required performance, and by the addition of various additives or admixtures. Given that differences between grades of RMX are driven by varying the quantity of the primary ingredients and by the use of freely available additives, there is supply-side substitutability between the different grades which can be produced at any RMX plant.

4.3.2 Site plants compete alongside fixed plants

RMX produced at site plants forms part of the same single relevant product market. Site plants produce RMX volume around the country according to the location of specific projects. There is complete demand-side substitutability between site plant and fixed plant-produced RMX, so even on large jobs customers usually have the choice of procuring RMX from fixed plant suppliers rather than having a dedicated site plant. For all but the very largest projects, it is usual for customers simply to request RMX and for the concrete supplier to make the decision to offer a site plant solution or supply from a fixed plant or plants. The competitive constraint exerted by fixed plants on site plants is therefore such that they should be treated as forming part of a single product market for the supply of RMX.

4.3.3 Volumetric trucks should be considered to form part of the RMX market

A volumetric truck effectively combines a mobile truck mixer and batching plant in one vehicle. All raw materials are stored in separate compartments and these are then metered and mixed into fresh concrete where and when it is needed. This means that there is no expensive waste of materials, as the unmixed product remains useable indefinitely. The volumetric truck also eliminates the need for part load charges and problems with over or under-ordering. Customers can estimate the amount of RMX needed and the exact quantity can be mixed on site. Volumetric trucks can supply all mixes and grades of RMX, including screed and mortar. Mixes and grades can be switched from one customer to the next or even halfway through a job if necessary.

Volumetric trucks produce the same RMX product as is produced from fixed and site plants (by way of illustration, the Parties understand that volumetric trucks are now performing motorway barrier work in direct competition with fixed RMX plants, and concrete produced by volumetric trucks is capable of ISO certification under the Quality Scheme for Ready Mixed Concrete (**QSRMC**) on the same basis as concrete produced from fixed and site plants).

Volumetric trucks play a significant role in the market for the supply of RMX and accounted for nearly 9% of RMX volumes in GB in 2010. Regionally, volumetric trucks also accounted for a substantial share of overall RMX volumes (as much as 16% in the North West). In addition, the impact of volumetric trucks is particularly illustrated by the fact that volumetric trucks can deliver product over greater distances than conventional mixer trucks dispatched from fixed plants.

By way of illustration, the Parties note that:

- FM Conway runs thirteen of its own volumetric trucks to supply its various Term Maintenance Contracts (**TMC**) within London (previously, it purchased RMX from Tarmac, but now self-supplies);
- Other volumetric suppliers also compete in London (for example, Jim'll Mix-it and Eastcrete);
- **[Confidential Business Secret]**
- **[Confidential Business Secret]**

4.3.4 Relevant geographic market for RMX

Consistent with previous decisional practice, the Parties submit that a 10 mile geographic radius around points of production for RMX is the relevant starting point for any analysis of the geographic scope of competition. The Parties' data show that 80% of their RMX volumes were delivered within approximately [Confidential Business Secret] miles of their RMX production sites. The Parties note that these delivery distances reflect a distinct feature of the RMX market, namely the fact that distances may be substantially shorter in areas that are particularly dense with RMX sites.⁴⁹ The OFT accepted a starting point of 10 miles to be appropriate.⁵⁰

4.4 Bulk grey cement

4.4.1 Relevant product market for bulk grey cement

Cement (also referred to as "Portland cement") is produced from a mixture of finely ground limestone or chalk, clay and sand, which is heated almost to melting point (at around 1,450°C) in a large rotating kiln. The cement clinker that emerges is then ground to a fine powder or combined with other cementitious materials to produce different grades of product. It is a basic ingredient of RMX and mortar, amongst other applications. In GB, grey cement is supplied to (i) RMX producers; (ii) builders' merchants; (iii) concrete product manufacturers; and (iv) soil stabilisation contractors to add strength to clay soils.

Different types of grey cement are made at cement works, depending on the amount of different cementitious materials (such as GGBS, PFA, limestone fines and silica fume) that are inter-ground or blended with the cement clinker. GGBS is a by-product recovered from blast furnaces used in the production of iron. It can be used unground as a coarse aggregate or as a supplementary cementitious material (where it can replace up to 70% of cement in a concrete mix). PFA is a by-product of coal-fired power stations. Both products have environmental benefits given that their processing requires less energy than in the processing of primary materials and if they were not used in composite cements or as an addition at the RMX site then the materials would be wasted and sent to landfill.

These materials are either combined at the cement works (to produce a composite cement) or at the concrete plant where RMX is produced.

There are three main types or grades of grey cement:

- **CEM I** – which is made from ground cement clinker and a small percentage of gypsum to control the material's setting time when mixed with water;
- **CEM II** – which contains between 6 and 35% PFA, limestone or GGBS; and
- **CEM III** – which contains between 36 and 95% GGBS.

The Parties submit that the relevant market comprises all grades of grey cement.

⁴⁹ See RBB Economics *Anglo American plc / Lafarge S.A. / JV: geographic radials for the purpose of the competition assessment*, 13 May 2011, submitted to the OFT.

⁵⁰ OFT Decision, paragraph 105.

4.4.2 Domestic and imported cement form part of the same relevant product market

No distinction should be made between imported and domestically-produced grey cement. From a demand-side perspective, the two sources are fully substitutable and compete directly with each other.

This is consistent with previous decisional practice at both an EU and national level, where the Commission and OFT have found domestic and imported cement to be directly substitutable since: (i) there are no appreciable quality differences (all cement sold in GB must meet European standards);⁵¹ and (ii) prices for imported and domestically produced cement are similar.⁵²

The fact that imports have maintained a significant share of the grey cement market in GB, despite the recent significant downturn in demand, is consistent with the ability to import grey cement at a competitive price. Put differently, the rise in imports was not purely to satisfy peak demand in 2007, and has remained an important feature of the GB market since that time.⁵³

4.4.3 Bulk and bagged cement

Bulk cement is stored in large silos and is dispatched in specialist road or rail tankers (i.e. as bulk cement). Cement can also be packed into bags prior to distribution and dispatched in ordinary vehicles (i.e. as bagged or “packed” cement).

Packaging can take place either on-site at a cement production facility, or later in the supply chain process at a depot, depending on the available facilities. Imports of grey cement are typically (although not always) transported in bulk form in cargo ships; from the import terminal, cement is then distributed to customers in bulk form or packed into bags at the import terminal.

While there is no technical difference between bulk and bagged cement in terms of their properties, the OFT has previously suggested that a distinction may exist between bulk and bagged cement.⁵⁴

The Parties recognise that bulk and bagged cement are differentiated products. While there is a degree of supply-side substitutability between bulk and bagged cement (with most suppliers having the equipment in place to supply both forms and the ability to switch relatively quickly), from a demand-side perspective bulk and bagged cement serve different customers and therefore substitutability may be limited:

- **Bulk cement** is used by RMX and concrete product manufacturers which have suitable equipment to handle bulk cement themselves.
- **Bagged cement** is typically supplied to builders’ merchants and DIY outlets. Bagged cement is also typically more expensive than bulk, largely reflecting the additional packaging costs.

Consequently, the Parties submit that it is appropriate to distinguish between bulk and bagged cement.

⁵¹ The current British and European Standard for the 27 types of common cement available in Europe is BS EN 197-1: 2000 (Cement Composition, specifications and conformity criteria for common cements) and the current British and European standard for masonry cement is BS EN 413-1:2004.

⁵² Cases *COMP/M.3713 - Holcim/Aggregate Industries*, Commission decision dated 14 March 2005; *COMP/M.4719 - Heidelberg Cement/ Hanson*, Commission decision dated 7 August 2007; *COMP/M.5425 - DOPRASTAV/ CESKOMORAVSKY BETON/ TBG DOPRASTAV*, Commission decision dated 6 February 2009 and *Anticipated acquisition by Lafarge Cement UK of Port Land Cement Company Limited* (OFT decision of 21 October 2005).

⁵³ The impact of cement imports on competition in the British grey cement industry is considered further below.

⁵⁴ *Anticipated acquisition by Lafarge Cement UK / West Thurrock* (OFT decision of 27 June 2005); and *Anticipated acquisition by Lafarge Cement UK of Port Land Cement Company Limited* (21 October 2005).

4.4.4 Relevant product market for bulk grey cement

The Parties consider the relevant geographic market for grey cement to be at least national in scope.

5 Market Conditions

5.1 Market shares

The Parties' estimated market shares for cement, rail ballast, high purity limestone and high PSV aggregates on a national level are set out in Annex 2.

Annex 3 contains market share information for aggregates, asphalt and RMX in each local area ([**Confidential Business Secret**] miles for aggregates and asphalt and [**Confidential Business Secret**] miles for RMX), where the Parties' combined share exceeds 40%.

5.2 Customers and suppliers

5.2.1 Aggregates

(i) Customer types

Aggregates customers may be broadly grouped into three categories.

First, there are "fixed outlets", i.e. customers with fixed locations and a fairly steady demand for aggregates (such as concrete products manufacturers, bagged aggregates producers, non-vertically integrated and vertically integrated RMX or asphalt producers).

Second, and most importantly in volume terms, there are sales to the "general construction" or "jobs" segment. In this segment, aggregates are required by construction and civil engineering firms for specific construction projects (in the case of larger projects lasting for a number of months).

Third, some sales are also made to merchant hauliers or resellers. These are typically customers that have their own vehicle fleets and collect from quarries or depots (multi sourcing on the basis of price and location). Resellers would typically sell into the general construction segment.

Tarmac and Lafarge individually provided further information to the CC regarding their respective customers (across all products) on 16 September 2011.⁵⁵

(ii) Suppliers

The production of aggregates is a primary industry and therefore the major input costs are energy, labour, logistics and investment in land, plant and equipment.

Further information was provided regarding Tarmac's top 20 suppliers overall (not specifically for aggregates) in response to question 22 of Annex C to the CC, first day letter. Lafarge provided information specifically for aggregates suppliers in response to this request.

⁵⁵ Tarmac, "Customer Classification & Location", 16 September 2011

5.2.2 Asphalt

(i) Customers

The primary customers for asphalt are contractors which may be the asphalt surfacing and maintenance divisions of asphalt producers or third party contractors working on private, industrial and commercial contracts (such as commercial and residential construction, for example surfacing around retail and housing developments) or contractors which are part of Direct Labour Organisations or working for government authorities (local authorities or the Highways Agency) in relation to new road construction or repair and maintenance works.

(ii) Suppliers

Bitumen suppliers and aggregates producers are the main suppliers of inputs to asphalt producers, together with energy companies.

5.2.3 RMX

(i) Customers

Customers for RMX are typically general construction or civil engineering companies, with the exception of a small number of customers in the concrete products (CP) segment. Supply is made both through the contracts or 'jobs' channel (in which customers procure RMX on a project by project basis, normally through formal tender or partnership arrangements) and more generally on an ad hoc basis outside the scope of any wider contractual arrangement.

(ii) Suppliers

Suppliers of aggregates and cement are the main suppliers of inputs to RMX producers.

5.2.4 Cement

(i) Customers

The customer base for grey cement can be segmented between customers of bagged cement products (e.g., builders' merchants and DIY stores) and customers of bulk product. Bulk cement is supplied principally to fixed outlets, where a further segmentation is typically made between RMX, CP, mortar and soil stabilisation customers.

(ii) Suppliers

The principal inputs in the production of cement are limestone, clay or shale and sand iron oxide, together with a blend of gypsum, PFA or GGBS. The parties note that all GB domestic cement producers operate their own limestone and clay/shale production, meaning that external purchases of these inputs are not significant. In addition to the suppliers of these products, energy costs represent the most important external supply cost in cement production.

5.3 Pricing

[Confidential Business Secret]

⁵⁷ This figure assumes a plant size of 1mte/annum that is built on an existing cement plant operating site. The Parties estimate that a new plant built on a Greenfield site would cost in excess of £300m.

5.4 Cost structures in the relevant markets and capital requirements

One important feature of the construction industry is the different cost structure observed across the different stages of the vertical supply chain.

Cement, for example, can be regarded as one of the most capital intensive industries. For instance, a new cement plant typically requires a capital expenditure of approximately £250 million.⁵⁷

Similarly, a new aggregates site requires substantial investment, most of which is associated with the cost of acquiring land, mineral rights, planning permission, as well as plant and equipment. The Parties estimate that capital investment of between £5 million and £10 million is required for the development of a greenfield site, excluding the cost of any land or mineral (although if a mobile plant is used, the set up costs will be reduced). Plant and machinery capital costs for a sand and gravel plant would be in the region of £2-£6 million, whereas for a large crushed rock site it would be in the region of £10-£25 million.

On the other hand, downstream RMX and asphalt businesses require much lower investments with new sites typically costing around £0.3-£1.5 million and £3-5million respectively.

Consequently, the proportion of costs accounted for by fixed costs varies considerably across the products at different levels of the supply chain. In cement and aggregates - the capital intensive industries - fixed costs account for respectively c. 50% and c. 40% of total costs while in asphalt and RMX fixed costs account for respectively only c. 12% and c. 15% of total costs.

The different cost structure across the products relevant to the JV is also shown in the percentage of production costs accounted for by other cost entries. For instance, raw materials contribute relatively little to the total cost of cement production (c. 20%). This contrasts with RMX, for example, where cement and aggregates (the main inputs for RMX production) represent c. 80% of total production costs. Similarly, aggregates and bitumen (the main raw material for asphalt production) account for c. 80% of asphalt production costs. Fuel and electricity costs account for a more significant proportion of cement production costs (c. 30%), however energy costs represent only a trivial proportion of costs associated with RMX and asphalt production (c. 1% and c. 8% respectively).

Margins obtained in capital intensive industries should be put into context by considering the percentage of total costs accounted for by variable costs and fixed costs. Higher gross margins are typically obtained in aggregates and cement in order to cover the higher fixed costs (including operational fixed costs as well as initial capital investment incurred) in these sectors relative to asphalt and RMX.

Specifically, the substantial capital expenditures involved in cement and aggregates production suggest that the years of turnover required to cover the initial investment costs are likely to be much higher in those product areas than in asphalt and RMX. As such, a meaningful assessment of profitability in cement and aggregates should not rely solely on the profitability of sales, as captured by short run performance indicators (e.g. gross margins or EBITDA margins), but should also take into account the extent to which substantial prior investments have been made to generate those sales.

5.5 Entry requirements; scope for new entry and ease of expansion

5.5.1 Aggregates

Given significant levels of overcapacity there are low barriers to expansion from existing production sites since output can be readily scaled and the number of hours for which a plant is in

operation can be easily increased without the need to incur additional fixed costs, thus utilising excess capacity. For this reason the importance of new entry is diminished; ease of expansion provides a powerful constraint in itself.

Given the high level of fixed cost investment required to enter into the production of primary aggregates, the industry naturally favours production on a large scale, whereby fixed costs can be spread across a large number of units of production. This enables producers to exploit economies of scale and this ultimately benefits consumers in the form of lower prices.

Although the Parties agree that there are barriers to entry, they are not at a level prohibitive to new entrants. For example, Dudman purchased a marine dredging vessel and began this activity recently. The Parties consider that global companies involved in the provision of construction materials are also capable of entering GB markets. A list of these companies was provided at Annex B96 of Tarmac's response to Annex C of the CC's first day letter, dated 15 September 2011.

In the Parties' opinion, entry into the primary aggregates segment is most likely to take place through the acquisition by a new entrant of an existing production site, or of an existing producer. For example, Marwyn Materials, trading as Breedon Aggregates and backed by the Marwyn investment group, entered the aggregates market by this method. In addition, producers of primary aggregates face significant and increasing competition from suppliers of recycled and secondary aggregates. The OFT accepted that barriers to entry are significantly lower in the supply of recycled/secondary aggregates.⁵⁸

Entry into the production of recycled aggregates is straightforward as no substantial investments are required (e.g. mobile crushers can be hired over the short-term or leased), allowing for efficient operation even on a small scale. For example, a recent report published by BDS lists over 400 companies operating over 580 static recycled aggregates sites in GB.

⁵⁸ "Aggregates", OFT Report on the market study and proposed decision to make a market investigation reference (OFT1358), August 2011, paragraph 4.26.

5.5.2 Asphalt

In general, the Parties consider that there are low barriers to entry in relation to asphalt as the investment required to set up an asphalt plant is not substantial. Barriers to expansion are also low because output can be readily scaled without the need to incur additional fixed costs (e.g., by increasing working hours).

Barriers to entry are also low as a result of the insubstantial investment required to set up an asphalt plant.

- it takes approximately one year to set up a new asphalt plant (including obtaining planning consent and a period of commissioning); and
- the estimated capital expenditure involved would be equivalent for an existing competitor or new entrant.

Despite existing overcapacity and short to medium term reductions in forecast demand, there has been continued investment from asphalt suppliers. For example:

- in 2009, Independent Aggregates opened a new plant at Dalhousie, Midlothian; and
- MacAdam Asphalt opened a plant at Cloburn near Lanark in February 2010.

Mobile asphalt facilities provide an additional way for new asphalt competitors to enter the market and for existing asphalt competitors to expand their production (e.g. by supporting existing fixed asphalt plants), particularly in relation to airfield work and major road building projects. Mobile asphalt plants can be purchased for approximately £1.2-£1.4 million and rented for approximately £8,000 per week. The total hire (including set up costs) for a typical contract period of 20 weeks would be approximately £250,000. Alternatively a second hand plant could be purchased and installed on site for approximately £500,000, in addition to rental of land for the facility.

Accordingly, the Parties consider that potential new entry into the asphalt market is credible, notwithstanding the generally poor market conditions.

Entry in respect of asphalt is most likely to arise through firms seeking to vertically integrate either “backwards” (from asphalt surfacing into asphalt production) or “forwards” (from aggregate production into asphalt production), as evidenced by the following recent examples:

- in March 2010, GD Harries opened a new asphalt plant in Narberth, Pembrokeshire (thus demonstrating the potential for forward integration); and
- in 2010, FM Conway, which had previously only been active in road maintenance and related services, opened a new asphalt business in Erith, London (thus demonstrating the potential for backward integration by asphalt customers).

5.5.3 RMX

Entry into the production of RMX is relatively easy, as this can be done with a single silo, a single hopper and a water tank (along with appropriate mixer trucks or volumetric vehicles to deliver the products) for as little as £300,000 capital investment. Given that RMX is a homogenous product and that geographic markets are local in scope, a small operator can compete effectively within a local area provided that they are as efficient as other producers.

The low barriers to entry and expansion in RMX are evidenced by the following:

- RMX plants are characterised by significant spare capacity (such that even smaller competitors would have sufficient capacity to constrain the Parties in any given local market following the Proposed Transaction);
- Between 2005 and 2009, approximately 23 new RMX suppliers commenced operation, notwithstanding the current economic conditions; and
- National RMX competitors face effective competition from smaller RMX producers. This competitive constraint has increased over the past four years: in 2000, the share of supply accounted for by local or regional suppliers was 17%; by 2007, that share had increased to 21.3% and, by 2010, was over 27%. This expansion has occurred despite significant declines in demand for RMX over the past few years, and would be expected to continue to apply following the Proposed Transaction. (The Parties are not aware of any smaller RMX supplier exiting the market since 2005).

5.5.4 Cement

The Parties are aware of proposals announced by one independent importer, Dudman, to rehabilitate the former Blue Circle cement works at Upper Beeding, Shoreham, West Sussex for cement production. The Parties understand that Dudman has also agreed terms for a new aggregate and cement import facility in the North West and is in the process of setting up a new cement import terminal in Montrose, Scotland.

It is notable that, while external market demand has fallen by 42.3% between 2007 and 2009, the combined supply by importers such as Dudman has declined by just 3.4%, from a total import volume of 718kt in 2007 to 694kt in 2009. In market share terms, the competitive position of imports (independent importers have opened five new terminals since 2008) has seen a marked rise across the same period, accounting for 7.1% of GB supply in 2007 and for 11.9% in 2009.

Of at least equal note is the significance of imports relative to Tarmac's external supply volumes: in 2007, imports exceeded Tarmac's external supply volumes by a factor of **[Confidential Business Secret]**; by 2009, imports were **[Confidential Business Secret]** times greater than Tarmac's third party supply volumes.

Barriers to entry to importing cement are lower than barriers to entry into cement production and a significantly lower level of investment is required. The parties will provide further information in response to the CC's market questionnaire.

5.5.5 Likelihood of exit from the relevant markets

In recent times, following the failure of a producing company in the relevant markets, the assets have been purchased by other producers at a reduced price and have remained in production. For example, following the failure of Ennstone PLC in 2009 the assets were acquired by Breedon Holdings. When Castle Granite failed in 2009, its assets were acquired by Cornwall County Council. After the failure of C&G concrete in 2011, its assets were acquired by Breedon. In these cases the assets remained in production throughout. Consequently, it is unlikely that company failures will lead to a reduction in capacity levels within the relevant markets within the near term.

6 The counterfactual

6.1 Description and analysis of a scenario considering the consequences for Tarmac, Lafarge, and the market in general if the Proposed Transaction were not to occur

Please see Annex 4.

7 Competitive effects of the JV

7.1 Aggregates – National Dimensions

Neither third parties during the OFT process nor the OFT in its conclusions indicated concerns at the national level, with the exception of the supply of aggregates for rail ballast.

7.1.1 Rail Ballast

In the Parties' view, Cemex, Hanson, Aggregates Industries and the Norwegian importer, Stema, are all credible suppliers of rail ballast. The increment resulting from the Proposed Transaction in relation to the supply of rail ballast, arises almost solely as a result of Tarmac's 50% interest in MQP.

7.1.2 High Purity Limestone

The OFT left open the question of whether there might be a SLC at national level in the supply of high purity limestone for FGD.

The Parties submit there will be no such SLC, for the reasons set out below:

- there are only eight customer contracts and these are long term (usually of between five and ten years' duration);
- the relevant contracts are subject to competitive tender;
- prices are adjusted under the existing contracts with power stations in accordance with RPI (there is no price re-negotiation during the term of the contract), therefore, opportunities for the JV to attempt to exploit its position would not exist in the short to medium term;
- Cemex can be expected to present a significant competitive constraint on any contract renewal. Cemex started supplying chemical stone from the Dove Holes quarry in 2006 (after winning from Tarmac a contract to supply high purity limestone to British Sugar). The Parties also believe that Cemex tendered for chemical stone contracts with three power stations when these contracts were most recently competed for in 2007. It is expected that Cemex will be a serious competitor when the next contract comes up for renewal,⁶⁰

⁶⁰ In Macquarie UK Broadcast Ventures Limited/National Grid Wireless Group (Final report dated 11 March 2008) the CC found that "even in situations where long term contracts exist, and even if contracts have been drafted to cover most foreseeable eventualities, the presence of a competitor provides some degree of constraint on the incumbent provider when changes to the terms or scope of the service are required... Even though a long term contract may create a strong incumbency advantage, the threat of losing the customer to a competitor under a similar long term contract in the future, or the threat of losing other business to the competitor, possible in an adjacent market, typically does constrain the incumbent provider's behaviour" (paragraph 7.12).

- further competition comes or could come from other suppliers of chemical stone, such as Longcliffe, Singleton Birch and Ben Bennett who have resources of the requisite type⁶¹; and
- the Parties note also that (at least) one significant FGD customer told the OFT that there would be sufficient alternative suppliers post merger.⁶²

7.1.3 High PSV

The OFT did not consider that the Proposed Transaction would give rise to competition concerns in the supply of high PSV.⁶³ The Parties agree with the OFT's conclusion on PSV stone given the limited overlap between the Parties, the small increment arising from the Proposed Transaction and the fact that almost all of the Parties' production of high PSV is used internally in their downstream asphalt operations. Lafarge produces high PSV aggregates from only two sites: Hafod ([**Confidential Business Secret**]) and Dry Rigg ([**Confidential Business Secret**]). Tarmac does not produce any PSV of 68+ specification and therefore the only overlap between the Parties is in relation to 65+ PSV. High PSV is available from other sources, including substantial existing imports from Northern Ireland.

7.2 Aggregates - sub-national Dimensions

Past cases in this sector have been cleared in Phase I on the basis of decision rules that equate a SLC to a defined share of production within a local area.

On both a national and regional (Economic Planning Region) basis, the Parties' shares and post-merger JV share on an all aggregates basis are well below 40% (and indeed below 35%).

7.2.1 Crushed Rock

The OFT suggested that a potential SLC arose on a regional basis in relation to crushed rock in the East Midlands and Yorkshire and Humberside.⁶⁴ The Parties dispute this:

- first, they do not accept that crushed rock is in a separate market from other functionally substitutable aggregates, such as sand and gravel or recycled products; consequently they do not believe any unilateral concerns arise in relation to crushed rock on a regional basis. They also note that the increment in Yorkshire & Humberside is only [**Confidential Business Secret**], which is not suggestive of a loss of significant rivalry; and
- second, as discussed in section 4.1.3 above, as in the supply of all aggregates, the geographic scope for crushed rock is local and it can be determined by a 30-mile radial around the point of production as a starting point for competitive assessment. Regional boundaries are arbitrary and do not define supply patterns in any way. Therefore there is no evidence that the parameters of competition in the supply of crushed rock (either alone or when taken with its functional substitutes) are regional. Consequently the geological coincidence of the Parties' ownership of crushed rock resources located in those regions does not give rise to a SLC.

7.3 Aggregates - Local markets

It is therefore only on a more localised basis that issues of unilateral effects may potentially arise from the JV. The question is thus the appropriate test to assess whether and where a SLC may

⁶¹ The OFT noted that limestone powder producers market themselves as offering high purity limestone for FGD.

⁶² OFT Decision, paragraph 127.

⁶³ OFT Decision, paragraph 123.

⁶⁴ OFT Decision, paragraph 131 – 133.

arise. In this context the Parties note that, within particular product grades, all the products in issue can be considered to be undifferentiated and that producers of one grade will supply a wide range of grades (the production of one grade necessarily entailing the production of others, as described above).

In the OFT Decision, the OFT proposed a 33% threshold “taking all the evidence in the round”⁶⁵. Whilst the Parties were willing, within reason, to engage in undertakings in lieu discussions with the OFT on that basis, they submit that there is not sufficient analysis in the OFT Decision to support that approach in Phase II before the CC.

First, the Parties accept that the starting point will be delineation of the relevant geographic area within which any assessment should be made. The Parties recognise the approach to catchment areas and geographic markets in the CC2 Guidelines. Their approach to radials for the purpose of competitive assessment in this case remains as set out in the Annex B3 to the Parties’ Initial Submission to the OFT (as referred to above in section 4.1.1(vii)). This provided evidential support for the use of **[Confidential Business Secret]** mile radials for aggregates as a starting point for any analysis.⁶⁶

There is, furthermore, the more contentious issue of the threshold at which the CC should conclude with the relevant degree of certainty that the JV would result in a SLC.

The OFT considered that evidence did not suggest every site in a radial is equally well placed to compete. However, the Parties and their economic advisers, RBB Economics, put considerable evidence to the OFT regarding features of competitive dynamics in local markets. First, it should be noted that (i) the main dimension of competition is price, (ii) suppliers are not differentiated to a substantial degree by non-price factors and there is no branding of any consequence, such that (for a given grade of aggregate) suppliers’ products are essentially undifferentiated.

Second, while the Parties do not deny that additional distance delivered imposes additional costs on the supplier, in an environment of spare capacity and high fixed costs to recover, suppliers are willing to accept lower margins to serve jobs further away from their sites.⁶⁷ As such, within any given **[Confidential Business Secret]** mile radial, the Parties do not view the geographic location of a site to be a strong differentiating factor. For example, even if one of the Parties’ sites were located closer to a customer than a rival, so long as the rival were within **[Confidential Business Secret]** miles of the customer, it would most likely be in a position to pose a credible alternative for the customer in question. Consistent with this view is the evidence that: (i) a substantial share of the Parties’ customers are located more than **[Confidential Business Secret]** miles away from the supplying site⁶⁸ (i.e. suppliers can and do make credible offers from over **[Confidential Business Secret]** miles away, as evidenced by their ability to win customers over that distance); (ii) the closest supplying site to a particular customer is by no means guaranteed to supply that customer;⁶⁹ and (iii) a significant proportion (i.e. around **[Confidential Business Secret]**) of sales

⁶⁵ OFT Decision, paragraph 151.

⁶⁶ This analysis is robust to the exclusion of high PSV volumes.

⁶⁷ Consistent with this view, ex works prices (the delivered price less transport costs) typically decline with distance.

⁶⁸ See Figure 1 and Figure 2 of the Parties’ response to the OFT’s Issues Letter.

⁶⁹ See Parties’ answers to questions 8 and 9 of the OFT’s request for information of 23 May 2011. Relatively low percentages of the Parties’ sales (Tarmac**[Confidential Business Secret]**, Lafarge**[Confidential Business Secret]**) were made where they were the closest plant to the source of demand (consistent with the view that competitors facing a disadvantage in terms of proximity to the source of demand can nonetheless pose an effective constraint).

are delivered outside the radials (consistent with the view that a site at the centre of a radial is constrained over the large part of that radial by a site located near the “edge” of the radial).⁷⁰

In any case, it should be noted that when considering proximity to typical sources of demand in 2009, the Parties were the closest two sites in only 1% of cases – that is to say, the Parties are by no means uniquely close competitors in terms of their location.⁷¹

The Parties recognise that the CC will focus much of its efforts on the associated questions of market definition and SLC thresholds. The Parties believe that in light of the functional substitutability of different types of aggregates, spare capacity in the sector, the nature of procurement (i.e. price is negotiated or determined by a competitive tender) plus the factors described above, a SLC is unlikely to arise at market shares below 50%.

7.4 Asphalt – National Dimensions

As with aggregates the OFT raised no concerns on a national level. The Parties believe this is correct.

7.5 Asphalt – Local Issues

During the Phase I process, evidence was put to the OFT supporting catchment areas within **[Confidential Business Secret]** mile radials. The OFT accepted that this corresponded to the narrowest market satisfying the hypothetical monopolist test, except in relation to the Greater London area, within which it had regard to shares of supply data based on **[Confidential Business Secret]** mile radials.⁷² The OFT then applied a 40% threshold in considering whether an SLC might arise, but left open the question of whether some other test might apply in relation to the small number of plants capable of operating on a 24/7 basis.

The Parties note that the OFT appears to have selected the 40% threshold on the basis of guideline and convenience rather than on the basis of an analysis of the JV's post-Proposed Transaction ability to, for example, raise prices. In fact, the evidence suggests that such effects would be unlikely, in particular for the following reasons:

- for 94% of Lafarge's sales, there were at least three other competitors within **[Confidential Business Secret]** miles of the customer (where a Tarmac plant was within that radial). Accordingly, in the vast majority of radials, the merger would only result in a reduction from five to four competitors. Given general levels of excess capacity in the market, competition post-JV would remain effective in each of these radials; and
- specifically in relation to 24/7 plants, the Parties observe that these compete with other plants (not just with 24/7 plants). Moreover, some plants with planning permission to operate on a 24/7 basis may nevertheless be subject to noise and traffic limits curtailing or limiting their activity, while some plants which are not 24/7 plants nevertheless may have rights to operate outside normal working hours on a more limited basis.

⁷⁰ This finding is robust to the exclusion of specialist products (which are transported substantially further) from the delivery analysis.

⁷¹ See RBB Economics *An Assessment of Geographic Closeness of Competition*, 13 May 2011, submitted to the OFT.

⁷² OFT Decision, paragraph 169.

7.6 Asphalt - Relevance of Rail Depots

The Parties submit that no separate issues arise in relation to asphalt plants with rail access for the reason identified by the OFT namely that the measure of market power (if any) is picked up in the share in the downstream market.⁷³

7.7 RMX

Neither the OFT nor third parties identified any concerns in the supply of RMX at the national level. This reflects the local dimension of competition in the supply of RMX.

In previous cases in this sector,⁷⁴ the OFT has found that a concentration is unlikely to give rise to competition concerns in local markets where:

- the merged entity operates up to 40% of the RMX plants (by number) within any 10-mile catchment area; or
- the merged entity operates between 40% and 50% of the RMX plants (by number) within any 10-mile catchment area and there are at least four other RMX competitors active in the same catchment area, at least one of which is not a national player.

In the OFT Decision,⁷⁵ the OFT suggested a simplification of this decision rule, concluding that the prospect of local unilateral effects arising in the supply of RMX on a **[Confidential Business Secret]** mile radius could be excluded where the combined share of the Parties does not exceed 40%.

The Parties submit that the identification of an SLC at a 40% share level would be conservative given the particular features of local RMX markets.

RMX is a homogenous product. As correctly noted in the joint OFT/CC Merger Guidelines, "*in mergers in markets where products are undifferentiated ... combined market shares of less than 40 per cent will not often give the OFT cause for concern over unilateral effects*"⁷⁶. Since a 40% share represents a safe harbour threshold in the context of a first-phase review process, the Parties submit that the more detailed investigation to be conducted by the CC should potentially support a higher threshold.

RMX plants typically operate at very low levels of capacity utilisation, estimated by the Parties at between **[Confidential Business Secret]**. Within any given locality, RMX plants - whether operated by national competitors or smaller suppliers - will tend to be of a similar size and will tend to have similarly low levels of capacity utilisation. (That is, plants will typically be larger in densely populated areas and of lesser scale in smaller population centres.) Accordingly, all competitors would have similar levels of excess capacity and would be able to achieve throughput required by customers within the same local areas; therefore all competitors would constrain each other (including, for example, smaller RMX competitors constraining national competitors).

Independent RMX producers have successfully grown their market share over time, both at a national level (to around 27% in 2009) and across most regions (between 17 and 48% in 2009). This confirms that independent RMX suppliers exert a significant and growing competitive constraint on the national players. The ease of entry and growth of independent RMX suppliers

⁷³ Ibid, 54.

⁷⁴ Proposed acquisition by Hanson plc of Pioneer plc (OFT decision of 19 April 2000); Proposed acquisition by Anglo American plc of Tarmac (OFT decision of February 18, 2000); and Proposed acquisition by RMX Group plc of Alexander Russell plc (OFT decision of 20 May 2001).

⁷⁵ OFT Decision, paragraph 200.

⁷⁶ OFT Decision, paragraph 5.3.5.

also suggests that market entry would act as significant constraint on any hypothetical attempt by the JV to raise prices in local markets. The Parties note that the very localised nature of RMX markets means that independent RMX producers are often better able to compete than national players, as they have superior local knowledge as compared to the more centralised sales teams used by the Parties.

Analysis based solely on a fixed site count fails to take account of the additional constraints from mobile RMX plants and from volumetric trucks. According to BDS, there are between 500-600 volumetric trucks operating in GB, operated by 200 companies, together accounting for an estimated 9% of all RMX sales (whether from a fixed site or volumetric trucks) in GB in 2010.

In these circumstances, the Parties submit that no SLC should generally be identified at share levels below 50%.

7.8 Cement - National Dimension

Lafarge is currently the largest producer and supplier of grey cement in GB, operating a network of four cement-producing plants.

By contrast, Tarmac is the smallest domestic cement producer in GB, operating a single plant at Tunstead, Derbyshire in the East Midlands. In each of the years 2007- 2010, Tarmac has consistently supplied around **[Confidential Business Secret]** of bulk cement externally, representing not more than **[Confidential Business Secret]** of GB bulk external supply. **[Confidential Business Secret]**

Tarmac's supply consists, moreover, of only a narrow range of products, substantially narrower than the product range supplied by the other national producers. Indeed, Tarmac supplies only two grades of bulk grey cement (Cem I and Cem II), the narrowest range of cement grades of the domestic producers, and grades which all other domestic producers are capable of producing. This market reality is at odds with the conclusions reached by the OFT at first phase.

While acknowledging the limited external sales position of Tarmac today, the OFT Decision suggested that, at such time in the future as demand for cement may increase, Tarmac "*could at no additional cost, adjust its internal/external supply levels to increase its sales to the external market.*"⁷⁷ In theory, there are two methods by which Tarmac could increase its external cement volumes:

- First, Tarmac could increase its capacity utilisation and sell externally the additional volumes produced. However, this would result in an insignificant increase in external volumes. **[Confidential Business Secret]**
- Secondly, in theory, Tarmac could switch existing internal sales to external sales. This is unlikely to be commercially feasible in practice. **[Confidential Business Secret]**

The OFT Decision also rejects the competitive constraint that will be imposed on the JV by importers⁷⁹ on the basis that they "are not viable alternative suppliers of cement since they tend to be more unreliable in terms of guaranteeing terms of supply ... or quality." At the same time, however, the OFT suggests that Tarmac's "unique purchasing position allows it to dictate from where it sources its external demand, since it has several options available to it," including "to encourage imports or even new entry".⁸⁰ The OFT appears, therefore, to be arguing that Tarmac,

⁷⁷ OFT Decision, paragraph 208.

⁷⁹ At paragraph 224.

⁸⁰ At footnote 90.

but not third parties, can credibly threaten to switch to sourcing cement from national cement players to importers. The Parties submit that this position is plainly unsustainable and inconsistent with market facts.

- Importers of cement represent a substantial share of supply of cement volumes to non-integrated RMX producers, both on a regional Economic Planning Region (EPR) basis as well as on a national (GB) basis.
- Considered on a national basis, importers have been successful in gaining market share, even during the economically challenging last three years, and now account for approximately 15% of GB external sales. As such, they will continue to constrain the Parties post-Proposed Transaction.

Considered on an EPR basis, importers accounted in 2009 for at least 20% of volumes supplied in every region, with the exception of Scotland. However, in Scotland the Parties are constrained by the existence of high levels of spare capacity, as well as by the established positions of both Hanson and Cemex, which together accounted for 40% of external bulk cement sales in Scotland in 2009. Indeed, Hanson and Cemex have a strong position in cement supply in Scotland by virtue of an import terminal in Edinburgh (Cemex) and a rail depot in Glasgow (Hanson). Further, Aggregate Industries imports cement into Scotland from its parent company Holcim, an international cement producer with substantial spare capacity. Moreover, the Parties understand the Dudman is in the process of setting up a cement import terminal in Montrose, Scotland.

- Moreover, in three regions (East Anglia, South West and Wales) importers accounted in 2009 for more than 40% of volumes supplied to non-integrated RMX producers.
- Finally, and crucially, it should be noted that the combined regional share of importers substantially exceeds that of Tarmac in every region.

These data indisputably demonstrate that importers represent effective alternative sources of cement from the perspective of non-vertically integrated RMX producers.

The OFT Decision further concludes⁸¹ that there is *“little or no evidence of multi-sourcing ..., suggesting that customers prefer to source their cement volumes from one supplier at any given time.”* In practice, there is considerable evidence of multi-sourcing. Moreover, the absence of material customer overlap is indicative of the limited competition between the Parties today, and therefore the limited loss in rivalry arising from the formation of the JV:

- Contrary to the OFT’s assertion, Lafarge’s customers purchased approximately **[Confidential Business Secret]** of bulk grey cement volumes from both Lafarge and at least one third party supplier (i.e., not Tarmac) during the last three years. In addition, less than **[Confidential Business Secret]** of volumes purchased by Lafarge’s customers was exclusively sourced from the Parties, and **[Confidential Business Secret]** of volumes was sourced from Lafarge only. This suggests that Lafarge customers have regularly sourced volumes from third parties in the past, and that the majority of these customers have considered suppliers other than the two merging Parties. Therefore the absence of material customer overlap between the Parties indicates the absence of strong competition between the Parties. Put another way, it cannot be concluded that customers have no credible alternatives to the Parties once the JV is realised. Certainly, the JV does not remove an essential or unique alternative for customers of grey cement.

⁸¹ At paragraph 219.

- If Tarmac and Lafarge were particularly close competitors, one would expect to see the majority of volumes lost by Lafarge to be recaptured by Tarmac. However, this assertion is not supported by analysis of realised supply patterns. **[Confidential Business Secret]** In short, the realised supply patterns confirm that Tarmac is not a particularly close competitor to Lafarge with respect to the supply of grey cement.

Finally, the JV will be constrained post-Proposed Transaction by the existence of high levels of spare capacity in the market, as well as by the established positions of both Hanson and Cemex (each accounting for around 19% of the external GB bulk cement market) which would be expected to constrain any hypothetical attempt by the JV to increase prices.

7.9 Cement - Regional Dimension

The OFT Decision suggests⁸² that, since Tarmac's Tunstead facility is located close to Lafarge's Hope cement plant, "the parties are close competitors, particularly for those customers which source cement from the parties' overlapping cement plants in the East Midlands and North West area".

The Parties have explained above that the observed market evidence directly contradicts this assertion at the national level. This is equally true at the regional level:

- First, Tarmac's external bulk sales are for the majority of regions insignificant, accounting for less than **[Confidential Business Secret]** of regional supply in 2009 in **[Confidential Business Secret]** out of ten EPRs. In only **[Confidential Business Secret]** regions (**[Confidential Business Secret]**) does Tarmac's share of supply exceed 5%. Consequently, across the majority of regions the Parties' combined sales represent low increments.
- Second, in each of the regions in which the Parties' combined share exceeds 40%, there are at most three non-integrated customers which were supplied by both Parties in 2009. In addition, the combined volumes supplied to these non-integrated customers were insignificant at less than **[Confidential Business Secret]**. The Parties therefore submit that they are not particularly close competitors, even in regions where the Parties have a higher combined share.
- Third, several other cement plants are located close to Tarmac's Tunstead plant: Hanson Clitheroe (48 miles), Hanson Padeswood (51 miles), Cemex South Ferriby (61 miles), Cemex Rugby (67 miles), Hanson Ketton (70 miles). Therefore, even on a narrow **[Confidential Business Secret]** mile basis around Tarmac's Tunstead cement plant, there are five third party cement plants in operation which compete with the Parties. Moreover, there are also six import terminals within **[Confidential Business Secret]** miles of Tarmac's Tunstead cement plant which currently compete with Lafarge and Tarmac.

8 Horizontal Co-ordinated Effects

The OFT Decision raises potential concerns of coordinated effects in relation to the supply of cement.⁸³ The theory of coordinated effects in relation to the supply of cement that the OFT appears to consider can be summarised as follows. Domestic cement producers use price announcement letters to coordinate price increases over and above the level warranted by

⁸² OFT Decision, paragraph 221.

⁸³ The OFT Decision also notes that third parties complained of coordinated effects in relation to aggregates and asphalt but these are not particularised - see OFT Decision, paragraph 268. The Parties are confident they can rebut any such allegations.

changes in market conditions. However, as the OFT acknowledges, price announcements by themselves provide an insufficient basis for tacit coordination. This is particularly the case since actual transaction prices can be shown to vary considerably across customers.⁸⁴ Indeed, considerable evidence has been provided that demonstrates that price increases are widely and non-systematically dispersed across customers of a given product and that they are always lower than the announced increase. Price announcements do not therefore represent a credible commitment to any given price to any given customer. A price announcement cannot therefore provide a clear signal as to what the price increase should be, or a way to allow for actual prices charged to any customer to be monitored. Indeed, because the distribution of actual prices achieved is not tightly clustered around any point, even if each rival knew the distribution of achieved prices (which is extremely unlikely), rivals would not know to which purchaser any particular price had been given.⁸⁵

Adherence to the proposed tacit understanding relating to price announcements must therefore be monitored in some fashion. The monitoring mechanism proposed in the OFT Decision is one of customer allocation. It should be noted that the OFT Decision does not maintain that customers are allocated on a geographic basis – the facts would refute such an argument⁸⁶ – but merely that some customers are considered to be allocated to a particular supplier. Monitoring whether “allocated” consumers switch between the alleged coordinating group indicates, according to the OFT’s theory of coordinated effects, whether the tacitly agreed price increases announced in the price letters are implemented (at least in broad terms).

However, for the following reasons, the Parties do not consider that current competition can be characterised as tacitly coordinated.

8.1.1 External market shares have fluctuated significantly

Importantly, the OFT does not appear to have considered how such a hypothetical customer allocation arose in the first place. Reaching the terms of coordination is the first critical element of coordination that must be assessed.⁸⁷ Nor does the OFT consider how such an alleged allocation of customers might be sustained over time. Adherence to the terms of coordination is the second critical element of coordination.⁸⁸ These are therefore important omissions, especially given the significant developments that have occurred in the industry, including the significant changes in customer base that occurred following the decision of vertically-integrated RMX producers to source their cement requirements in-house. For example, in 2009 Lafarge lost **[Confidential Business Secret]** of its previous cement sales to Hanson as a consequence of Hanson moving to a model of greater self-supply for its downstream RMX plants; the evidence does not indicate that such repatriation was coordinated – Lafarge gained only **[Confidential Business Secret]** from

⁸⁴ The Parties draw attention to RBB Economics’ detailed analysis of the scope for coordinated effects as a result of the Proposed Transaction. See Annex B6 to the Parties’ First OFT Submission, 10 June 2011. That analysis shows that such price dispersion is observed in all the reference markets.

⁸⁵ See RBB *Economics Cement Analysis*, 16 August 2011, submitted to the OFT.

⁸⁶ If effective market division were occurring, this would imply that the alleged coordinating group would not supply customers that are close to competitor plant locations. However, analysis of Lafarge supply patterns show that approximately **[Confidential Business Secret]** of Lafarge’s non-integrated RMX customers are located within close proximity of rival plant locations (i.e. within **[Confidential Business Secret]** miles) – this is very close given the delivery range of cement plants which exceeds **[Confidential Business Secret]** miles. Further, market shares on a regional basis do not reveal national players having strengths in particular regions. Moreover, considerable changes in regional market shares are not consistent with market sharing practices, which would require that a particular national player would retain a constant and considerable share in the region it dominates. Importers have also substantially penetrated (and grown to achieve high shares in) many regions across GB. See RBB Economics *Cement Analysis*, 16 August 2011, submitted to the OFT.

⁸⁷ See CC/OFT, *Merger Assessment Guidelines*, para. 5.5.9.

⁸⁸ See CC/OFT, *Merger Assessment Guidelines*, para. 5.5.9.

Hanson in terms of repatriated volumes (i.e. volumes switched from externally to internally sourced). Moreover, Lafarge estimates that it won **[Confidential Business Secret]** from Hanson in 2009, an amount well in excess of **[Confidential Business Secret]** of Lafarge's total external bulk and bagged sales in that year. In other words, even if one ignores gains that Lafarge made from repatriation, the evidence indicates that in 2009 Lafarge competed to win a substantial quantity from Hanson, i.e. **[Confidential Business Secret]**, an amount equal to **[Confidential Business Secret]**.

More generally, the Parties note that there have been significant movements in shares in the external supply of cement. For example, Cemex has increased its share of external bulk cement sales in the South East from 19% in 2007 to over 33% in 2009. The main loser of share in that region as Lafarge, which saw its share fall from nearly **[Confidential Business Secret]** to just under **[Confidential Business Secret]**. Hanson has lost share on a regional basis in several areas, losing more than 10 percentage points between 2007 and 2009 in East Anglia, East Midlands and the North West.⁸⁹ Even if one focuses on bulk volumes that include internal and external supply, Lafarge's share declined substantially from **[Confidential Business Secret]** in 2007 to **[Confidential Business Secret]** in 2010 in GB.

8.1.2 Tarmac is neither a "maverick" nor a party to coordination

The OFT Decision is unclear as to which firms are alleged to be participating in the coordinating group. On the one hand, the Decision posits pre-existing tacit coordination in which Tarmac is part of the alleged coordinating group and on the other considers that Tarmac has very different incentives to compete and that the merger will more closely align the incentives of the three remaining vertically-integrated cement producers. The Parties consider that these two views are inconsistent and unsustainable.

Tarmac's principal focus is self-supply. While it has expanded production in the last year and is expected to reach a utilisation level of **[Confidential Business Secret]** in 2011, Tarmac's external volumes are, and have historically been, just a small share of bulk external sales (**[Confidential Business Secret]** in 2007 and only **[Confidential Business Secret]** in 2010) in line with Tarmac's strategy to produce by and large for internal use.**[Confidential Business Secret]**

8.1.3 Importers provide an important competitive constraint

In the Parties' view, the OFT Decision gave insufficient weight to the competitive constraints provided by importers. This is surprising for the following reasons. First, the OFT in its Market Study found that Aggregates Industries/Holcim is a significant importer of cement which it uses for its own internal use. Second, and importantly, market evidence indicates that importers have in many regions significantly expanded their share of supply to non-integrated RMX customers. For example, in East Anglia, importers accounted for over 60% of bulk sales to the external non-integrated RMX market and nearly 50% in the South West.⁹¹

8.1.4 Structural links in the industry do not create a realistic prospect of coordination

The existence of cross supplies within the industry is not indicative of coordination. Supply agreements between producers are not uncommon in the industry, given the significance of transport costs. These are primarily for logistical reasons and occur on a third-party, arm's length basis. This is more cost effective than using internally produced input products that have to be transported over a greater distance. Purchases may also be made to cover shortages.

⁸⁹ See Table 6, RBB Economics *Cement Analysis*, 16 August 2011.

⁹¹ See Table 6, RBB Economics *Cement Analysis*, 16 August 2011.

Further, swap agreements give rise to one or a few prices for supply between domestic cement producers, such prices cannot be a signal for the hundreds of (highly dispersed) prices set to the remainder of the external market. Further, swap agreements do not allow for effective monitoring.

8.1.5 Growth of non-integrated RMX outlets is not consistent with coordination

In its final decision, the OFT did not discuss in detail the concern that non-integrated independent RMX producers were being harmed as part of a coordinated foreclosure strategy. Indeed, it is important to emphasise that observed outcomes are not consistent with coordinated foreclosure. Market evidence demonstrates that non-integrated RMX suppliers have expanded their market share considerably during the last few years, even in areas where they compete with integrated suppliers. This has occurred during a recession – a time when one might have expected independents to suffer more than their integrated rivals. Specifically, the share of supply accounted for by local or regional suppliers was 17% in 2000; it reached 21.3% in 2007 growing rapidly to over 26% in 2009, and to over 27% in 2010. Growth has been pervasive across GB.⁹²

More generally, this evidence is (irrespective of a foreclosure allegation) not consistent with coordination among domestic producers to set higher prices to non-integrated RMX producers.

8.1.6 There is no evidence of tacit coordination with respect to capacity

The GB cement industry is characterised by significant overcapacity.⁹³ However, the response of the various domestic cement producers to this overcapacity has been markedly asymmetric. Comparing cement capacity shares of domestic, “on-site”,⁹⁴ grey cement for 2007-2009 indicates that Lafarge’s share fell from over **[Confidential Business Secret]** to just over **[Confidential Business Secret]**. Over the same period, Cemex’s cement capacity share increased from approximately 20% to 29% while Hanson’s cement capacity share increased slightly. This clearly indicates that domestic cement producers are not tacitly coordinating with respect to capacity.⁹⁵

8.1.7 Conclusion

In short, observed market evidence confirms the Parties’ view that competition in the supply of cement is not currently characterised by tacit coordination. Furthermore, given that Tarmac has played such an insignificant role in the external market to date and that this could not be expected to change in the counterfactual; that Hanson and Cemex cannot be expected to change what appears to be their non-coordinated behaviour and that importers will continue to play a constraining role in the market there is no realistic prospect of the merger increasing the likelihood of coordinated effects. Similar conclusions apply in respect of aggregates, asphalt and RMX

8.2 Vertical Issues

8.2.1 Aggregates as an input for asphalt and RMX

The OFT noted in the OFT Decision that it had not received significant specific complaints about vertical effects in the supply of aggregates.⁹⁶ This is unsurprising, given that the market share data indicated that significant aggregates production is accounted for by third parties, and accordingly vertical foreclosure is unlikely.

⁹² See Section 4.1.1 of RBB Economics *Cement Analysis*, 16 August 2011, submitted to the OFT. See also BDS “Estimated market shares of ready mixed concrete companies in Great Britain”.

⁹³ As set out in Annex B6 to the Parties’ OFT submission, average capacity utilisation across the industry is just 62%.

⁹⁴ i.e. assuming no further blending away from cement plants.

⁹⁵ See RBB Annex: Supplemental evidence on coordinated effects vertically integrated RMX producers and price increase letters as a focal point, 05 August, 2011, a copy of which is reproduced as Annex 7 to this submission. Submitted to the OFT.

⁹⁶ OFT Decision, paragraph 259(a).

This section explains the absence of input or customer foreclosure effects in relation to aggregates sold for the production of asphalt and RMX. Specifically, the Parties have no ability to engage in input foreclosure (and thus there is no need to consider their incentive to do so). Further, customer foreclosure is not a credible theory of harm due to the Parties' already very high degree of internal sourcing of aggregates requirements.

- (i) The Proposed Transaction does not enhance the ability of the Parties to engage in input foreclosure

The Proposed Transaction will not enhance the ability of the JV to engage in input foreclosure at the upstream level (i.e. sales of aggregates), because:

- the Parties do not compete to any substantial degree to supply non-integrated asphalt **[Confidential Business Secret]** and RMX **[Confidential Business Secret]** producers:
 - the size of aggregates purchases made by non-integrated asphalt and RMX producers from all aggregates suppliers is small (around **[Confidential Business Secret]** compared to a total GB market size of c.**[Confidential Business Secret]**. for all supplies of aggregates used in the production of asphalt and RMX in 2010, i.e. internal and external);⁹⁹
 - since the Parties' presence in this segment is not substantial (estimated at **[Confidential Business Secret]** for Lafarge and **[Confidential Business Secret]** for Tarmac of overall aggregates sales to non-integrated asphalt producers in 2010, and **[Confidential Business Secret]** for Lafarge and **[Confidential Business Secret]** for Tarmac of overall aggregates sales to non-integrated RMX producers¹⁰⁰) the formation of the JV does not give rise to market power over non-integrated purchasers of aggregates for these uses; and
 - accordingly, it follows that the Parties have no ability to engage in input foreclosure in relation to purchasers that do not have their own source of aggregates supply for use in asphalt and RMX applications;
- the Proposed Transaction does not result in a material change in the ability of the JV to withdraw material volumes from integrated purchasers of aggregates for asphalt and RMX production, given the very small amounts supplied to such customers at present; and
- since integrated firms can, and do, self-supply, the overcapacity within the market suggests that any attempted withdrawal of supplies by the JV would be easily replaced by rival suppliers.

⁹⁹ According to the Parties' estimates of the size of this market segment. The size of the aggregates market for use in asphalt and RMX production is estimated based on the total volume of asphalt and RMX supplied, and the corresponding aggregates required (**[Confidential Business Secret]**).

¹⁰⁰ See footnotes 96 and 97 above.

¹⁰³ Excluding aggregates sourced from Lafarge's joint ventures.

- (i) The Proposed Transaction does not enhance the ability of the Parties to engage in customer foreclosure.

The Parties source such a large amount of their requirements in-house that customer foreclosure is not likely to be an issue. In particular:

- in 2009, Tarmac's asphalt plants sourced approximately **[Confidential Business Secret]** of their aggregates needs internally, **[Confidential Business Secret]** including high PSV, and its RMX plants sourced approximately **[Confidential Business Secret]** of their aggregates needs internally; and
- in 2009, Lafarge's asphalt plants sourced **[Confidential Business Secret]** of their aggregates needs internally and its RMX plants sourced **[Confidential Business Secret]** of their aggregates needs internally.¹⁰³

In short, there is no scope for customer foreclosure. By and large, the Parties source their aggregates requirements in-house. To the extent that Tarmac purchases aggregates for use in asphalt applications externally, the amount is small (estimated to be approximately **[Confidential Business Secret]**), representing **[Confidential Business Secret]** of Tarmac's overall purchases of aggregates for use in asphalt. Nonetheless, it is important to emphasise the following:

- first, where the Parties switch purchases internally that were previously sourced externally, this would be for the purpose of achieving supply chain efficiencies. This would not amount to anti-competitive strategic behaviour – rather, it is a pro-competitive outcome likely to intensify competition in downstream markets by lowering production costs; and
- secondly, to the extent that rival suppliers fail to secure orders from the Parties (due to the Parties pursuing efficiency gains in-house), a necessary, but not sufficient, condition for foreclosure would be for rivals to be induced to operate at substantially less efficient levels. However, in practice, it would be expected that, rather than simply suffer higher costs, rival suppliers would seek to regain efficient levels of output by lowering their prices to secure greater sales. Both outcomes intensify price competition and are therefore pro-competitive.

8.2.2 Cement as an input into RMX

The JV will not give rise to a harmful vertical effect, whether through input foreclosure or customer foreclosure.

- (i) The Proposed Transaction does not enhance the ability of the Parties to engage in input foreclosure

The Proposed Transaction will not enhance the ability of the JV to engage in input foreclosure in the supply of cement to independent RMX producers for several reasons:

- While the JV would account for **[Confidential Business Secret]** of external sales of cement, with a minor increment of just **[Confidential Business Secret]**, the JV's competitive position will not radically change;
- There is limited customer overlap as regards the Parties' supply to external customers (in particular Tarmac's current strategy of self supply causes Tarmac to have a very small presence in the external market for cement);

- The JV will be constrained by the existence of high levels of overcapacity in the market, as well as by the established positions of both Hanson and Cemex (which each account for around **[Confidential Business Secret]** of the external bulk cement market) and which would be expected to constrain any attempt by the JV to restrict competition; and
- Importers have been successful in gaining market share, even during the economically challenging last three years, and now account for approximately 15% of external sales. Moreover, the Parties understand that Dudman has agreed terms for a new aggregate and cement import facility in the North West. The Parties are also aware of proposals announced by Dudman, to rehabilitate the former Blue Circle cement works at Upper Beeding, Shoreham, West Sussex for cement production.

Moreover, these factors apply when each local market where a vertical overlap arises is considered in detail. As set out in full in Annex 1 prepared by RBB Economics, the Parties have no ability to engage input foreclosure at a local level (and so there is no need to consider the incentive or effect of such a hypothetical strategy).

- (ii) The Proposed Transaction does not enhance the ability of the Parties to engage in customer foreclosure

The theoretical objective of a customer foreclosure strategy would be to distort competition in the upstream cement markets to the advantage of the JV, by restricting competitors in those upstream markets from having access to the Parties' downstream operations. For the following reasons, there is no realistic prospect of customer foreclosure as regards purchases of cement.

- Customer foreclosure would be an issue if the JV substantially reduced its purchases from rival domestic producers such that: (i) those producers operated substantially less efficiently; (ii) as a result they charged downstream firms higher prices (e.g. costs were raised for rival RMX firms); and (iii) the cost raising effect dominated any efficiency gain from which the JV benefits (e.g. such that the overall RMX price were to rise post-Proposed Transaction).
- In order to rule out customer foreclosure as a credible theory of harm, it is sufficient to demonstrate that that Parties do not have the ability to withdraw a substantial share of purchases from the external market.
- In order for customer foreclosure to be feasible, the JV would need to be in a position to deny access to a sufficient proportion of purchases on the external market such that it would competitively disadvantage its competitors in the upstream cement market. In the Parties' view, at the very least, the combined purchases of the Parties in the upstream market should substantially exceed 30% before customer foreclosure theories could be a realistic prospect.
- The Parties' combined shares of purchases of external sales of bulk cement are substantially below **[Confidential Business Secret]**. Total external sales of bulk grey cement in GB in 2009 amounted to **[Confidential Business Secret]**. Of these, Tarmac purchased **[Confidential Business Secret]** (i.e. **[Confidential Business Secret]** of purchases) and Lafarge **[Confidential Business Secret]** (i.e. **[Confidential Business Secret]** of purchases), i.e. a combined share of just **[Confidential Business Secret]** of purchases. Corresponding shares of

purchases in 2008 and 2007 were respectively, **[Confidential Business Secret]** and **[Confidential Business Secret]**. Such low shares do not point to the Parties being a critical route to market for those wishing to make external sales.

- The Parties have explained above that the relevant geographic market for grey cement is no narrower than a radial of **[Confidential Business Secret]** miles around a plant, and no wider than national. In order to assess whether customer foreclosure would be feasible on a sub-national basis, the Parties have estimated their share of purchases of external bulk cement sales split by economic planning region in 2009. It is clear that even on this (overly) narrow basis, the Parties' combined share of purchases does not reach a level sufficient to give cause for concern; in no instance does the combined share of purchases exceed **[Confidential Business Secret]**.
- The Parties' low share of external purchases (and thus their inability to give rise to customer foreclosure) reflects the fact that they source the majority of their requirements internally. For example, in relation to RMX, in 2009, Lafarge supplied **[Confidential Business Secret]** of its own downstream cement requirements; the corresponding figure for Tarmac was **[Confidential Business Secret]**. Given the rationale for the Proposed Transaction, it is feasible that the JV would seek to supply a greater proportion of its total cement requirements internally. Nonetheless, it is important to emphasise the following.
 - First, where the Parties switch purchases internally that were previously sourced externally, this would be for the purpose of achieving supply chain efficiencies. This would not amount to anti-competitive strategic behaviour – rather, it is a pro-competitive outcome likely to intensify competition in downstream markets by lowering production costs.
 - Second, to the extent that rival suppliers fail to secure orders from the Parties (due to the Parties pursuing efficiency gains in-house), a necessary – but not sufficient – condition for foreclosure would be that rivals are induced to operate at substantially less efficient levels. However, in practice, it would be expected that rather than simply suffer higher costs, rival suppliers would seek to regain efficient levels of output by lowering their prices to secure greater sales. Both outcomes intensify price competition and are therefore pro-competitive.

In these circumstances, the Parties submit that there are sound reasons to believe that no vertical concerns in relation to a SLC arise as a result of the Proposed Transaction in the supply of grey cement in GB.

8.2.3 No concerns arise in respect of other vertical links

Given the absence of market power in the upstream market for aggregates following completion of the Proposed Transaction:

- No concerns arise in relation to the link between aggregates and bagged aggregates, and sands sold through the builders' merchants and DIY stores channel for landscaping and other uses; and
- No concerns arise in relation to the link between aggregates and surfacing / cladding and binding products.

No concerns arise in relation to the supply of high PSV since the Parties mostly use PSV internally and significant high PSV volumes are in the hands of competitors or are imported.