

LAFARGE AGGREGATES LIMITED AND LAFARGE CEMENT UK LIMITED

OVERVIEW SUBMISSION IN RESPONSE TO
THE COMPETITION COMMISSION'S
STATEMENT OF ISSUES

NON-CONFIDENTIAL VERSION

April, 2012

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1. This Submission is made by Lafarge Aggregates Limited and Lafarge Cement UK Limited (together, “**Lafarge**”) in response to the Competition Commission’s (“**CC**”) Statement of Issues dated 8 March 2012.

A. Executive Summary

2. The timing of the CC market investigation into the supply or acquisition of aggregates, cement and ready-mix concrete (“**RMX**”) (the “**MIR**”) presents a series of challenges for both the CC and market participants, including Lafarge:

- **Market Decline.** The MIR takes place against the backdrop of an economic downturn since 2008 which has been longer and more severe than any experienced by the construction materials industry within the last 30 years. The reduction in volumes has accelerated again in 2012 with year-on-year declines for the first quarter in excess of 10 per cent for aggregates and RMX, while GB cement volumes appear likely to decline or to remain flat at best in 2012. Industry forecasts do not predict any change in these trends before at least 2014, at which point demand is expected still to remain below levels seen in 2009. Any potential improvements will develop from a low base, resulting in sustained and significant levels of overcapacity.
- **Combination of Lafarge and Tarmac.** Lafarge announced in February 2011 the proposed combination of its UK construction materials business with that of Tarmac Limited (the “**Proposed JV**”). As the Inquiry Group will be aware, the Proposed JV is currently subject to a parallel CC investigation (the “**Merger Investigation**”) in respect of which the CC is due to issue its Final Report by 1 May, 2012. Should Lafarge be successful in obtaining approval for the Proposed JV and implementing the required divestments, the structure of its UK business, as well as the dynamics of the relevant UK markets more generally, will be substantially impacted. In particular:
 - Lafarge’s current UK business is heavily focused on the production and supply of cement, with significant gaps in the national coverage of its aggregates, asphalt and RMX businesses. The Proposed JV will allow Lafarge to attain national coverage and a more diversified product mix.
 - The Proposed JV will give rise to valuable synergies estimated at around £[REDACTED] million per annum, representing almost [REDACTED] per cent of combined EBITDA. Around [REDACTED] per cent (£[REDACTED] million) of the total synergies estimate is represented by procurement synergies and logistics savings, which will result in a reduction in variable costs for the Proposed JV. It is expected that customers will benefit from the logistics savings and enhanced product portfolio of the Proposed JV which are central to the expected synergies.

- Lafarge invests around €150 million annually in research and development (“**R&D**”) to develop innovative products that deliver lower construction costs for consumers. By making this R&D available to the Proposed JV, Lafarge will be able to extend its range of value-added products (“**VAPs**”) across the UK as a result of the network of RMX plants that will be available to the Proposed JV.¹
 - **New Market Entry.** In its remedy discussions with the CC relating to the Proposed JV, Lafarge and its joint venture partner, Anglo American plc, have offered to divest a significant package of cement, RMX and aggregates assets (the “**Remedies Package**”). Should the CC approve the Proposed JV on the basis of the Remedies Package, the relevant markets will benefit not only from the synergies created by the Proposed JV, but also from the creation of a fourth national cement producer with significantly greater cement capacity and external cement sales than Tarmac today. Further, the scale of the proposed RMX volumes in the Remedies Package is substantial, such that a single purchaser of the divested volumes would become GB’s third largest RMX supplier nationally, and significantly larger than the Proposed JV itself.
3. The MIR therefore requires the CC to reach a definitive view on the competitive effects of features of the reference markets at a time when the structure of each of the relevant markets is in a state of considerable change. During the period of the MIR, Lafarge would hope to be in a position - subject of course to the outcome of the Merger Investigation - to negotiate the sale of the Remedies Package to one or more buyers acceptable to the CC. While Lafarge would expect to complete these asset sales, and to implement the Proposed JV, within the period of the MIR, it is unlikely that the competitive benefits that are expected to flow from the Proposed JV will be fully observed. Lafarge invites the Inquiry Group to consider the implications of this evolving market dynamic for the conduct of the MIR.

B. Lafarge

4. Lafarge S.A. (www.lafarge.com) is a limited liability company incorporated and headquartered in France and listed on the Paris Stock Exchange. In 2011, Lafarge S.A. generated total revenues of €15,284 million, of which 65.3 per cent was derived from its global cement operations and 34.2 per cent from the supply of aggregates, concrete and related products (“**A&C**”).
5. Within the United Kingdom, Lafarge’s business has been developed through two major acquisitions:
- The acquisition of Redland plc in 1997; and
 - The acquisition of Blue Circle Industries plc in 2001.
6. Today, Lafarge’s operations in GB include four cement plants, 43 aggregates sites and 96 RMX plants. It has limited activity, however, in the west of the country. Following implementation of the Proposed JV, Lafarge will retain four cement plants

¹ Around [REDACTED] per cent of Lafarge’s current RMX sales are VAPs.

(including Tarmac's Tunstead plant in place of Lafarge's Hope cement works), [REDACTED] aggregates sites and [REDACTED] RMX plants, providing the Proposed JV with national reach. Maps illustrating the plant network of Lafarge today and of the Proposed JV are included at **Annexes 1** and **2** respectively.

7. In 2011, Lafarge's UK business revenues totalled £[REDACTED] million. Of this, [REDACTED] per cent was derived from the production and supply of cement, and [REDACTED] per cent from its A&C business.

C. Background on the Referred Markets

8. The MIR takes place in the context of an economic downturn which is longer and deeper than any experienced by the construction industry within the last 30 years.
9. Figures 1 to 4 below illustrate, for each of aggregates, asphalt,² RMX and cement, long-term trends in production volumes since 2000.³

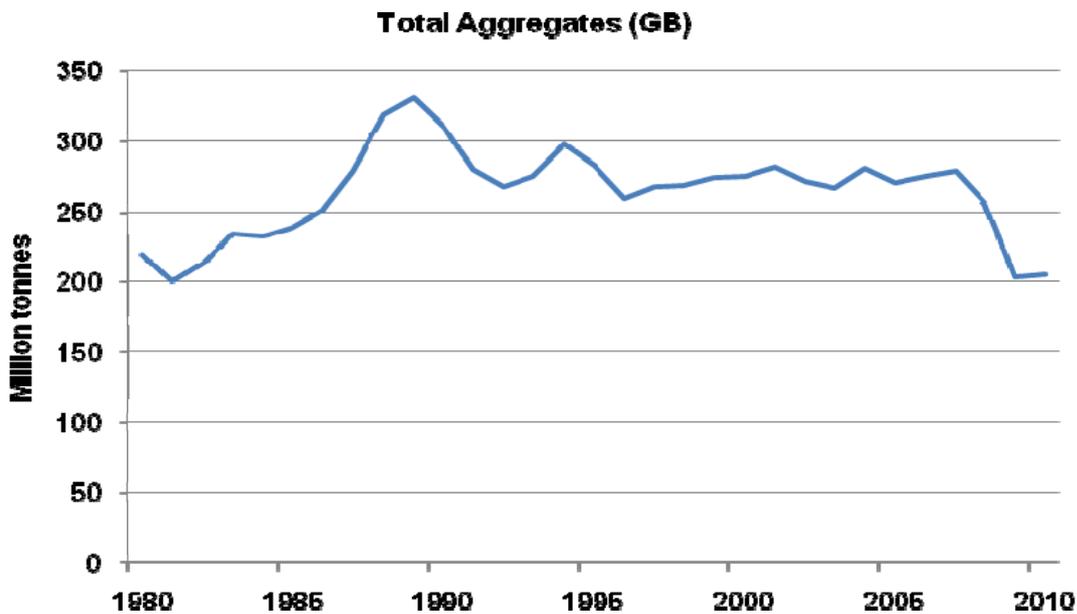
(a) Aggregates

10. 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, although during this time, the growth in the share of recycled aggregates led to a decline in primary aggregates production. 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 per cent). In 2010, demand was 210 million tonnes. Although there was a modest recovery in 2010, this is forecast to be reversed in 2011 to 2013 with volumes falling below those seen in 2009.

² Although the market for the supply of asphalt is outside the scope of the MIR, references to the asphalt market are included insofar as is relevant to understanding patterns of supply in aggregates.

³ 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. These data relate to GB only.

Figure 1: Total Aggregates Demand in GB, 1980-2010 (Million Tonnes)

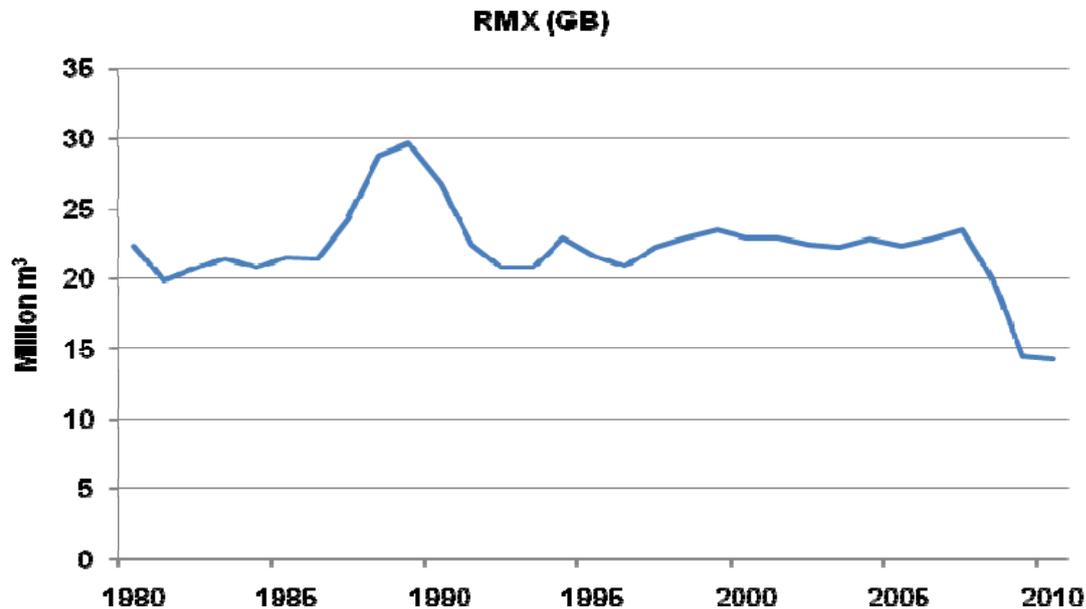


Source: ONS and MPA.

11. 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) have 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. Capacity has also increased through this period with the development of recycled and secondary aggregates following the introduction of fiscal measures including inert landfill tax and Aggregates Levy. Revisions to material specifications have also made these materials cheaper to produce and more readily acceptable, thereby increasing the capacity and availability of material in a declining market.
 12. Following the onset of the recession in 2008, 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.
 13. Aggregates producers have pursued a strategy of mothballing sites or closing high cost operations where possible. However, those sites which continue to operate below capacity have scaled back production (by reducing staff and running plants for restricted periods) due to decreased demand.
 14. Lafarge estimates that it is operating at an approximate average capacity utilisation rate below [REDACTED] per cent at a national (GB) level (including both operational and mothballed sites).
- (b) RMX**
15. 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 per cent).

Figure 2: Total RMX Demand in GB, 1980-2010 (Million m3)



Source: MPA.

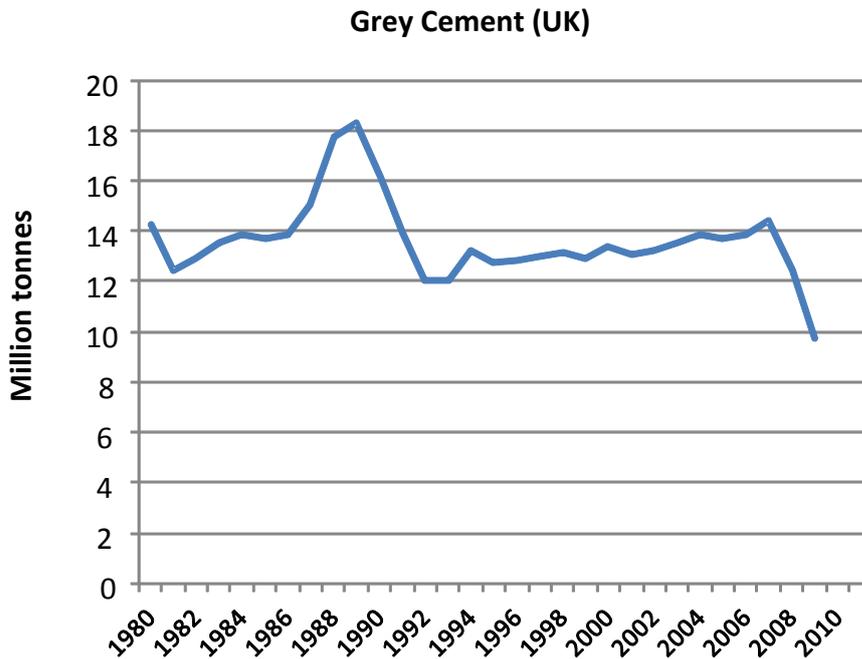
16. At present, RMX capacity exceeds demand by a considerable margin. Lafarge considers that it is operating at an approximate capacity utilisation rate of less than [REDACTED] per cent at a national level.⁴

(c) Cement

17. 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 per cent 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 per cent decline.

⁴ 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).

Figure 3: Total Cement Demand in GB, 1980-2010 (Million Tonnes)



Source: MPA.

18. Lafarge estimates that, in 2010, demand levels for grey cement in GB were approximately nine million tonnes, representing a modest 2 per cent increase on 2009 sales; in 2011, demand totalled around 9.5 million tonnes, representing a 5 per cent annual growth increase. However, industry forecasts⁵ anticipate 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. UK GDP data for the first quarter of 2012 has shown that the economy is now technically in recession again with construction output in particular showing a significant downturn (a 3 per cent fall versus the previous quarter). The high degree of remaining domestic over-capacity – which Lafarge expects 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 to expand domestic production capacity is reduced.

D. Market Definition

19. In the course of the Merger Investigation, Lafarge submitted detailed comments to the CC on the approach to market definition in cement and A&C. Lafarge therefore refers the CC to the Overview Submission made in the context of the Merger Investigation. Specific comments with regard to the approach to market definition adopted by the CC in its Provisional Findings on the Merger Investigation (the “PFs”) are set out below.

⁵ MPA market outlook briefing (GB) – September 2011.

(a) **Aggregates**

20. Lafarge considers that the relevant market for the supply of aggregates should include all aggregate types, namely primary, secondary and recycled aggregates. In the PFs, the CC in theory considered the competitive constraint from recycled and secondary materials only after filters based on segments of primary aggregates had been applied. However, it is not clear from the PFs that the CC in fact considered fully the competitive constraints from recycled and secondary aggregates, even as “out-of-market” constraints. The cost saving offered by recycling in terms of disposal of inert wastes together with the Aggregates Levy advantage makes local production very competitive against alternative primary sources. Lafarge reiterates the important competitive constraint exerted by recycled and secondary aggregates on primary aggregates and considers that the CC should, in the context of the MIR, take full account of this consideration in defining the relevant product market for aggregates.
21. Lafarge also considers it inappropriate to look separately at competition for the supply of sand and gravel and crushed rock. Lafarge notes, however, that within the PFs, the CC made an assessment of the substitutability of sand and gravel and crushed rock by application and decided to assess competition for the supply of sand and gravel and crushed rock separately, as segments within a market for primary aggregates.
- **Supply of aggregates to asphalt producers.** In considering the use of aggregates by application, the CC should note that Lafarge does not compete to any significant extent to supply aggregates to non-integrated asphalt producers. The PFs recognise in the context of their vertical effects analysis that *“the main parties’ supply shares in all primary aggregates [including crushed rock] to non-integrated asphalt producers are negligible.”* Indeed, given that the majority of asphalt producers are backwardly-integrated into aggregates, the estimated market size for aggregates sales to independent asphalt producers is small. This suggests that a separate analysis of the supply of aggregates to asphalt producers is unlikely to be justified given the existing degree of vertical integration and consequent absence of a significant “market” for this segment.
 - **Supply of aggregates to RMX producers.** Similarly, Lafarge is not a major supplier of aggregates to independent RMX producers. According to a recent BDS report⁶, Lafarge accounts for only around 2 per cent of aggregates supplied to independent GB RMX producers, and the five largest aggregates suppliers together accounted for only around 30 per cent of sales to this segment in 2010. Moreover, the Proposed JV would account for only around 10 per cent of aggregates supplied to all GB independent RMX producers. This is consistent with the CC’s finding as part of its vertical effects analysis in the PFs that *“the parties’ shares in the supply of ‘crushed rock’ to non-integrated RMX suppliers do not exceed 20 per cent even if the more conservative measure of supply share in all external sales of crushed rock is used.”* Moreover, since crushed rock and sand and gravel of the same grades are functionally substitutable and proportions of use of crushed rock and sand

⁶ Aggregates supplies to ready mixed concrete plants, BDS, November 2011.

and gravel vary substantially in RMX use by region, a narrower segmentation by aggregate type in the competitive assessment is not justified.

- **Supply of aggregates for general construction use.** Apart from the use of aggregates in the production of asphalt and RMX, the other main application for aggregates is in general construction use. In general construction applications, primary aggregates face direct competition from recycled / secondary aggregates. The survey conducted by the CC in the context of the Merger Investigation produced evidence of actual switching from primary to secondary / recycled aggregates (mainly driven by price). Other third party producers of aggregates (*e.g.*, Aggregate Industries (“AI”) and Breedon) also provided evidence to the CC supportive of this view.

22. For these reasons, Lafarge considers that it is not appropriate for the CC to assess competition within any segment of the market narrower than that of all aggregates.

(b) RMX

23. Lafarge agrees with the assessment of the CC in the Merger Investigation that a single product market should be identified for the supply of RMX. Lafarge disagrees, however, with two aspects of the approach in the PFs.

- **Volumetric trucks.** Lafarge disagrees with the treatment of volumetric trucks as being outside the relevant product market for RMX. Volumetric truck operators compete directly with other RMX suppliers for both small scale jobs and high specification work. Lafarge is not aware of any quality issues associated with concrete produced from volumetric trucks, strength and specification for RMX being a function of the inputs used in production (which can be flexed to meet different strength requirements and specifications). It should be noted that the key certification bodies (BSI and QSRMC) will certify volumetric operators to the same standard as fixed plant suppliers. The evidence provided to the CC during the Merger Investigation by Cemex, Allen Newport and Hillhouse is supportive of Lafarge’s view that volumetric trucks can and do supply RMX to the same specifications as fixed RMX plants.
- **Fixed vs site plants.** Lafarge does not regard pre-existing fixed and site plants as being in direct competition with each other due to the different competitive processes involved in the decision to use a site plant. In particular, RMX site plants are set up to supply specific construction projects and therefore the vast majority of sales from these plants is not supplied to the general market (*i.e.*, there is competition “for” rather than “in” the market). Competition for the establishment of an RMX site plant takes place at the point when the customer puts the job out to tender. Once a customer has decided to use a site plant for a construction project (usually a large scale or long-life project), the site plant being set up will not compete for other jobs in the local vicinity (and will usually, under the contract terms, supply only to the customer on site, *i.e.*, the plant is captive to the customer in question and does not compete in the external market). Site plants are also generally subject to planning restrictions that may regulate the time period over which they may be operated and control vehicle movements; therefore, to the very limited extent

that site plants may supply the general market, these planning restrictions further limit the site plant's ability to supply external markets.

(c) Cement

24. Lafarge considers that the relevant market is that for the supply of grey cement.
25. It is not appropriate to look at competition for the supply of CEM I and domestically produced cement separately. From a demand-side perspective, customers are able to switch from other types of cement. Cement producers are able readily to source those cementitious products required to produce CEM II and CEM III, such as pulverised fly ash (“PFA”) and ground granulated blast furnace slag (“GGBS”). Cement producers are able to switch from producing CEM I to other types of cement. For example, cement works which have milling and blending facilities and storage for cementitious products and the end products could readily switch production to blended cements. Moreover, substitutability is not restricted to cement producers alone and this practice is common and undertaken at relatively low cost at the RMX producer level.⁷

(d) Geographic markets for aggregates, asphalt and RMX

26. In the PFs, the CC identified different average supply radials for different producers. Lafarge does not agree that there is a sound economic basis for this differentiated approach. The PFs justified this approach by arguing that “*the confidence intervals around the mean radii of each of the Main Parties are fairly narrow, indicating little variation in the averages of individual sites of the Main Parties.*” However, Lafarge notes that the CC obtained narrow confidence intervals around the mean catchment because its calculations were based on a methodology that likely underestimates the true variations in catchment radii across sites.
27. Moreover, even if the confidence intervals estimated were relatively narrow, it does not necessarily follow that a Lafarge site could not compete over the same distance as a site operated by another producer. For example, an aggregates site many have several large customers within five miles such that most volumes are sold within five miles of the site. However, that does not imply (i) that the same site could not or would not compete for jobs further away, or (ii) that sites further away could not compete for those large customers. The PFs’ approach also implicitly assumes that third party competitors would compete over differing distances when competing against different suppliers (Lafarge and Tarmac in the context of the Merger Investigation). The result, that very different competitive constraints are apparently imposed on production sites which are located in close proximity to each other, is clearly not credible in this regard; the PFs do not put forward any evidence to demonstrate why, intrinsically, one producer can compete more effectively over a wider distance than another.
28. In addition, the PFs do not put forward any evidence to justify the distinction between the catchment areas of urban / non-urban sites, in asserting that “*there are reasons to*

⁷ Specifically, RMX producers regularly purchase CEM I cement from a cement supplier and separately purchase additives such as PFA or GGBS and combine these at the RMX plant to produce a CEM II/III product as an input to the production of RMX concrete.

expect competition to take place over a shorter distance in urban areas due to slower travel speed due to congestion.” Actual delivery distances are affected by the relative locations between a site and the point(s) of demand, and the fact that a site based in an urban area typically has a delivery distance smaller than that of a site based in a non-urban area does not mean that the urban site could not compete over the same distance as a non-urban site. Nor does it imply that a non-urban site would not constrain the urban site.

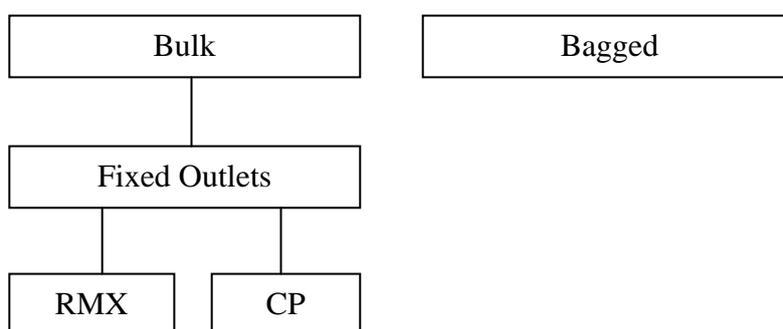
29. Similarly, the fact that products distributed from rail-linked depots are transported over shorter distances than products distributed from quarries/wharves does not justify the use of narrower individual radials for each depot. In general, although depots are located closer to the demand locations (thus leading to shorter distances), they compete for customers with quarries that are located further afield.
30. In determining the relevant geographic scope, the PFs do not take into account the economically viable delivery distances of the products and how they are affected by transport costs, nor do the PFs assess how the geographic scope will be affected by a small but significant non-transitory increase in price. As noted in the CC / OFT Merger Assessment Guidelines, *“the geographic market identified using the hypothetical monopolist test will typically be wider than a catchment area.”* Indeed, the catchment distances estimated by the CC in Table 1 of Appendix I to the PFs are in most cases narrower than 30 miles, a figure which Lafarge considers to be the approximate distance that aggregates can be delivered economically.

E. Analysis of Competition in the Relevant Markets

(a) Customer behaviour

31. Within the market for grey cement, Lafarge maintains a basic distinction between customers of bagged cement products (*e.g.*, builders’ merchants and DIY stores) and customers of bulk cement product. Bulk cement is supplied principally to fixed outlets, where a further segmentation is typically made between RMX customers and CP customers. This customer classification is illustrated at **Figure 4** below.

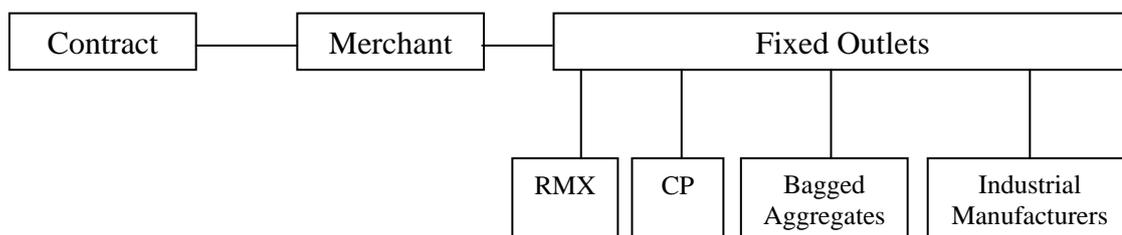
Figure 4: Customer Classification for Grey Cement



32. Within the market for aggregates, a distinction is made by Lafarge between the contract channel (*i.e.*, supply of product to a building or road contractor as part of a previously tendered supply contract), the merchant channel (*i.e.*, supply to haulier-merchants) and supply to fixed outlets. Fixed outlets are then again further segmented

between RMX customers, CP customers, producers of bagged aggregates and industrial manufacturers. This customer classification is illustrated at **Figure 5** below.

Figure 5: Customer Classification for Aggregates



33. Independent asphalt customers could potentially represent a further sub-category of fixed outlet. However, and as noted above, since most asphalt producers are vertically-integrated into aggregates, Lafarge supplies only a minimal volume of aggregates (approximately [REDACTED]kt in 2008, and no volume in either 2009 or 2010) to non-integrated downstream asphalt producers.
34. Finally, for RMX, a distinction may be made between supply through the contracts channel in which customers procure RMX on a project-by-project basis, normally through formal tender or partnership arrangements, and more general supply outside the scope of any wider contractual arrangement. In both cases, the customers are typically general construction or civil engineering companies, with the exception of a small number of customers in the CP segment.

(b) Pricing

35. Lafarge conducts price negotiations through centralised service centres for aggregates and cement, and through regional sales offices for RMX. In each case, these service centres are supported by local sales teams. Customers typically contact several alternative suppliers to secure a competitive price. In the case of aggregates, asphalt and RMX, Lafarge maintains internal price guides which provide a starting point for local sales teams in negotiations for new customers and contracts, while prices for existing customers are negotiated, with the existing price being the starting point for negotiations. In the case of cement, Lafarge does not have a pricing guide but uses existing prices to similar customers as an indication for the starting point for negotiations with new customers. Internal price guidance is adjusted periodically based on market conditions.
36. Lafarge has established bands of discretion within which sales staff can deviate from the guide price. Any deviations beyond the specified percentage require approval from a person at the next level of authority (*e.g.*, a supervisor or manager). A local sales manager requires approval for any deviations in excess of [REDACTED] per cent depending upon the product in question.

(c) **Profitability**

37. 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 most capital intensive industries - fixed costs account for around 50 per cent and 40 per cent respectively of total costs, while RMX fixed costs account for around 15 per cent of total costs.
38. The different cost structure across the relevant product markets is also shown in the percentage of production costs (fixed plus variable) accounted for by other cost entries. For instance, raw materials contribute relatively little to the total cost of cement production (around 20 per cent). This contrasts with RMX, for example, where cement and aggregates (the main inputs for RMX production) represent around 80 per cent of total production costs. Fuel and electricity costs account for a more significant proportion of cement production costs (c. 30-40 per cent), however energy costs represent only a trivial proportion of costs associated with RMX production (around 1 per cent).
39. Margins over variable costs 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 RMX.
40. 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 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), but should also take into account the extent to which substantial prior investments have been made to generate those sales, and that earnings derived from those sales are required to cover the initial investment and fixed costs associated with operating in, for example, the cement and aggregates industries. This is why Lafarge uses return on capital employed (“**ROCE**”) to measure the performance of its businesses.
41. As the CC acknowledged in its final report in *Wienerberger Finance Service/Baggeridge Brick*, “*indicators, or ways of distinguishing intense competition and oligopoly pricing, include first, the level of profitability generated by the price levels established. If profits are excessive then this may be an indicator of existing oligopoly pricing*” and “*While margin analysis (eg operating profit as a percentage of turnover) may be a useful measure to compare companies within an industry, or plants within a company, it is of less use when comparing one market to another. Comparisons can be made with other industries but there is no obvious comparison (unlike the comparison of ROCE to WACC) to use to judge whether profits are excessive.*”⁸ Further, the CC also accepted in the Merger Investigation that ROCE is an appropriate means to assess profitability: “*‘High’ variable profit margins are not*

⁸ A report on the anticipated acquisition by Wienerberger Finance Service BV of Baggeridge Brick plc, 10 May 2007. See paragraphs 43-53, Appendix B.

*in themselves definitive indicators of market power (eg a firm's competitive price may exceed variable costs in an industry with substantial fixed costs), or 'excess' profitability. In relation to the latter, an appropriate comparator or benchmark return is required to determine whether profits or returns are deemed 'excessive', and return on capital employed (ROCE) or internal rate of return calculations are better suited as indicators of excess profitability when benchmarked against an appropriate cost of capital".⁹ Lafarge notes that the PFs do not contest the calculations of ROCE or WACC that it has made. Details of the ROCE of Lafarge's cement and A&C operations are included at **Annex 3**.*

42. Lafarge has implemented significant cost reduction measures in recent years in order to support the profitability of its GB operations. These cost reductions have been achieved with both fixed and variable cost initiatives. In 2006, Lafarge formalised cost reduction as a priority focus for the whole Group via the 'Excellence' cost reduction program. Key milestones were set for each business unit in 2008 and 2010 (Excellence 2008 and 2010 respectively). In this context, Lafarge Cement was tasked with and has delivered significant cost reduction savings over the period since 2006, comprising £[REDACTED]m in 2008 (against a 2005 base), £[REDACTED]m in 2009 (against a 2008 base), £[REDACTED]m in 2010 (against a 2009 base) and £[REDACTED]m in 2011 (against a 2010 base). These savings have been achieved over several cost groups with key actions in the period 2005-11 as detailed below:

- **Fuel:** reduction in average kiln fuel consumption from [REDACTED] to [REDACTED] MJ/t clinker;
- **Fuels substitution:** increasing use of alternative fuels ("AF") over fossil fuels with AF substitution rate increasing from [REDACTED] per cent to [REDACTED] per cent;
- **Power consumption:** reduction in specific power consumption (cement in silo) from [REDACTED] to [REDACTED] Kwh/t cement;
- **Raw materials and consumables:** increasing use of additions in cement (to reduce clinker content) and greater use and efficiency of rail transport between works and depots;
- **Fixed costs:** closure of the Northfleet and Westbury works in 2008 and 2009 respectively reduced fixed costs by around £[REDACTED]m nominal per year (reducing total Lafarge Cement manufacturing costs from £[REDACTED]m in 2005 to £[REDACTED]m in 2011); and
- **SG&A:** Lafarge Cement achieved a significant reduction in its central costs through the creation of a shared service centre for back office activities for all Lafarge UK business units, and by downsizing Lafarge Cement's head office functions by a move to a new location in Solihull in 2007 (SG&A total costs reduced from £[REDACTED]m to £[REDACTED]m).

⁹ See Appendix L to the PFs, at paragraph 3.

43. All of the above cost reductions have had a major impact in attempting to sustain Lafarge Cement overall margins such that, absent these actions, Lafarge Cement margins over total costs (fixed plus variable) would have fallen from £[REDACTED]/t in 2008 to just £[REDACTED]/t in 2011. This is illustrated by **Figure 6** below.

[REDACTED]

F. Theories of Harm

(a) Concentration and barriers to entry

44. Lafarge submits that there are low barriers to entry and expansion in each of the relevant markets that is subject to the MIR, such that no producer has any ability to raise prices beyond current competitive levels. As noted above, Lafarge estimates that it is currently operating at an average capacity utilisation rate below [REDACTED] per cent in aggregates and in the range of [REDACTED] per cent in RMX on a national (GB) basis. These utilisation levels are considered to be indicative of overcapacity in the relevant markets as a whole. Further, Lafarge estimates that in cement both Cemex and Hanson have substantial excess capacity, and that cement importers (including AI) have a capacity of approximately 2.8Mt per year and that only 38 per cent (1.064Mt) was used in 2010.

45. Competitors therefore have the ability to expand in each market subject to the MIR. Even in the absence of specific expansion plans, competitors could easily increase production from existing production facilities without the need to invest in new capacity.

(i) Aggregates

46. Within the market for the supply of aggregates, Lafarge considers that there is strong competition in all local markets, in particular due to:

- Competition from other primary aggregates suppliers, including independents and regional / local producers, which are effective competitors in every local market throughout GB.
- Significant excess capacity in the hands of competitors. Given significant levels of overcapacity there are no material 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. For this reason, the importance of new entry is diminished; ease of expansion provides a powerful constraint in itself.
- Competition from recycled and secondary aggregates producers. As noted above, the CC stated in the PFs that although recycled / secondary aggregates are for the purposes of the Merger Investigation excluded from the relevant market for aggregates, they would be considered in the CC's local competitive effects analysis of the Proposed JV. Recycled aggregates, in particular, are a significant source of competition to primary aggregates, especially in areas close to the major conurbations where they are often produced in close

proximity to customer locations (thereby enjoying an additional cost advantage over primary aggregates delivered from quarries located at greater distances from the customer).

- Aggregates producers operate in a competitive selling process where jobs and prices are invariably determined via negotiation or tender (whether formal or otherwise). Suppliers in construction material markets face large and experienced buyers that establish customer and location-specific prices and are accustomed to multi-sourcing and shopping around for the best terms of supply. These types of customer have sophisticated procurement teams experienced in obtaining competitive terms of supply through effective negotiation or via competitive tenders (*e.g.*, formal requests for proposals to suppliers). Further, many customers are repeat buyers, often with a regional or GB-wide scope, and thus have a good knowledge of prices across any particular region or across GB more generally, which can be used to negotiate competitive terms of supply.

47. Lafarge considers that 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.¹⁰
48. As regards the supply of recycled aggregates, Lafarge maintains that barriers to entry are low, as evidenced by the growth in the share of supply of recycled / secondary aggregates in the period since 1985. 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. A recent report published by BDS lists over 400 companies operating over 580 static recycled aggregates sites in GB.

(ii) RMX

49. There is dynamic competition in the supply of RMX in all local markets, in particular due to:
- Competition from the multitude of other national and local RMX producers;
 - Significant excess capacity in the hands of competitors, which could be utilised should any producer seek to increase prices;
 - Relatively low costs of entry into the production of RMX, as acknowledged in the PFs; and

¹⁰ “Aggregates”, OFT Report on the market study and proposed decision to make a market investigation reference (OFT1358), August 2011, paragraph 4.26.

- Competition from volumetric trucks. As noted above, Lafarge faces direct competition from suppliers operating volumetric trucks and considers that they should be treated as forming part of the relevant market for RMX. The CC has recognised that volumetric trucks constrain RMX suppliers operating from fixed plants and stated in the PFs that it will take into account the competitive constraint exerted by volumetric trucks in its competitive assessment.
50. 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, by and large, a homogenous product and that geographic markets are local in scope, a small operator can compete effectively within a local area.
51. The low barriers to entry and expansion in RMX are evidenced by the following:
- RMX plants are characterised by significant spare capacity;
 - 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 non-major RMX suppliers was 17 per cent; by 2007, that share had increased to 21 per cent and, by 2010, was over 27 per cent. This expansion has occurred despite significant declines in demand for RMX over the past few years and is expected to continue in the future. Lafarge is not aware of any smaller RMX supplier exiting the market since 2005. The finding that non-major RMX producers have grown share is even more prominent when including supply from volumetrics: share for non-majors grew from 25 per cent to 34 per cent over the same period.

(iii) Cement

52. Construction of a new cement plant of around 1Mt would require a capital investment of around £250-360 million. However, entry via the acquisition of an existing cement works could achieve effective entry at a lower fixed capital cost. In addition, the cost of installing a new cement mill at an existing grinding station (with a 600kt per annum capacity Vertical Roller Mill (“VRM”)) including associated technology and storage would be about £20-£30 million, which represents an alternative means of increasing cement capacity. These costs could, however, be reduced by around £5 million if carried out on a smaller scale, for example, by installing a reconditioned mill at an existing site. Further, barriers to entry in cement imports are relatively low, with a new import terminal costing around £20/annual tonne of capacity, as opposed to up to £80/annual tonne of capacity for a grinding station and up to £300/annual tonne of capacity for an integrated cement plant. As a result, the cost of setting up a new import terminal could range from £400,000 to £1 million. Lafarge considers that barriers to entry into cement via import terminals are low as evidenced by the five new import terminals that have been set up in GB since 2007, with the most recent

being at the end of 2011.¹¹ The risk involved with import facilities is also lower since the time for obtaining consents and construction will typically be under two years for an import terminal, around four years for a grinding station, and approximately ten years for an integrated plant. Finally, the incentives for importers to enter the GB market (and/or expand existing levels of sales) will be supported by the introduction of the EU ETS Phase III in 2013 (see further below).

53. Between 2007 and 2010, importers accounted for between 22 and 26 per cent of all cement sales to non-integrated RMX producers. Indeed, in 2010, Cementos Portland Valderrivas (“CPV”), Dudman and Titan each supplied greater volumes than Tarmac of bulk cement externally to non-major cement customers, without use of a rail link. Major industrial ports where cement import terminals could be opened (and in fact currently operate) have established transport infrastructure, either by connection to the rail network or being linked to motorways, such that a new import terminal in those locations would have access to either rail or road transport for distribution to customers inland.
54. Lafarge is 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.
55. It is notable that, against a backdrop of declining demand for cement, the combined share of supply of cement to bulk external non-major customers by importers such as Dudman has increased from 13 per cent to 18 per cent over 2007-2010.

(b) Co-ordination between producers

56. In the course of the Merger Investigation, the OFT and the CC have comprehensively reviewed the potential for coordination in each of the markets that is subject to the MIR. Neither authority has suggested that the aggregates or RMX markets display any propensity for coordination. Rather, their sole focus has been on the potential for coordination in the supply of bulk cement.
57. Lafarge notes a number of the findings reached in the PFs with regard to the market for bulk cement:
 - First, the CC “*did not come to a conclusion whether there was pre-existing coordination in the bulk cement market*”;
 - Second, the CC accepts that “*profits are not excessive*”; and
 - Third, the CC “*noted that some of the evidence could also be consistent with non-coordinated behaviour.*”
- (i) Co-ordination on price
58. There is no realistic prospect that the supply of bulk cement could be subject to price coordination given the high degree of market complexity (evidenced by the high

¹¹ Workington, Blythe, Lowestoft, Southampton, and Garston. Lafarge understands that Dudman is in the process of setting up a new cement import terminal in Montrose, Scotland.

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.

(ii) Coordination on Capacity

59. Nor is there any realistic prospect of non-price coordination on the basis of capacity, as acknowledged by the PFs.¹² Furthermore, the GB domestic producers have made markedly different capacity decisions in the last five years.

(iii) Coordination on Production Shares or Wins/Losses

60. Without reaching any finding of pre-existing tacit coordination in the supply of bulk cement, the PFs allege that the market for the supply of bulk cement could potentially be susceptible to tacit coordination between Lafarge, Hanson and Cemex. The PFs argue that these three firms comprising the alleged coordinating group might, during times of excess capacity, tacitly coordinate with respect to production shares and/or with respect to wins and losses of external customers. The PFs claim that tacit coordination would result in higher prices in the upstream market for external bulk cement leading, ultimately, to higher prices in downstream markets where bulk cement is used, namely RMX and CPs.

61. The question to be determined in the MIR is whether the evidence before the CC supports a finding that it is probable that any alleged coordinating group can and will be able to meet the three cumulative *Airtours* criteria in relation to a coherent (and specified) form of coordination. These are addressed in turn below.

(i) Ability to reach and monitor the terms of coordination

62. As stated by the Court of First Instance in *Impala v Commission*, in order to establish market transparency sufficient to warrant a finding of coordinated effects, the level of transparency must “*be sufficient to allow each member of the dominant oligopoly to be aware, sufficiently precisely and immediately, of the development of the conduct on the market of each of the other members*”.

63. The PFs dismiss the possibility of existing or future coordination on price or capacity. Instead, the PFs postulate that coordination is “*most likely*” in relation to “*shares of production and/or wins and losses of customers*”. Lafarge submits that the market facts are not consistent with the cement industry being characterised by coordination on production shares and/or wins and losses of customers.

- **Instability in market shares.** There is a substantial body of observed market evidence consistent with non-coordinated behaviour, including the evolution of market shares and capacity which demonstrates that Lafarge, Hanson and Cemex have not aligned their competitive behaviour. Between 2007 and 2009, Lafarge’s share of the supply of bulk cement to non-major customers dropped by 8 percentage points (pp). Such variation in share is not consistent with the PFs’ theory on alignment on market shares. Moreover, it would seem irrational

¹² “We noted that we are not suggesting that cement producers have, or will, coordinate on capacity levels”, (Appendix K to the PFs, at paragraph 57(d)).

for Lafarge to coordinate with Cemex and Hanson so as to lose 8 points of share in 3 years. Lafarge notes that this represents a substantial destruction of value and is an outcome which is inconsistent with coordination. Further, while Lafarge has grown its share of supply of bulk cement sold externally to non-major RMX producers over the period 2007-2010, shares are nonetheless volatile and asymmetric. Hanson, for example, lost 6.5pp of share over the period, while importers (other than AI) reached a peak of 26 per cent in 2009 and have consistently accounted for 22 per cent or more of the segment. Moreover, the dramatic changes in demand over the period since 2007, together with the uncertainties of any recovery, suggest that monitoring and transparency are difficult and that market conditions are not conducive to coordination.

- **Wins and losses are consistent with unilateral behaviour.** The PFs have acknowledged the potential importance of credible threats to switch yet understate actual evidence that such threats are indeed effective at lowering price. Specifically, Lafarge has submitted evidence to the CC in the context of the Merger Investigation that, when facing a competitive threat, Lafarge reduced prices in order to retain its customers. Yet when the PFs consider Lafarge's failed approaches to customers, they presume that the same did not apply (*i.e.*, that Hanson and Cemex would not have lowered price substantially to prevent their customers from switching to Lafarge). The PFs also incorrectly interpret repatriation evidence and as a result make unsupported statements concerning the targeting of Hanson customers by Lafarge in 2009. Specifically, following Hanson's withdrawal, in just one month, of over 500kt of cement demand, Lafarge had little choice but to seek to regain volumes as quickly as possible. Repatriation was the fastest route to do this, and Hanson was by far the main supplier of cement to Lafarge RMX sites; it was inevitable that Lafarge's policy of repatriation would impact most heavily on Hanson. It was not a targeted action (Lafarge could not have repatriated substantially from other suppliers). Further, Lafarge notes that the PFs would appear to accept that Cemex data were not consistent with repatriation being used as part of a coordination strategy. Finally, switching data are supportive of two key facts: that importers are a greater constraint than their market shares would suggest; and that importers are a greater constraint on Lafarge and Hanson than is Tarmac today.
- **Price announcements do not provide an indication of actual price changes.** Price announcement letters are an ineffective means to monitor "deviation": price announcement letters, which are generally annual, are unlikely to be useful for "immediate" monitoring capability, or even signalling, especially given that price announcement letters do not provide an indication of actual price changes, which are typically dispersed in a non-systematic manner, and in some cases, the outcome is a net average price change which goes in the opposite direction to the announced change.
- **Realised prices are not transparent.** As set out at paragraph 6.158 of the PFs, "*realized prices for cement were not very transparent, which would reduce the risk of such price 'leakage' because customers would not usually be aware of the prices being paid by other customers.*"

- **The activity of importers is not transparent.** Imports (which represent 13 per cent of bulk external sales and 18 per cent of bulk external sales to non-major customers in GB) are not captured by the MPA monthly data. Moreover, MPA data are not split between internal and external sales. Consequently, MPA monthly data cannot provide information to MPA members at regular intervals to allow a sufficient degree of monitoring to sustain coordination. Specifically, monthly MPA data only provide information on the volumes of domestic GB producers, and therefore MPA members are not able to calculate “proper” market shares. Instead, MPA members are only able to calculate their own relative share. This necessarily excludes importer volumes. Such shares cannot be split on a monthly basis, whether by internal and external sales, by region, by sales channel or by bulk or bagged sales.
- **Lack of transparency in and from the RMX market.** There is much less transparency in relation to RMX than the PFs assume. Only around half of cement production is sold into the RMX channel, with the result that it can only ever give limited information to a group seeking to coordinate on volumes. Further and importantly, changes in the volumes of competing RMX plants may be due to changes in the prices of aggregates or other inputs, rather than any change in relation to cement inputs. The number of local RMX markets themselves are numerous and characterised by the presence of both national and local competitors so that changes from the process of RMX competition would be difficult to distinguish from “cheating” in relation to cement coordination, and coordination would be complex given the need to reach the terms of coordination over around 250 local RMX markets.

64. Any prospect for coordination will be further eliminated following implementation of the Proposed JV. In particular:

- **Asymmetry in capacity.** Following implementation of the Proposed JV, Lafarge would expect to be able to increase its overall cement plant capacity utilisation through the optimal supply of cement to its own RMX network (both in terms of supplying additional RMX plants and also the ability to supply blended cements to former Tarmac RMX plants) such that spare capacity will be less balanced between Hanson, Cemex and the Proposed JV.
- **Value-Added Products.** The Proposed JV will, through increased focus on VAPs, have different incentives in the RMX market to other cement and independent RMX producers.
- **CPs and Mortar.** The supply of bulk cement outside the RMX channel accounts for around 50 per cent of external supply (and the four major UK producers and AI have different positions in these downstream sectors). In contrast to the position of Cemex and Hanson, the Proposed JV would have no downstream CP or mortar operations.

(ii) Internal Sustainability

65. Lafarge considers that tacit coordination in the supply of bulk cement would not be internally sustainable for a number of reasons.

- **Number of suppliers.** In the supply of bulk cement, Lafarge faces robust competition throughout GB, including from the following market participants.
 - **Cemex.** Cemex is the second largest producer and supplier of grey cement in GB with a total capacity of approximately [REDACTED]ktpa and estimated sales in 2010 of [REDACTED]kt. It operates two integrated cement plants at Rugby (Warwickshire) and South Ferriby (North Lincolnshire), and a grinding and blending station at Tilbury (Essex). The company also owns and operates six marine import terminals, including the new facility at Tilbury (Essex), which opened in September 2009 following a £50 million investment (the largest investment in the GB cement industry in the last five years). The Tilbury import facility has a total cement capacity of 1.2mtpa (based on grinding and blending operations) but has no clinker manufacturing capability and thus is reliant on either clinker transfers from Cemex's two integrated cement works in GB or clinker imports. However, to operate at full capacity, Cemex would have to import the vast majority of Tilbury's clinker requirement from outside GB. Tilbury also has on-site barge loading facilities enabling deliveries to be made by river into the heart of London via Cemex's network of wharves. Cemex is also active in the supply of cementitious products, most notably PFA. Lafarge estimates that Cemex supplied approximately [REDACTED]kt of PFA in GB in 2009.
 - **Hanson.** HeidelbergCement's UK cement division – Hanson – was formed in 2007 through the merger of Castle Cement and Civil and Marine. It has a total cement capacity of approximately [REDACTED]ktpa and estimated sales in 2010 of [REDACTED]kt. It operates three cement plants at Ketton (Rutland), Ribblesdale (Lancashire) and Padeswood (North Wales). Hanson is also the only producer of GGBS in GB by reason of its having concluded a long-term (30-year) exclusive supply arrangement with Tarmac (who in turn have an exclusive arrangement with Tata Steel).
 - **Aggregate Industries.** AI is owned by Holcim, one of the world's leading suppliers of cement and aggregates. AI does not manufacture cement domestically, but has the facilities to import up to [REDACTED]ktpa from its significant German cement business. Lafarge estimates that AI imported approximately [REDACTED]kt in 2010 and [REDACTED]kt in 2011. Its grey cement is imported in bulk through one of its four import terminals at Chatham (Kent), Ellesmere Port (Cheshire), Glasgow and Plymouth (Devon).
 - **Cementos Portland Valderrivas.** CPV is a major international cement producer, headquartered in Spain and with operations throughout Europe, the United States and Tunisia. In GB, it operates through two subsidiaries:
 - **Dragon Alpha Cement Ltd.** Based in Sharpness (Gloucestershire), Dragon is the most established cement import company in the country and has been active in GB for

the past 25 years. A wholly-owned subsidiary of CPV, Dragon is active in the supply of bulk cement, bagged cement, white cement, mortars, hydraulic and hydrated lime, and self-levelling compound. Lafarge believes that Dragon imports much or all of its cement from the Uniland Group (“Uniland”) in Spain, in which CPV holds a majority interest.

- **Southern Cement Ltd.** Southern is a leading importer and distributor of both bulk and bagged cement products and has been supplying the concrete and construction industry in GB for the last eight years. Its head office is at the port of Ipswich (Suffolk). Southern Cement Ltd. is owned by Uniland. The majority of Southern Cement’s imports into GB are from Uniland’s cement plants in Spain.

Through Dragon and Southern, Lafarge estimates that CPV supplied over [REDACTED] kt in 2011, up from around [REDACTED] kt in 2010.

- **Titan Group.** Titan is an independent multi-regional producer of cement and other related building materials. Headquartered in Greece, Titan Group has expanded its production and distribution operations into 12 countries. Within the United Kingdom, Titan operates through Titan Cement UK, which owns a cement distribution station in the commercial port of Hull (East Yorkshire). Lafarge estimates that Titan imported [REDACTED] kt in 2011, similar to the [REDACTED] kt in 2010, although could import a substantially higher amount given its estimated import capacity of around [REDACTED]kt.
- **CRH plc.** CRH is an international building materials group headquartered in Ireland. Its European materials division is a major, vertically-integrated producer of primary materials and value-added manufactured products operating in 20 countries, whose principal products are cement (with an annualised production of 13.2m tonnes), aggregates, RMX, concrete products, asphalt and lime. In its domestic market, CRH has invested heavily in cement production facilities, most notably with the new kiln extension and upgrade of its Platin Works near Drogheda (north of Dublin). The Platin upgrade and expansion was announced in 2006 and completed in 2009. It cost an estimated €[REDACTED] million and increased the capacity of the works from 2.0 million to 2.8 million tonnes. Subsequently, on 24 June, 2010, CRH acquired a UK cement import business, Dan Morrissey Concrete UK (“**Morrissey**”). Lafarge estimates that Morrissey imported over [REDACTED] kt of grey cement in 2011, nearly double the [REDACTED] kt of 2009. CRH has publicly stated its intention to use Morrissey’s import terminal at Swansea as an outlet for its Irish cement production into GB. Given the collapse of domestic demand in Ireland and the resulting high levels of over-capacity, it might be anticipated that Platin and potentially other CRH plants will increasingly look to the GB market as an outlet for their grey cement production.

- **Dudman Group Limited.** Formed twenty-one years ago, Dudman, based in West Sussex, has grown steadily from a haulage firm to being today one of the South of England's largest independent aggregate producers, RMX suppliers, cement importers and secondary/recycled aggregate producers. Through its own dedicated fleet of tanker vessels owned by its shipping arm, Independent Shipping Limited, Dudman imports cement to supply its own RMX plants and external customers throughout the UK. Having terminals at Shoreham (West Sussex), Howden (East Yorkshire) and Lowestoft (Suffolk) enables it to provide national coverage. Lafarge understands that Dudman commissioned a new terminal in Liverpool in 2011 utilising supply from Lagan cement and is about to use a new terminal in Montrose, Scotland. Lafarge estimates that Dudman's supply of cement in GB was approximately [REDACTED] kt for 2011 compared to [REDACTED] kt in 2010 (but Garston was only active from September 2011). Dudman is understood to source cement from Lagan in Ireland, as well as from suppliers in Germany.
- **Sherburn Stone Co Ltd.** Sherburn is a small independent based in Shadforth, County Durham. Lafarge estimates that Sherburn imports approximately [REDACTED] tonnes of cement per annum.
- **Thomas Armstrong.** Based in Flimby, Cumbria, Thomas Armstrong is one of the UK's largest privately-owned manufacturers of building products and suppliers of building services with a product portfolio that includes aggregates, concrete blocks and precast concrete. Thomas Armstrong started to import cement from Germany in May 2008, having built a £1 million storage unit at the port of Workington to accommodate the 40,000 tonnes of cement it intended to import each year. Thomas Armstrong has stated its intention to supply its pre-cast concrete plants at Workington, Flimby and Silloth which it had previously supplied from cement imported into Hull. Lafarge estimates they imported around [REDACTED] kt in 2011, up from around [REDACTED] kt in 2010.
- **Quinn.** Quinn has approximately [REDACTED] million tonnes of capacity at its plants at Ballyconnell in the Republic of Ireland and Derrylin in Northern Ireland, although its Derrylin plant is currently not operating. Although Quinn does not have an import terminal located in GB, Quinn imports significant volumes (estimated at around [REDACTED]kt p.a.) of both bulk and packed cement into the country by ferry.
- **Lagan.** Lagan has a [REDACTED] tonne facility at Kinnegad, Co. Meath. Lafarge understands that Lagan imports cement into GB via ferry or through Dudman.
- **Strategic differentiation.** Lafarge's significant investment and development globally of VAPs has given it a differentiated position in the RMX market in relation to other GB producers, while bringing substantially greater choice and cost saving opportunities to downstream RMX customers. One focus of the

Proposed JV, that of making VAPs available to customers on a wider geographic basis, will also result in a divergence in incentives. The Proposed JV will target customers with a “value in use” proposition which would differentiate both the Proposed JV as well as customer behaviour in relation to the Proposed JV RMX offering. The investment in this differentiation is an important part of Lafarge and the Proposed JV’s future market positioning.¹³

- **Cross-sales.** Lafarge has very limited cross-sales volume. In 2011, Lafarge sold just [REDACTED]kt of bulk cement to Hanson and [REDACTED]kt to Cemex. In the same year, Lafarge purchased no bulk cement from Hanson and only [REDACTED]kt from Cemex. It is anticipated that the increased geographic coverage would allow the Proposed JV to benefit from considerable logistical efficiencies, particularly in terms of reduced distribution costs from the improved proximity of cement and RMX production assets. Lafarge’s clear expectation is that the Proposed JV would maintain the current self-supply policy. [REDACTED]
- **Punishment mechanisms.** In the PFs, the CC considers three punishment mechanisms: (a) lowering cement prices, (b) lowering RMX prices, and (c) repatriation of cement volumes.
 - **Lowering cement prices.** Prior to the Proposed JV, a punishment strategy of offering a lower cement price on the external market enhances the ability of non-integrated RMX producers to win sales in the downstream market at the expense of Lafarge’s RMX sites (*i.e.*, the punishment strategy harms the punisher in the downstream market). This punishment strategy will become even less attractive for the Proposed JV because it will supply a higher volume of RMX than Lafarge, thereby accentuating the negative profit effect in the downstream market.
 - **Lowering RMX prices.** The PFs’ claim that there is greater scope to punish by lowering RMX prices is misconceived and highly speculative. That claim implies substantial additional complexity to the terms of any putative tacit understanding since it would need to cover hundreds of local RMX markets; it would be very costly for the punisher without necessarily having a marked impact on the deviant because a deviant’s customers cannot be targeted due to the transitory (*i.e.*, short-term contract or “jobs”) nature of RMX contracts and the uncertainty under which suppliers (including suppliers outside the putative coordinating group) bid for any given contract; it would often punish a member of the coordinating group that did not deviate (and thereby potentially destabilise tacit coordination); it would affect RMX producers outside the coordinating group and thereby risk causing a price cut that is hard to reverse (compounding the reduction in profits for the punisher and making it very difficult to escape from a punishment phase); the punishment phase could be triggered by someone outside the coordinating group making coordination unstable;

¹³ A description of Lafarge’s VAP product range is included at **Annex 4**.

and finally (even in the unlikely event that a targeted punishment could be achieved) it would provide an additional mechanism by which cheating could occur (*i.e.*, a feature that undermines coordination that would have to be weighed against the enhanced scope to punish). In summary, coordination that relies on reaching and monitoring the terms of coordination at the RMX level would be undermined by the additional complexity involved, the increased lack of transparency, and also by the strength of AI and independents at the RMX level of the supply chain.

- **Repatriation of cement volumes.** Finally, in relation to the PFs' claim that "repatriation" (*i.e.*, self supply of cement volumes formerly purchased from others) could give rise to a clear and credible signal that would facilitate punishment, this lacks both empirical support (the Proposed JV may well have no scope to repatriate due to the efficiencies of internalising volumes that Tarmac currently sources externally) and theoretical merit (the harsher punishments allegedly being signalled are not credible). Lafarge notes further that the PFs' repatriation theory is highly speculative and apparently without precedent in competition policy. The PFs do not provide convincing evidence of repatriation being used as a punishment strategy. For example, Lafarge's alleged targeted repatriation of volumes away from Hanson in 2009 simply reflected what was available for Lafarge to repatriate (*i.e.*, in order to repatriate, Lafarge necessarily had to do so at the expense of Hanson). Further, the PFs provide evidence from Cemex that gains and losses did not balance out, a feature which is not consistent with retaliatory behaviour in the market. Moreover, while the PFs provide evidence from Cemex that its gains and losses from/to each major "*could be indicative of some retaliatory strategies*", they go on to observe that "*there is not such a relationship between Cemex gains and losses to/from Hanson*". Lafarge notes the following additional points in relation to repatriation:
 - **Limited external purchases.** Lafarge currently sources an insignificant amount of cement externally and therefore does not have the ability to punish any "deviation" via repatriation.
 - **One-off mechanism.** The PFs' focus on repatriation as a mechanism for punishing deviations does not consider that repatriation is, by its very nature, a one-off action. Once volumes have been repatriated, they can no longer be used to deter subsequent deviation. Moreover, an effective mechanism to punish deviations must be sufficiently plausible and effective to counterbalance the "incentive and abilities to deviate." As repatriation is, in effect, a one-off punishment, the use of repatriation alone is unlikely to be a credible deterrent to deviation in the long term.

(iii) External sustainability

66. Contrary to the view expressed in the PFs, Lafarge considers that cement importers impose an important competitive constraint on GB cement producers.

- **Consistent growth in importers' market share.** In 2010, the share of supply of external bulk cement to non-major customers was approximately 18 per cent, which broadly accords with the 20 per cent share which the European Commission has typically regarded as being sufficiently significant to constrain leading suppliers from acting in concert, particularly where there is evidence of such firms having competed with the leading suppliers. The PFs' disregard of import competition is also at odds with the European Commission's consideration of the UK market in its review of Heidelbergcement/Hanson where it considered that

“any attempt to coordinate may be destabilised by the increasing constraint of imports, either by other competitors or by some customers. Currently there are some 20 cement terminals in Great Britain allowing for the discharge of cement and cement additives, not only owned by the major players but also by those with smaller presence such as Titan or Holcim or by independent undertakings or customers. The capacity of all of these import terminals account for around 6 million tonnes (representing around 35 per cent of the cementitious market) and it is only used at about 25 per cent.”

- **Incentives from CO₂ allocations.** Several of the cement importers are international cement companies with tied producing plants (namely CRH, Titan, CPV and Quinn) which provides the import terminals of these firms with a consistent source of supply of cement. Moreover, in some cases (*e.g.*, in Greece, Ireland and Spain), these companies are struggling to secure 100 per cent of their free CO₂ allocations, since their domestic demand has fallen below the level where domestic demand allows them to exceed the 50 per cent historic production threshold. In this case, the economic incentives for exporting become even stronger. This provides an asymmetric dynamic, which is completely different from domestically producing GB competitors.
- **Cost to serve.** The PFs assert that importers are a relatively weak constraint due to a higher cost base. The PFs' finding that the total costs of delivering cement to Great Britain are substantially higher for importers than for domestic cement producers is based upon an analysis by the CC which does not compare “like-with-like”. Specifically, Lafarge notes that the PFs inconsistently assess GB domestic producers' costs to supply on the basis of variable cost pricing, but assess importer costs to supply on the basis of pricing in excess of variable costs. This inconsistency has important consequences, since a like-for-like comparison would result in a decrease in estimated importer total costs to serve GB customers by £13-£20 per tonne. The PFs also fail to take into account Lafarge's analysis that supplying cement at variable cost would result in Lafarge incurring unsustainable substantial cash losses. As a result, Lafarge considers that the analysis contained in the PFs of the cost to serve for a GB producer is not appropriate for the cement industry.

- **Geographic supply distance.** Even when examining the proportion of Lafarge external bulk volumes delivered to non-major customers within a 50 mile radial of an import terminal, the majority [REDACTED] of Lafarge’s relevant volumes are within close proximity to import terminals which do not belong to Lafarge, Tarmac, Cemex, Hanson or AI; around [REDACTED] per cent are within an 80 miles radial of an import terminal. Lafarge notes that a 50-mile radial is at the low end of the PFs’ range of catchment area of importers (40-100 miles), with the 40 mile figure apparently based on two importers submitting that “*most of their customers were located within 25 to 40 miles.*” The PFs also note that two importers “*served customers up to 100 miles away, and one importer told us that, although its customers tended to be local, it had a few small customers over 100 miles from its import terminal.*” Consequently, Lafarge considers that importers are able to compete over a greater distance than 50 miles. Moreover, Lafarge’s estimates for GB non-major importers (which cover all such importers, not merely the delivery distances of individual importers which chose to submit evidence to the CC) indicate that around 80 per cent of bulk cement volumes supplied by importers were distributed within 80 miles of import terminals.

- **Growth of independent RMX producers.** Finally, in relation to RMX, it is noted that there has been an increase in competition from independent RMX producers in recent years. Lafarge submits that this evidence is not consistent with input foreclosure in the cement market; the evidence also further undermines any potential concerns that the CC may have in respect of vertical integration and that the Proposed JV may attain greater symmetry with Hanson and Cemex.

(b) Vertical integration and exclusionary behaviour

(i) Aggregates as an input for asphalt and RMX

67. In its decision on the Merger Investigation, the OFT noted that it had not received significant specific complaints about vertical effects in the supply of aggregates.¹⁴ 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.
68. This section explains the absence of input or customer foreclosure effects in relation to aggregates sold for the production of asphalt and RMX. Specifically, Lafarge has no ability to engage in input foreclosure (and thus there is no need to consider its incentive to do so). Further, customer foreclosure is not a credible theory of harm due to an already very high degree of internal sourcing of aggregates requirements.

Lafarge has no ability to engage in input foreclosure

69. Lafarge has no ability to engage in input foreclosure at the upstream level (*i.e.*, sales of aggregates) because:

¹⁴ OFT Decision, paragraph 259(a).

- It does not compete to any substantial degree to supply non-integrated asphalt¹⁵ and RMX¹⁶ producers. Its incentive to do so will be increased rather than reduced by the Proposed JV:
 - The size of aggregates purchases made by non-integrated asphalt and RMX producers from all aggregates suppliers is small (around 6,300kt compared to a total GB market size of c. 60,000kt for all supplies of aggregates used in the production of asphalt and RMX in 2010, *i.e.*, internal and external);¹⁷
 - Lafarge's presence in this segment is not substantial (estimated at [REDACTED] per cent of overall aggregates sales to non-integrated asphalt producers in 2010, and [REDACTED] per cent of overall aggregates sales to non-integrated RMX producers). The formation of the Proposed JV would not give rise to market power over non-integrated purchasers of aggregates for these uses; and
 - Accordingly, it follows that Lafarge has 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.
- Lafarge has no ability to withdraw material volumes from integrated purchasers of aggregates for asphalt and RMX production given that very small amounts are 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 would be easily replaced by rival suppliers.

Lafarge has no ability to engage in customer foreclosure.

70. Lafarge sources such a large amount of its requirements in-house that there is no scope for customer foreclosure. In particular, in 2009, Lafarge's asphalt plants

¹⁵ In 2010, the total volumes of asphalt produced by non-integrated asphalt players was around [REDACTED]kt, according to estimates based on BDS data (all asphalt producers that are not also aggregates producers are considered to be non-vertically integrated). Given the approximate one-for-one ratio between asphalt sold and aggregates used in the production of asphalt, this suggests that total aggregates purchases by non-integrated asphalt producers was around [REDACTED]kt in 2010. Lafarge did not supply to non integrated asphalt producers in 2010.

¹⁶ In relation to RMX, in 2010, the total volume of RMX produced by non-integrated players was [REDACTED]m3 (non-integrated producers of RMX have been identified from BDS 2010 reports and based on estimated volumes set out in those reports, excluding on-site batched volumes). Given the one-for-two ratio between the volume of RMX sold and the volume of aggregates used as an input in the production of RMX, this suggests that the total purchase of aggregates made by non-integrated RMX producers was around [REDACTED]kt in 2010. Lafarge's share of supply to this segment is estimated to have been [REDACTED] per cent at most (based on sales of [REDACTED]kt to this segment of the market) in 2010.

¹⁷ 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 (1:1 for asphalt; 2:1 for RMX).

sourced [REDACTED] per cent of their aggregates needs internally and its RMX plants sourced [REDACTED] per cent of their aggregates needs internally.¹⁸

71. Nonetheless, it is important to emphasise that, to the extent that the Proposed JV switches 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.

(ii) Cement as an input into RMX

Lafarge has no ability to engage in input foreclosure

72. Lafarge has no ability to engage in input foreclosure in the supply of cement to independent RMX producers for several reasons:

- In assessing whether incentives are sufficiently aligned to give rise to coordination, it is important to consider the costs and benefits associated with the output restriction that is inherent in the PFs' theory of tacit coordination. By restricting external production, each firm in the alleged coordinating group would hope to benefit from increased internal sales. For example, by coordinating to harm independent RMX producers' ability to compete, the Proposed JV would hope to gain additional RMX volumes. Against that benefit, each firm in the alleged coordinating group will make fewer sales to the external market, losing the margin on bulk cement on each lost unit. Whether the benefits exceed the costs will depend on the conditions in each local RMX market (of which there are hundreds). This calculus is well-known and is standard in the assessment of input foreclosure. However, the PFs present no evidence or analysis that any input foreclosure would arise, and the CC has reached no conclusion on the matter. In any event, the proposed Remedies Package would make the scope for input foreclosure even less likely;
- Lafarge is constrained by the existence of high levels of overcapacity in the market, as well as by the established positions of both Hanson and Cemex; and
- Importers have been successful in gaining market share, even during the economically challenging last three years, and now account for approximately 18 per cent of bulk external sales to non-major customers and 22 per cent of bulk external sales to non-major RMX customers. Moreover, Lafarge understands that Dudman agreed terms for a new aggregate and cement import facility in the North West (Liverpool) at the end of 2011. Lafarge is also aware of proposals announced by Dudman to rehabilitate the former Blue Circle cement works at Upper Beeding, Shoreham, West Sussex for cement production.

73. Separately, Lafarge notes that the CC will consider allegations of refusal to supply, or refusal to quote, as evidence of market allocation. As stated categorically by Lafarge

¹⁸ Excluding aggregates sourced from Lafarge's joint ventures.

during the course of the Merger Investigation, there are very few instances in which Lafarge has refused or would refuse to supply an existing or potential customer, namely (i) lack of creditworthiness, (ii) exhaustion of available supply volumes, as occurred during the demand peak of 2006/2007, (iii) shortage of key input materials for particular cement grades (*e.g.*, fly ash for the production of Cem II), or (iv) health and safety concerns at the point of delivery. Absent one or more of these circumstances, Lafarge maintains that it would make a competitive supply offer to any customer. Evidence of substantial growth in share by non-major RMX producers, and evidence that the prices of cement charged by Lafarge to non-major cement customers are not typically higher than those charged to major cement customers, are also not consistent with GB cement producers engaging in a refusal to supply cement to non-major customers.

Lafarge has no ability to engage in customer foreclosure

74. The theoretical objective of a customer foreclosure strategy would be to distort competition in the upstream cement markets to the advantage of Lafarge, by restricting competitors in those upstream markets from having access to Lafarge's 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 Lafarge 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 Proposed JV benefits (*e.g.*, such that the overall RMX price were to rise).
 - In order to rule out customer foreclosure as a credible theory of harm, it is sufficient to demonstrate that Lafarge does not have the ability to withdraw a substantial share of purchases from the external market.
 - In order for customer foreclosure to be feasible, Lafarge 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. At the very least, Lafarge's purchases in the upstream market should substantially exceed 30 per cent before customer foreclosure theories could be a realistic prospect.
 - Lafarge's share of purchases of external sales of bulk cement is substantially below 30 per cent. Lafarge estimates that total external sales of bulk grey cement in GB in 2010 amounted to [REDACTED]kt. Of these, Lafarge purchased less than [REDACTED]kt (*i.e.*, less than [REDACTED] per cent of purchases). Such low shares do not point to Lafarge or, going forward, the Proposed JV, being a critical route to market for those wishing to make external sales.

(iv) Policy and regulation

75. Lafarge does not consider that the regulation identified by the CC in its Issues Statement has the effect of preventing, restricting or distorting competition in the supply of aggregates, RMX or cement.
- (i) EU Emissions Trading System will encourage imports
76. The EU Emissions Trading System (“**EU ETS**”) applies to the production of cement. Under EU ETS Phase II (2008-12), each cement works in GB receives a fixed annual allocation for each integrated cement plant with clinker manufacturing capability. Under the rules of Phase II, each cement plant has to produce a minimum average of 500 tonnes per day of clinker over the year to receive the annual allocation in full.
77. Since the EU ETS applies equally to all cement producers within GB, Lafarge does not consider that the EU ETS distorts competition per se between GB producers. Lafarge does consider, however, that the EU ETS discourages new investment in greenfield cement works (by raising the costs of domestic production and reducing returns on capital employed) and encourages imports.
78. EU ETS Phase III is likely to increase the effectiveness of importers as a competitive source of supply. New rules for qualifying for CO₂ allocations from 1 January 2013 to 31 December 2020 will require cement plants to operate at more than 50 per cent of Historic Activity Levels (“**HAL**”) in each year in order to qualify for 100 per cent of CO₂ rights. Those cement manufacturers that do not produce at least 50 per cent of their historical clinker production will have their CO₂ entitlements dramatically reduced.¹⁹ This threshold provides strong incentives for cement producers in countries where domestic demand is extremely low relative to recent production levels (*e.g.*, Spain, Greece and Ireland – countries that already export to GB) to export in order to meet the 50 per cent production threshold (and sell any unused allocations).²⁰ These will be on-going changes, not one-off changes in production volumes depending upon domestic demand conditions in each year. Further, cement or clinker import from outside of the EU ETS zone will have a significant cost advantage.

¹⁹ Since CO₂ permits are tradeable, their loss would represent a significant loss of revenue.

²⁰ If manufacturers only achieve between 25 per cent and 50 per cent of their HAL of clinker production then the following year manufacturers have their allocation reduced by half. For example a plant with an HAL of 1mt clinker, operating today with a local demand equivalent to 450kt of clinker would be 50kt of clinker production short of qualifying for 100 per cent of its CO₂ allocations. If the cement plant were to export cement with a clinker content of 50kt to achieve 500kt of clinker production (*i.e.*, equal to 50 per cent of its HAL) then it would receive an additional 383kt of CO₂ rights: the plant would qualify for 100 per cent of its allocations rather than only half of its allocations, *i.e.*, an extra 500kt x 0.766 T CO₂ (383kt). If CO₂ were priced at €26 per tonne then the cement plant would be able to sell these 383kt of CO₂ rights for approximately €10 million. The consequence of the regulation would be that the margin associated with producing, and exporting, an additional 50kt of clinker production would increase substantially, thereby providing it with stronger incentives to increase export volumes. Lafarge considers that cement plants in several European countries which currently export cement to GB are operating below 50 per cent of their HAL.

(ii) Aggregates Levy has encouraged the use of recycled aggregates

79. 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. The Aggregates Levy has had the direct effect of making secondary and recycled aggregates more price competitive than primary aggregates.
80. In Lafarge's 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.²¹ Indeed, Lafarge also uses recycled and secondary aggregates interchangeably with primary aggregates.²² It is estimated that 28 per cent of the share of supply of aggregates is accounted for by secondary and recycled aggregates.²³
81. 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. Lafarge expects the demand for recycled and secondary aggregates to increase as the desire for sustainable building and construction becomes more critical and when demand returns generally in the construction industry.

(iii) The Aggregates Planning regime imposes no barrier to entry

82. Although the planning regime imposes some burdens on aggregates producers, Lafarge considers that the regime operates neither to disadvantage particular producers (*i.e.*, smaller operators as opposed to larger more national players) nor to prevent new entry. The Development Plan-led system provides clear criteria setting out the process for planning applications, and the terms on which applications will be judged.
83. The current planning regime seeks to strike a balance between the need for aggregates demand to be met with the requirement for the burden of "hosting" aggregates operations fairly across GB. There is a natural inclination for local planning authorities to resist granting applications for Greenfield quarries simply because these are not popular within local communities. The national framework for aggregates planning, however, captured within the managed aggregates supply system ("**Mass**"), forces local authorities to grant permissions to Greenfield and quarry extensions in order to generate sufficient supply to meet local demand.
84. As a larger national aggregates producer, Lafarge does not consider that its size or experience accord it any special advantage in comparison to independent or local aggregates producers in navigating the planning regime.

²¹ For example, Lafarge (quoting based on primary aggregates) lost the Greater Manchester Waste project in Bredbury ([REDACTED]kt) and Newton Heath ([REDACTED]kt) to CCC Recycled.

²² For example, Lafarge has used recycled rail ballast at its Ackworth asphalt plant.

²³ See <http://www.mineralproducts.org/sustainability/highlights.html>.

- (iv) The Aggregates Planning regime does not encourage “hoarding” of undeveloped sites
85. The OFT’s reference decision refers to “landbanking” and concludes that practices in the aggregates industry are akin to those practices observed by supermarkets in the Groceries Market Study. It is important to note that the term “landbanking” in the aggregates context is not the same as practices of supermarket retailers purchasing land with permission to construct supermarkets in order to prevent competitors acquiring sites from which they can compete.
86. Landbanks in the aggregates context refers to the requirement for local mineral planning authorities to provide a steady and adequate supply of aggregates capable of meeting demand for a minimum period of time (usually seven years). Consideration must be given to the annual supply figure permitted, not simply the provision of a total permitted tonnage of material. MPS1 states that if a landbank falls below these levels, additional reserves will need to be permitted if acceptable applications are submitted. In particular, MPS1 states that “*A large existing landbank bound up in very few sites should not be allowed to stifle competition.*” This ensures that mineral planning authorities grant sufficient permissions to meet local demand.
87. Accordingly, Lafarge disagrees with the OFT’s characterisation of the planning regime as encouraging “landbanking” (in the sense developed in the Groceries Market Study) or hoarding of undeveloped sites.
88. Once permission has been granted to operate a quarry, there is in most cases a strong incentive to produce aggregates from the site (although given the recent evolution of market demand, some sites which were put forward for consent prior to 2008 may now no longer be economically viable to operate). This is because often the leasehold arrangements granting permission to quarry material from the surface impose minimum rents per annum (known as “certain rents”) which are merging with the royalties due. While royalties payable will depend upon the quantity of aggregates produced once production is above the minimum level, certain rents are payable regardless of whether aggregates are quarried. Accordingly, this imposes a strong incentive to quarry aggregates from such sites in order to produce some level of return to mitigate losses on certain rents. In addition, planning permissions for extraction also contain conditions that impose a time limit for the completion of works. While extensions of time can be sought, there are no certainties, and further costs of planning applications will be incurred.
89. Additionally, the very local geographic scope of aggregates markets makes it inefficient to mothball sites and withdraw from local areas. It is not economical to close a site if there are no nearby sites from which it is economical to transport aggregates and serve local demand. This therefore encourages suppliers to resist mothballing sites and to operate a greater number of local sites, rather than fewer sites.