

## HANSON UK

### Competition Commission Market Investigation – Aggregates, Cement, RMX

#### Response to the Competition Commission Issues Statement

20 April 2012

#### 1. INTRODUCTION

- 1.1 This document sets out Hanson's response to the Issues Statement published by the Competition Commission (CC) on 8 March 2012 in relation to the Aggregates, RMX and Cement Market Investigation (*the MIR*).

##### **Overview**

- 1.2 Hanson considers that there are a number of comments which it can usefully make at this early stage to inform the CC's thinking. In particular, it seeks to address:

1.2.1 A number of the concerns raised by the Office of Fair Trading (OFT) in its reference decision in respect of the MIR (*the OFT Reference Decision*)<sup>1</sup>; and

1.2.2 A number of the provisional findings of the CC (*the CCPF*) in respect of the proposed Anglo American (Tarmac)/Lafarge joint venture (*the Tarmac/Lafarge Merger Inquiry*)<sup>2</sup>.

- 1.3 Hanson does not seek to provide a comprehensive response to the points raised in the Issues Statement, the OFT Reference Decision or the CCPF. It anticipates that the CC will be exploring the issues over the course of the MIR and, as such, Hanson will have the opportunity to engage fully with the CC on the points not covered in this Submission (for example, in its responses to the CC's various Questionnaires).

- 1.4 Naturally, the fact that a point has not been addressed in this Submission should not be taken to mean that Hanson in any way agrees with the conclusions/thinking of the OFT and/or the CC merger team. Hanson looks forward to exploring these points and other aspects of the MIR over the coming months, as they are clarified by the CC and set out with any evidence the CC may wish to rely on.

##### **Executive Summary**

- 1.5 This Submission focuses on particular issues which are relevant to each of the theories of harm set out by the CC in the Issues Statement, and is structured accordingly.

- 1.6 As regards the potential theories of harm around **unilateral market power (Theory of Harm 1)**, Hanson focuses on aggregates and RMX for current purposes.

- 1.7 The markets for aggregates and RMX are competitive and neither of these markets presents characteristics that would suggest any company individually holds unilateral market power. For example:

1.7.1 The aggregates market is a competitive market with more than 230 companies currently active in supplying aggregates<sup>3</sup>. Primary aggregates suppliers are subject to significant constraints from secondary and recycled aggregates. Based on some initial analysis conducted by Hanson for the purposes of this Submission, in most local areas throughout Great Britain where it is active,

<sup>1</sup> OFT Reference Decision, January 2012 - OFT1358ref

<sup>2</sup> CC Provisional Findings Report of 23 February 2012 on the Tarmac/Lafarge Merger Inquiry.

<sup>3</sup> BDS Marketing Research: "*Estimated market shares of pits, quarries and marine wharves in Great Britain (2010)*", October 2011, page 163 et seq.

there are at least four companies competing with it in primary aggregates alone, which is generally sufficient and removing the need for regulatory intervention<sup>4</sup>. Hanson would expect this picture to be largely replicated across the vast majority of local markets in Great Britain; and

- 1.7.2 The RMX market is competitive and has low barriers to entry with a growing market share of independents<sup>5</sup>, as well as an increasing role in the market being played by volumetric trucks. RMX producers generally also face significant buyer power, as almost all RMX work is tendered for.
- 1.8 As regards the theories of harm around **tacit coordination (Theory of Harm 2)**, Hanson considers the OFT allegations in its Reference Decision, and the CC's concerns (expressed in the CCPF), about coordination in the cement market to be wholly incorrect. The asymmetries between cement producers in cost, capacities, internalisation and capacity utilisation severely limit the incentives to participate in coordination, and make it difficult for firms to come to any form of common understanding. The significant changes to the commercial realities of the cement market in recent years also make tacit coordination now or in the future highly unlikely (for example, the shock of the recession, rising energy costs and the introduction of the EU Energy Trading Scheme – which introduces a substantial (opportunity) cost of producing cement – the variable costs of producing cement have increased significantly).
- 1.9 Any alleged coordination would also be undermined by external forces – for example, the independent cement importers to which customers can, and do, turn. These importers can rapidly expand supply. Finally, the behaviour of firms and market outcomes are inconsistent with coordination. Cement firms are pursuing different strategies - Hanson is taking costs out of the business, others are increasing capacity utilisation - and there is no evidence of excessive profitability in the cement industry.
- 1.10 The OFT's concern that the majors have coordinated, systematically to **squeeze** independent RMX suppliers during the recession is groundless (**Theory of Harm 3**). This concern should be dismissed in its entirety. There is no evidence that majors have either the ability or incentive to coordinate a squeeze of independent RMX suppliers. And, according to respected third party market data, far from being excluded, independent RMX suppliers have increased their supply of RMX during the recession and have gained significant share of the market.
- 1.11 Therefore, Hanson sees no evidence of this alleged squeeze in practice or effect – equally efficient independent competitors (the basis of the test that the CC must apply) have continued to trade, and to flourish, in the market. Finally, Hanson emphasises that it has played no part in any alleged squeeze. Independent RMX companies are important and valued customers for Hanson. As is demonstrated in this response, [CONFIDENTIAL].
- 1.12 With regard to theories of harm around **policy and regulation (Theory of Harm 4)**, Hanson considers that: the Aggregates Levy contributes to the attractiveness and real price advantage of secondary and recycled aggregates and accordingly to the constraint posed to primary aggregates producers by these supply sources (this is dealt with under Theory of Harm 1 below); and the EU ETS has a significant impact on competitive conditions (dealt with under Theory of Harm 3).
- 1.13 The Submission also seeks to deal with some of the points by the OFT in the OFT Reference Decision concerning the planning regime. In particular, Hanson considers that, to the extent that the planning system poses a barrier to entry, it does so for all players equally (and there are not higher barriers for smaller companies). As regards alleged "landbanks", it is commercially reasonable for producers of the reference products to maintain a prudent level of mineral reserves to ensure continuity in supply of

<sup>4</sup> Merger Assessment Guidelines, CC2/OFT1254, paragraph 5.3.5.

<sup>5</sup> OFT Reference Decision, paragraph 4.48.

reserves, as the planning system is lengthy, costly and with no certainties. There is no foundation to the OFT's potential concerns over use of landbanks by industry participants to raise barriers to entry.

- 1.14 The suggestions by the OFT that the planning regime enhances transparency in aggregates, in particular through contacts between players in Aggregates Working Parties, does not reflect the realities of the operation of the system in practice.
- 1.15 Before turning further to the substance of the Submission, Hanson notes a number of general concerns in relation to the OFT Reference Decision and the Tarmac/Lafarge Merger Inquiry (as well as repeating comments made previously about the overlap with the European Commission's investigation).

## 2. PRELIMINARY COMMENTS ON THE OFT REFERENCE DECISION

- 2.1 The OFT Reference Decision raises a number of significant concerns, in particular:
- 2.1.1 The lack of substantiation of the alleged theories of harm the OFT explored;
- 2.1.2 The degree of reliance on a limited amount of anecdotal and anonymous evidence; and
- 2.1.3 The fact that the industry structures which are now under review and expressed to be of concern have to a significant extent been the subject of regulatory review and subsequent approval under the merger control rules.
- 2.2 Hanson recognises that, as a first phase body, it may not be appropriate to expect the OFT to prove any theories of harm it is exploring to the standard which would be required of the CC (as the second phase decision maker). However, Hanson believes that the factors identified in this section mean that the CC should give little, if any, weight to the stated concerns raised by the OFT.
- 2.3 Indeed, given the fact that current market structures result from mergers which, in most cases, have been the subject of merger reviews, the CC is respectfully encouraged to approach the MIR with a presumption that the markets are generally working well, rather than the opposite.

### ***Quality of Analysis in the Reference Decision***

- 2.4 The alleged theories of harm suggested in the OFT Reference Decision have not, in Hanson's view, been sufficiently substantiated to any recognisable standard of proof, particularly in light of the fact that they involve technical, rare and complex competition theories of harm, such as coordination, refusal to supply and margin squeeze.
- 2.5 One example relates to the "performance indicators" which the OFT cites in relation to margin squeeze<sup>6</sup>. The OFT appears to have relied on:
- 2.5.1 general high-level ONS data;
- 2.5.2 data selected from only two of the cement producers on suggested divergence between cement and RMX prices (the OFT has itself acknowledged and recognised "*serious limitations*" in the data<sup>7</sup>); and
- 2.5.3 rudimentary analysis of alleged differences between the prices charged by cement producers to themselves, other cement producers and "independents", again based on a small number of producers (Hanson was not given access or opportunity to comment on the OFT's methodology or calculations).

<sup>6</sup> OFT Reference Decision, paras. 5.43 to 5.67

<sup>7</sup> OFT Reference Decision, paragraph 5.54,

- 2.6 As explored in more detail later in this Submission, this is a very rudimentary method of analysis when considering the complexities that a margin squeeze Theory of Harm involves.

### ***Use of Anecdotal and Anonymous Evidence***

- 2.7 When the above factors are taken into account, it is evident that the OFT Reference Decision is, to a significant extent, characterised by a reliance on a limited quantity of anonymous and anecdotal evidence. The OFT's Reference Decision set out a series of claims<sup>8</sup> which were set out on an anonymous basis. The level of detail provided in the OFT Reference Decision was so vague that it prevented companies, such as Hanson, from being able to respond to the issues raised.

- 2.8 Not only does this cast doubt on what reliance, if any, which can be placed on such reports, comments and the conclusions based on such comments, but it also raises serious concerns about the ability of the parties involved in the MIR to exercise their rights of defence. This is an issue which has already been raised during Hanson's Administrative Meeting, but it is appropriate for Hanson to repeat and formalise its request for such third party allegations to be set out in sufficient detail in order to allow a due consideration and response.

- 2.9 It is noted that some complaints appear to have been presented to the CC during the course of the Tarmac/Lafarge Merger Inquiry. On a review of the third party comments published on the Tarmac/Lafarge Merger Inquiry page on the CC's website, it appears again that these are often anonymous. It is notable that, [CONFIDENTIAL], Hanson provided details that demonstrated that:

2.9.1 [CONFIDENTIAL] was groundless [CONFIDENTIAL]

2.9.2 [CONFIDENTIAL].<sup>9</sup>

- 2.10 This suggests that, at least as far as [CONFIDENTIAL] that Hanson has been provided with, the concerns expressed appear to be unsubstantiated.

- 2.11 Hanson invites the CC to follow a similar process with all such complaints as was taken by the CC in relation to [CONFIDENTIAL] put to Hanson during the put-back process in the Tarmac/Lafarge Merger Inquiry.

### ***Previous Merger Reviews***

- 2.12 Hanson has also noted the references in the OFT Reference Decision (and the CC's references in the Issues Statement) to potential vertical integration issues and, for example, the suggestion that the resulting economies of scale arising from vertical integration might present the possibility of a barrier to entry in discouraging new entrants from entering the market. In relation to such suggestions, the merger control authorities at both national and European level (in particular the OFT and the European Commission) have repeatedly assessed and cleared the mergers that have given rise to the vertical integration in the industry. These clearances have been at Phase I, which further confirms a clear lack of competition concerns.

- 2.13 A clear example of this relates to the European Commission's 2007 clearance of the acquisition of Hanson by HeidelbergCement<sup>10</sup>. This involved vertical integration between a major cement player (Castle Cement), and a major RMX player (Hanson), in the UK. This was cleared by the European Commission in Phase I. The OFT would have had the opportunity to comment and, if it had any concerns, request a reference back of

<sup>8</sup> OFT Reference Decision at Section 5.1 – 5.26

<sup>9</sup> Putback Paper on "Coordination in the Supply of Bulk Cement" – Hanson comments submitted on 30 January 2012. [CONFIDENTIAL].

<sup>10</sup> See e.g. Case COMP/M.4719 *HeidelbergCement/Hanson*, paragraph 90 et seq.

jurisdiction over the UK aspects of the deal to the UK<sup>11</sup> (but chose not to). Indeed, the European Commission considered possible input and customer foreclosure strategies (following another such complaint), but expressly rejected them.

- 2.14 In addition to this clearance, mergers leading to vertical integration in the UK (aggregates and/or cement into RMX) have been dealt with in a significant number of cases. Examples include:
- 2.14.1 Aggregate Industries' acquisition of Atlantic Aggregates Limited and Stone Haul Limited (secondary aggregates into RMX)<sup>12</sup>;
  - 2.14.2 Aggregate Industries' acquisition of Foster Yeoman (aggregates into RMX)<sup>13</sup>;
  - 2.14.3 Lafarge's acquisition of Blue Circle Industries (a major cement player combining with a vertically integrated aggregates and RMX player)<sup>14</sup>;
  - 2.14.4 Minorco's (Anglo American) acquisition of Tarmac (aggregates into RMX)<sup>15</sup>; and
  - 2.14.5 Hanson's acquisition of Pioneer (aggregates into RMX)<sup>16</sup>; and
  - 2.14.6 RMC's acquisition of Rugby Cement<sup>17</sup>.
- 2.15 There are also numerous instances where horizontal overlaps have been approved by the European Commission or the OFT at Phase I. These include those cases noted above, with more significant instances of horizontal overlap in aggregates arising from Aggregate Industries/Foster Yeoman, Anglo American/Tarmac and Hanson/Pioneer (even though local divestments were required, the overlaps at national level did not give rise to concern). In relation to cement, RMC/Rugby involved significant overlaps.
- 2.16 Now, having previously approved the mergers and the resulting increases in the scale of operation and/or vertical integration (or having had the chance to comment on/request a reference back of such mergers in the case of EU Merger Regulation cases), the OFT appears to be referring to concerns over concentration and vertical integration, as well as the larger scale of industry as representing a possible barrier to entry. Some of these cases are recent (e.g. HeidelbergCement/Hanson), whereas others are more historic. However, even in the cases of the more historic cases, it should be noted that markets have become more competitive since the date of those decisions (e.g. growth of imports of cement, relative growth of the secondary and recycled aggregates sectors and the relative growth of independent RMX producers).
- 2.17 Hanson therefore considers that any potential objections by the CC in relation to vertical integration and horizontal concentration (particularly at the national level) raises fundamental *res judicata* concerns if the various clearance decisions by the merger control authorities cannot now be relied upon by the consolidated undertakings in question.

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<sup>11</sup> Under Article 9 of Council Regulation 139/2004/EC (the EU Merger Regulation).

<sup>12</sup> OFT decision, *Aggregate Industries Limited / Atlantic Aggregates Limited / Stone Haul Limited*, 2 March 2009, paragraph 121-123.

<sup>13</sup> Case COMP/M.4298 *Aggregate Industries/Foster Yeoman*, paragraph 18-20; and subsequent clearance by the OFT following referral by the European Commission; OFT decision, *Aggregate Industries/Foster Yeoman*, 22 December 2006, paragraph 96-98.

<sup>14</sup> Case COMP/M.2317 *Lafarge/Blue Circle (II)*, paragraph 15 et seq.

<sup>15</sup> Case COMP/M.1779 *AngloAmerican/Tarmac*; and subsequent clearance by the Secretary of State (subject to undertakings) following referral by the European Commission.

<sup>16</sup> Case COMP/M.1827 *Hanson/Pioneer*.

<sup>17</sup> Case COMP/M.1759 *RMC/Rugby*.

### 3. IMPACT OF TARMAC/LAFARGE MERGER INQUIRY

- 3.1 It is highly unusual that a market investigation overlaps with a merger inquiry which involves two of the major players in the markets under investigation in the MIR. Not only does this cast doubt on the appropriateness of pursuing a MIR in respect of markets which were subject to considerable scrutiny under the merger inquiry (in particular given the considerable information burden placed on the main industry players)<sup>18</sup>, but it also has two particular implications for the MIR.

#### ***Risk of CCPF prejudicing the analysis and findings in the MIR***

- 3.2 First, the CC has reached a number of provisional conclusions (and will shortly be reaching final conclusions) on a number of issues relevant to the MIR in the context of its merger inquiry. Examples of preliminary conclusions of relevance to the MIR include: market definition in aggregates, RMX and cement; and the factors relevant to a cement coordination Theory of Harm. Whilst the CC's statement in the CCPF that "*we did not come to a conclusion whether or not there was pre-existing coordination in the bulk cement market*"<sup>19</sup> is welcome, the CC purports to find features relevant to coordination when it notes that "*we found that the evidence on market outcomes that we reviewed, when taken together, indicated that there were shortcomings in the way the market functioned and was consistent with a degree of pre-existing tacit coordination*".
- 3.3 Hanson welcomes the CC's statement in the Issues Statement (at paragraph 6): "*This investigation is separate from the inquiry into the joint venture between Anglo American and Lafarge....We are of course aware of those findings [the CCPF] but the members of the Inquiry for the market investigation will reach their own conclusions in relation to the matters covered by the market investigation on the basis of the evidence we receive and the analysis we undertake.*"
- 3.4 Indeed, there are reasons why the CC should adopt considerable caution before giving any weight to the (provisional) findings in the Tarmac/Lafarge Merger Inquiry in the context of the MIR. The MIR is designed to provide the opportunity for a "fresh look" at the market, and the CC should ensure that it is carried out as such. In particular, there are two reasons why Hanson's interests would be prejudiced if the CC allowed itself to be influenced by the Tarmac/Lafarge Merger Inquiry:
- 3.4.1 Hanson is likely to be a main party in the MIR, but was only a third party in the merger inquiry. As a third party, it had limited opportunity and incentive to engage with the CC and exercise the rights of defence which it will exercise in the MIR (for example, it had a short telephone hearing with the CC, Hanson had a very short period of time to comment on any CC papers, there was no site visit to Hanson's facilities, etc). Therefore, Hanson would be unduly prejudiced if the CC's findings in the Tarmac/Lafarge Merger Inquiry in any manner influenced the CC's thinking in the MIR without a thorough "fresh look", which is the very essence of a Market Investigation. Indeed, Hanson understands that the CC would be under a legal obligation to approach the MIR with such a "fresh look" and not accept and rely on findings from the Tarmac/Lafarge Merger Inquiry.
- 3.4.2 A merger inquiry involves a very tight timetable, which can act as a limit on the depth of analysis which can be undertaken by the CC (particularly in cases, which from both a legal and economic perspective, involve more complex and uncertain theories of harm, as is being suggested in the current case); by contrast, the market investigation regime is designed to provide for an in-depth review of a market and requires a more detailed analysis of heavily econometric theories of harm to assess whether or not they in fact apply.

<sup>18</sup> Hanson has already raised, in separate correspondence, its concerns over the overlap in timing and apparent subject matter between the MIR and the European Commission investigation into suspected breaches of Article 101 TFEU in the cement and related products markets (which include aggregates and RMX), and does not seek to repeat its concerns here.

<sup>19</sup> CCPF, paragraph 38

- 3.5 Therefore, whilst Hanson will refer here to certain statements made in the CCPF and to some of the theories of harm that have been explored in the CCPF, as a proxy for the theories likely to be explored in the MIR, the CC must strictly consider its analysis anew even when findings from the Tarmac/Lafarge Merger Inquiry may have been finalised.

***Risk of the outcome of the Tarmac/Lafarge JV (if permitted with e.g. divestment remedies) fundamentally changing the market structure currently under review***

- 3.6 Second, there is an issue arising from the decision to pursue the MIR in parallel with the Tarmac/Lafarge Merger Inquiry, i.e. the risk that the outcome of the proposed Tarmac/Lafarge JV, if approved, would have a fundamental impact on the structure and dynamics of the markets under consideration. For example, if the CC permits the Tarmac/Lafarge transaction, it appears likely to require significant remedies along the lines suggested in its Notice of Possible Remedies (*Tarmac/Lafarge Remedies Notice*).<sup>20</sup> The remedy suggested by the CC itself in the Tarmac/Lafarge Remedies Notice require divestment of a substantial cement and RMX business to a third party, which would lead to a player which is currently not one of the major UK cement suppliers becoming a new 'major' and a significant player in the industry<sup>21</sup>. The effect of those remedies may be to introduce a brand new vertically integrated player into the market. Even if this is not the case, other potential alternative outcomes (on a clearance with remedies) would at least lead to a very substantial change in the structure of the markets covered by the MIR.
- 3.7 Even if the JV is prohibited outright, it cannot either be excluded that this decision would be subject to appeal (leading to a very significant uncertainty for much of the MIR duration with the possibility that the appeal might ultimately be successful and the market structure might ultimately be subject to significant change).
- 3.8 In considering whether there are any features of the relevant markets which prevent, restrict or distort competition as part of the MIR, the CC must consider the structure of the markets concerned<sup>22</sup>. It would evidently be very difficult, if not impossible, for the CC to reach a decision on this issue if the market structure was likely to undergo very significant change, for example on creation of a new 'major'.
- 3.9 Therefore, any structural change resulting from the Tarmac/Lafarge Merger Inquiry (if permitted), whether now or further on appeal, would in view of the likely necessary divestments, change the dynamics of the market and prejudice the MIR. This is particularly the case, due to the fact that any analysis by the CC could only then be based on "historic" market conditions (potentially with different 'majors') – i.e. the MIR would then review some of the most complex and uncertain theories of harm on the basis of speculative and/or erroneous data as regards market structure and conditions.
- 3.10 Hanson reserves all rights to make further submissions in this respect if and when appropriate. However, it would note that the CC has the power to request a variation in the terms of reference for the MIR (and that the OFT has acceded to previous requests)<sup>23</sup>. It would suggest that the CC give serious consideration to requesting a variation of the terms of reference.
- 3.11 Given the fact that any approval of the Tarmac/Lafarge JV with the remedies currently required by the CC would lead to the most significant changes to the *cement* and *RMX* markets, there would be a compelling case for asking for the exclusion of cement and RMX in their entirety from the scope of the MIR. This would, of course, not prevent the OFT from referring those markets at a later stage if it later concludes that the test for reference is again met if and when the impact of any changes in market structure are clearly and finally confirmed and verified (which is likely to take considerable time).

<sup>20</sup> Reference relating to the Anticipated Joint Venture between Anglo American Plc And Lafarge SA: Notice of possible remedies under Rule 11 of the Competition Commission Rules of Procedure, 21 February 2012.

<sup>21</sup> For example, see the report in the Financial Times on 26 February 2012 which noted that Breedon Aggregates has confirmed an interest in acquiring assets divested as a result of the merger inquiry.

<sup>22</sup> Section 131 (2) of the Enterprise Act 2002

<sup>23</sup> Section 135 of the Enterprise Act 2002.

3.12 A limitation of the reference to the aggregates market would conform to the original stated objective and scope of the OFT's market study when this study commenced back in 2010. Whilst any changes in market structure would, of course, impact on the consideration of aggregates (and, indeed, Hanson feels that it would remain inappropriate for a MIR to cover aggregates in the context of potentially significant structural change), the changes to aggregates markets resulting from the JV and the suggested remedies appear less extensive than those to cement and RMX. Therefore, if the CC felt that it could not request a variation of the MIR which, in effect, resulted in a termination of the MIR, a variation to limit the MIR to aggregates markets would seem a logical solution.

#### 4. OVERLAP WITH THE EC INVESTIGATION

4.1 The CC will note that a number of players active in the reference markets are subject to an ongoing investigation by the European Commission into a suspected breach of Article 101 TFEU<sup>24</sup> (the *EC Investigation*)

4.2 Hanson noted to the OFT that it considered that a MIR would be inappropriate (and indeed contrary to the OFT's own guidance) whilst the EC Investigation was ongoing. A copy of these comments has been provided to the CC, and so Hanson does not repeat them here. Again, Hanson reserves its right to make further submissions on this point.

4.3 However, it is worth noting, in the context of the comments made above, the additional difficulties posed by the overlapping EC Investigation.

4.4 This means that Hanson (and, it assumes, other companies in the industry) has been subject to extremely intense regulatory burdens over the last four years. Indeed, since November 2010 (when Hanson received a draft of an information request from the European Commission<sup>25</sup>), numerous personnel within Hanson have had to dedicate significant amounts of their time answering information requests from the European Commission (the deadline for the European Commission's information request expired in August 2011) and the CC (the information requests in respect of Lafarge/Tarmac were required to be answered in late 2011), as well as dealing with further queries (or putbacks) on an ongoing basis from the European Commission and the CC. In addition to the professional fees, this has often involved transferring staff from other projects to work on a full time basis on these matters, which has inevitably had an adverse impact on many matters, projects and employee training exercises in Hanson's everyday business. It is clear from the CC questionnaires sent to Hanson that this process is likely to continue for a number of months.

4.5 Whilst Hanson appreciates that the CC has certain statutory functions to perform, it is notable that the burden on the industry is expressly recognised by the OFT in its guidance on MIRs as a strong reason for not making an MIR. The OFT notes that it would not normally make an MIR when there is an overlapping EC investigation in order to "*reduce undue burdens on business and as a matter of administrative good practice*"<sup>26</sup>. This stated objective of the OFT would appear not to have been followed in this instance and in itself represents a strong reason to limit the scope of the MIR.

4.6 In addition, the Issues Statement suggests that the CC will explore issues which could overlap with the matters under the EC investigation, particularly considering that the two investigations appear to have each commenced in a single industry sector and then extended and converged across the three sectors of aggregates, RMX and cement within the vertical integration. Initially, the OFT/CC investigations covered aggregates, whilst the EC investigation originally appeared to focus on cement. However, these

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<sup>24</sup> See the Press Release issued by the European Commission on 10 December 2010 in which it noted that it was initiating proceedings in relation to an investigation covering a number of countries (including the UK) and a number of products (including cement, aggregates and ready-mix). The Press Release noted suspicions of import/export restrictions, market sharing, price coordination and "related" restrictions.

<sup>25</sup> This information request has been the subject of an appeal to the European General Court. Whilst interim measures have been rejected, the substance of the case remains to be heard.

<sup>26</sup> OFT Guidance on Market Investigation References (OFT 511), paragraph 2.16.

investigations now both have a broader product scope across the three vertically integrated sectors, hence overlapping each other to an increasing extent.

- 4.7 Hanson appreciates that a MIR is designed to be a different type of review from an investigation into suspected breaches of Article 101 TFEU. However, it is evident that there must now be a material risk of overlap between an Article 101 TFEU investigation into suspected market sharing, price coordination and import/export restrictions and a CC MIR into theories of harm involving investigation of potential coordination and margin squeeze concerns (in which the constraint from imports will be a factor), particularly where the product scope of these investigations are increasingly converging.
- 4.8 As noted in the submission by Hanson to the OFT, the assertion of exclusive jurisdiction by the European Commission by initiating proceedings does present various conceptual and legal difficulties in terms of the investigation of theories of harm (e.g. tacit coordination) which now risk conflicting with those being explored by the European Commission (if it is exploring actual coordination in the same markets) and in terms of the remedies it may, in principle, be able to impose (if it feels that remedies are necessary).
- 4.9 Again, Hanson considers that these factors now present a compelling case to limit the scope of the MIR. Whilst a limitation to aggregates would again not represent a clear solution (as the EC Investigation appears to cover aggregates as well as cement and RMX), it would appear significantly to limit that scope for conflict.

***THEORY OF HARM 1: "HIGH CONCENTRATION AND BARRIERS TO ENTRY MEAN THAT THE SUPPLIERS CAN EXERCISE UNILATERAL MARKET POWER"***

**5. OVERVIEW**

- 5.1 This section explores the theories of harm as far as concentration in aggregates and RMX are concerned:
- 5.1.1 The extent of concentration in aggregates markets by reference to Hanson's own preliminary data on its market shares around its own facilities and the importance of the constraint from secondary and recycled aggregates; and
- 5.1.2 The general nature of competition in RMX markets and the importance of the constraint from volumetric producers.
- 5.2 In short, the preliminary analysis conducted by Hanson in relation to its own position demonstrates that Hanson does not have unilateral market power in aggregates or RMX markets, as:
- 5.2.1 in primary **aggregates**:
- (a) Hanson has a national market share of approximately 14-15%;
  - (b) in respect of those local areas where Hanson has a production facility, its shares are generally below "safe harbour" thresholds traditionally adopted by the Competition Authorities; and
  - (c) Hanson faces sufficient competition throughout Great Britain from other aggregates producers, in addition to constraints from secondary/recycled aggregates.
- 5.2.2 for fixed plant **RMX**:
- (a) Hanson has a national market share of approximately 16-17%;
  - (b) Hanson faces sufficient competition throughout Great Britain from other RMX producers, in addition to constraints from volumetric trucks;

- (c) barriers to entry are low; and
- (d) there is significant countervailing buyer power, as most RMX work is tendered for.

5.3 The OFT Reference Decision and, to a certain extent, the CCPF does not take sufficient account of the significant constraint exercised by secondary/recycled aggregates supplies and volumetric RMX trucks. In particular, the OFT Reference Decision and the CCPF suggests that these alternative sources of supply are limited in their applications, whereas the evidence referred to below shows how these sources of supply are "moving up the quality chain" (in the case of secondary/recycled aggregates) and serving larger projects (in the case of volumetric trucks). Secondary and recycled aggregates are entirely substitutable for all virgin, low grade non-premium aggregate application and as such must be considered to be part of the same market without differentiation.

5.4 Any concentration analysis should therefore take account of these sources of supply and the potential for these sources of supply to win further share from "traditional" sources. Doing so would lower concentration levels further.

## 6. CONCENTRATION IN PRIMARY AGGREGATES

6.1 The aggregates market in Great Britain is very competitive and BDS recently listed more than 230 companies currently active in the supply of aggregates<sup>27</sup>.

6.2 Even if one were to examine a separate relevant market for primary aggregates, which Hanson contests (see further below), Hanson does *not* hold unilateral market power, either on a national level or a regional level.

6.3 Hanson notes that the European Commission concluded in its Article [102] enforcement priority guidelines that "*dominance is not likely if the undertaking's market share is below 40% in the relevant market*".<sup>28</sup> Hanson also notes that CC/OFT guidance in the area of merger control states that "*market shares of less than 40 per cent will not often give the OFT cause for concern over unilateral effects*".<sup>29</sup>

6.4 In primary aggregates (land-won and marine), Hanson has a market share of approximately 14-15% in Great Britain<sup>30</sup> and, therefore, cannot be considered to hold unilateral market power on a national level.

6.5 For the purposes of this Submission, Hanson has conducted a "quick look" analysis of its position in local areas around its production facilities. In the time available, Hanson has not been able to assess its aggregates market position by reference to catchment areas within which 80% of its plants' external sales volumes were delivered (the approach suggested in the CCPF), but has examined its positions on the basis of production output within a 30-mile radius of its land-won aggregates production sites as a rough initial proxy for its market position and that of its competitors<sup>31</sup>.

6.6 On the basis of regional 30-mile radius markets in Great Britain assessed against 2010 data, Hanson's market share based on production output of aggregates would not, in reality, have exceeded 40% in any area in Great Britain. There are only [CONFIDENTIAL] areas where Hanson could have been considered to exceed such a

<sup>27</sup> BDS Marketing Research: "*Estimated market shares of pits, quarries and marine wharves in Great Britain (2010)*", October 2011, page 163 et seq.

<sup>28</sup> Communication from the Commission — *Guidance on the Commission's enforcement priorities in applying Article [102] of the [Treaty on the Functioning of the European Union] to abusive exclusionary conduct by dominant undertakings*, OJ 2009 C45/7, paragraph 14.

<sup>29</sup> Merger Assessment Guidelines, CC2/OFT1254, paragraph 5.3.5.

<sup>30</sup> BDS Marketing Research: "*Estimated market shares of pits, quarries and marine wharves in Great Britain (2010)*", October 2011, page 6 and 163; and OFT Reference Decision, January 2012, OFT1358ref, paragraph 3.12.

<sup>31</sup> Please note that in calculating market shares, Hanson has relied on BDS Marketing Research for 2010, as well as some internal market data; and that it therefore cannot be excluded that market shares have changed since, e.g. due to competitors closing or mothballing certain sites, further expansion or retraction, etc.

market share on that basis would have been [CONFIDENTIAL] and [CONFIDENTIAL]. However, apart from Hanson having faced/facing significant competition from a number of competitors in [CONFIDENTIAL] in the time period for which the market share data was obtained (2010), the market shares in these areas are not relevant, as: one plant had minimal production (as the site acts as a depot only) and is now mothballed; and a majority of the output of the other related to high PSV stone, much of which is likely to be transported outside the 30-mile radius used as a proxy for this exercise.

- 6.7 Indeed, Hanson understands that the CC and the OFT considers it unrealistic that competition concerns over unilateral effects arise where an entity's market share in aggregates markets fall below 33%<sup>32</sup>. This is, of course, a lower threshold (i.e. not suggestive of competition concerns when the threshold is exceeded). Even on such a cautious basis, Hanson's market share (based on the rudimentary methodology set out above) would be below this level in all but [CONFIDENTIAL] further areas (where its share would still be below 40%).
- 6.8 In [CONFIDENTIAL] areas where Hanson holds a market share of 33-40%, Hanson faces competition from at least four other competitors and CC/OFT guidance in the area of merger control states that "*the OFT has not usually been concerned about mergers that reduce the number of firms in the market from five to four (or above)*", i.e. suggesting that competition can generally be assumed to be sufficient where there are at least four other players competing in the market, in which case there is no need for regulatory intervention<sup>33</sup>.
- 6.9 Therefore, whilst Hanson acknowledges that this analysis is by no means comprehensive, it does provide an initial indication of the likely lack of unilateral market power for Hanson, even if primary aggregates were to be considered separately.

## 7. IMPORTANCE OF RECYCLED/SECONDARY AGGREGATES

- 7.1 In the OFT Reference Decision, the OFT notes that aggregates come from three sources:
- 7.1.1 **Primary aggregates** – newly extracted from the ground or seabed;
  - 7.1.2 **Secondary aggregates** – a by-product from the extraction of other materials or a manufacturing process, which may be natural (such as china clay waste) or man-made (such as steel slag); and
  - 7.1.3 **Recycled aggregates** – produced from crushed demolition waste.

### ***OFT/CC (provisional) views of recycled/secondary aggregates***

- 7.2 The OFT Reference Decision underplays the role played by secondary and recycled aggregates in terms of providing a strong competitive constraint to primary aggregates producers.
- 7.3 Whilst the OFT recognises that "*for some uses, secondary and recycled aggregates can be substitutes for primary aggregates*", it does not consider that this applies universally or even in a majority of cases<sup>34</sup>. The OFT also refers to its own decision in the Tarmac/Lafarge merger<sup>35</sup> where it found that "*the use of secondary and recycled is weighed heavily towards lower value structural fill and sub-base applications rather than "value-added" applications, with primary aggregates being strongly preferred in some applications, including RMX concrete production.*" It also makes reference to an earlier

<sup>32</sup> CCPF, paragraph 6.25-6.27.

<sup>33</sup> Merger Assessment Guidelines, CC2/OFT1254, paragraph 5.3.5. In [CONFIDENTIAL], there are two competitors in the immediate 30-mile radius from that plant ([CONFIDENTIAL]) but, in this context, Hanson notes that the OFT in its Reference Decision, paragraph 4.11, recognised that two players are sufficient for competition and that additional players have no impact on price; and considered this to also be plausible in relation to the aggregates sector, as it in part can be characterised as a bidding market.

<sup>34</sup> Paragraph 3.6 of the OFT Reference Decision.

<sup>35</sup> OFT Merger Decision *Anglo American/Lafarge*, ME/5007/11, November 2011.

European Commission merger decision<sup>36</sup> which found that *"secondary aggregates are not substitutable across the whole range of applications."*

- 7.4 Notwithstanding the above, the OFT recognises the competitive constraint from secondary and recycled aggregates (and therefore included it within the scope of the OFT Reference Decision).
- 7.5 Hanson also notes that, in the CC PF, the CC provisionally found that, although secondary and recycled aggregates did to some extent constrain primary aggregates, each type was in a separate relevant product market. The CC did however note that there appears to be more scope for switching to secondary/recycled aggregates for general construction use, as oppose to RMX or asphalt production<sup>37</sup>.
- 7.6 Whilst Hanson agrees with the conclusions that secondary/recycled aggregates do present a competitive constraint, it considers that the OFT Reference Decision and the Tarmac/Lafarge Decision both understate the constraint for the reasons set out below.

### ***Replacement of Primary with Secondary/Recycled Aggregates***

- 7.7 Secondary and recycled aggregates have certain inherent advantages over primary aggregates from the producer viewpoint:
- 7.7.1 The National Planning Policy Framework (NPPF) published on 27 March 2012 provides strong support for the development of secondary and recycled aggregates operations. For example, it states that local planning authorities, when preparing their Local Plans should *"so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously"*<sup>38</sup>. It also states that Mineral Planning Authorities should use the best available information to assess the projected demand for the use of mineral resources in their area, *"taking full account of opportunities to use materials from secondary and other sources which could provide suitable alternatives to primary materials"*<sup>39</sup>.
- 7.7.2 Secondary and recycled aggregates are currently exempt<sup>40</sup> from the Aggregates Levy (which gives them an automatic £2 per tonne cost advantage over primary aggregates). This cost advantage is notable when compared against prices for primary materials (for example, a £2 per tonne advantage for secondary/recycled material is significant when compared against an average £9 per tonne ex-gate price for crushed rock). Moreover, part of the levy is used to fund the Sustainability Fund and Aggsregain website (run by WRAP), both of which actively promote secondary/recycled aggregates in the market (i.e. the levy contributes to the advertising for the rival product).
- 7.7.3 Secondary aggregates (which are often by-products of other production processes) and recycled aggregates (which do not involve capital intensive quarrying operations) also have certain production cost advantages over primary aggregates<sup>41</sup>.

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<sup>36</sup> M. 5803 *Eurovia/Tarmac*, European Commission decision of 10 June 2010.

<sup>37</sup> Paragraph 5.26.

<sup>38</sup> Paragraph 143 of the NPPF.

<sup>39</sup> Paragraph 163 of the NPPF.

<sup>40</sup> On 7 March 2012, the General Court annulled a 2002 European Commission decision declaring that the exemptions in the Aggregates Levy amounted to lawful State aid, in particular referring to the exemption for secondary aggregates. At this stage, it is not yet known what the likely outcome of the case will be.

<sup>41</sup> The OFT has recognised the potential costs advantage of secondary aggregates (as well as recognising the contribution of the Aggregates Levy) in its decision in the case of Aggregate Industries completed acquisition of Atlantic Aggregates and Stone Haul (*Completed acquisition by Aggregate Industries UK Limited of Atlantic Aggregates Limited and of Stone Haul Limited* - Office Decision of 2 March 2009): *"One reason why secondary aggregates are cheaper than primary aggregates is*

- 7.8 The MPA estimates that, despite the very significant drop in demand for aggregates, recycled aggregate volumes have declined at a lower rate, suggesting that, as a proportion of aggregates supply, recycled aggregates have at least been on the rise. This trend can be expected to continue, in particular in the light of the various Government initiatives towards sustainable housing.
- 7.9 In addition, technological advances (combined with the price incentives already referred to) mean that the recycled aggregates have the potential to rise up the quality spectrum in terms of end use (i.e. there are ever growing end uses for which customers are prepared to use recycled material)<sup>42</sup>. Moreover, the issue of the strength of the end-product for which aggregates are used, can be addressed by the matrix of fine aggregate and cement slurry that binds together and fills the voids between the larger, coarse aggregate pieces (comparable to bitumen and various sands and fillers for producing asphalt). This matrix does not itself need to be essentially strong but rather be a good binder for the coarse aggregate from where the final product strength derives. Therefore, provided a correctly graded material can be produced, its strength is less important. This is expected to enable the utilisation of more products to replace the fine aggregate part of the mix. In turn, this means that a clear distinction can no longer be drawn between applications for which secondary/recycled aggregates are suitable or not suitable.
- 7.10 There are also a number of initiatives promoting the use of secondary/recycled aggregates, many of which contribute to the move of secondary/recycled aggregates up the "quality chain". These include:
- 7.10.1 The Waste & Resources Action Programme (WRAP) initiative to reduce the amount of construction industry waste being disposed of by landfill by 50%. Specifically, the WRAP Aggregates Programme set up in 2002 promotes sustainable aggregates use by reducing the demand for primary aggregates through encouraging greater use of recycled and secondary aggregates;
  - 7.10.2 The Code for Sustainable Homes (CSH) promotes the use of recycled materials. Under this scheme, credits may be earned by contractors where the materials used meet the Building Research Establishment Environment Assessment Methodology (BREEAM)<sup>43</sup>. This acts as a driver for public-sector projects (such as the construction of hospitals, schools and public housing) to stipulate the use of recycled materials;
  - 7.10.3 BREEAM has also influenced the use of sustainable materials for construction works at the 2012 Olympics. For example, the Olympic Delivery Authority specified at the outset that 25% by weight of all materials used on the Olympic Park venues and infrastructure should be recycled or secondary products. BRE sustainability targets have therefore been met by using recycled materials in RMX in this case<sup>44</sup>; and

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*because they are cheaper to produce since they derive from waste materials and therefore do not need to be directly quarried*" (paragraph 18). In that case, the Office adopted (what it termed a "cautious") market definition by referring to secondary aggregates only (due to the cheaper prices of secondary aggregates and specific demand for secondary aggregates). However, it is likely that competitive constraints are asymmetric: whilst there may be limits to the constraints imposed by primary aggregates on secondary aggregates, secondary (and recycled) aggregates do constrain primary aggregates. Indeed, in previous merger cases involving primary aggregates suppliers, such as the Aggregate Industries/Foster Yeoman decision (*Completed acquisition by Aggregate Industries Limited of Foster Yeoman Limited* – Office Decision of 20 November 2006), the Office has considered that recycled/secondary aggregates form part of a wider aggregates market.

<sup>42</sup> There are also examples of more innovative uses of recycling technologies. One example relates to a company called H. Sivyer Transport. Sivyer collects waste material from companies such as Thames Water, including used concrete pipes. Such products are recycled and then used for retrenching work as an alternative to traditional concrete (which primary aggregate producers typically provide). This recycled material can be used as a viable substitute and sold back to the originating party providing the waste goods, which in effect displaces those companies who provide and produce primary material.

<sup>43</sup> BREEAM is the most widely used environmental assessment method for buildings. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance.

<sup>44</sup> *Learning legacy – lessons learned from the London 2012 Games construction project*, BRE Construction Products Association, 23 March 2012, page 18.

- 7.10.4 In 2008, the UK Government launched the Strategy for Sustainable Construction which takes a longer-term view on how the UK construction industry can become more sustainable and work towards the overall sustainability targets of the UK.
- 7.11 Hanson has also recently begun producing RMX using recycled materials, supporting the fact that recycled/secondary aggregates are increasingly viewed as a substitute for primary aggregates in RMX as well (contrary to the general conclusion in the CCPF). This follows Hanson's commitment to WRAP and customer-led demand for such products (see above).
- 7.12 Even where there are end uses for which secondary/recycled aggregates are not suitable, increasingly a blend of primary and secondary aggregates are used. Even when secondary/recycled aggregates act as a substitute for lower quality primary aggregates, this substitution affects the production costs and dynamics of high quality primary aggregates as a quarry generally produces both ends of the quality spectrum due to the indigenous geological conditions and production techniques of particularly crushed rock quarries.

### ***The dynamics of the secondary/recycled aggregates sector***

- 7.13 Hanson sells recycled aggregates, as do a number of the other major players (inevitably due to the efficiencies arising from the recycling of aggregates in-situ at the site of production). However, the recycling of aggregates off-site at independent plants can also be attractive. The production of recycled aggregate at a fixed, central plant can usually produce a more diverse range of products and, therefore, better market options. This opens up opportunities for players outside the primary aggregates players to become strong competitors for the supply of aggregates. There are very many small suppliers of recycled aggregates who are strong players in local aggregates markets. Indeed, the OFT Reference Decision recognises that the market for recycled aggregates is "*much more competitive*"<sup>45</sup>, that barriers to entry into secondary and recycled aggregates are lower and that there has been a "*rapid expansion of recycled aggregates in particular in recent years*".<sup>46</sup>
- 7.14 A large sector producing recycled aggregates is the demolition industry which effectively is paid to produce crushed brick and concrete, and can then compete very strongly against primary aggregates for those end uses where quality is not a key factor.
- 7.15 Hanson is not active in the production of secondary aggregates. A number of the main players in this sector of the market are outside the primary aggregates sector, including china clay and slate producers. Hanson also [CONFIDENTIAL]<sup>47</sup>.
- 7.16 In summary, Hanson considers that the CC's review of the aggregates sector should take into account the very significant (and increasing) constraint imposed by secondary and recycled materials on primary aggregates. The fact that the secondary and recycled aggregates sectors represents around 28% of supply in Great Britain of aggregates and that these sectors are fragmented represents a significant factor indicating more fragmented aggregates markets than suggested by the OFT Reference Decision.

## **8. RMX**

- 8.1 The RMX market in Great Britain is highly competitive. BDS recently listed 206 companies currently active in the supply of RMX.<sup>48</sup> Prices are heavily and fiercely

<sup>45</sup> At paragraph 4.9, the OFT Reference Decision notes that there are an "*estimated 650 plants recycling construction demolition and excavation waste, operated by more than 450 companies in Great Britain*". The OFT Reference Decision also notes that "*the top 10 companies also produce an estimated 25% of recycled aggregates in Great Britain*". For the avoidance of doubt, it should be noted that Hanson does not agree with the apparent implications in the statement in the text above that there is a separate market for recycled aggregates and that there may be concerns over competition in primary aggregates.

<sup>46</sup> OFT Reference Decision, paragraph 4.35.

<sup>47</sup> Hanson currently [CONFIDENTIAL].

negotiated on a contract by contract basis with further negotiations often taking place every six months and sometimes every four months. Almost all work in RMX supply is tendered for, which results in significant buyer power.

- 8.2 Barriers to entry and expansion are low in the RMX market, as the level of financial resourcing needed is lower. Land suitable for RMX production is generally available as general industrial land and the planning process is relatively straightforward.<sup>49</sup> This is also corroborated by the fact that independent suppliers recently have *increased* their relative share of supply in the market<sup>50</sup>.
- 8.3 Hanson cannot be considered to hold any significant unilateral market power in the relevant market for RMX, as it has a market share on a national level of approximately 16-17% in Great Britain.<sup>51</sup>
- 8.4 Hanson considers that the CC's analysis will bear out the above factors and looks forward to engaging with the CC in this respect.

### ***Volumetric Trucks***

- 8.5 Under Theory of Harm 1, the CC sets out its intention to consider the substitutability between plant-batched, site-batched and volumetric truck sources<sup>52</sup>.
- 8.6 The position and impact of volumetric trucks in the RMX market was considered by the CC in the CCPF. The CC did not consider volumetric trucks as part of the relevant market for RMX but did consider the competitive constraints provided by them, in certain areas which it considered to be potentially problematic.<sup>53</sup> In coming to the conclusion that volumetric trucks were not part of the relevant market for RMX, the CC commented<sup>54</sup>:
- 8.6.1 Volumetric trucks serve a different segment of the market (typically small-volume projects); and
- 8.6.2 The product produced by volumetric trucks was perceived to be of a lower quality, in terms of specification and strength, compared to RMX produced at fixed or site plants.
- 8.7 Hanson considers the impact of volumetric trucks within the RMX market was understated by the CC in the CCPF. In recent years, volumetric trucks have become a far greater competitive constraint on RMX production at a fixed or site plant. Specifically, Hanson considers that:
- 8.7.1 Volumetric trucks overlap in serving similar segments of the market, to those served by plant RMX production. Volumetric trucks are not confined to just supplying small projects<sup>55</sup>;
- 8.7.2 The products produced by volumetric trucks are no longer considered to be of lower quality. Many volumetric companies are now BSI accredited.<sup>56</sup> Hanson

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<sup>48</sup> OFT Reference Decision, paragraph 3.33, referring to BDS Marketing research, "*Estimated market shares of ready mixed concrete companies in Great Britain (2009)*".

<sup>49</sup> OFT Reference Decision, paragraph 4.46.

<sup>50</sup> OFT Reference Decision, paragraph 4.48.

<sup>51</sup> OFT Merger Decision *Anglo American/Lafarge*, ME/5007/11, November 2011, paragraph 188; and OFT Reference Decision, paragraph 3.33-3.34.

<sup>52</sup> Issues Statement paragraph 34.

<sup>53</sup> CCPF para 21 (g).

<sup>54</sup> CCPF para 5.51

<sup>55</sup> Hanson is aware of volumetric trucks supplying larger projects in the West Midlands (one example being for a large project involving the M42). In addition, volumetric truck suppliers generally now supply both domestic and commercial customers, to a variety of project types and sizes. Volumetric truck producers also have the advantage of now being able to fill the trucks the night before a morning delivery. This is advantageous for them as this reduces what would be the batching time at a static plant.

<sup>56</sup> Hanson has received feedback from customers that volumetric trucks now produce specific mixes to specifications, in addition to a high quality of service.

also has recent experience of volumetric trucks winning work against Hanson where the projects required a higher grade of concrete.

- 8.8 Hanson would therefore suggest the CC considers the impact of and competitive constraints provided by volumetric trucks to site based RMX production.

### ***Position of Hanson***

- 8.9 In the time available, Hanson has not been able to assess its RMX market position in catchment areas within which 80% of its plants' external sales volumes were delivered. Neither has Hanson been able to examine its positions on the basis of production output in local 10-mile radius areas as a proxy for its market position and that of its competitors<sup>57</sup> but has assessed its position on the basis of number of plants in local areas of supply.<sup>58</sup>

- 8.10 Hanson understands that the CC and the OFT considers it unrealistic that competition concerns over unilateral effects arise where an entity's market share in RMX markets falls below 40% (on the basis of plant count).<sup>59</sup> On the narrow basis of local 10-mile radius markets, it is possible that Hanson's market share might exceed 40% in [CONFIDENTIAL] areas of Great Britain. However, in most such geographical areas, Hanson faces significant competition from a number of major competitors. Hanson is also of the view that it does not hold unilateral market power in RMX markets in any local area, due to inter alia the following countervailing factors:

- 8.10.1 Hanson faces competitive constraints by volumetric trucks (see above)<sup>60</sup>, as well as by competitors located *outside* relevant radii of supply, in particular where those competing sites outside the radius are well placed to serve a demand centre that would be the main source of customers for Hanson's sites located within the radius in question<sup>61</sup>;

- 8.10.2 barriers to entry are low and the market share of independents is growing,<sup>62</sup>

- 8.10.3 as almost all RMX work is tendered for, each contract is subject to significant customer buyer power with significant volumes being switched between suppliers; and

- 8.10.4 in [CONFIDENTIAL] areas where its share may exceed 40% on the basis of the exercise conducted, Hanson faces competition from at least four other RMX competitors and CC/OFT guidance in the area of merger control states that "*the OFT has not usually been concerned about mergers that reduce the number of firms in the market from five to four (or above)*", i.e. suggesting that competition can generally be assumed to be sufficient where there are at least four other players competing in the market, in which case there is no need for regulatory intervention<sup>63</sup>.

## ***THEORY OF HARM 2: "COORDINATION IN CEMENT"***

### **9. OVERVIEW**

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<sup>57</sup> In the time available, market share data on the basis of actual sales or production output have not been readily available to Hanson.

<sup>58</sup> Please note that in calculating market shares, Hanson has relied on BDS Marketing Research for 2010, as well as some internal market data; and that it therefore cannot be excluded that market shares have changed since, e.g. due to competitors closing or mothballing certain sites, further expansion or retraction, etc.

<sup>59</sup> CCPF, paragraph 6.25.

<sup>60</sup> CCPF, paragraph 6.84; and OFT Reference Decision, paragraph 3.35.

<sup>61</sup> CCPF, paragraph 6.22-6.23 and 6.84.

<sup>62</sup> OFT Reference Decision, paragraph 4.48.

<sup>63</sup> Merger Assessment Guidelines, CC2/OFT1254, paragraph 5.3.5. See also OFT Reference Decision, paragraph 4.11, where the OFT recognises that two players are sufficient for competition.

- 9.1 The second Theory of Harm set out in the CC's Issues Statement is that competition might be reduced or prevented because of coordination between producers.<sup>64</sup> To test this theory, the CC notes that it will look both at the long-term feasibility of coordination (from a theoretical perspective) and at whether there is any evidence from the behaviour of producers or market outcomes that coordination is in fact occurring.
- 9.2 This section follows the CC's general approach and considers:
- 9.2.1 whether the market structure is likely to facilitate or hinder collusion; and
- 9.2.2 whether there is any empirical evidence to suggest that coordination is currently taking place.
- 9.3 The section focuses on the grey cement market, as this is where tacit coordination is alleged by the OFT in the OFT Reference Decision and where the CC raised concerns in the CCPF.
- 9.4 Hanson disagrees with all of the allegations of tacit coordination in cement – no form of “understanding” exists between Hanson and any of its competitors.
- 9.5 Hanson believes that if the CC, now with the benefit of more time, looks in more detail at the realities of cement production, cement imports, the incentives/strategies of cement players, and the profitability of the industry it will find evidence that is inconsistent with tacit coordination (now or in the future).
- 9.6 To help the CC understand these realities, Hanson sets out below some key facts on its business and the industry. It is critical that the CC understands the production process for cement (to appreciate, for example, supply elasticity and the measurement of capacity). Therefore, Hanson looks forward to a production site visit from the CC staff and also includes a short overview of the production process in the **Appendix**.
- 9.7 This section is structured as follows:
- 9.7.1 Part 1 summarises some of the key realities the CC should consider. Understanding the commercial realities of the business is essential to the CC fitting the correct economic model to the interactions of the cement producers.
- 9.7.2 Part 2 assesses the theoretical foundations of tacit coordination from an economics perspective. When we apply this theory to the structural and cost characteristics of the cement industry, we find that tacit coordination is unlikely in this industry.
- 9.7.3 Part 3 presents the evidence for testing the Theory of Harm. We examine evidence on prices, margins, imports, switching and economic profitability and find that the empirical evidence does not support the theory that tacit coordination is occurring in the cement industry.
10. **PART 1: LOOKING AT THE REALITIES**
- 10.1 The cement industry has often been portrayed in the economic literature as one where coordination is plausible due to its high capital intensity (low marginal costs of production), high barriers to entry, and product homogeneity.<sup>65</sup> The OFT, in the OFT Reference Decision, follows a similar line of argument, as does the CC in its CCPF.
- 10.2 In our view, this stylised description of the cement industry no longer fits the facts.

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<sup>64</sup> As the CC points out, coordination can take a number of forms – producers could coordinate prices, sales, production, or market shares – and can be explicit (by agreement) or tacit (a common understanding, but no agreement).

<sup>65</sup> For example, “*Cementing the case for collusion under the National Recovery Administration*”, Chicu Vickers and Ziebarth, NBER, available at: [http://www.nber.org/public\\_html/confer/2012MNDs12/Chicu\\_Vickers\\_Ziebarth.pdf](http://www.nber.org/public_html/confer/2012MNDs12/Chicu_Vickers_Ziebarth.pdf)

- 10.3 The cement industry is in fact highly energy-intensive and produces large volumes of CO<sub>2</sub>. With rising energy costs and the introduction of the EU Energy Trading Scheme (EU ETS) – which introduces a substantial (opportunity) cost of producing cement – the variable costs of producing cement have increased significantly.
- 10.4 To put this into context:
- 10.4.1 Variable costs accounted for [CONFIDENTIAL]% of Hanson's total production costs in [CONFIDENTIAL] (excluding the opportunity cost of CO<sub>2</sub> allowances and transport costs)<sup>66</sup>.
- 10.4.2 When the opportunity cost of CO<sub>2</sub> allowances is included, variable costs account for [CONFIDENTIAL]% of Hanson's production costs in [CONFIDENTIAL]<sup>67</sup>.
- 10.4.3 When both CO<sub>2</sub> allowances and transport costs are included, variable costs account for [CONFIDENTIAL]% of Hanson's production costs in [CONFIDENTIAL].
- 10.5 Hanson accepts that the capital intensity of cement is understated by these figures – if, as we believe is more appropriate, Hanson's capital assets are valued at replacement costs, then avoidable costs would be a lower proportion.
- 10.6 The view of the cement industry as one where supply is inflexible because a large proportion of costs are fixed is at odds with the realities of Hanson's commercial strategy. Hanson has responded to the sharp decline in the demand for cement by [CONFIDENTIAL].
- 10.7 At the same time, Cemex and importers have shown that it is not necessary to acquire clinker production facilities (the most capital intensive part of the production process) in order to compete in the cement market. Clinker can and is imported into plants where it is simply ground into cement. This has not only reduced barriers to entry and expansion, but it has also introduced substantial asymmetries into the market – the cost functions of a plant with clinker production and grinding are very different in shape and scale to a plant which simply grinds clinker.
- 10.8 Numerous importers of cement (as opposed to clinker) have also successfully established import terminals around the UK with nominal capex and technical requirements. These new businesses have grown quickly and significantly with limited barriers to entry and expansion, and they continue to grow<sup>68</sup>. Cement importers now routinely compete with Hanson on a daily basis in the sales of bulk cement, winning a growing proportion of business, and putting competitive pressure on Hanson to reduce prices. Historic perceptions regarding perceived quality differentials in imported cement and the resulting quality premium on domestic product price have disappeared.
- 10.9 One of the implications of this supply flexibility is that price competition is much less ruinous when demand falls – the more flexible is production, the more costs can be avoided when demand falls, and the less price has to fall to ensure that supply matches demand. [CONFIDENTIAL]. There is therefore much less incentive to coordinate prices in this type of industry compared to one where only limited costs can be avoided by reducing production.
- 10.10 Taken at face value, there are some features of the cement production in the UK which may, from a theoretical perspective, be regarded as facilitating tacit coordination - there

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<sup>66</sup> These costs include all fixed and variable costs, including depreciation, but excluding profits. They are not therefore full economic costs.

<sup>67</sup> We have estimated the opportunity cost of producing CO<sub>2</sub> based on the average price that Hanson achieved for selling CO<sub>2</sub> permits in 2010.

<sup>68</sup> Importers are now showing willingness to service major customers using lorry transport (from Ireland) as opposed to shipped cement.

are barriers to entry in production (although much lower barriers for imports), there is some transparency in production (although not on pricing), and the market is not particularly characterised by innovation. However, there are many factors which hinder coordination including:

- 10.10.1 Asymmetry of market shares;
  - 10.10.2 Low barriers to expansion;
  - 10.10.3 High fluctuations in demand;
  - 10.10.4 Cost asymmetries in production;
  - 10.10.5 Sophisticated buyers; and
  - 10.10.6 Asymmetries in capacity constraints.
- 10.11 These factors, and, in particular, the asymmetries in cost, capacities, and capacity utilisation, severely limit the incentives to participate in coordination and make it difficult for firms to come to any form of common understanding. They also strengthen the incentives to deviate from any understanding.
- 10.12 Turning to the evidence of behaviour and effects, we do not see any evidence of coordination:
- 10.12.1 [CONFIDENTIAL].
  - 10.12.2 Producers have responded differently to the recession. Some, like Hanson, [CONFIDENTIAL], while others, such as Tarmac, have gone for a high utilisation strategy.
  - 10.12.3 The EU ETS complicates firms' production decisions as they can now earn revenues both from the sale of cement and from unused CO<sub>2</sub> allowances. Firms that anticipate higher prices for unused CO<sub>2</sub> allowances and who have lower marginal costs of production may prefer to keep plant open but run at a low capacity utilisation rate. Others may prefer to close capacity. This is likely to make it difficult to come to a common understanding on production, capacity or market shares.
  - 10.12.4 Although prices and margins have not fallen significantly following the sharp reduction in demand this is consistent with many standard oligopoly models (e.g. Cournot).
  - 10.12.5 Indeed many orthodox oligopoly models, including Cournot, predict that, when there is a demand shock, prices fall further when prices are coordinated than when there is effective competition. This suggests, contrary to the OFT's supposition, that if coordination was taking place, we would be more likely to see significant price reductions.
  - 10.12.6 Imports currently account for approximately 13% of the market and there is evidence of Hanson winning and losing share to imports.
  - 10.12.7 [CONFIDENTIAL].
  - 10.12.8 [CONFIDENTIAL]. The facts do not support the use of "repatriation" as a punishment strategy. If it was a "punishment" strategy, we would expect to see a period of deviation from a coordinated outcome, a punishment phase, and then a return to the coordinated outcome. However, neither the OFT in its reference decision nor the CC in CCPF, provides evidence of deviation from a coordinated outcome or indeed any other motive for a punishment strategy

being invoked. There is also no evidence that “repatriation” has punished firms (prices and market shares are not changed very significantly), and, no explanation for why, if the punishment phase has now ended, Hanson continues to supply in-house.

10.12.9 There is no evidence that Hanson’s economic profits are excessive when compared to its cost of capital.

## 11. PART 2: TACIT COORDINATION FROM A THEORETICAL PERSPECTIVE

- 11.1 Economists have long recognised that firms may be able to coordinate their behaviour to raise prices above the competitive level without the need for any explicit agreement. There are two strands to the literature. The older “conjectural variations” approach is based on one-shot (static) games where firms may “conjecture” that if they were to lower prices, rivals would respond with price cuts of their own. If, for example, firms conjecture an aggressive price response, prices may rise above competitive levels. This literature does not rely on any threats of retaliation as it is a one-shot game. There is therefore no coordination. As the behaviour is rational (given conjectures) and maximises short-run profits it is not regarded as being anti-competitive.
- 11.2 This literature has been criticised because it does not provide an explanation as to how these conjectures are formed. The conjectures are also inconsistent in the sense that pricing decisions are based on an anticipated reaction by rivals which, in a one-shot game, cannot occur.
- 11.3 The more modern economic literature is based on dynamic supergame models where firms interact repeatedly with each other for an infinite time period. In these games, the best one-shot response is for firms to compete aggressively, and to charge what is often described as the competitive price. However, over time, firms may learn to coordinate their behaviour and raise prices towards the joint profit-maximisation level. As firms always have a short-run incentive to deviate from the coordinated outcome by seeking to sell more output, to sustain prices above the competitive level firms need to be able to detect and punish cheating. Where these incentives exist, there is said to be internal stability. However, for coordination to be successful, firms also need to be isolated from external competition, i.e. from imports and new entrants.
- 11.4 Coordinated behaviour has been defined by Motta as “any market outcome in which prices are high relative to those in the one-shot competitive equilibrium.”<sup>69</sup> This definition highlights that coordination may not succeed in raising prices all the way to the joint profit-maximising level.
- 11.5 The CC’s merger guidelines are based on dynamic game theory. We support this approach. Indeed, the notion of coordinated behaviour only makes sense within this dynamic game theory setting where a distinction can be drawn between a cooperative and a non-cooperative outcome.
- 11.6 We also acknowledge the CC’s general approach in the CCPF to focus on whether the market outcomes are consistent with coordination or competition with less emphasis placed on the factors that, in theory, may facilitate or hinder coordination. While the latter is useful by way of background, it does not produce any testable hypotheses. For example, how symmetric do market shares need to be to facilitate coordination?
- 11.7 However, when reviewing the evidence, Hanson thinks it is vital that the CC does not look at the evidence solely through the lens of dynamic supergame theory. Simpler oligopoly models, including those based on conjectural variations, are often more consistent with how companies behave in practice. For example, when a company loses market share, it will often seek to be more aggressive in winning market share back. In many standard oligopoly models, this is fully consistent with competitive behaviour, but in supergame

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<sup>69</sup> Motta. “*Cartels in the EU: economics, law and practice*”.

models, the same behaviour is often interpreted as retaliation. We would therefore suggest that in interpreting the evidence, the CC determines which oligopoly model best fits the facts.

- 11.8 Hanson would also encourage the CC to keep in mind that the equilibrium price in dynamic game theory models may be below the long-run competitive equilibrium price (such models often do not allow for the exit of firms or the reduction of capacity when margins fall below long run avoidable costs) .
- 11.9 We would therefore encourage the CC to:
- 11.9.1 adopt what has become known as the “menu” approach, and, looking at the evidence on market outcomes in the round, come to a view as to whether competition is best characterised as a dynamic game theory model or an alternative dynamic or static oligopoly model; and
- 11.9.2 examine whether cement companies are earning normal or excessive profits when considering the benchmark for the competitive price (see Part 3).

### ***The “Airtours Criteria”***

- 11.10 The CC, in its merger guidelines, sets out the three conditions that need to be established in order for coordination effects to be feasible:
- 11.10.1 Firms need to be able to reach and monitor the terms of coordination;
- 11.10.2 Coordination needs to be internally sustainable among the coordinating group; and
- 11.10.3 Coordination needs to be externally sustainable, in that there is little likelihood of coordination being undermined by competition from outside the coordinating group.
- 11.11 These criteria are essentially the same as those set out in *Airtours* and in the European Commission’s Article 102 enforcement priority guidelines.<sup>70</sup>
- 11.12 Although these conditions are almost without controversy, the economic literature also stresses the need to consider whether firms would choose to join in or stay out of the coordinating group. This is known as the “participation constraint”. There are pros and cons to a firm joining a coordinating group. On the one hand, a decision to join may result in higher prices, but firms have to accept a lower level of production. Firms can produce more by staying outside the group, free riding on the higher prices. But if too many firms stay outside or they produce too much, prices will fall, and the stability of the coordinating group may be undermined. The “participation constraint” could be considered under any or all of the three CC conditions. We do however think that it is an important consideration, particularly when discussing the theoretical impact of excess capacity on the feasibility of coordination (see below).
- 11.13 Before going through each of these criteria in order, we look first at the evidence for the factors that hinder or facilitate collusion as set out by Ivaldi et al, in their influential paper for the European Commission.<sup>71</sup> It is clearly important not to “cherry pick” criteria<sup>72</sup> (which Hanson is concerned the OFT has done in the OFT Reference Decision). We therefore go through each criterion in turn.

<sup>70</sup> Case T-342/99, *Airtours v Commission*, [2002] ECR II-2585, paragraph 62; cf. Case C-413/06P *Bertelsmann v Impala* ECR 2008 Page I-04951; Case T-193/02, *Laurent Piau*, paragraph 110 et seq; Case T-374/00 *Verband der freien Rohrwerke and Others v Commission* [2003] ECR II-2275, paragraph 121; Joined Cases C-395/96 P and C-396/96P *Compagnie maritime belge transports and Others v Commission* [2000] ECR 1365, paragraph 36 and 44; Case T-191/98 and 212-214/98 *TACA*, ECR 2003 p. II-3275, paragraph 625 et seq.

<sup>71</sup> “*The economics of tacit collusion*”, Ivaldi, Juilien, Rey, Seabright and Tirole, March 2003, available at [http://ec.europa.eu/competition/mergers/studies\\_reports/the\\_economics\\_of\\_tacit\\_collusion\\_en.pdf](http://ec.europa.eu/competition/mergers/studies_reports/the_economics_of_tacit_collusion_en.pdf)

<sup>72</sup> Case C-413/06P *Bertelsmann v Impala* ECR 2008 Page I-04951, paragraph 125-126.

**Number of companies**

11.14 There is strong theoretical support for the notion that coordination becomes less likely as the number of firms in an industry increases. But how many firms does there have to be in a market before coordination becomes unlikely? This question was addressed in an influential behavioural economics paper by Huck (2004) “*Two are few and four are many*” in which he found that coordination (without communication) was rarely found where there were more than three players in the market. With four major cement producers, and a fifth major manufacturer of the reference products importing and selling substantial cement volumes, this experimental research would suggest that tacit coordination would be difficult to achieve.<sup>73</sup>

**Symmetry of Market Shares**

11.15 As Ivaldi et al point out, it is not symmetry of market shares per se that makes coordination more likely, but rather what lies behind those market shares – firms with similar market shares are likely to have similar costs, and therefore a similar incentive to align their behaviour. Although we do not have information on our competitors’ costs, as shown in **Table 1** our own portfolio of plants have very different costs, [CONFIDENTIAL].

**Table 1:** [CONFIDENTIAL]

[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]

Note: Variable costs above exclude distribution and CO<sub>2</sub>.

11.16 Hanson suspects that our rivals’ plants display an even wider range of cost asymmetries. In particular, Cemex has wet processing as well as dry processing semi-wet and semi-dry plants and a grinding-only site at Tilbury (which imports clinker). Even within one ‘dry’ kiln technology costs do vary significantly between specific plants.

11.17 In any event, market shares are not particularly symmetric, either in terms of sales or production capacity.

**Entry Barriers**

11.18 High entry barriers are needed to ensure that there is external stability, but barriers to expansion are important too – if firms can expand capacity relatively cheaply then this will undermine internal stability.

11.19 The barriers to entry to developing a new limestone quarry (including gaining planning consents) and investing in grinding and clinker capacity are high. However, as Cemex has shown, it is possible to enter the market without having access to a quarry or clinker production capacity in the UK by simply importing clinker.

11.20 Clearly, barriers to expansion are currently very low due to the excess capacity in the UK and elsewhere in the world. Indeed, increasing production can actually reduce unit costs of producing cement, as there are fewer outages and lower fixed costs of re-starting kilns, which is a very energy-intensive process. This excess capacity is likely to continue into the future, as the carbon credits regime provides incentives for firms to retain capacity.

11.21 If demand was to expand rapidly, [CONFIDENTIAL].

<sup>73</sup> This research examined the likelihood of tacit coordination only. Tacit coordination is widely regarded as more difficult to achieve with a large number of firms than explicit coordination (where firms, by definition, can communicate with each other and reach formal agreements).

### ***Frequent interaction***

- 11.22 If the same firms repeatedly compete in the sale of a product, it can be easier for firms to learn how to coordinate their behaviour and for retaliation to be imposed more swiftly. Cement companies do compete with each other for the same customers – indeed, much of the sales of cement is by tender, increasing the intensity of price competition.

### ***Market transparency***

- 11.23 Market transparency is important to ensure that any deviation from the coordinated outcome can be rapidly detected.
- 11.24 The type of transparency required depends upon whether cement companies are hypothesised to coordinate on, for example, prices, market shares, production or the allocation of customers. As the OFT acknowledge in its Reference Decision<sup>74</sup> and as the CC itself also recognises<sup>75</sup>, there is no cement price transparency. Although letters are sent to customers announcing price increases these bear no relationship to the prices that are charged to individual customers. Cement prices are individually negotiated, there is considerable dispersion in these prices, and prices are clearly not aligned.<sup>76</sup> Moreover, for there to be sufficient transparency to demonstrate that coordination has emerged, companies generally need to have similar cost structures.<sup>77</sup> As CC recognises, Lafarge does not have a cost structure that is currently similar to the other majors'; and only if the proposed joint venture with Tarmac is approved would it become more similar to Hanson and Cemex.<sup>78</sup>
- 11.25 Data published by the MPA provides aggregated data on the national industry production and total national sales, but, importantly does not provide any production or sales figures for individual companies. We do not see it as plausible for competitors to coordinate using such national production data and there is no evidence of this. Different cement companies appear to be following very different production strategies, with some firms, such as Tarmac, operating at a high level of utilisation, while [CONFIDENTIAL].
- 11.26 The OFT and the CC have both suggested that transparency may be facilitated through so-called 'tacit customer allocation' amongst the major manufacturers. In Hanson's view, it would be difficult to combine this allegation with the following conclusions by the CC:
- 11.26.1 evidence regarding refusal to supply cement was considered inconclusive and some majors' sales to independents has *increased*<sup>79</sup>; and
- 11.26.2 The CC's evidence on customer switching was not conclusive and rather suggested a competitive market.<sup>80</sup>

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<sup>74</sup> OFT Reference Decision, paragraph 5.39 (cf. also OFT Merger Decision *Anglo American/Lafarge*, paragraph 303): "(...) however (...) price increase letters are in practice used as a starting point for negotiations with customers and that firms generally fail to achieve the prices set out in the price letters."

<sup>75</sup> CCPF, paragraph 6.112, 6.133 and 6.136.

<sup>76</sup> Cf. OFT Reference Decision, paragraph 5.41, with reference to OFT Merger Decision *Anglo American/ Lafarge*, paragraph 304-305 and 307; confirmed also by CC itself - see CCPF, paragraph 6.112, 6.133, 6.136; and Appendix M, paragraph 24.

<sup>77</sup> CCPF, paragraph 6.113 and 6.126; cf. Case T-342/99, *Airtours v Commission*, [2002] ECR II-2585, paragraph 121.

<sup>78</sup> CCPF, paragraph 6.203.

<sup>79</sup> CCPF, paragraph 6.116; and Appendix K, paragraph 12.

<sup>80</sup> CCPF, paragraph 6.118 and Appendix O.

**Demand growth**

11.27 Dynamic supergame theory suggests that coordination is more difficult to sustain in a declining market as the short-term gains from deviating from the coordinated outcome are high when compared to the future benefits (the benefits of coordination are lower when demand is falling). Prior to the 2008 recession, demand for cement was relatively constant, but notably grew at a lower rate than GDP. This may suggest there is some modest decline in the cement industry. Hanson does not however consider this to be a factor which either hinders or facilitates coordination.

**Business cycles and demand fluctuation**

11.28 Coordination is generally regarded as being more difficult to sustain in an industry which is subject to demand fluctuations and business cycles. The seminal papers are Rotemberg and Saloner (1986) and Haltiwanger and Harrington (1991). Both papers stress that when demand is at a peak, the incentive to deviate from a coordinated outcome is maximised, so that cheating is more likely to occur. As Ivaldi et al note: “collusion is most difficult at the beginning of recessions when demand is still high, but declining”.<sup>81</sup> This is a critical point. It suggests that coordination would be particularly difficult in 2008 and 2009 which is precisely when the OFT and the CC in CCPF allege that it took place.

**Cost Asymmetries**

11.29 Cost asymmetries hinder coordination as they make it very difficult for firms to reach and sustain an agreement – low-cost firms want to produce more and high-cost firms less.

11.30 Cost asymmetries can also undermine internal stability when costs change over time. The closure of higher-cost plants, the increase in energy costs (which will exacerbate differences in efficiency between plant and between firms) and the growing importance of CO<sub>2</sub> allowances (firms may choose to run less to maximise CO<sub>2</sub> allowance sales or run more to increase capacity utilisation) all serve to make it more difficult for cement firms to coordinate their strategies.

11.31 **Table 1** above showed that there is [CONFIDENTIAL] cost variation in Hanson’s portfolio of plants. [CONFIDENTIAL]. It is likely that cost asymmetries are greater for Hanson’s competitors since all of Hanson’s plants use dry processing and have clinker production whereas, for example, Cemex has semi-wet, semi-dry and one plant that does not have a clinker production facility (see **Table 2**).

**Table 2: Heterogeneity of plant capacity**

Producer	Dry plant	Semi-dry	Semi-wet	Grinding and processing only	Total
Hanson	3	0	0	0	3
Lafarge	4	0	0	0	4
Cemex	0	1	1	1	3
Tarmac	1	0	0	0	1

**Asymmetries in capacity constraints**

11.32 As with cost asymmetries, asymmetric capacity constraints hinder coordination, as different firms have different incentives. Firms with no capacity constraints have a greater incentive to increase production, and, should they choose to do so, rival capacity-constrained firms have no ability to retaliate.

<sup>81</sup> Ivaldi et al (2003), op cit.

- 11.33 As discussed above, supply is relatively flexible which makes it difficult to define and measure the current level of plant capacity. That calculation is complicated by the existence of mothballed plants. These can be brought back on stream should demand for cement increase, but it is costly to do so – Hanson estimates the costs of bringing a mothballed plant back on stream is [CONFIDENTIAL].
- 11.34 What is clearer is that there is asymmetry in the number of plants operated – Lafarge has 4 plants, Cemex and Hanson 3 each, and Tarmac 1.
- 11.35 In the CCPF, the CC appears to accept that there are asymmetric capacity constraints. In particular, it notes that Tarmac, who is relatively capacity-constrained, has different incentives to the other three major producers. However, instead of then drawing the conclusion that this is likely to hinder tacit collusion, the CC suggests that Tarmac is not party to the coordination.
- 11.36 Hanson finds this conclusion difficult to understand on a number of levels. The CC appears to be making the point about “*participation constraints*” – the decision by firms to either join, or stay out of coordination - but conventional economic theory suggests that firms are more likely to want to free-ride on coordination (and benefit from higher prices, but produce more) where they have excess capacity. The CC’s conclusion therefore appears to be at odds with conventional economic theory.
- 11.37 Furthermore, if Tarmac and importers, whose market shares increased during 2007-2009<sup>82</sup> are outside the coordination, (collectively, this accounts for approximately 25-30% of industry output) this makes it difficult for coordination to be externally stable.

***Product homogeneity***

- 11.38 If products are homogeneous it can make it easier for firms to reach an understanding – market shares, for example, are much more meaningful. The impact of homogeneity on internal stability is more ambiguous – product homogeneity increases the incentives to deviate from a coordinated outcome as lower cost firms can expect a large increase in output, but, for the same reason, retaliation is more powerful and easy to impose.
- 11.39 Hanson acknowledges that cement grades can represent a largely homogenous product, but there are important differences between the different types of cement (CEM1, CEM2, CEM3, and white cement), between customers (RMX, bagged cement, and concrete products), the geographic location of the customer and the quality of the product. More importantly, when a customer buys cement, it also purchases the associated service. Supply chain reliability, as well as the guarantee of a consistent quality of product is important for many customers, a fact the CC acknowledges in the CCPF.

***Multi-market contact***

- 11.40 Historically, Hanson has [CONFIDENTIAL].

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<sup>82</sup> CCPF, paragraph Appendix O, paragraph 20 and 22; Appendix P, paragraph 21-22; and OFT Merger Decision *Anglo American/Lafarge*, ME/5007/11, November 2011. paragraph 225.

### ***Other Factors***

- 11.41 A number of other factors affect the likelihood of coordination, including the price elasticity of demand, the presence or absence of mavericks, club and network effects, structural links, excess capacity and buyer power. We focus on the latter two as these were noted in the OFT and CC decision documents.

### ***Countervailing Buyer Power***

- 11.42 If buyers are sophisticated and able to play one cement producer off against another, this can increase price competition and undermine the internal and external stability of a coordinated outcome (for example, where buyers can credibly switch to imports).
- 11.43 The buyers of bulk cement are large construction companies, independent RMX producers and also concrete products producers, for whom cement is a key input. The cost and quality of cement, and the associated service, are key to their business and buyers are sophisticated.
- 11.44 For many of these customers imports are a credible threat as witnessed by the fact that [CONFIDENTIAL] of Hanson's gains in 2011 were won from customers who had previously been supplied by an importer – see discussion on imports below.
- 11.45 Moreover, the CC appears to rebut the potential for Aggregate Industries having buyer power as a cement buyer in Great Britain with the argument that majors could keep cement prices low but, in Hanson's view, this seems inconsistent with the CC's apparent conclusion of cement prices being high.<sup>83</sup>

### ***Excess Capacity***

- 11.46 Dynamic supergame theory suggests that the impact of excess capacity of the feasibility of coordination is ambiguous. Holding excess capacity increases the incentive to deviate from the coordinated outcome by increasing production but, it also provides the wherewithal to punish a firm that chooses to deviate.
- 11.47 However, one criticism that has been levied at supergame theory is that it neglects the "*participation constraint*". This literature is based on static models of collusion, the leading articles being Selten (1973) and d'Aspremont et al (1983).
- 11.48 That is, firms need to decide first whether to be party to the coordination or to free-ride on it and stay outside. This is a delicate trade-off – if firms choose to coordinate, by say, restricting output, it will increase industry profits, but they will take a smaller share of the pie. Staying outside is likely to reduce the size of the pie, but it gives firms outside a larger slice.
- 11.49 Where firms have excess capacity, they typically have a much greater incentive to stay outside any coordination and increase their production. In this important respect, excess capacity is likely to lead to the breakdown of any coordinated behaviour.

### ***Summary***

- 11.50 Putting these factors together we now consider whether it is likely to be feasible for firms to reach a common understanding that would allow them to coordinate their behaviour and whether any such understanding is likely to be undermined by internal or external forces.
- 11.51 To reach an understanding requires two key factors – interests need to be aligned, and there needs to be sufficient transparency to be able to monitor compliance of any understanding. The analysis suggests that interests are not aligned. While cement itself

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<sup>83</sup> CCPF, paragraph 6.177.

may be a relatively homogeneous product, there are very significant asymmetries in the type of plant used, the efficiency of that plant, the number of plants, and the degree of excess capacity. Issues such as CO<sub>2</sub> allowances – and whether to restrain production to maximise sales of allowances or to take advantage of excess capacity and increase production – add considerable complexity. The issue of how much to produce depends crucially upon expectations of the price of CO<sub>2</sub> allowances, and it is not at all obvious how firms could come to the same view on this without communication or agreement. [CONFIDENTIAL], while competitors such as Tarmac appear to have adopted a higher capacity utilisation strategy.

- 11.52 Internal stability similarly relies upon a commonality of incentives which, for the reasons stated above, do not apply. Supergame theory also suggests that coordination is least likely at the point in time when a recession first bites, as the incentive to deviate from a common understanding is greatest.
- 11.53 With regards to external stability, Hanson accept that new entry into clinker production is unlikely, particularly given the excess capacity that currently prevails on the market and is likely to continue while the carbon trading regime maintains its current form. However, imports remain a real and growing threat, with Hanson winning and losing significant volumes of business to imports each year. Imports are very flexible in where they can be landed in the UK, and, in particular, they can target parts of the country should prices move out of line. While imports account for 10-15% of UK consumption currently, this could be rapidly expanded if the price of cement were to be increased above the competitive level.

## 12. PART 3: EFFECTS OF TACIT COORDINATION

### *Prices and Margins*

- 12.1 The OFT in the OFT Reference Decision and the CC in the CCPF express their concern that the sharp reduction in demand for cement in the UK has not been accompanied by a significant fall in prices and margins. For example, the CC notes: “*in a competitive market we would have expected cement margins to have dropped in 2008 and 2009 when there was a large drop in demand (particularly when combined with large increases in the cost of production). In our view, this should have been likely to result in reductions in the variable profit / tonne in 2009 (possibly, quite substantial falls).*”<sup>84</sup>
- 12.2 The impact of a fall in market demand on prices and margins depends upon a number of factors. In addition to the degree of competition noted by the CC it also includes the oligopoly model, whether demand becomes more or less price elastic after the shock, and the cost function of firms in the industry.
- 12.3 At a more fundamental level, the impact of a given reduction in demand on prices and margins depends upon the shape of the industry supply function. If the supply function is vertical - cement firms are unable to avoid costs by reducing production - then a fall in demand will cause a sharp decline in prices and margins. As supply cannot be flexed price has to do all the work in adjusting to clear the market. Conversely, if the supply function is horizontal e.g. if there are constant returns to scale, then output will adjust, with no impact on prices or margins.
- 12.4 The traditional view of the cement industry is that it is highly capital-intensive. Since the production of clinker is a continual production process ([CONFIDENTIAL]<sup>85</sup>), in the short-run, production is often regarded as fixed, in which case one would expect to see a very significant fall in prices and profits.
- 12.5 However, Hanson’s short-run production function of cement is considerably more flexible than in this traditional description. The production of clinker in particular is very energy-

<sup>84</sup> CCPF paragraph 6.109

<sup>85</sup> These costs escalate the longer a plant is left idle, due, for example, to corrosion in the kiln. Hanson estimates that the costs of re-starting a kiln left idle for a year are between [CONFIDENTIAL],

intensive. Rising energy prices now mean that variable costs account for [CONFIDENTIAL]% of Hanson's total costs (excluding distribution and CO<sub>2</sub>). In addition, the EU carbon trading regime imposes a significant opportunity cost of producing clinker. Although Hanson is provided with allowances free of charge, for each tonne of CO<sub>2</sub> it produces via clinker production, one less tonne of CO<sub>2</sub> permits can be sold on the open market. The extent of this opportunity cost varies with the market price of CO<sub>2</sub> permits, but in 2010, the opportunity cost of CO<sub>2</sub> was approximately [CONFIDENTIAL] of Hanson's total costs.<sup>86</sup> So when including CO<sub>2</sub> and transport, variable costs account for [CONFIDENTIAL] of Hanson's total costs. This overstates Hanson's variable costs to some extent as [CONFIDENTIAL].

12.6 However it is not just variable costs that are avoidable. [CONFIDENTIAL].

**Figure 1:** [CONFIDENTIAL]

[CONFIDENTIAL]

12.7 Hanson has been able to do this by [CONFIDENTIAL], and [CONFIDENTIAL], This suggests that rather than being a highly capital intensive business with a short-run supply function which is nearly vertical, cement production is much more akin to constant returns to scale. As a consequence, prices and margins are much more stable in the presence of falling demand.

12.8 As well as the shape of the supply function, the impact on prices and margins of a decline in demand depends upon the oligopoly model that best approximates competition in the cement market. For example, in the standard Cournot model the price-cost margin depends only upon the price elasticity of demand and the number of firms in the industry. As the number of firms in the cement market is unchanged, if the shift in demand is iso-elastic, then the price-cost margin remains constant.<sup>87</sup>

12.9 It is not clear what oligopoly model the CC has in mind. One possibility is that it views the cement market as one which has a fixed level capacity, and price moves with demand. At times of peak demand, when the industry is operating at full capacity, prices may move towards monopoly levels, but fall towards marginal costs when demand is low. However, as explained above, this is not an appropriate characterisation of the cement market – supply adjusts to falling demand as well as price.<sup>88</sup>

12.10 Moreover, where demand shocks are correlated, as in a recession, the lower prices and margins generated in these simple models are not sustainable. Firms need to cover their total costs, so, if firms expect prices to be low, this will lead to either firms exiting the market, or capacity being taken out of the market, or both. This will have the effect of increasing both prices and margins back up to equilibrium levels. In the classic Kreps and Scheinkmann paper, when firms first choose capacity, and then compete on price, outcomes are equivalent to Cournot competition. A sharp decline in demand in this model, will lead to big reductions in production. Price and margins may rise or fall depending upon the elasticity of demand.<sup>89</sup>

12.11 Another possible model is the supply function model, which has been used to model industries such as the electricity supply market. The feature of this model is that plants are ranked according to their marginal cost of production. When demand fall, price falls too, as output can be replaced by a more efficient (lower marginal cost) plant.

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<sup>86</sup> These costs include all fixed and variable costs and depreciation (valued at historic cost). They do not therefore include the full economic costs of the business.

<sup>87</sup> The CC in the CCPF report the variable profit margin, which appears to be an estimate of price less marginal cost rather than the price cost margin, i.e. (price – marginal cost) / marginal cost. Under the CC's definition, prices and margins both fall in the Cournot model, but such falls are modest when the demand shift is iso-elastic and marginal costs represent a relatively high proportion of total costs. This is discussed in more detail below.

<sup>88</sup> An example might be Bertrand-Edgeworth cycles.

<sup>89</sup> Kreps and Scheinkmann (1983). "Quality pre-commitment and Bertrand competition yield Cournot outcomes", *Bell Journal of Economics*.

- 12.12 At face value this model shares some features of the cement industry, notably asymmetry in plant type and plant efficiency. But, the impact of the EU ETS on Hanson [CONFIDENTIAL].<sup>90</sup>
- 12.13 The CC has also suggested that margins would fall by more in a competitive market than where there is coordination. We find this conclusion surprising, as it is the precise opposite of what we observe in many standard oligopoly models.
- 12.14 In the Cournot model, for example, prices and margins fall more under monopoly (or when firms collude or coordinate at the monopoly price). The same result is obtained in many of the other orthodox oligopoly models such as Bertrand (differentiated products) and Stackleburg. The intuition behind this result is that in more competitive markets, if firms are pricing close to marginal cost when demand is high, there will be less scope to reduce prices when demand falls.
- 12.15 This is an important result – it shows that there can be no presumption that prices and margins should fall significantly when there is a reduction in demand.
- 12.16 To put this into context we illustrate what happens to prices and margins in a Cournot model when there is a 25% reduction in demand. We assume that demand functions are linear and that the slope of the demand function is unchanged by the demand shock. We calibrate the model to Hanson’s circumstances by assuming that marginal costs account for 60% of price in year 1 and 66% in year two. We then compare the predicted changes in price and margins for 4 firms, 5 firms, and 1 firm (collusion).<sup>91</sup>

**Table 3: Cournot Model – predicted price reduction are greater when firms collude**

Number of firms	Change in demand	Marginal cost (% of 4-firm price)	Change in marginal cost	Change in price
5	-25%	60%	+6%	-8%
4	-25%	60%	+6%	-10%
1 (collusion)	-25%	60%	+6%	-19%

- 12.17 This simulation shows that prices fall by 10% when 4 firms compete, but by 19% when they collude. With 5 firms, the price reduction is only 8%. This highlights that expected price reductions following a large reduction in demand are likely to be modest in the cement industry if competition is characterised by the Cournot model and demand functions are linear. If the fall in demand is iso-elastic, then price would actually increase in line with the higher marginal costs of production. The simulation also shows that price reductions would be significantly greater if firms were colluding than when they were competing.
- 12.18 If we leave orthodox economic theory aside, many firms do not seek to price in accordance with marginal costs, but rather they seek to cover average total costs, or, equivalently, target some ROCE figure. Pricing in accordance with marginal cost is, of course, not sustainable, unless firms are also able to increase prices when there is a shortage of capacity, but the ability to do this is limited to a very significant extent by the threat of imports. Buyers of cement may also prefer more stable prices. Moreover, if output fails to recover, or recover sufficiently quickly, this will lead to the exit of firms, which would cause an increase in price-cost margins. In this context, when demand falls, fixed costs are spread over a lower volume of output and so prices and price-cost margins can actually rise.

<sup>90</sup> [CONFIDENTIAL].

<sup>91</sup> We assume that marginal costs are constant with respect to output in both time periods.

**Competition from Imports**

- 12.19 Imports of cement became an established feature of the market between 2002 and 2006 where high domestic demand and relatively high cement prices led to a significant expansion in both the number of importers and the capacity at import terminals. Imports have grown year on year and by 2010 they accounted for 12.8% of the UK market.<sup>92</sup>
- 12.20 Hanson believes that imports provide a strong and increasing competitive threat. [CONFIDENTIAL].
- 12.21 Hanson believes that this over-supply is likely to be structural as the EU ETS provides incentives for capacity to remain in the market.<sup>93</sup> As CO<sub>2</sub> permits also increase the opportunity cost of producing cement in the EU, this provides a cost advantage to plants in Morocco and elsewhere in North Africa to increase their exports into the UK. Hanson anticipates that imports of cement and clinker will increasingly come from countries outside of the EU.
- 12.22 Barriers to the expansion of imports are very low. Although Hanson and other majors have invested heavily in sophisticated import terminals, these have proved to be unnecessary. The terminals used by independent importers are relatively low tech but they have proved both adequate and highly successful economically. Wharves can be rented and converted into a terminal for modest capital outlays and without any need for complex planning consent. In addition, there is currently significant excess capacity at UK important terminals.
- 12.23 Hanson believes that imports impose a direct competitive constraint on their cement business. In some markets imports target a different customer segment to UK suppliers and so offer only a limited competitive constraint. In cement however, the directness of competition between Hanson and imports can be illustrated by two facts. [CONFIDENTIAL]. This suggests they are targeting a similar customer base.

**Table 4:** [CONFIDENTIAL]

[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]

- 12.24 Second, Hanson's gains from imports [CONFIDENTIAL]. This diversion ratio suggests that imports are as close a substitute for Hanson's cement.

**Table 5: Hanson gains from imports as a % of total gains 2009-11)**

	2009	2010	2011
Hanson gains from imports	[CONFIDENTIAL] <sup>94</sup>	[CONFIDENTIAL]	[CONFIDENTIAL]
Market share of imports	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]

- 12.25 In the CCPF, the CC suggests that the costs of imports (including transport costs) are higher than UK supplies. Hanson is not able to confirm this. However, even if the costs of imports are higher than UK supplies this does not mean that they do not provide a significant competitive constraint. First, importers may be prepared to accept lower

<sup>92</sup> MPA estimates. This figure does not include imports on identified vessels or by lorry transport.

<sup>93</sup> For example, Hanson understands that the EU ETS is one of the factors driving Spanish and Irish cement producers to increase exports to European countries (including the UK) as they maintain cement production to retain allowances despite significant declines in cement demand in their own countries.

<sup>94</sup> This diversion ratio was artificially suppressed due to the large total volume of switching between the majors in 2009 as large volume.

margins in the UK than in their home markets, particularly where they have excess production to sell. Secondly, importers have flexibility where they land their cement in the UK and can save on road transportation costs by landing cement closer to the point of demand. Historically imports only competed on a 50 mile radius from the port. However, Hanson is increasingly witnessing imports moving large distances by road. [CONFIDENTIAL].

- 12.26 Hanson has noted the CC's claims that the importers' increasing market share has not had any significant effect on prices and margins.<sup>95</sup> However, this is contradicted by a market investigation carried out by the European Commission, which confirmed that European continental cement, fly ash and GGBS exporters *do* exert price pressure in the UK.<sup>96</sup>
- 12.27 In the context of the feasibility of tacit coordination, even if imports have higher costs than domestic suppliers, they would provide a cap on the extent to which the price of cement could be increased above the competitive level. As noted above, the barriers to expansion to imports are low, and if the price of cement were to rise imports would be likely to expand.

**Switching**

- 12.28 Switching costs are very low in the cement industry. Cement is a relatively homogeneous product, customers are sophisticated, the quality of the product can be readily perceived, customers purchase mainly on the basis of price, and there are no long term contracts. The CC's analysis in the CCPF also concludes that switching costs are low.<sup>97</sup>
- 12.29 In a competitive market prices are constrained by the threat of switching. Low levels of switching are therefore fully consistent with switching in a competitive market – if prices are competitive there is no need to switch. Of course, low levels of switching can also be consistent with tacit coordination, particularly where suppliers reach an understanding not to target each others' customers. The question the CC will want to address is how to distinguish between the two.
- 12.30 If we look at the level of switching which has actually taken place in the cement industry it varies widely from year to year (see **Table 6** below).

**Table 6: [CONFIDENTIAL]**

[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]

Source: Hanson estimates

- 12.31 Switching levels were [CONFIDENTIAL].
- 12.32 The CC, in the CCPF, suggests that the high level of switching in 2009, and the considerably lower levels in 2010 and 2011, could be consistent with a temporary breakdown in coordination. More specifically, the CC observes:
- 12.32.1 taking supplies in-house (what the CC terms "repatriation") may be used as a signal to rival suppliers to revert to the former understanding; and

<sup>95</sup> CCPF, Appendix P, paragraph 23.

<sup>96</sup> Case COMP/M.4719 *HeidelbergCement/Hanson*, paragraph 31.

<sup>97</sup> CCPF Paragraph 6.144

- 12.32.2 taking supplies in-house could also be used as a punishment strategy, as it reduces market shares.
- 12.33 The CC suggests that the gains and losses of the individual majors were relatively symmetric in each year – so there was no significant change in market share – and that this would be consistent with signalling or retaliation.
- 12.34 Hanson believes that the evidence, when taken in the round, is not consistent with signalling, retaliation or indeed any attempt to coordinate outcomes.
- 12.35 If we look first at the theory that taking supplies in-house sends a signal, for signals to be effective, they have to be capable of being understood. [CONFIDENTIAL].
- 12.36 The second part of the theory is that this is a form of retaliation. Dynamic supergame theories suggest that punishment strategies will be invoked as soon as cheating is detected. There is, however, no suggestion that, if firms were coordinating outcomes, there was any deviation. As the CC themselves note, prices did not fall, and there was no significant change in market share.
- 12.37 For punishment strategies to be credible and effective, they have to punish firms in terms of profits foregone. But, again, if prices are not falling, and market shares are relatively constant, it is not clear how firms are being punished.
- 12.38 If the coordination hypothesis is correct, then when the punishment phase ends we would expect firms to revert to the previous coordinated outcome, or, at the very least, raise prices and margins. We accept that it is difficult to provide evidence on prices and margins given the flux in the market at the time. We may also expect firms to revert to their previous purchasing strategy. But, this has not happened. Hanson has [CONFIDENTIAL] wherever it is commercial opportune to do so.
- 12.39 The only evidence that the CC musters to support its hypothesis is that cement firms gains and losses were similar in each year. If we look at Hanson's net gains, as a proportion of its losses (see **Table 6** above), [CONFIDENTIAL]. We would suggest this is not symmetric. Indeed, Hanson made [CONFIDENTIAL] over the period.
- 12.40 Following [CONFIDENTIAL]. In oligopoly models, such as Bertrand-Edgeworth cycles, we see similar competitive reactions to a loss of market share. In the commercial world, if firms lose a significant contract, they will often compete more aggressively for the next one, a pattern which again sees a positive correlation between gains and losses. If firms lose too much market share, then it may become uneconomic to support a distribution and RMX site network, which itself can cause further reductions in market share. There are thus sound economic and commercial reasons to respond more aggressively to market share losses.

#### ***Economic Profitability***

- 12.41 Hanson does not believe there is evidence of excessive levels of economic profitability in Hanson's cement division.
- 12.42 We understand the CC will examine economic profitability through a comparison of Hanson's Return on Capital Employed (ROCE) with its Weighted Average Cost of Capital (WACC). However, in this analysis we consider it important that the CC recognise the following factors:
- 12.42.1 Hanson's physical assets and reserves used in cement production are reflected in the balance sheet on a historic cost basis. It would cost Hanson (or a new entrant) a significantly greater amount to replace these assets. Economic profitability based on these historic costs will be distorted and will misdiagnose profitability for Hanson.

- 12.42.2 Free CO<sub>2</sub> allowances under EU ETS to the clinker producers have impacted revenues and production decisions since they were launched in 2005. Their value as an intangible asset for the business needs to be factored into the economic profitability analysis. Further, increasing pressure will be placed on cement firms' profitability during Phase 3 of the EU ETS, as firms will need to buy additional allowances (impacting clinker production costs directly). The allowances may have improved headline revenues of cement producers during the recession, but this cannot be used as evidence of tacit coordination.
- 12.42.3 There are valuable intangible assets in cement production not reflected on the balance sheet. For example, Hanson has a knowledgeable, skilled workforce that would be costly to replace.

**The balance sheet understates the economic value of the significant and long-lived physical assets Hanson employs in cement production.**

- 12.43 Significant capital assets are required to produce cement.<sup>98</sup> These assets require substantial initial capital investment for plant and mineral reserves, together with ongoing costs of repair and maintenance.
- 12.44 The assets tend to have long economic lives. [CONFIDENTIAL].<sup>99</sup>
- 12.45 The true economic value of these long-lived assets, however, is not fully reflected on the Hanson balance sheet, which carries them at their depreciated historic costs (or in the case of certain buildings and land, at the original acquisition price). These assets would cost a significantly greater amount to replace today (for Hanson or a new entrant). An analysis of capital employed should reflect assets valued at current cost, not historic cost.
- 12.46 As an illustration of materiality, **Figure 2** shows the assets in the cement division's fixed asset register at the beginning of 2012 (shown as cumulative totals to illustrate the acquisition of assets over time). These are physical assets *in use* (including land, buildings, machinery and vehicles) at the [CONFIDENTIAL]. The gross book value (GBV) shows the original acquisition price paid for the asset (which does not reflect the replacement cost today). The total GBV of assets on the register at beginning of 2012 is just over £[CONFIDENTIAL]. A significant proportion of the assets were acquired between 1980 and 2000. Depreciation means that the net book value (NBV) on the balance sheet is [CONFIDENTIAL] at approximately £[CONFIDENTIAL] at beginning of 2012. Most of the assets acquired in the 1980s and 1990s, though long-lived and still in use, are from an accounting perspective carried at a small fraction of their original values (a number are fully depreciated showing the economic lives are in fact longer than the accounting lives). These historic depreciated costs significantly underestimate what it would cost Hanson (or a new entrant) to replace the physical assets today.

**Figure 2: Hanson cement division, fixed asset register beginning of 2012**

[CONFIDENTIAL]

[CONFIDENTIAL].

- 12.47 By way of a specific example, our engineers have conducted an indicative estimate of the replacement cost for major parts of the [CONFIDENTIAL]<sup>100</sup>. As at the beginning of 2012, the physical assets at [CONFIDENTIAL] accounted for approximately £[CONFIDENTIAL] in NBV on the fixed asset register. However, as shown in **Table 7**, based on market experience and conservative assumptions, it would cost Hanson in excess of

<sup>98</sup> For the avoidance of doubt, the capital assets required to import completed cement (or clinker that then needs to be refined into cement) are very significantly lower.

<sup>99</sup> [CONFIDENTIAL].

<sup>100</sup> These estimates are indicative only and have been prepared rapidly for the purposes of responding to the CC's Issues Statement. As such, they are preliminary and may be refined with additional work. They are, however, considered conservative and further refinement is more likely to increase the estimated costs than reduce them.

£[CONFIDENTIAL] to replace the Kiln #8 clinker production system (including coal mill) and over £[CONFIDENTIAL] in addition to replace the two relevant cement mills (there are four other cement mills at [CONFIDENTIAL]). These estimates do not cover all plant, land and buildings at [CONFIDENTIAL] (the estimate, [CONFIDENTIAL]).

**Table 7: [CONFIDENTIAL]**

[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]

Source: HeidelbergCement engineering estimates

Notes: <sup>(1)</sup> BLAIN is a unit for expressing the fineness of the milled material (the surface size of 1 g of product expressed in cm<sup>2</sup>). The higher the BLAIN the more finely ground the material, and also the lower the tonnes per hour output of the mill. Therefore, to compare the sizes of mills it is important to also account for the BLAIN of the output.

- 12.48 The balance sheet also underestimates the economic value of the land, mineral reserves and resources owned by Hanson. [CONFIDENTIAL]<sup>101</sup> [CONFIDENTIAL].

**Table 8: Estimated mineral reserves at [CONFIDENTIAL], as at April 2012**

[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
Carbonate limestone	[CONFIDENTIAL]	[CONFIDENTIAL]
Silica limestone	[CONFIDENTIAL]	[CONFIDENTIAL]
Silica clay	[CONFIDENTIAL]	[CONFIDENTIAL]
Mixed clay	[CONFIDENTIAL]	[CONFIDENTIAL]
<b>Total</b>	[CONFIDENTIAL]	[CONFIDENTIAL]

- 12.49 The estimates set out above indicate that the historic costs on the balance sheet very significantly underestimate the replacement costs at [CONFIDENTIAL].
- 12.50 The orders of magnitude difference between historic costs and replacement costs means that ROCE calculations based on the former will significantly, and unreasonably, overestimate the profitability of the cement division.<sup>102</sup>
- 12.51 Further, Hanson is concerned that *ex post* profitability analysis that applies historic depreciated costs as an estimate of capital employed would give distorted results for Hanson and the industry. In particular, there is a significant risk of a “false positive” finding of excessive profits given the long-lived nature of the assets.

***A distorted profitability test***

- 12.52 Hanson operates in a market where there are a number of other producers and importers, each at different points in their capital investment cycle. Given this dynamic, [CONFIDENTIAL]. This means that *ex post* profitability analysis based on capital employed valued at historic depreciated costs will lead to distorted results. This is best explained through a simplified example.

<sup>101</sup> [CONFIDENTIAL]

<sup>102</sup> Indeed, the CC’s own guidelines for market investigations explain: “The Commission will normally consider returns on the depreciated replacement cost of assets, unless there are specific reasons why this is inappropriate. Such profits could be significantly different from profits reported in statutory accounts which are usually on a historic cost (or modified historic cost) basis.” (Market Investigation References: CC Guidelines, June 2003, page 35).

- 12.53 Assume a firm buys an asset for £1,000 that will last for 10 years. Inflation is expected to be 5% per annum over the period. Finally, assume that the firm's real cost of capital (its real WACC) is 8%, which is equivalent to a nominal WACC of 13.4%.
- 12.54 The firm needs to be confident that it will earn a profile of revenue over the asset's life that recovers both:
- 12.54.1 A reasonable return on the asset. The money invested in the asset will be tied up and so the company will need to earn at least its cost of capital on the asset each year. Assume the firm earns a 'normal' return on the asset.
- 12.54.2 A return of (or depreciation of) the asset. The asset will depreciate each year, until it expires at the end of year 10. The company needs to earn sufficient return of the asset over its lifetime to recover its original investment.
- 12.55 The annual inflation adds a further dimension to the firm's decision. The firm needs to be confident that it can recover the return of and on its asset in real terms i.e. after recovery of inflationary price increases. There are three broad ways for ensuring that returns of and on an investment will be sufficiently high in nominal terms to offset inflation. First, prices can be set to return the nominal WACC on depreciated historic asset costs each year (this can be called the "historic depreciated costs" approach). Second, prices can be set to earn the real cost of capital on depreciated inflated (or current cost) asset values each year. This approach can be called the "replacement costs" approach (as, each year, the asset is valued at what it would cost to replace the asset in that year). A third alternative available to the firm – the "financial capital maintenance" approach – is also explained below.
- 12.56 Focussing on the "historic depreciated costs" and "replacement costs" approaches first. Both are equivalent in terms of allowing the firm to recover its original investment (as shown in **Table 9** and **Table 10**), but they lead to very different profiles of revenue for the firm over the 10 years. This is shown in **Figure 3**.

**Table 9: Historic depreciated costs, nominal rate of return**

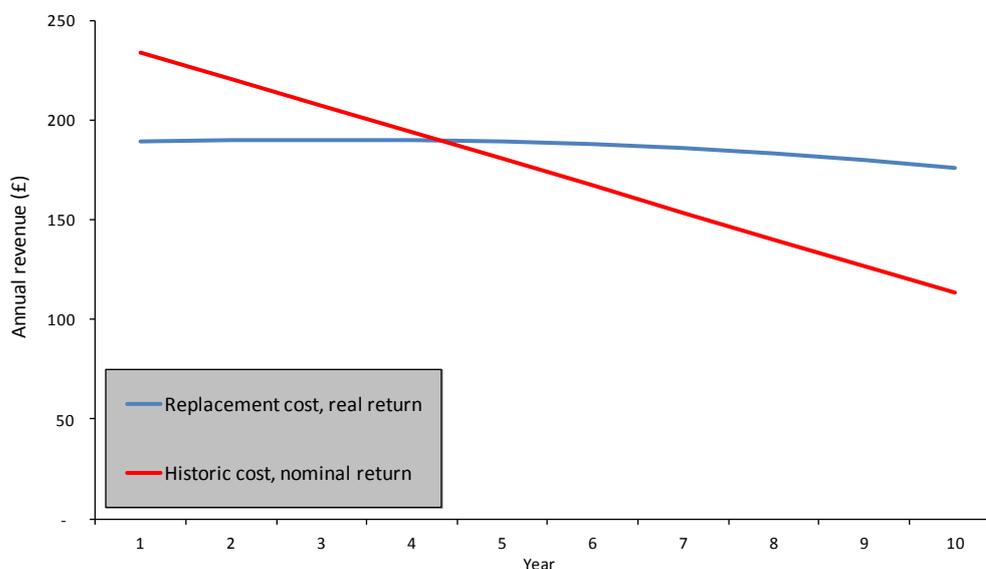
Year	Historic cost (£)	Asset base (£)	Economic Depreciation (£)	Rate of Return	Return on Capital (£)	Total revenue (£)
1	1,000.00	1,000.00	100.00	13.40%	134.00	<b>234.00</b>
2	1,000.00	900.00	100.00	13.40%	120.60	<b>220.60</b>
3	1,000.00	800.00	100.00	13.40%	107.20	<b>207.20</b>
4	1,000.00	700.00	100.00	13.40%	93.80	<b>193.80</b>
5	1,000.00	600.00	100.00	13.40%	80.40	<b>180.40</b>
6	1,000.00	500.00	100.00	13.40%	67.00	<b>167.00</b>
7	1,000.00	400.00	100.00	13.40%	53.60	<b>153.60</b>
8	1,000.00	300.00	100.00	13.40%	40.20	<b>140.20</b>
9	1,000.00	200.00	100.00	13.40%	26.80	<b>126.80</b>
10	1,000.00	100.00	100.00	13.40%	13.40	<b>113.40</b>
					<b>NPV @13.4%</b>	<b>£1,000.00</b>

**Table 10: Replacement costs, real rate of return**

Year	Inflation index	Replacement cost (£)	Asset base (£)	Indexation	Economic Depreciation (£)	Rate of return	Return on Capital (£)	Total revenue (£)
1	1.050	1,050.00	1,000.00	50.00	105.00	8.00%	84.00	189.00
2	1.103	1,102.50	945.00	47.25	110.25	8.00%	79.38	189.63
3	1.158	1,157.63	882.00	44.10	115.76	8.00%	74.09	189.85
4	1.216	1,215.51	810.34	40.52	121.55	8.00%	68.07	189.62

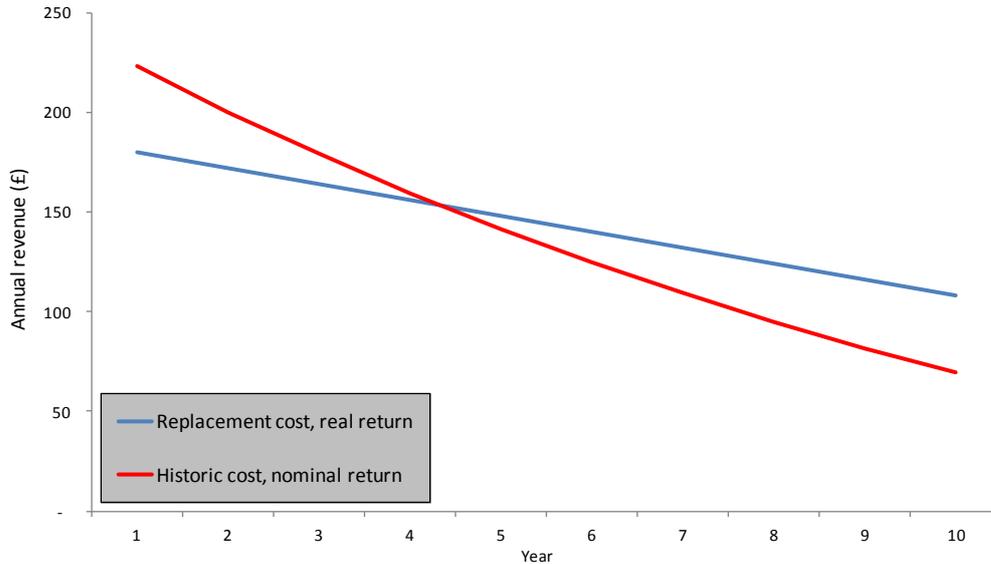
Year	Inflation index	Replacement cost (£)	Asset base (£)	Indexation	Economic Depreciation (£)	Rate of return	Return on Capital (£)	Total revenue (£)	
5	1.276	1,276.28	729.30	36.47	127.63	8.00%	61.26	188.89	
6	1.340	1,340.10	638.14	31.91	134.01	8.00%	53.60	187.61	
7	1.407	1,407.10	536.04	26.80	140.71	8.00%	45.03	185.74	
8	1.477	1,477.46	422.13	21.11	147.75	8.00%	35.46	183.20	
9	1.551	1,551.33	295.49	14.77	155.13	8.00%	24.82	179.95	
10	1.629	1,628.89	155.13	7.76	162.89	8.00%	13.03	175.92	
								NPV @ 8%	£1,000.00

**Figure 3: Comparison of historic depreciated costs approach and replacement costs, nominal prices**



12.57 The revenues and prices (assuming fixed annual output from the asset) in **Figure 3** are expressed in nominal terms – i.e. they are what the users of the asset would actually pay in cash terms in each year. In the historic depreciated costs approach the firm receives a higher price immediately following the investment, but then the revenues/price profile under this approach, far from increasing with inflation, actually falls steeply in nominal terms. In real terms, the decline is even sharper. This seems unusual in economic, commercial and commonsense terms. The replacement cost approach, however, shows a flatter revenue profile in nominal terms (although as shown in **Figure 4** it too declines in real terms).

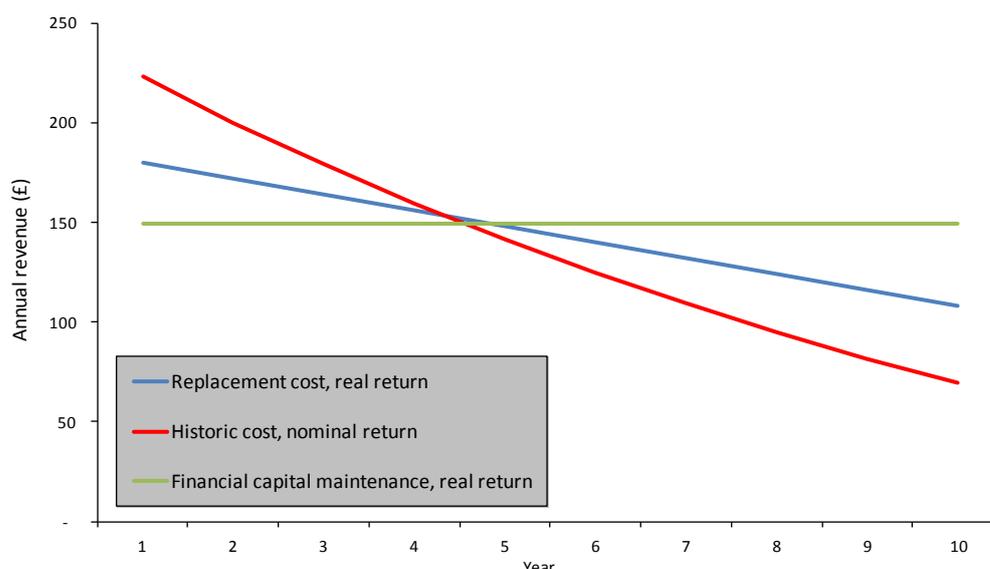
**Figure 4: Comparison of historic depreciated costs approach and replacement costs, real prices**



- 12.58 Both approaches give the firm a normal return (both are “fair” ways for the firm to recover the investment). However, an *ex post* profitability analysis (using ROCE) may be distorted if a revenue profile consistent with the replacement costs approach is benchmarked against a capital employed value based on the historic depreciated costs approach. The ROCE would misdiagnose returns as excessive if it was calculated at a point when the asset was nearing the end of its life even if the returns were ‘normal’ (in that the revenue profile was set at the outset based on the replacement costs approach).
- 12.59 The issue becomes more pronounced if the firm, in fact, faced a profile of revenue recovery consistent with the “financial capital maintenance” approach. Here the firm receives a flat revenue profile which would be consistent with a situation of flat real prices. In the example, this results in annual revenue of £149 per annum (estimated by an annuity formula<sup>103</sup>), which holds constant over the 10 years in real terms (and rises in nominal terms, a pattern that would be expected in an inflationary environment with prices index-linked annually). As with the other two approaches, the firm recovers its £1,000 over the life of the asset, but with this different profile of revenues/prices. **Figure 5** illustrates the shape, in real terms, compared to the other two approaches.

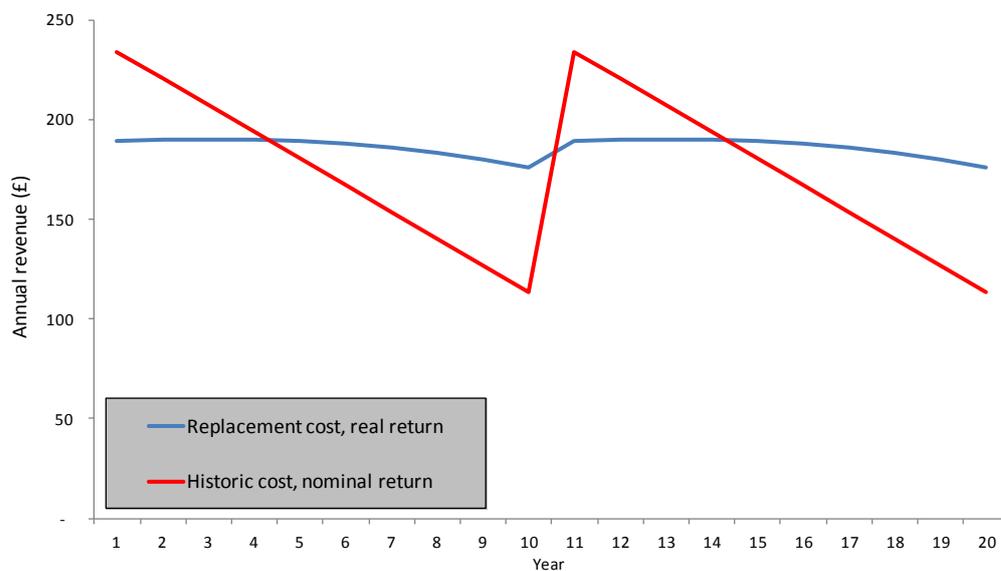
<sup>103</sup> The annuity formula to deliver the flat annual revenues is  $(A \cdot r / (1 - 1/(1+r)^l))$  where A = asset value, r = real cost of capital, and l = asset life.

**Figure 5: Financial capital maintenance, real terms**



- 12.60 If the revenue profile for the firm was consistent with financial capital maintenance, a profitability analysis based on capital employed valued at historic depreciated costs would face a significant distortion as the asset is near life-expired. Further, the degree of the distortion will increase the longer the asset's life (e.g. if the asset had a life of 30 years rather than 10 years).
- 12.61 The implication of the above is that valuing capital employed on a historic depreciated cost basis is fair only if the pricing and revenue profiles were also chosen by the firm on this basis. If the revenue and price profile was based on one of the other two approaches however, a distortion in ROCE emerges when capital employed is calculated on historic costs. This distortion misdiagnoses returns as excessive if the profitability analysis is conducted at a point in time when the assets are towards the latter half of their economic lives.
- 12.62 Hanson does not [CONFIDENTIAL]. Of the three approaches, the financial capital maintenance approach is the most consistent with the way a price-taking firm will be able to recover its investments as it posits prices that are flat in real terms, not "sculpted" to the particular investment profile of an individual firm.
- 12.63 Using historic depreciated costs as a benchmark seems inconsistent with the dynamics of a competitive market. Firms need to buy new assets when existing assets reach the end of their life. In the simplified example above, assume the firm buys a new asset for £1,000 at year 10. As shown, in **Figure 6**, if pricing is done with reference to historic depreciated costs, the firm would have a spiky profile of prices (in nominal and real terms, although the figure shows nominal) at the time of asset reinvestment (**Figure 6** understates the level of spike at the point of reinvestment because, given inflation, the asset would no longer cost £1,000 to replace in year 10). It is unlikely the firm could sustain this spiky price profile (even if it wanted to) if customers could switch to products sold by other firms in the market who were later in their investment cycle (and so at lower price points). Rather the firm would need to recover its investment based on replacement costs or financial capital maintenance. The latter would give constant real prices (rather than declining real prices) which seems more consistent with a competitive market.

**Figure 6: Comparison of historic cost and replacement cost profiles across investment cycle, nominal prices**



12.64 Given the UK cement market has a number of players (producers and importers) that are not symmetric in terms of their assets and investment cycles, it seems unlikely that the firms have priced with reference to their historic depreciated costs. This makes *ex post* profitability analysis based on a historic depreciated costs benchmark distorted for the industry (although given that different players have asset bases of different ages, the magnitude of this distortion is difficult to predict *a priori*). [CONFIDENTIAL].

12.65 The test will also be distorted by the depreciation error caused by accounting lives for assets being shorter than the economic lives for assets. Accounting policies on asset lives vary between firms but tend to be prudent in depreciating the asset rapidly. Economic depreciation, however, would be smoother over the full life of the asset. Therefore, for older assets, current levels of accounting depreciation would be too low (leading to overstated EBIT and profitability). In applying the replacement cost approach, the CC should also make relevant adjustments to the EBIT to reflect reasonable levels of economic depreciation.

**CO<sub>2</sub> allowances have impacted financial performance**

12.66 The sale of unused carbon dioxide (CO<sub>2</sub>) allowances [CONFIDENTIAL]. However, the CC should consider carefully how CO<sub>2</sub> is treated in the *ex post* profitability analysis (as well as how changes in the EU ETS regime will impact future profitability for the industry).

12.67 This section begins by providing some context on the EU ETS scheme. It then discusses the impact it has had on Hanson (and the industry). Finally, it explains the implications Hanson considers relevant for the CC's analysis.

Context on the EU ETS

12.68 The EU ETS has been established to stem the amount of CO<sub>2</sub> produced in the EU. CO<sub>2</sub> is a by product of energy intensive production industries such as electricity and cement. The EU ETS is a "cap and trade" system. This means that whilst the overall level of emissions permitted is capped, individual participants in the system may buy and sell allowances as they require. One allowance allows the holder the right to emit 1 tonne of CO<sub>2</sub>. These allowances may be traded, whilst the cap on the total number of allowances creates the scarcity in the market. If a company exceeds its allocated allowance in a year, then it must purchase sufficient allowances from other companies to match its emissions.

Similarly, a company may sell any surplus allowances. The effect of the scheme is to raise the marginal costs of production of the goods that produce CO<sub>2</sub> as a by product.

12.69 The EU ETS was launched on 1 January 2005 and comprises three phases:

12.69.1 **Phase 1** – This ran from 2005-2007 (3 years). This was a "learning by doing" phase whereby participation was voluntary. Each Member State drew up its own national allocation plan (NAP) which determined their total level of ETS emissions and how many emission allowances each facility in their country received. All allowances were issued free of charge in the UK.

12.69.2 **Phase 2** – This started on 1 January 2008 and finishes at the end of 2012 (5 years)<sup>104</sup>. This coincides with the first commitment period of the Kyoto Protocol. For this period, the EU ETS emissions for the EU have been capped at approximately 6.5% below 2005 levels to help the EU as a whole ensure delivers on its Kyoto commitments. In Phase 2 the Member State's NAP required approval by the European Commission.

12.69.3 **Phase 3** - This will commence on 1 January 2013 and will run for 8 years. It is expected that there will be a decline in the overall allowance cap – estimated as a 21% reduction in 2020 compared to 2005. This suggests that the relative value of an allowance will increase over time (through increasing scarcity)<sup>105</sup>.

12.70 The market for the trade of CO<sub>2</sub> allowance is European wide. Currently, allowances can be carried and traded across years within a phase, but not across phases 1 and 2. **Figure 7** and **Figure 8** illustrate that the value of allowances has been volatile. For example, when it became clear in April 2006 that there would be a surplus of allowances in the EU in 2007 (and 2007 allowances expired at the end of Phase 1) the price slumped. The weather also impacts value of allowances because electricity producers are more likely to need additional allowances during a cold winter.

**Figure 7:** [CONFIDENTIAL]

[CONFIDENTIAL]

**Figure 8:** [CONFIDENTIAL]

[CONFIDENTIAL]

12.71 The production of cement is highly energy- and carbon- intensive due to the heat needed to produce clinker and the process emissions from the chemical decomposition of limestone to produce clinker. In the production of 1 tonne of clinker there are approximately 0.53 tonnes of CO<sub>2</sub> emitted from the calcination of limestone and 0.3 tonnes of CO<sub>2</sub> from the combustion of fossil fuels. The emissions of CO<sub>2</sub> from calcination are irreducible.

12.72 In Phase 1 and Phase 2 the allowances were based on the historic CO<sub>2</sub> emissions in the relevant baseline years. For new entrants the plant capacity and other variables, such as

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<sup>104</sup> In Phase 2, 20% of the electricity supply industry allowances were sold by auctions which resulted in increased power cost to consumers.

<sup>105</sup> In Phase 3 all power generators across the EU will not receive allowances free of charge. In most industrial sectors the allowances issued each year will decline from 80% of those initially allocated to 30% of the initial allocation by 2020. In some sectors which have been assessed as exposed to carbon leakage (industries such as cement and steel) will receive the same allocation throughout the phase. The EU will be reviewing the leakage assessment in 2014. In Phase 3 a new entrant (or the extension of existing capacity) will be issued allowances on the same basis as incumbent installations only as long as there are allowances available in the new entrant reserve. Once the NER is exhausted, allowances will have to be purchased.

the design of the cement plant and the moisture of raw material inputs were used in a UK benchmark calculation to issue additional or new allowances.

- 12.73 For Phase 3 of the EU ETS the European Commission has set the benchmark for the emissions associated with the production of one tonne of clinker. This is currently set at 0.766 tonnes of CO<sub>2</sub> per 1 tonne. The amount of allowances allocated to a production facility then depends upon the company's historic clinker production for phase 2, with the median of 2005 to 2008 being used.
- 12.74 If a site is closed permanently, then the allowance for that site will be lost. In order to stop a company obtaining its allowances, producing 1 tonne of clinker, and then selling the remainder of its allowances, a 'partial closure' rule comes into force in Phase 3 whereby if a company produces 50% or less of its annual clinker capacity, it will only receive 50% of its overall allowance in the following year.

Implications for Hanson

- 12.75 Hanson has participated in the EU ETS [CONFIDENTIAL]. It has been allocated a certain number of free allowances for its three production facilities on an annual basis. The allowances are tied to the IPPC permit for each site, but they can be transferred between accounts and traded across Europe or traded on the open market by. [CONFIDENTIAL].

**Table 11: [CONFIDENTIAL]**

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Notes: \* Total allowances sold in a year can differ from unused allowances if Hanson held unused allowances across years.

- 12.76 The amount of allowances allocated to Hanson facilities during Phase 3 of the EU ETS, at approximately [CONFIDENTIAL].
- 12.77 The allowances have impacted production decisions and costs.
- 12.78 The allowances may be given free of charge, but once received by a cement producer they immediately have financial value (given there is an open market and scarcity). The allowance creates an opportunity cost of producing an additional tonne of clinker, as the producer is no longer able to sell the CO<sub>2</sub> allowance.

- 12.79 This leads to an upward shift in the marginal cost curve for cement production<sup>106</sup>. All else equal, this upward shift in the marginal cost curve will reduce the level of clinker production the producer, and the industry, will rationally choose<sup>107</sup>. The ability to pass this input cost increase through to price, however, depends on the symmetry of market participants (e.g. the energy efficiency of their production facilities) and the constraint from imports from outside the EU (which are unaffected by the allocations).
- 12.80 There is significant volatility in this marginal cost, with this volatility driven by factors exogenous to the UK cement market (e.g. the severity of the winter in Europe). As shown in the price charts above, the value of allowances have varied significantly across time. This impacts cement production in that it creates volatility in cement margins (making the calculus of pricing and production more challenging).
- 12.81 Hanson has [CONFIDENTIAL].
- 12.82 The EU ETS policy has therefore impacted the dynamics of cement production in the past few years, and its impact is likely to increase as the allowance caps are reduced through Phase 3.

*Implications on profitability analysis*

- 12.83 The allowances were gifted free of charge and have provided Hanson, and other cement producers, with an alternative revenue stream during the recession (as Hanson has been able to sell unused allowances). It would be a misdiagnosis, however, to suggest that this new revenue stream increases economic profitability. This additional revenue is counterbalanced by an intangible asset that should be included in the capital employed.
- 12.84 Shareholders expect and require management to maximise the returns on assets, whether purchased or gifted, given the opportunity cost of retaining assets rather than selling them to a third party. It is not unreasonable for a company to earn a return on a gifted asset. Therefore, [CONFIDENTIAL]. This makes it essential that [CONFIDENTIAL].
- 12.85 The allowances are valuable assets even if they are gifted – indeed Hanson recognises the granted allowances in its balance sheet as an intangible asset<sup>108</sup> (although this accounting value is prudent and understates the true economic value of the allowances). The income from CO<sub>2</sub> allowances can come in the form of revenue from selling unused allowances or the saved costs of not having to buy allowances for clinker that is produced. The value to the shareholder, and so the increase in capital employed for the management, is the net present value of the income stream.
- 12.86 Finally, it is important to note that the CO<sub>2</sub> allowances income stream will reduce in importance during Phase 3 as granted allowances are reduced. Further, additional costs will enter the P&L directly if economic recovery leads to clinker production exceeding the granted allowances (meaning companies have to buy extra allowances for each extra tonne).

***There are important intangible assets in cement production not recorded on the balance sheet.***

- 12.87 As discussed above, Hanson Cement does record CO<sub>2</sub> allowances on the balance sheet as an intangible asset (although the accounting value attached is likely to be lower than

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<sup>106</sup> Although the incremental increase in variable costs per tonne of cement may not be recorded directly as an operating cost in the income statement, this does not mean cement margins have not narrowed on a per tonne basis. This is clearly illustrated for a producer that has exceeded its allowance cap and has to buy additional allowances on the market. The purchase prices of these allowances would enter directly into the operating costs in the income statement.

<sup>107</sup> This is the desired effect of the EU ETS – to reduce CO<sub>2</sub> production across the EU. The effect on quantity and price is less clear, however, when there are production thresholds the producers must achieve in order to retain future allowances.

<sup>108</sup> In line with UK GAAP the allowances each year are valued at the allowance price prevailing on the day the allowances are given to Hanson UK (in February each year). The value of the asset varies as allowances are bought and sold during the year, and is assessed for impairment at the end of a year.

the true economic value). However, there are other important intangible assets not recorded on the balance sheet that should also be taken into account in ROCE analysis:

- 12.87.1 Cement production requires skilled and trained employees – engineers, chemists, and technical experts – to produce the right grade of cement (particularly as the quality of inputs can vary). The knowledge of this workforce would be costly for a new entrant to establish.
- 12.87.2 Hanson has invested in developing a relationship with the communities around each of its sites. Hanson invests resources each year to make sure disruption for the communities is minimised and any concerns are minimised. This goodwill is important and has value (it would be costly to replace).

### Summary on economic profitability

- 12.88 Economic profitability analysis must be conducted with care and on the correct basis if the CC is to assess the dynamics of competition in the cement market. The CC should use the replacement cost approach to valuing capital employed rather than historic costs, [CONFIDENTIAL]. The CC must account for the intangible assets used in cement production; in particular CO<sub>2</sub> allowances.

## THEORY OF HARM 3: "VERTICAL FORECLOSURE"

### 13. OVERVIEW

- 13.1 In this section Hanson responds to the allegation by the OFT that during the recession the five majors have sought coordination to “squeeze” independent RMX customers out of the market. The allegation is groundless and is based only on vague, anecdotal and incomplete evidence which falls short of what would be required to prove this allegation<sup>109</sup>.
- 13.2 Hanson believes that the majors do not have either the ability or incentive to undertake this type of squeeze, and that there is no evidence of a concerted strategy to squeeze out independents<sup>110</sup>. Although it is not necessary to establish that cement prices to RMX independents in themselves were abusive, as an excessive price<sup>111</sup>, it would in Hanson’s view be difficult to claim that a margin squeeze exists if downstream RMX prices were not *systematically* on predatory levels or where the upstream cement prices were so prohibitively high that it constituted a constructive refusal to supply.
- 13.3 Hanson has played no part in any alleged squeeze.
- 13.4 Crucially, there is little evidence of any detrimental effect on independent RMX suppliers from this alleged squeeze. Independents have a sizable and growing share of RMX supply in Great Britain (particularly when on-site batching is included<sup>112</sup>). As shown in **Figure 9**, this share grew through the 2000s, with particularly growth during the recession when the majors were allegedly undertaking the squeeze. [CONFIDENTIAL]. It is notable how adaptable and resilient independents have proved during the recession and they would appear to have continued to flourish and benefit from their greater agility and lower overheads relative to larger operators. Given the low barriers to entry and expansion in RMX markets, it is likely that independents will continue to flourish as the economy returns to growth.

<sup>109</sup> One must also accept that RMX independents have an incentive to complain about their suppliers (particularly during a recession), even where suppliers are not at fault. Further, there is dispersion of cement prices across customers (depending on their size, length of custom, and negotiating skill); meaning that the small number of customers at the top of the range may complain of a squeeze, even though the majority of customers are satisfied. The dispersion of prices to independents suggests there is no evidence of a systematic squeeze.

<sup>110</sup> Hanson notes that most margin squeeze cases have been ones that relate to prices either for accessing an essential facility or relating to prices of a product supplied by a single monopoly/“super-dominant” supplier (See e.g. Case C-280/08P *Deutsche Telekom v Commission*, judgment of 14 October 2010, paragraph 231, 234 and 255). Hanson is not aware of examples where a collectively dominant oligopoly has been found to effect a squeeze.

<sup>111</sup> Case C-280/08P *Deutsche Telekom v Commission*, judgment of 14 October 2010, paragraph 183.

<sup>112</sup> Hanson considers that on-site batching and volumetric trucks should be included in the RMX market.

Figure 9: [CONFIDENTIAL]

[CONFIDENTIAL]

[CONFIDENTIAL].

#### 14. THE OFT'S THEORY OF HARM

14.1 In the OFT Reference Decision, the OFT argues that vertically integrated majors have squeezed independent RMX suppliers through a combination of: well-functioning tacit coordination amongst cement producers causing cement prices to rise relative to the prices of RMX; majors supplying cement at a higher price to independents than to their own downstream subsidiaries or each other; cases of majors refusing to supply independents; and, in certain situations, aggressive (below cost) pricing by majors in RMX markets downstream. The OFT puts forward evidence it considers "consistent with" or "potentially indicative of" the majors collectively effecting a squeeze, although the OFT does acknowledge that its own evidence is not determinative.

14.2 However, Hanson considers the OFT's evidence to be extremely weak:

14.2.1 The OFT relies on the pattern of a number of complaints by independents about a squeeze. The OFT does not state the overall number of complaints received<sup>113</sup>, nor whether it provides a representative sample of the over 200 independent RMX companies across the UK. Indeed, the OFT notes that many accounts could not be substantiated – "*[g]iven the lack of detail provided and the difficulty of following up to substantiate particular accounts (notably those made anonymously) it is very difficult to come to a firm conclusion as to whether individual allegations might represent potential infringements of competition law*"<sup>114</sup>. The OFT opted not to share the complaints with Hanson and refused to give Hanson any opportunity to respond to the allegations on a case by case basis. Therefore, it is impossible for Hanson to respond to vague, unsubstantiated evidence of this sort. The very limited number of cases Hanson were able to comment on during the Anglo American/Lafarge put-back paper process enabled Hanson to demonstrate to the CC that [CONFIDENTIAL] that Hanson were shown were groundless (see above).

14.2.2 The OFT refers to econometric analysis it conducted to estimate the average annual marginal cost of RMX based on data from one of the majors. This was conducted using monthly data from that firm for each of the years 2002 to 2010 on the total cost and total quantity of RMX produced. An average annual marginal cost was estimated for each year. These values (each apparently statistically significant) were then compared to the firm's average price per cubic metre. This showed the firm's RMX margins had narrowed in the recession. The findings of this analysis are, however, incomplete for several reasons<sup>115</sup>. The OFT does not set out the functional form of its econometric model so it is unclear whether there is any control by the OFT for factors such as the varying mix of regions in which sales are made (which affects end customer type, costs to serve, and intensity of local competition). This is also a period during which firms would have been removing significant fixed cost, and the OFT has not explained how it accounts for this non-stationarity in the time-series. Finally, there is no explanation of the robustness of the estimated model, such as the goodness-of-fit or the extent of omitted variable bias (for example, estimated coefficients based on only 12 observations in each year, which appears to be what the OFT has done, are themselves likely to lack robustness).

<sup>113</sup> The final OFT Reference Decision does note that six complaints were made during the consultation period on the OFT's provisional finding (released August 2011).

<sup>114</sup> OFT Reference Decision para 5.11

<sup>115</sup> The OFT itself notes "*that there are serious limitations in the data available to us. In particular, the analysis is based on accounting costs, rather than economic costs. Moreover, the estimates are based on national averages and this further complicates their interpretation, as ready mix concrete markets are local in scope*" OFT Reference Decision (para 5.54).

- 14.2.3 The OFT compares the cement prices charged by the majors to their own RMX subsidiaries (and the RMX subsidiaries of other majors) with those charged to independents, and finds that the prices to independents were higher (apparently even after using econometrics to control for size differences between the majors and independents). The OFT concludes that “[s]uch price discrimination could be consistent with an attempt by the majors to squeeze”, although it notes “limitations in the data available to the market study means that the above analysis is not wholly conclusive”<sup>116</sup>. Hanson disputes the OFT’s conclusion. [CONFIDENTIAL]. Further, there could be various pro-competitive justifications for a differential to exist<sup>117</sup>, therefore far more evidence is needed before a conclusion can be drawn about any alleged differential being consistent with a margin squeeze.
- 14.2.4 The OFT cites a news article – “*Recession takes its toll on ready-mixed sector*”, Agg-net, 17 November 2011 (accessed March 2012) – to argue that 8 RMX companies had exited during the previous 12 months. However, there could be many reasons for their exit (in particular, as the article notes, the deep recession), and there is no evidence linking these exits to input foreclosure directly. Indeed, there is no assessment of whether these exits are consistent with natural churn in the industry. The same article also goes on to state that 300 companies remain in the industry.

## 15. ASSESSING THE ALLEGED SQUEEZE

- 15.1 Hanson considers that the CC should bear in mind the following issues in investigating the alleged squeeze.

### *Demonstrating an ability to squeeze*

- 15.2 It is necessary as a first step to show that tacit coordination in cement took place effectively during the recession (i.e. demonstrating that collective dominance was exercised by imposing higher cement prices to independents than they would otherwise have been). Without clearing this hurdle, an adverse effect on competition in RMX could not occur. As explained above, Hanson does not believe there is evidence to allow the conclusion of tacit coordination in the cement market.
- 15.3 Importantly, the ability to foreclose depends on the availability of input alternatives<sup>118</sup>. Hanson’s cement is not essential for the downstream (RMX) customer, as cement markets are wide and there are many other suppliers to turn to for cement. Cement supply from other manufacturers and cement importers provide credible alternatives for RMX suppliers.
- 15.4 The ability of the majors to foreclose is also undermined by the data in **Figure 9** showing that the amount of RMX supplied by independents has increased in absolute terms, which

<sup>116</sup> OFT Reference Decision paras 5.58 and 5.60.

<sup>117</sup> There may be various commercial reasons other than volume that could explain a differential (if that differential exists). Some examples include: (i) internal subsidiaries may commit to purchases of cement many months in advance, where independent sales may more often be on the spot. The additional certainty of the committed sales would afford a discount as is typical of many markets (e.g. where a ticket purchased on the day may be more expensive than the same ticket purchased months in advance); (ii) it is likely that internal sales face lower transaction costs (such as lower marketing, negotiation, and contracting costs per sale). Indeed, the bulk of the costs a cement producer incurs in having a sales force should be allocated to external sales (as they would be avoidable if the cement producer only sold internally) meaning a differential could be justified in cost reflective pricing; and, (iii) as the OFT notes, a key efficiency of vertical integration – the removal of double marginalisation – could also explain the differential.

<sup>118</sup> The CC will need to consider whether the supply of cement is objectively necessary for operators to be able to compete effectively on the market. Although a margin squeeze cannot be ruled out where the upstream product is not indispensable, it is a highly relevant issue to determine, particularly as alleged margin squeeze cases do not deserve competition law enforcement priority attention if the input is not objectively necessary for operators to be able to compete effectively on the market (see Case C-52/09 *Konkurrensverket v TeliaSonera*, judgment of 17 February 2011, paragraph 69 and 72; cf. Communication from the Commission — *Guidance on the Commission’s enforcement priorities in applying Article [102] of the [Treaty on the Functioning of the European Union] to abusive exclusionary conduct by dominant undertakings*, OJ 2009 C45/7, paragraph 80-83; and Case C-280/08P *Deutsche Telekom v Commission*, judgment of 14 October 2010, paragraph 231, 234 and 255.

means that it is highly likely they have accessed a greater volume of cement in absolute terms during the recession<sup>119</sup>.

### ***Recognising a period of significant disequilibrium***

- 15.5 The shock of the recession on the RMX market has been very material. The unexpected and sharp nature of the collapse in demand has put pressure on all RMX suppliers (with some areas of Great Britain put under more pressure than others). In many local markets demand from RMX customers contracted substantially, sometimes almost completely, and abruptly. This was a period of high uncertainty. And high levels of uncertainty remain in many local markets about the timing and extent of any recovery. This period of “disequilibrium” should be appreciated by the CC:
- 15.5.1 It makes the alleged ‘common strategy’ of foreclosure coordinated across the majors difficult to believe. This disequilibrium makes it highly unlikely that tacit coordination in cement supply could be maintained. Within RMX, suppliers’ incentives and market positions were changed rapidly and not symmetrically (as the shock affected different local markets and customers in different ways). [CONFIDENTIAL].
- 15.5.2 It means that there were many other commercial forces acting on independent RMX suppliers outside of input costs that could explain any volatile or thinning margins (and, as noted in **Figure 9** above, it appears that many independents have survived and grown through the shock). These factors could include: abrupt changes in customer base (in both volume and mix terms); intensified levels of buyer power and bargain hunting from the remaining customers; and, changing bank funding costs. Therefore, the CC should carefully consider the various factors impacting independents’ margins before concluding that any squeezed margins (or companies’ exit) are attributable to cement input costs alone.
- 15.5.3 It means that the majors’ own performance and strategies have changed materially. [CONFIDENTIAL]. Therefore, any assessment of squeeze needs to be considered with reference to the changing portfolio, costs and prices present for Hanson and other majors.

### ***Demonstrating an incentive to squeeze***

- 15.6 Hanson believes the majors collectively, and Hanson in particular, does not have an incentive to squeeze independent RMX providers. For this collective strategy of exclusion to be attractive (and so possible), each major individually would need to believe the enhanced profitability of its downstream RMX subsidiary (now and in the future) from excluding rival RMX independents would outweigh the forgone cement sales that it would have made to these independents. This calculus, however, seems unlikely as:
- 15.6.1 There are low barriers to entry and expansion in RMX supply, with competitive entry and expansion being possible, and demonstrable, on a small scale<sup>120</sup>. The competitive tension from the threat of entry and expansion will continue to put pressure on RMX margins even if a significant number of independents were marginalised in a squeeze (which, as explained above, seems unlikely given imports). Low downstream margins would weigh against the incentive to squeeze.
- 15.6.2 There continues to be uncertainty about the future of the RMX market – when, where and to what extent it will recover. This uncertainty would weigh against

<sup>119</sup> Cement is not consumed in fixed proportions in RMX (the amount of cement can be flexed somewhat, although this affects RMX performance) but there is high degree of correlation.

<sup>120</sup> There is also existing, mothballed capacity, which could be re-introduced.

the incentive to squeeze (as the major's future RMX revenues would be uncertain and so more heavily discounted).

- 15.6.3 Even with independents excluded, the major would need to believe that RMX competition between the majors would be soft. There is no evidence that competition between the majors was soft pre-recession – for example, Aggregate Industries saw its share rise rapidly at the expense of the other majors.
- 15.7 Further, the incentives of the individual majors are asymmetric. Lafarge has a sizeable share in the cement market, but a small share in RMX. On the other hand, Aggregate Industries and Tarmac have small upstream shares with more substantial RMX businesses. Each major has different ratios of internal to external cement sales. The asymmetry of positions makes it less likely that they will reach a common understanding to squeeze (and by how much to squeeze).
- 15.8 Hanson, in particular, has little incentive to squeeze out independent RMX producers. Hanson supplies [CONFIDENTIAL]. Of its overall bulk cement supplies in 2010 (including internal supplies), for example, it supplied around [CONFIDENTIAL]% to independent RMX producers, just under [CONFIDENTIAL]% to major players and around [CONFIDENTIAL]% internally. Therefore, squeezing out independents is in no way attractive to Hanson – [CONFIDENTIAL].

***Demonstrating that 'equally efficient' RMX rivals have been squeezed out***

- 15.9 In order for there to be a 'margin squeeze', the CC will need to determine whether the upstream cement prices, when compared to the prices downstream, do not allow even an Equally Efficient Competitor to trade profitably in the downstream market on a lasting basis<sup>121</sup>.
- 15.10 For a margin squeeze to constitute an abuse, it is necessary to demonstrate an *effect* on the competitive situation of competitors, i.e. it must be exclusionary with the effect that it makes market penetration by Equally Efficient Competitors more difficult. And the anti-competitive effect must relate to the possible barriers which the alleged margin squeeze creates and on the degree of competition in that market.<sup>122</sup> Moreover, in Hanson's view, it cannot be argued that any alleged margin squeeze can result in consumer harm in the relevant markets, as any Equally Efficient Competitor is likely to merely duplicate the RMX produced by the manufacturers against which the margin squeeze allegations are made – in which case regulatory intervention is not warranted.<sup>123</sup>
- 15.11 Independent RMX competitors have not been weakened in recent years, as shown in the BDS Consulting data in **Figure 9**. Therefore, there is little (or no) evidence of anticompetitive effect.

***Necessary benchmark for Equally Efficient Competitors***

- 15.12 In addition, determining the benchmark of an "equally efficient" RMX independent is challenging. Each relevant manufacturer owns a different portfolio of RMX facilities with different facility sizes and technologies, and located in different parts of the country

<sup>121</sup> In other words, for a margin squeeze to have existed, it needs to be demonstrated that the spread between wholesale prices and retail prices for end-users - in this case the spread between cement prices and retail RMX prices - is capable of having an exclusionary effect on equally efficient actual or potential competitors, with the effect that access to the RMX markets is, at the very least, made more difficult as a result of the margin squeeze which such a spread can entail for them, (Case C-52/09 *Konkurrensverket v TeliaSonera*, judgment of 17 February 2011, paragraph 73-74)

<sup>122</sup> Case C-280/08P *Deutsche Telekom v Commission*, judgment of 14 October 2010, paragraph 250-251 and 254; and Case C-52/09 *Konkurrensverket v TeliaSonera*, judgment of 17 February 2011, paragraph 61-62.

<sup>123</sup> Communication from the Commission — *Guidance on the Commission's enforcement priorities in applying Article [102] of the [Treaty on the Functioning of the European Union]* to abusive exclusionary conduct by dominant undertakings, OJ 2009 C45/7, paragraph 87, with reference to Case C-418/01 *IMS Health v NDC Health* [2004] ECR I-5039, paragraph 49; Case T-201/04 *Microsoft v Commission* [2007] ECR II-3601, paragraph 658.

(which impacts both the input costs a particular facility faces and the relevant retail RMX price in the local area).

- 15.13 It seems appropriate to conduct a squeeze analysis at the company level rather than individual production site level. Hanson operates a portfolio of RMX facilities/sites, often serving customers [CONFIDENTIAL] from more than one facility. Therefore, the “equally efficient” competitor would need to be considered at a RMX portfolio level rather a single site.
- 15.14 Therefore, Hanson has conducted a preliminary analysis of whether its own cement and aggregates prices have led to a squeeze during the recession period<sup>124</sup>:
- 15.14.1 **‘Equally efficient’ competitor costs:** Hanson used its own RMX division’s costs at the company level as an estimate for an Equally Efficient Competitor operating a similar portfolio [CONFIDENTIAL] to calculate a cost per cubic metre of RMX.
- 15.14.2 **Adjusting for internal supplies of cement and aggregates:** The Equally Efficient Competitor would access cement and aggregates at [CONFIDENTIAL] price [CONFIDENTIAL]. Market prices were estimated on the basis of [CONFIDENTIAL]. If a squeeze were taking place, it is likely that the [CONFIDENTIAL] prices [CONFIDENTIAL] would be higher than the [CONFIDENTIAL] prices (thereby eroding the as efficient competitors margins). [CONFIDENTIAL].
- 15.14.3 [CONFIDENTIAL]:
- (a) [CONFIDENTIAL].
  - (b) [CONFIDENTIAL].
  - (c) [CONFIDENTIAL].

**Table 12:** [CONFIDENTIAL]

[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]

[CONFIDENTIAL]

**Table 13:** [CONFIDENTIAL]

[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]
[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]	[CONFIDENTIAL]

- 15.14.4 **Estimate RMX retail price:** Hanson used the realised prices it has achieved per cubic metre at a national level as a proxy for the market price for RMX at the retail level. This involves averaging across varying prices achieved in different local markets of Great Britain.

<sup>124</sup> Hanson does supply other inputs – [CONFIDENTIAL]. The analysis here, however, focuses on cement and aggregates as these are the reference products, with cement in particular being the product through which the alleged squeeze has been undertaken.

- 15.14.5 **Compare with variable costs:** The analysis shows that an Equally Efficient Competitor would have been able to cover its variable costs in each year (particularly when considering [CONFIDENTIAL]). Therefore, it would not have been squeezed out of the market, as is alleged, in the short term.

#### **THEORY OF HARM 4: POLICY AND REGULATION**

##### **16. OVERVIEW**

- 16.1 One of the potential theories of harm put forward in the CC's Issues Statement considers whether any aspect of regulation of aggregates, cement or RMX industries, or the implementation of policies relevant to those industries, has the effect of preventing, restricting or distorting competition.
- 16.2 In particular, the CC is examining whether:
- 16.2.1 The planning regime and/or policy on the development and use of mineral reserves, and the way that these are applied, restricts the ability to develop new aggregates production facilities or to expand existing facilities and so may create a barrier to entry and expansion or distort competition in the market;
- 16.2.2 These schemes create incentives for companies to seek permission for aggregates extraction which are not then developed and if so, whether such "land banking" (and/or "mothballing" of previously active sites) has the effect of restricting supply to the market or making entry by rivals more difficult; and
- 16.2.3 Any aspects of these schemes provide a degree of transparency that facilitates co-ordinated behaviours.
- 16.3 Each of these issues is considered in turn, taking into account the points raised by the OFT in the OFT Reference Decision.
- 16.4 Theory of Harm 4 also covers other aspects of regulation/policies. These have been, to a certain extent, touched upon in other sections above (e.g. Aggregates Levy under Theory of Harm 1 (see above, paragraph 7.1 et seq) and the EU ETS under Theory of Harm 2), but this Submission does not seek to cover all aspects of regulation/policy at this stage. The section below on planning focuses on the allegation that the planning regime constitutes a barrier to entry in relation to the aggregates market.

##### **17. OFT'S VIEWS ON THE PLANNING SYSTEM**

- 17.1 In the OFT Reference Decision, the OFT highlighted a number of issues for the Government to consider in the context of the Department of Communities and Local Government (DCLG) consultation on the draft NPPF.
- 17.2 It is noted that the final version of the NPPF has since been published (on 27 March 2012).<sup>125</sup> This replaces a number of planning documents including Minerals Policy Statements MPS1 and MPS2 and number of the Minerals Planning Guidance notes.
- 17.3 The OFT has particular concerns in relation to the planning system:
- 17.3.1 The creation of significant barriers to entry; and
- 17.3.2 An increase in market transparency.
- These are dealt with separately below.

##### **18. PERCEIVED CONCERNS AS TO BARRIERS TO ENTRY**

<sup>125</sup> <http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>

- 18.1 The OFT raises three potential barriers to entry:
- 18.1.1 The planning system favours incumbents over new entrants;
  - 18.1.2 There is potential for incumbents to hoard landbanks in order to exclude new entrants; and
  - 18.1.3 The costly nature of planning application process is a barrier in itself.

***Planning system favours incumbents over new entrants***

18.2 The OFT's Reference Decision states that the planning system appears to favour incumbents in a number of ways (described below). As noted above, the OFT's views were based on the situation prior to the publication of the NPPF. It is therefore the case that the government has had the opportunity to take into account those concerns in the NPPF. The NPPF, however, fundamentally retains a plan-led system (albeit with a greater focus on sustainable development), which means that the failings associated with the planning regime will remain. In any event however, these failings are not related to the conduct of any operator, large or small.

18.3 Before turning to each of these factors, Hanson notes that the planning system poses a barrier to entry for all market players, not just smaller companies or potential new entrants.

***Favouring extensions of existing quarries over applications for greenfield sites***

18.4 The OFT states that the tendency of MPAs to generally favour extending the time period on existing planning permissions for quarries, rather than granting permissions for new greenfield sites, favours incumbents. It has however noted that this is an advantage for any incumbent, regardless of its size, i.e. it can equally apply to smaller operators.<sup>126</sup>

18.5 Hanson notes however that the OFT has accepted that such decisions are primarily due to environmental and social reasons. Indeed, this is reflected in the new NPPF, which states that local planning authorities are to assess planning applications against environmental criteria *"to ensure permitted operations do not have unacceptable adverse impacts on natural and historic environment or human health"*<sup>127</sup>.

18.6 Hanson agrees that this approach may lead to a preference for MPAs to grant extensions for existing sites, rather than authorising the development of new greenfield sites. This is important in terms of managing the country's finite mineral resources, where small resources might otherwise be left unworked if they are not extracted through an existing, adjoining operation, whilst that is active. It is likely that such small extensions would not be economic to open and operate as standalone sites and, hence, if they are to be worked at all, they need to be planned as extensions. Otherwise, they would be forever sterilised and the resource would be lost.

18.7 However, this certainly does not exclude the possibility of planning being obtained for the development of greenfield resources, as all sites will ultimately reach the end of their potential life either through reserve exhaustion or through the economic cost of operation as reserves become more distant. The MASS requires the provision of an adequate, steady and sustainable supply of aggregates and this can only be achieved through the allocation of sites in development plans and ultimately the grant of planning permission through a range of sites, some comprising extensions and some greenfield. The complexity, delays and failings in the development plan process make planning for any facility costly and very time consuming.

***Landbank target levels are treated as a cap***

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<sup>126</sup> Paragraph 6.14-6.18 of the OFT Reference Decision.

<sup>127</sup> Paragraph 143 of the NPPF.

- 18.8 The OFT notes that certain MPAs may treat landbank targets as a cap, rather than as a minimum threshold for permitted reserves and that this creates an absolute barrier to entry. It also states that there may be the potential or incentives for incumbents to hoard landbanks and/or mothball sites in order to exclude new entrants. The OFT therefore recommends that landbank targets are applied more flexibly, taking into account potential competitive benefits.
- 18.9 The new NPPF states that MPAs should continue to make provision for the maintenance of landbanks of at least 7 and 10 years respectively for sand & gravel and crushed rock. As before, landbanks are to be used principally as an indicator of the security of aggregate minerals supply and to indicate the additional provision that needs to be made for new aggregate extraction and alternative supplies in mineral plans<sup>128</sup>.
- 18.10 In this regard, the OFT accepts that it has no evidence of any harm caused and that this is only a theoretical risk. Further, it recognises the role of environmental considerations when MPAs decide on the level of permissions to grant<sup>129</sup>. Hanson considers that the OFT has misunderstood the aim of the Managed Aggregates Supply System (MASS) which is to ensure adequate supply of land, rather than constraining it. There is therefore a presumption in favour of sustainable development, which should lead to planning authorisation.
- 18.11 In any event, any potential barrier to entry created by the interpretation of the landbanks provision by some MPAs in the past cannot be attributable to conduct of Hanson (or other market players).
- 18.12 The OFT also comments that there is no provision for competition effects to be systematically taken into account when evaluating planning applications, as permission is linked to the land, rather than the company extracting the minerals<sup>130</sup>. It should be noted that this issue is now addressed in the new NPPF which recognises that MPAs should ensure that *"large landbanks bound up in very few sites do not stifle competition"*<sup>131</sup>.
- 18.13 Hanson also notes that the OFT's analysis of potential strategic mothballing of sites was inconclusive and that it does not put forward any evidence to suggest that this decision is being employed pursuant to anti-competitive objectives<sup>132</sup>. As the OFT has noted, mothballing may be an action taken for perfectly legitimate economic reasons, for example, due to the recent downturn in construction activity. Hanson submits that it is commercially reasonable for companies to maintain a prudent level of mineral reserves in order to ensure continuity in the supply of reserves to work, when operating in a planning system that is lengthy, costly and with no certainty of a successful outcome. As a result, companies have to cater for the long lead in time and it is not unreasonable to have replacement sites available, which can be brought on-stream as required. Indeed, the time span needed for planning a greenfield site is so long that the economical landscape can change significantly over this period meaning that the intentions of a site's operator at commencement of the process can also change significantly due to these economic reasons.
- 18.14 The planning system also addresses situations where operators might be sitting on planned reserves. For example, the Town & Country Planning Act 1990<sup>133</sup> allows MPAs to make a prohibition order where no extraction has taken place for a period of 2 years and where the MPA is of the opinion that development is unlikely to resume to any substantial extent. This facility therefore provides MPAs with an opportunity to remove the ability of any operator to hoard planned reserves.<sup>134</sup>

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<sup>128</sup> Paragraph 145 of the NPPF.

<sup>129</sup> Paragraph 6.21 of the OFT Reference Decision.

<sup>130</sup> Paragraph 6.24 of the OFT Reference Decision.

<sup>131</sup> Paragraph 145 of the NPPF.

<sup>132</sup> Paragraph 6.33 of the OFT Reference Decision.

<sup>133</sup> Schedule 9, paragraph 3.

<sup>134</sup> The process is detailed in MPG4, which is one of the few pieces of planning guidance that was not repealed by the NPPF. This power is therefore still available to MPAs, should it be required.

### ***Costly nature of planning application process***

- 18.15 The OFT also considers that the nature of the planning system in terms of the time and resources required may favour incumbents. However, it concedes that *"small and large operators are treated the same by MPAs and face the same costs."*<sup>135</sup>
- 18.16 The OFT also states that incumbent firms may benefit from a strong network of relationships built up with MPAs and the local community over time. Hanson considers that in some cases smaller local operators may even be treated more favourably. There is sometimes a perception amongst MPAs that smaller operators are local players who would be more committed to a particular region and employing local people (in Hanson's view, this is an incorrect perception, but can nevertheless persist in the thinking of some MPAs).
- 18.17 Smaller operators may also utilise external consultants to assist in the planning process where these resources are unavailable in-house. Indeed, Hanson also outsources a significant proportion of its planning work.
- 18.18 In any event, the costly nature of the planning process is not due to the actions of operators, but rather a result of the design of the regime. As the OFT itself notes, due to the need to consider environmental and social factors (as discussed above), there is a trade-off in the speed and ease of the process.<sup>136</sup> The need to comply with EU legislation is also a key factor. For example, the Review of Old Mineral Permissions process places all operators under an unnecessary cost burden of effectively having to seek fresh approval with a full environmental impact assessment every 15 years for sites which already enjoy planning permission.

## **19. ALLEGED MARKET TRANSPARENCY**

- 19.1 The OFT has raised concerns as to the overall transparency of the industry as a result of the sharing of information on aggregates supply and permitted reserves within MASS. It has also raised concerns that companies attending Aggregate Working Parties (AWPs) may indirectly benefit from close relationships with policy officials. It did not, however, form a view as to whether the role of AWPs impacts competition.
- 19.2 It is noted that AWPs retain a role in advising MPAs when they prepare their annual Local Aggregate Assessment in the new NPPF.<sup>137</sup>
- 19.3 As to the OFT's assertion that *"a high degree of transparency can also have the effect of dampening competition"*<sup>138</sup>, Hanson notes that all planning applications (not just in relation to aggregates sites) ensure a degree of transparency since these applications are in the public domain. This is because one of the drivers for having transparency is the local plan process (statutory based), which is evidence based. In order for an MPA to make a local plan allocation, it needs to be able to demonstrate to an inspector that the proposal is "sound" and supported by evidence. For example, an MPA may be challenged as to why it is making an allocation for a specific site extension unless it can show that the site will exhaust within the plan period. This therefore requires the public disclosure of data regarding the reserves and production/sales for that individual site.
- 19.4 The degree of transparency resulting from the operation of the planning process goes no further than would be expected in a planning system in which long-term investment decisions are made and careful planning of capacity is necessary to ensure future demand is met. Indeed, there are limitations to the information shared between industry

<sup>135</sup> Paragraph 6.38 of the OFT Reference Decision.

<sup>136</sup> Paragraph 6.41 of the OFT Reference Decision.

<sup>137</sup> Paragraph 145 of the NPPF.

<sup>138</sup> Paragraph 6.42 of the OFT Reference Decision.

players via AWP's and other bodies and there are safeguards in place (for example, the "three company" rule<sup>139</sup>).

- 19.5 Hanson also notes that the OFT's concerns surrounding the potential for information sharing within the AWP's were not supported by the majority of stakeholders or any other evidence gathered by the OFT. Industry personnel only represent a relatively small proportion of those involved in AWP's, whose participants also include local authorities and other bodies. AWP involvement is not limited to the major players only: representatives are drawn from smaller players (as well as the majors) and trade associations who represent them, such as the British Aggregates Association (BAA). A lack of awareness on the part of small independents, as referred to by the OFT<sup>140</sup> suggests that better publicity of the AWP's would be a solution.
- 19.6 Finally, it should be reiterated that AWP's are bodies whose role is to advise on technical issues at a high level to Government. They do not have policy-making roles, nor do they make planning decisions on the position of particular operators or planning applications. Therefore, the scope for competition being distorted by industry involvement in AWP's does not exist<sup>141</sup>.

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<sup>139</sup> Information is aggregated from at least three companies in order to maintain anonymity and preserve confidentiality when disclosed.

<sup>140</sup> Paragraph 6.53 of the OFT Reference Decision.

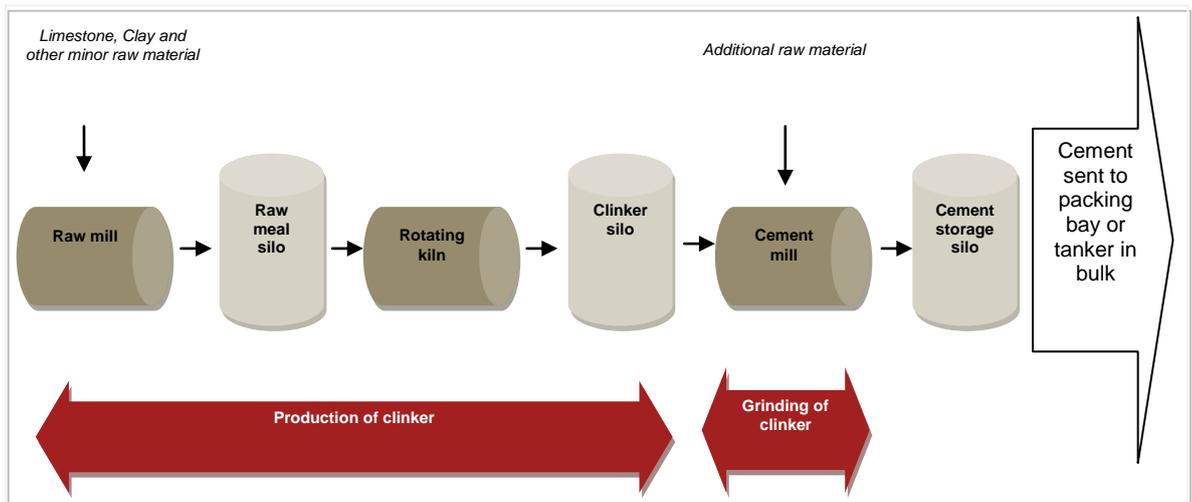
<sup>141</sup> Hanson has an advanced Competition Law Compliance Programme (as it expects would a number of other industry players). This Programme is designed to prevent contacts within AWP fora from crossing into areas which are outside the permitted scope of AWP discussions.

## APPENDIX

### THE CEMENT PRODUCTION PROCESS

1. The cement production process has important implications on the economics of the business. This Appendix sets out:
  - 1.1 The basic stages involved in cement production (for a Hanson dry process);
  - 1.2 How capacity is flexed in this process; and
  - 1.3 What excess capacity means in this industry as well as, in particular, for Hanson.
  - 1.4 **The cement production process**
    - 1.4.1 Hanson produces cement at 3 facilities – [CONFIDENTIAL]. **Figure 10** illustrates the cement production process in the [CONFIDENTIAL] facility. [CONFIDENTIAL]. Each site runs dry process kilns<sup>142</sup>.
    - 1.4.2 Cement production sites can have (i) facilities to produce clinker; (ii) facilities to grind clinker into cement, or (iii) a combination of the two. Not all cement producers in the UK have both these types of facilities so a comparison of capacity should take this into account. Clinker can be purchased rather than produced.

**Figure 10: Cement production process**



- 1.4.3 The individual steps in the production process are:
  - (a) **Extraction of raw materials:** Access to the limestone in the quarry is obtained by clearing the layers of earth above the limestone. This is done using explosives in a blasting process or extraction using machinery. The limestone and clay that has been exposed is then removed from the quarry in benches.
  - (b) **Grinding raw materials:** The limestone is transported to the crusher in which boulders of limestone are crushed into pebbles. They are then subsequently transported to limestone mix beds. From there, they are transferred to the raw milling process. In the crushing and milling processes, a significant amount of electricity is used to crush

<sup>142</sup> In a dry process, mineral components are dry-ground to form a powder in the raw mill whereas in a wet process they are wet-ground with added water to form slurry before being introduced to the kiln.

and then grind the limestone, clay and silica into a powder. Technical knowledge and 2-hourly testing of this mix ensures that the proportions are exact. The mixture that is formed is called the raw meal.

- (c) **Storing raw materials:** The raw mill silo is used to store the raw meal before it is fed into the kiln.
- (d) **Sintering:** The raw meal is fed into a 4-stage pre-heating tower. In the kiln, the meal is further heated to over 1450°C. Coal is the primary fuel used to heat the kiln. Access to coal and the ability to mill the coal is therefore essential for this process. Clinker, in the form of hard granules, is produced in the kiln. The clinker is then cooled before storage. This stage of the process consumes the most energy as vast quantities of coal as well as alternative fuels are used. This stage also releases significant amounts of CO<sub>2</sub>.
- (e) **Clinker store:** The clinker silo is used to store the clinker before the clinker is milled into cement.
- (f) **Refining clinker into cement:** The clinker is ground into powder cement through milling and the addition of gypsum. The differentiation between CEM I, II and III is made at this stage, depending on the quantity and type of additives added to the gypsum/clinker.
- (g) **Cement storage:** The finished cement is then stored in silos, before being prepared for sale as bagged cement (which involves packing equipment) or bulk cement.
- (h) **Transporting cement:** Rail links and transportation trucks are used to transport the cement to depots and then to customers. This stage is also capital-intensive and energy-intensive.

1.4.4 Regular maintenance of the facilities is required for the production process to function efficiently. Therefore, it is standard practice for the process to be shut down twice a year for the engineering and technical teams to carry out repairs.

## 1.5 Flexing production

1.5.1 Production is at its most cost efficient when it is run at full capacity and on a continuous basis. However, production can be flexed if required.

### *Altering the mix of fuels used*

1.5.2 During the Sintering stage, the quality of fuel used can impact the amount of clinker the kiln produces. If only coal is used, the kiln can produce around 20% more clinker per hour than if the coal is mixed with alternative fuels (e.g. biomass waste or rubber tyres). However, alternative fuels are cheaper and emit less carbon and so can be cost effective (as they increase the number of unused CO<sub>2</sub> allowances Hanson has to trade at the end of the year).

1.5.3 [CONFIDENTIAL].

### *Reducing the amount of time for which the kiln is run*

1.5.4 The kiln can be run for a shorter period of time to reduce production (i.e. longer or more frequent outages). Hanson [CONFIDENTIAL].

- 1.5.5 While running the plant on this start-stop basis has cost implications (it costs significant amounts to re-start a kiln and bring it back to suitable temperature), compared to for example mothballing the facility, the strategy does allow:
- (a) The maintenance of CO<sub>2</sub> allowances.
  - (b) The retention of specialist staff: While the production process is not labour-intensive, the staff who work on the sites are highly technically-skilled and a significant cost would be involved in retraining new staff.
  - (c) The ability to increase production quickly when demand increases.

***Mothballing a facility (or parts thereof)***

- 1.5.6 Mothballing a plant refers to the preservation of a production facility without using it to produce. Mothballing is a considerably more expensive and less reversible strategy than reducing kiln running time.
- 1.5.7 A restart of a kiln has many factors determining the cost of restart. It primarily depends upon (i) how long the kiln has been standing and (ii) the amount of corrosion that can occur over time which could lead to major repairs or complete replacement of equipment. Refractory may have failed in many areas of the kiln/pre-heater tower. There will also be other determining factors such as changes in the emission levels that the permit stipulates. There will also most likely be additional labour requirements for the increased operation.
- 1.5.8 If a kiln had stood for a year with no work having taken place in that period, it would require a standard shutdown repair to bring it back on approximately [CONFIDENTIAL] depending on the condition of the kiln when it was stopped i.e. how long it had run since previous shutdown work carried out.
- 1.5.9 The longer a plant stands idle, the more expensive the cost of restarting it becomes. Further, if a plant is mothballed for more than 2 to 3 years, the capital costs of restarting it can become prohibitive.
- 1.5.10 Hanson [CONFIDENTIAL] and [CONFIDENTIAL]. An estimate of the cost involved in [CONFIDENTIAL]. Permission would not be required to reinstate the kiln if it was mothballed for less than 10 years [CONFIDENTIAL].
- 1.5.11 Given that the EU ETS regulations in Phase 3 stipulate that a carbon credit allocation can be lost due to mothballing, it will become more costly to implement this strategy.

***Importing clinker***

- 1.5.12 To increase cement production at a site rapidly, Hanson could bypass any clinker production constraints and import clinker for grinding. The economics of the open clinker market need to be suitable (if clinker prices are high, then it may not be economic given the transport costs also to consider). [CONFIDENTIAL].
- 1.5.13 Grinding production can also be increased by running the mills for longer (or by running them at a courser fineness of end material). However, there can be constraints on this. [CONFIDENTIAL].

**1.6 Excess capacity**

- 1.6.1 The discussion above illustrates that the concept of capacity (and therefore excess capacity) in cement production depends on various factors and is not an

absolute term. In particular, capacity utilisation will be different if measured at the clinker production stage or at the grinding stage. The capacity at the grinding stage is the ultimate constraint on a producer, where clinker capacity could be augmented through purchasing clinker on the market. However, the constraint of clinker capacity becomes more binding as the economics of clinker purchase become less attractive (e.g. because of rising transport costs). Importantly, both levels of capacity can be flexed, often over a relatively short period, by changing the running time or input mix.

- 1.6.2 **Figure 11** illustrates how clinker capacity in Hanson changed between 2001 and 2011, [CONFIDENTIAL].

**Figure 11: Clinker capacity for Hanson (tonnes)**

[CONFIDENTIAL]

- 1.6.3 The extent to excess capacity in the industry is difficult to assess. It appears in the CCPF that capacity utilisation varies significantly by producer. As examples the CC notes: *“Lafarge, Tarmac and Hanson were operating at high levels of capacity utilization for most of the period between 2001 and 2008”; “Tarmac is still operating close to full capacity at present”; “Hanson was operating at full capacity in 2006 and 2007”; “While Lafarge accepted that it currently had excess capacity (a result of the downturn), over the 2001 to 2010 period as a whole it was in effect close to full capacity in practical terms for much of this period”; and “There have been some reductions in capacity by majors”.*