

## **AGGREGATES, CEMENT AND READY-MIX CONCRETE MARKET INVESTIGATION**

### **Note setting out our planned approach to assessing profitability in aggregates, cement and ready-mix concrete markets**

#### **Introduction and summary**

##### ***Purpose of the working paper***

1. The purpose of this working paper is to set out the context and the reasoning for the Competition Commission's (CC's) intended approach to assessing the profitability of the reference products.
2. We have received responses to our financial questionnaire (FQ) from the five largest vertically integrated construction materials companies in the UK (the Majors)<sup>1</sup> which included financial information relating to the periods 2007 to 2011. In this FQ we set out in brief our proposed approach to assessing profitability on a return on capital employed (ROCE) basis. We also set out our plan to value the Majors' capital employed on the basis of the replacement cost of a modern equivalent asset (MEA) and asked them to comment on this approach.
3. We have also identified a few areas, summarized in Table 3 below, where we would like to improve our understanding of the nature of the markets we are investigating. This will help us ensure that we appropriately capture their accounting implications.

##### ***Structure of the working paper***

4. The structure of the working paper is set out in the table below, which briefly explains the purpose of each of the sections.

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<sup>1</sup> These are (in alphabetic order): Aggregate Industries, Cemex, Hanson, Lafarge and Tarmac.

TABLE 1 **Structure of the working paper**

<i>Title</i>	<i>Purpose</i>	<i>Paragraphs</i>
Introduction and summary	To state the purpose of this working paper. To summarize our planned treatment of certain accounting transactions. To request comments on particular areas identified.	1 to 6
Background	To explain how profitability assessment fits into a market investigation. To state the purposes of the profitability analysis.	7 to 17
Framework for profitability assessment	To explain the CC's approach to profitability assessment as set out in the Draft Guidelines.	18 to 24
Specification of parameters articulated in the Draft Guidelines	To define for the purposes of the profitability assessment: <ul style="list-style-type: none"> <li>• the reference (product) markets;</li> <li>• the geographical scope;</li> <li>• the relevant firms; and</li> <li>• the relevant period of review.</li> </ul>	25 to 43
Selection of profitability measure	To explain the reasons for the selection of the profitability measure chosen.	44 to 61
Scope of relevant operating revenues, costs, assets and liabilities	To give clarity as to items we expect to see reflected within the financial information used in the profitability analysis.	62 to 63
Financial information: basis of preparation principles	To set out at a conceptual level the planned basis of preparation of financial information used in this analysis and the reasoning for this.	68 to 90
Financial information: application of basis of preparation principles	To apply the principles articulated in <i>Financial information: basis of preparation principles</i> to potential exceptions to the approach of adopting the current accounting treatment for transactions and events.	91 to 198
Context of analysis	To briefly explain how the financial information to be used in the profitability analysis has come into being.	199 to 204
Assessment & interpretation of profitability	To set out how the CC plans to assess and interpret the financial information prepared.	205 to 214
Glossary of financial terms	To explain less familiar terms used in this working paper.	215

### **Summary of planned treatments**

5. In the section on *Financial information: application of basis of preparation principles* we apply the *basis of preparation* principles articulated in the section *Financial information: basis of preparation principles* to a number of transactions either identified by ourselves or by the Majors as potentially requiring treatment different from current accounting practice. The following table summarizes the conclusions from this analysis.

**TABLE 2 Summary of planned treatments**

<i>Potential exception</i>	<i>Planned accounting treatment (summary)</i>	<i>Paragraphs</i>
Leased assets	To classify leased assets between finance and operating leases in line with current accounting standards.	94 to 98
Plant and machinery worth replacing	To value such assets on a modern equivalent asset basis.	102 to 109
Plant and machinery not worth replacing	To value assets such as mothballed plant in line with the current accounting standards for impairment.	110 to 114
Fully depreciated assets still in use/ highly depreciated assets	Where asset useful lives have been systematically understated to reassess these lives and depreciate the assets accordingly.	115 to 128
Mineral bearing land	To uprate the (gross) historical cost of investment in such land in line with a purchasing power index.	129 to 145
Carbon allowances	To assess profitability both gross and net of market transactions.	146 to 155
Purchased goodwill	To exclude purchased goodwill from capital employed.	156 to 161
Planning and consent costs	To not capitalize and depreciate such expenditures.	162 to 168
Skilled workforce and other intangibles	To not recognize any such intangibles as assets.	169 to 172
Depreciation	To depreciate assets on the basis of their carrying value.  To recognize asset holding gains and losses in the profit and loss account.	174 to 180
Transfer charging	To account for internal sales and purchases (and any cross-sales) at market prices.	181 to 187
Pension costs	To base the charge to the profit and loss on the current service cost.  To exclude any pension deficit or asset from capital employed.	188 to 198

### **Summary of specific areas on which we would welcome comments**

6. Table 3 brings together a few areas on which the CC would welcome comments.

Please refer to the referenced paragraphs for the full context.

**TABLE 3 Summary of specific areas on which the CC would welcome comments**

<i>Area</i>	<i>Comments requested</i>	<i>Paragraphs</i>
The feasibility of isolating the profitability of our provisionally defined markets	How feasible would it be to provide financial information which separates the costs and revenues of: <ul style="list-style-type: none"> <li>• bulk cement from bagged cement; and</li> <li>• specialist aggregates from other construction aggregates?</li> </ul>	28 to 33
Specification of a brand new cement works	Which features, in addition to being a dry process plant adapted to use alternative fuels, would a brand new cement works commissioned for delivery at 1 January 2007 have had?	107 to 109
Option agreements to secure access to mineral bearing land	In practice how varied are the arrangements for securing access to mineral bearing land?  How material to operators' overall portfolios are sites originally acquired under option arrangements?  How do operators account for the transactions and events resulting from such option arrangements, particularly when they are onerous?	133 to 135

## Background

### ***Purpose and statutory framework for market investigations***

7. This working paper takes as its starting point the references to profitability assessment within Draft Guidelines for Market Investigations published for consultation on 15 June 2012 (the Draft Guidelines<sup>2</sup>) as these are likely to be closer to the relevant Guidelines in force when we publish our provisional findings next year than the current Guidelines.<sup>3</sup>
  
8. The purpose of a market investigation is to ascertain whether in particular markets there exist adverse effects on competition (AEC) and, if so, to introduce remedies to address the identified adverse effects. In order to decide whether or not an AEC has arisen the CC looks at, among other issues, the main characteristics of the market and the outcomes of the competitive process.<sup>4</sup> One of the outcomes of the competitive process is the level of prices and profitability.<sup>5</sup> The outcome of high levels of profitability may indicate that there is an AEC. The Draft Guidelines stress, however, that the analysis of each issue (such as the level of profitability) is not discrete, instead the examination of each of the basic issues overlaps with and feeds into each other.<sup>6</sup>
  
9. The Statement of Issues (the Issues Statement) articulates our planned approach to assessing the effectiveness of competition in this market investigation including examining observed outcomes.<sup>7</sup> Of particular relevance here is that it states that we

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<sup>2</sup> [www.competition-commission.org.uk/publications/consultations-open/cc-review-of-market-investigation-references-guidelines](http://www.competition-commission.org.uk/publications/consultations-open/cc-review-of-market-investigation-references-guidelines).

<sup>3</sup> [www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep\\_pub/rules\\_and\\_guide/pdf/cc3.pdf](http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/rules_and_guide/pdf/cc3.pdf), June 2003.

<sup>4</sup> The Draft Guidelines, paragraph 96.

<sup>5</sup> The Draft Guidelines, paragraph 105.

<sup>6</sup> The Draft Guidelines, paragraph 97.

<sup>7</sup> [www.competition-commission.org.uk/assets/competitioncommission/docs/2012/aggregates-cement-and-ready-mix-concrete/issues\\_statement.pdf](http://www.competition-commission.org.uk/assets/competitioncommission/docs/2012/aggregates-cement-and-ready-mix-concrete/issues_statement.pdf).

will consider whether there is evidence of persistent high profits for producers of the reference products, and if so whether this is indicative of a lack of competition.<sup>8</sup>

### ***The purposes of the profitability analysis***

10. Our profitability analysis has a number of purposes most of which are highlighted in the Draft Guidelines as set out below.

### ***Indicator of whether prices are too high<sup>9</sup>***

11. Profitability can be a useful indicator of the competitive conditions in a market. An efficient firm in a competitive market would generally be able to earn no more than a 'normal' rate of profit—the minimum level of profits required to keep the factors of production in their current use in the long run ie its rate of return on invested capital for a particular business activity would be equal to its cost of capital for that activity.<sup>10</sup>

### ***Evidence about entry conditions<sup>11</sup>***

12. Profitability measures may, in particular, provide evidence about entry conditions. Firms earning persistently higher profits than normal might indicate factors that inhibit the entry that would otherwise see these profits undermined by new competitors.
13. Evidence of persistent abnormal profits within the industry or among large incumbents is generally consistent with a finding that barriers are high and that entry is therefore unlikely. But it is neither a necessary nor a sufficient effect. Data showing that incumbents consistently fail to earn high profits is generally consistent with low entry barriers, but it does not prove that barriers are low and that competition is

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<sup>8</sup> The Issues Statement, paragraph 22.

<sup>9</sup> The Draft Guidelines, paragraph 118.

<sup>10</sup> But an exceptionally efficient company may be able to earn a higher rate of profit for a prolonged period.

<sup>11</sup> The Draft Guidelines, paragraphs 119 & 218. Please note footnotes which do not appear to be relevant to the markets here have been omitted.

working dynamically; in the absence of a credible threat of entry there may be limited incentives for incumbents to innovate or to improve productivity.

#### *Evidence about trends in profitability*<sup>12</sup>

14. The CC may also have regard to the trend in profits. Where the size of the gap between the level of profitability and the cost of capital has grown over a period the competitive situation may have worsened. Where that gap has narrowed, competitive conditions may have improved. Where that gap has fluctuated the CC may consider whether, on average, profits have exceeded the cost of capital.

#### *Evidence about the impact of shocks on profitability*

15. We may also want to assess profitability over time in order to ascertain the short-term and long-term impact on profitability of changing supply and demand conditions, in this case the shock of a drop in demand for heavy building materials across Great Britain of the order of 30 per cent since the peak in 2007. Such evidence may be informative about the nature of competition.<sup>13</sup>

#### *Evidence of comparative efficiency between firms*<sup>14</sup>

16. As we have requested volume information as well as costs and revenues, we may be able to compare average unit costs and prices achieved for the reference products across the Majors and, to a certain extent, across their production sites. To the extent that the output is relatively homogenous (eg for grey cement) we may be able to assess, at least at a superficial level, the Majors' relative efficiencies. This may allow us to articulate further questions which should help us better understand the markets we are investigating.

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<sup>12</sup> The Draft Guidelines, paragraph 123.

<sup>13</sup> The Draft Guidelines, paragraph 110.

<sup>14</sup> The Draft Guidelines discuss this possibility in paragraph 125.

### *Evidence of absolute cost levels and the potential materiality of certain issues*

17. In addition to the purposes outlined above, which are all discussed in the Draft Guidelines, there are a number of other potential uses for the information prepared. In particular we may be able to assess the size and materiality of the financial impact of factors such as the aggregates levy and the EU carbon trading scheme on firms' costs and profitability, at least for the Majors.

### **Framework for profitability assessment**

18. As explained in paragraph 7, we are taking as our starting point the Draft Guidelines. In terms of framework for the profitability assessment there is no substantial difference between the existing Guidelines<sup>15</sup> and the Draft Guidelines.

### ***Approach articulated in the Draft Guidelines***

19. The CC considers the profitability of firms or groups of firms which represent a substantial part of the market. In practice, therefore, we tend not to be interested in the profits of less significant firms or groups of firms.<sup>16</sup> As already explained in paragraph 11, we assess a firm's profitability against its cost of capital. Furthermore we consider whether firms are earning *persistently* high profits against this benchmark.<sup>17</sup>
20. We therefore need, in addition to specifying a relevant profitability measure, to define the following parameters to assess profitability in line with this approach:
- (a) the reference products ie *the reference markets*;
  - (b) the firms representing a substantial part of the market ie *the relevant firms*; and
  - (c) the time frame over which we will test for persistence ie *the relevant period*.

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<sup>15</sup> [www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep\\_pub/rules\\_and\\_guide/pdf/cc3.pdf](http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/rules_and_guide/pdf/cc3.pdf), June 2003.

<sup>16</sup> The Draft Guidelines, paragraph 117.

<sup>17</sup> The Draft Guidelines, paragraph 119.

*We carefully interpret levels of profitability benchmarked against the cost of capital*<sup>18</sup>

21. In practice, a competitive market would be expected to generate significant variations in profit levels between firms and over time as supply and demand conditions change, but with an overall tendency towards levels commensurate with the cost of capital of the firms involved. At particular points in time the profitability of some firms may exceed what might be termed the 'normal' level. There could be several reasons, including cyclical factors, transitory price or other marketing initiatives, and some firms earning higher profits as a result of past innovation or efficiency improvements.
  
22. The CC will therefore be interested in whether profits have exceeded the cost of capital over a sustained period (ie persistently<sup>19</sup> high profits). The CC's view about whether high profits have been persistent will be influenced by its assessment of how competition works in the market concerned. For example, the pattern of investment and the nature of sources of competitive advantage (advertising, R&D, more efficient production) may affect the CC's view of the relevant timescales over which it would expect to see competition playing out in the market. In some cases, for example where large and risky investments have been made, the timescales over which it would expect to see a normal level of profits restored may be relatively long.
  
23. The extent to which profitability indicates limitations in the competitive process may depend on both the size of the gap between the level of profits and the cost of capital and the length of the period over which the gap persists. The CC considers that the longer that profits have exceeded the cost of capital, and the higher the amount by

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<sup>18</sup> These paragraphs are reproduced from the Draft Guidelines, paragraphs 121–125. Paragraph 124 in the Draft Guidelines is reproduced in paragraph 14 of this working paper.

<sup>19</sup> The test of persistence also helps eliminate the possibility of systematic over-fulfilment of expectations over a number of years as being the explanation for high profitability. As per *The Economic Analysis of Accounting Profitability* (see footnote 49), p58.

which they have exceeded the cost of capital, the more likely they are to indicate problems with competition.

24. The CC may find that profits did not exceed the cost of capital or did not do so for a persistent period. Such a finding would not necessarily signify that competition is not harmed. Low profitability may be concealing ineffective competition. For example, weak competition as a result of customers being unable to respond effectively to competing offers may sometimes attract so many new entrants that firms operate on an inefficiently small scale, have higher costs and set higher prices than would be the case if customers switched more readily. Alternatively, incumbent firms might be protected from new entry, but still not earn high profits because they are inefficient and operate with higher costs than would be sustainable with stronger competition in the market. In some cases, the CC may be able to compare actual costs with efficient costs when looking at the level of profitability achieved by firms but this may not always be practical.

### **Specification of parameters articulated in the Draft Guidelines**

25. As set out in paragraph 20 we need to specify a number of parameters before we start assessing profitability.

### ***The reference markets***

26. We take as our starting point each of the markets referred to us by the Office of Fair Trading (OFT) in its terms of reference.<sup>20</sup> We clarify these definitions further in Table 4.

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<sup>20</sup> [www.offt.gov.uk/shared\\_offt/market-studies/Aggregates-TOR.pdf](http://www.offt.gov.uk/shared_offt/market-studies/Aggregates-TOR.pdf), 18 January 2012.

TABLE 4 **The reference products**

<i>Reference products</i>	<i>OFT definition</i>	<i>Products included in the planned CC profitability analysis</i>
Aggregates	Includes primary, secondary and recycled aggregates	Both land-won and marine primary aggregates as well as specialist aggregates.*
Cement	Means grey cement	Includes both bulk and bagged grey cement (all types, CEM I, II and III).  The product also encompasses any grinding and importation activities and any resale of purchased cement.
Ready-mix concrete (RMX)	Includes on-site batching (volumetric trucks)	RMX at fixed, mobile and site plants and including volumetric trucks.

Source: CC.

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\* Specialist aggregates are, for example, high purity limestone, rail ballast, dolomite, etc.

27. We do not plan to assess profitability at site level but our analysis at market level may be informed by site-level data and we are separately considering site-level margins. We are primarily interested in the profitability of the individual markets. We may also produce a consolidated view of the profitability of each Major to complement our review of their transfer charging practices. See also paragraphs 181 to 187.

### *Reference versus relevant markets*

28. We note that the markets referred to us by the OFT, and on the basis of which we have received financial information from the Majors,<sup>21</sup> are generally wider than the relevant product and geographic markets that we have now provisionally defined in our economic assessment (Working paper on market definition for aggregates, cement and ready-mix concrete<sup>22</sup>). We note in particular that we provisionally separate:

- (a) bulk cement from bagged cement; and
- (b) specialist aggregates from other construction aggregates (as well as provisionally characterizing aggregates markets as local).

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<sup>21</sup> [redacted]

<sup>22</sup> [www.competition-commission.org.uk/assets/competitioncommission/docs/2012/aggregates-cement-and-ready-mix-concrete/market\\_definition\\_housestyle.pdf](http://www.competition-commission.org.uk/assets/competitioncommission/docs/2012/aggregates-cement-and-ready-mix-concrete/market_definition_housestyle.pdf).

29. The customers for bulk cement differ from those for bagged cement. The CC's understanding is that, other than being packaged and sold in a different way, the cement itself is produced by a common process.
30. Specialist aggregates represent relatively low volume but high value product markets. A wide range of construction aggregate products are sold representing the majority by value of the combined specialist and construction aggregates product markets.
31. It may be impractical to assess profitability for each and every of the relevant economic markets. For example we plan to complement our profitability analysis of the wider market for aggregates with margin analysis for particular (ie local) sites, rather than attempt to conduct profitability analysis for each and every local market.
32. We therefore plan to conduct the profitability assessment on a wider set of products (ie including specialist aggregates within aggregates, and both bagged and bulk cement within cement), at least in the first instance.
- *Specific area on which we would welcome comments: the feasibility of isolating the profitability of our provisionally defined markets*
33. We would welcome input, particularly from the Majors, regarding how feasible it would be for them to provide financial information which separates the costs<sup>23</sup> and revenues of:
- (a) bulk cement from bagged cement; and
  - (b) specialist aggregates from other construction aggregates.

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<sup>23</sup> Including the cost for assets and liabilities.

## Geographical scope

34. In the Terms of Reference the OFT defines the geographic scope of the referred markets to be Great Britain ie the UK excluding Northern Ireland. We consider the following activities should be captured within this geographical scope:
- (a) sales of materials processed or handled in Great Britain or Great Britain waters regardless of whether the purchaser is located in Great Britain or not;
  - (b) discounts and rebates relating to Great Britain sales (regardless of whether granted by Great Britain operations or not (eg would capture any rebates granted by head offices located outside Great Britain); and
  - (c) discounts and rebates on purchases relating to Great Britain operations (regardless of whether in fact granted to Great Britain operations (eg would capture any rebates granted at a pan group level).

### ***The relevant firms***

35. For each of the markets identified in paragraph 26, we considered that the firms representing a substantial part of the markets referred to us by the OFT will be the Majors, namely Aggregate Industries, Cemex, Hanson, Lafarge and Tarmac.
36. The Table 5 shows the Majors' production shares in 2011 in each of the reference markets.

TABLE 5 Share of Great Britain production in 2011

Firms	per cent		
	GB production share		
	Aggregates*	Cement†	RMX‡
<i>The Majors</i>			
Lafarge	8	[X]	8
Cemex	11	[X]	16
Hanson	12	[X]	17
Tarmac	21	[X]	14
Aggregate Industries	19	–	11
Subtotal	71	100	66
<i>Others</i>	29	–	34
Total	100	100	100

Source: See footnotes.

\*Aggregates: BDS<sup>24</sup> report *Estimated market shares of pits, quarries and marine wharves in Great Britain (2011)*, July 2012, table titled Summary outputs and shares of aggregates companies—GB (excluding Marine), p169. Only land-won primary aggregates (ie excluding marine aggregates) are taken into account. In line with BDS's approach Lafarge's and Hanson's aggregates market shares exclude the respective shares of Lafarge Cement and Hanson Cement. If these are included, Lafarge's share increases from 8.1 to 10.5%, and Hanson's share increases from 12.3 to 13.9%.

†Cement: CC analysis [X].

‡RMX: BDS report *Estimated market shares of ready mixed concrete companies in Great Britain (2011)*, July 2012, table of market shares of RMX companies in Great Britain, p54. RMX market shares include onsite batching, eg volumetric trucks.

37. The Majors therefore represent 71 per cent and 66 per cent of the primary aggregates and RMX markets respectively. The Majors, excluding Aggregate Industries which does not produce cement in Great Britain, represent 100 per cent of domestic cement production. For both the primary aggregates and RMX markets, Breedon Aggregates has the sixth largest market share with 2.8 per cent and 1.8 per cent respectively.<sup>25</sup> Given Breedon Aggregates' relatively low market share compared to the Major with the smallest market share in each market, we considered that the Majors alone would represent a 'substantial' part of each reference market.
38. We note that there may be some issues with focusing only on the profitability of the Majors, where 'survivorship bias' may suggest that large, successful firms are likely to exhibit profitability levels that are not representative of the profitability of smaller, and potentially less successful, firms in the market. While we do not propose to

<sup>24</sup> BDS Marketing Research Ltd is an independent marketing and research consultancy that collects and publishes information on, and is commissioned by firms engaged in, aggregates, RMX, asphalt, concrete products, cement, waste and related sectors.

<sup>25</sup> Sources for aggregates and RMX are the same as shown in the footnotes to Table 4.

extend our profitability assessment to cover medium-tier or smaller producers in the reference markets, we will be conducting a separate assessment on the profit margins<sup>26</sup> of the Majors and the medium-tier operators. The findings from our margin assessment will be set out in a separate working paper on profit margins.

### ***The relevant period***

39. The timeframe over which we conduct our profitability assessment should be sufficiently long to detect whether any trends in profitability have been persistent. In market investigations a five-year period is usually considered a representative and sufficient period over which the outcome of any competitive process might be demonstrated.
40. There has, however, been a sharp downturn since the end of 2007 and each of the reference markets has faced a significant fall in demand, which has failed to recover to pre-2007 levels and appears to be less stable.
41. In discussions with the Majors we have learnt that they appear to have difficulties in providing us with financial information relating to periods prior to 2007 that would be comparable with the period from 2007 to 2011 and would enable us to assess their profitability, ie information on their capital employed.
42. We therefore plan to assess the Majors' profitability over the five financial years (FY) covering the period from 1 January 2007 to 31 December 2011. All of the Majors share a common financial year ending 31 December, and therefore the relevant period covers FY07 to FY11. We are separately considering margin data for periods FY05 to FY11.

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<sup>26</sup> Margin assessment does not require information on capital employed.

43. See also the section on Assessment and Interpretation, paragraphs 210 to 212.

## **Selection of profitability measure**

### ***Nature of markets investigated***

44. The markets we are investigating can require very significant amounts of capital investment. This is the case not only for cement but also, depending on the precise arrangements for gaining the ability to extract from mineral bearing land, for aggregates as well.
45. The markets also feature long investment horizons. These can range from 30 to 40 years for a cement plant. The investment horizons can be equally long for aggregates: it can take up to 10 years before any minerals are extracted from a green field aggregates site; and only after perhaps a further 10 to 15 years for a sand and gravel site, and up to 50 years for a crushed rock quarry, would a site be fully exhausted. The timeframe for secondary aggregates may also be long since these would be linked to another industry with similarly long investment horizons eg steel production.
46. In contrast the investment horizons for RMX and for recycled aggregates appear to be much shorter. In the latter case there is a finite supply of demolition material from any individual site.
47. The markets we are investigating do not appear to have exhibited rapid technical and market environment changes over the last 20 years. However, one might expect perceptible developments over the medium to long term as even relatively modest levels of technical progress per year can be expected to have a cumulative impact.

48. Whereas these markets feature investment in significant levels of tangible fixed assets, we would expect them to feature relatively low levels of (separable) intangible assets.

### ***Possible alternatives to the return on capital employed measure of profitability***

#### ***Profitability measures mentioned in the Draft Guidelines***

49. There are a number of different ways to measure profitability. The Draft Guidelines primarily refer to the rate of return on invested capital mentioning both internal rate of return (IRR), truncated IRR and ROCE as possible alternative approaches.<sup>27</sup>
50. The Draft Guidelines also mention return on sales. However this would be an unsuitable profitability measure for these markets not least because of their capital intensive nature, particularly for primary aggregates and cement. Furthermore, unlike profitability measures based on estimating the rate of return invested capital, there is no robust comparator against which to judge the levels of profitability observed.

#### ***Return after capital charges profitability measure suggested by Hanson***

51. Hanson has suggested that we consider return after capital charges (RACC) as an alternative measure to measure economic profitability.<sup>28</sup> This approach recasts each asset purchased or developed for use in the business into a flat annuity charge<sup>29</sup> throughout its estimated economic useful life.<sup>30</sup> As this flat annuity charge would incorporate both a return *of* capital element and a return *on* capital element,<sup>31</sup> the appropriate benchmark to test for economic profitability would be zero. Any residual economic profit could only be explained by transitory factors, or some form of

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<sup>27</sup> The Draft Guidelines, Annex A Market characteristics and outcomes, Measuring profitability, paragraphs 8–14.

<sup>28</sup> [REDACTED]

<sup>29</sup> Hanson calculates real pre-tax annuities (assuming a value for its cost of capital) which it subsequently inflates using out-turn inflation [REDACTED].

<sup>30</sup> [REDACTED]

<sup>31</sup> [REDACTED]

economic rent.<sup>32</sup> This means that there would be no need to assess the level of capital employed at any point in time.

52. Hanson highlighted that the ratio of the net to gross book value of its assets was significantly less than the 50 per cent one would observe with a steady state of investment. As a result, the current age profile of its capital employed would not be representative of the whole period of its investment, and therefore the returns calculated using these capital employed figures would in turn also not be representative.<sup>33</sup> However, were we to adopt the RACC measure, this issue would disappear because capital charges would be constant in real terms over the life of the assets.
53. Our view is that, while adopting a RACC approach would help address the challenge of interpreting profitability levels if each Major's age profile of assets were to differ significantly from the steady state, it appears to assume that replacement costs can be equated to inflated historic costs.<sup>34</sup> In other words that the modern equivalent asset (MEA) is a direct replacement of the existing asset. Hanson's own evidence indicates that this is not the case.<sup>35</sup> In addition such a flat annuity approach would freeze within the calculation of the recurring charge the (gross) value of the asset on acquisition and therefore would not reflect the impact of any changes to the MEA during the life of the asset nor any impairment potentially resulting from, for example, the mothballing of assets or closure of sites in the period in which these events occur.

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<sup>32</sup> [REDACTED]

<sup>33</sup> This issue is discussed in more detail under Fully depreciated assets still in use/highly depreciated assets, paragraphs 115–128.

<sup>34</sup> [REDACTED]

<sup>35</sup> See paragraph 105 under Plant and machinery worth replacing. There Hanson estimated the MEA values for its grey cement fixed assets to be [REDACTED] per cent of inflated historical cost.

54. For these reasons and for reasons of transparency and practicability we do not plan to calculate RACCs for each Major.

### ***Justification for adopting the ROCE approach***

55. We are necessarily assessing profitability over a relatively limited period of time, namely over each of the five most recent completed years, compared with the overall lifespan of investment in these markets of up to 30 or even 40+ years. It is therefore necessary to select a profitability measure, such as ROCE, which can properly reflect the value of capital invested in the business at both the outset and close of the period of review. ROCE can also reflect the value of capital invested at the intervening year ends, thereby allowing trends in profitability to be observed. It is primarily because it is possible, albeit after some application, to estimate the current value of capital employed at the necessary points in time, that we prefer to assess profitability using return on capital employed where capital invested is a significant feature of the market.<sup>36</sup>
56. See also the section on Assessment and Interpretation, paragraph 214.

### ***ROCE will be assessed against the relevant against cost of capital***

57. A competitive market would be expected to generate significant variations in profit levels between firms and over time as supply and demand conditions change, but with an overall tendency towards levels commensurate with the cost of capital of the firms involved.<sup>37</sup>

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<sup>36</sup> Chapter 4, The Assessment of Activities over Limited Segments using Accounting Profitability Data within *The Economic Analysis of Accounting Profitability* (see footnote 49) is devoted to demonstrating that the approach outlined in this working paper provides economically relevant info which can be compared meaningfully to a measure of the opportunity cost of capital over the segment.

<sup>37</sup> The Draft Guidelines, paragraph 121.

58. The cost of capital is the minimum return that investors in a project expect to receive over the period of that investment. It is an opportunity cost and can be seen as the yield on capital employed in the next best alternative use.<sup>38</sup>
59. In assessing levels of profitability the Draft Guidelines state that the CC will have regard to its view of firms' cost of capital. The CC will generally look to the capital asset pricing model (CAPM) when considering the cost of capital, since this is a widely understood technique with strong theoretical foundations.<sup>39</sup>
60. Our planned approach to the assessment of the level of cost of capital for the purposes of this market investigation will be set out in a separate working paper. However, for the purposes of this working paper it is relevant to note that it has been the CC's practice to estimate the cost of capital on a nominal pre-tax basis.
61. As we plan to estimate the Majors' cost of capital in nominal terms, ie before taking into account the impact of general inflation it is appropriate to measure financial figures in the £s of the period to which they relate.

### **Scope of relevant operating revenues, costs, assets and liabilities**

62. The purpose of this section is to set out what type of revenues, costs, assets and liabilities we expect to see reflected in the profitability assessment. The approach adopted has not always been consistent across the Majors when responding to our requests for financial information.
63. We determine the ROCE using operational profits and operational capital employed and then compare it with the pre-tax weighted average cost of financing. The general principle is therefore that all revenues, costs, assets and liabilities necessarily arising

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<sup>38</sup> This is the definition given for the 'opportunity cost of capital' in the glossary of the Byatt Report, Volume II (see footnote 49).

<sup>39</sup> The Draft Guidelines, Annex A, Market characteristics and outcomes, paragraph 15.

from the operation of their business in the specified product markets should be included. Any other operating items, whether they be revenues or costs, which are associated with running the business, should also be included. The accounting for any joint venture (JV) operations should follow the firm's statutory accounting policy.

In practice this means that the following items should be excluded:

- (a) financing costs both of a profit & loss and balance sheet nature eg interest and sources of finance regardless of whether they are short or long term. These include intercompany loans<sup>40</sup> and include cash and bank balances;
- (b) taxation on income and any associated corporation tax or deferred tax; and balances.<sup>41</sup>
- (c) any pension deficit or surplus.<sup>42</sup>

64. One Major [redacted] commented that it benchmarked its own profitability using return on [redacted]<sup>43</sup>. This Major [redacted] added that this measure excluded any items relating to tax or financing (including cash) because the local businesses were not responsible for the financing/tax structures put in place by its parent, [redacted].<sup>44</sup> We also note that its financial information covering the period 2007 to 2011 contained nil balances for all short-term financing items including cash.<sup>45</sup>

65. In the interests of both comparability across the Majors and simplicity of treatment we plan to exclude all short-term financing items from capital employed.

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<sup>40</sup> Intercompany balances arising solely from transfer charging excepted as discussed at paragraph 186.

<sup>41</sup> The Byatt Report (see footnote 49), Volume I, paragraph 123, notes taxation on income forms part of the distribution of total returns, in this case to the Government. Specific, or other, indirect taxes, or taxes on economic rent should be treated as operational costs. Such an example of a specific tax here would be the Aggregates Levy.

<sup>42</sup> See paragraphs 195 & 196 for more detailed reasoning.

<sup>43</sup> [redacted]

<sup>44</sup> [redacted]

<sup>45</sup> [redacted]

## **Seasonality of working capital employed**

66. We appreciate that heavy building materials production, following the construction industry as a whole, is seasonal. Aggregate Industries highlighted that its activity was focused on the warmer months and therefore working capital at its financial year-end (31 December) would typically be lower than the average for the whole year.<sup>46</sup> When working out its estimate of its ROCE for 2011 for its aggregate activities Aggregate Industries adjusted its year end capital employed balance by [X] per cent<sup>47</sup> for this factor.<sup>48</sup>
67. We will consider this matter further once we are able to ascertain the materiality of the difference between year-end and average working capital prepared on a consistent basis across all the Majors as set out in paragraph 63.

## **Financial information: basis of preparation principles<sup>49</sup>**

### **Background and general principles**

68. All the Majors prepare financial information under the (modified) historical cost accounting (HCA) rules in accordance with UK or international accounting standards. Some Majors have revalued some of their fixed assets, in which case the basis of preparation is described as modified HCA.
69. We are interested in economic (or continuing) costs. Economic costs<sup>50</sup> are the costs of resources used at a price they would be traded at in a highly competitive market, where entry to and exit from the market is easy. Here the value of resources

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<sup>46</sup> [X]

<sup>47</sup> [X]

<sup>48</sup> [X]

<sup>49</sup> This section draws heavily on three authoritative sources namely:

1. *The Statement of Principles for Financial Reporting (1999)*, UK Accounting Standards Board [www.frc.org.uk/getattachment/a12aab64-45fc-4d8e-9acd-0097d686178b/Statement-Statement-of-Principles-for-Financial-Reporting.aspx](http://www.frc.org.uk/getattachment/a12aab64-45fc-4d8e-9acd-0097d686178b/Statement-Statement-of-Principles-for-Financial-Reporting.aspx).
2. *Accounting for Economic Costs and Prices (1986): A Report to HM Treasury by an Advisory Group* (the Byatt Report).
3. *The Economic Analysis of Accounting Profitability (1987)*, Jeremy Edwards, J A Kay, Colin P Mayer.

<sup>50</sup> The Byatt Report, volume 1, p5.

consumed and assets utilized should reflect their current value to the business, not their historical cost.

70. We also focus on product markets which are a subset of the Majors' total activities. Relevant revenues, costs, assets and liabilities should be attributed to these product markets using the principles of causality and objectivity.

### ***Principles of asset and liability definition***

71. Assets are defined as rights or other access to future economic benefits controlled by an entity as a result of past transactions or events. Liabilities are obligations of an entity to transfer economic benefits as a result of past transactions or events.<sup>51</sup> From the perspective of a new entrant assets also need to be able to be purchased separately from purchasing the business as a whole ie only the separable assets are relevant here.

### ***Measurement basis for valuation of assets***<sup>52</sup>

72. The current value of an asset could be determined by reference to entry value (replacement cost), exit value (net realisable value) or value in use (discounted present value of the cash flows expected from continuing use and ultimate sale by the present owner). For some assets (for example investments in actively traded securities), these three alternative measures of current value produce very similar amounts, with only small differences due to transaction costs. However, for other assets (for example fixed assets specific to the business), differences between the alternative measures can be material.

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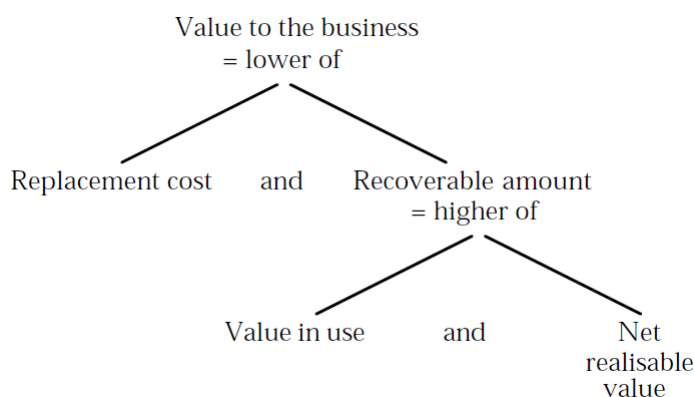
<sup>51</sup> As defined in the Statement of *Principles for Financial Reporting (1999)*, UK Accounting Standards Board.

<sup>52</sup> The following paragraphs draw heavily on the 'Alternative Measures of Current Value' section within *The Statement of Principles for Financial Reporting (1999)*, UK Accounting Standards Board, paragraphs 6.6–6.9.

73. Assets utilized should reflect their current *value to the business*, which is the loss the entity would suffer if it were deprived of the asset involved. That measure, which is also referred to as the *deprival value*, or *value to the owner*, will depend on the circumstances involved.
74. In most cases, as the entity will be putting the asset to profitable use, the asset's value in its most profitable use (in other words, its recoverable amount) will exceed its replacement cost. In such circumstances, the entity will, if deprived of the asset, replace it, and the current value of the asset will be its current replacement cost.
75. An asset will not be replaced if the cost of replacing it exceeds its recoverable amount. In such circumstances, the asset's current value is that recoverable amount:
- (a) When the most profitable use of an asset is to sell it, the asset's recoverable amount will be the amount that can be obtained by selling it, net of selling expenses; in other words, its net realisable value (NRV).
  - (b) When the most profitable use of an asset is to consume it—for example by continuing to operate it—its recoverable amount will be the present value of the future cash flows obtainable and cash flows obviated as a result of the asset's continued use and ultimate disposal, net of any expenses that would need to be incurred; in other words, its value in use.
76. This can be portrayed diagrammatically as follows:

FIGURE 1

**Establishing which valuation basis for an asset gives its value to the business**



Source: UK Accounting Standards Board, Statement of Principles, 1999.

77. Application of these valuation principles consistently across all assets is also called current cost accounting (CCA).

*Estimation of replacement cost*

78. Where an asset is worth replacing, its value to the business will be its current replacement cost, or more precisely the replacement cost of an MEA determined in a fully competitive market and allowing for the asset's remaining useful life. The MEA value is the cost of replacing an old asset with a new one with the same service capability allowing for any differences both in the quality of output and in operating costs. The fact that markets are often not fully competitive does not alter the validity of the assumption of competition as a benchmark for measuring costs.
79. This approach is consistent with our Draft Guidelines which state<sup>53</sup> that the CC considers MEA values to be the economically meaningful measure for the purpose of measuring profitability in most cases. The definition<sup>54</sup> given in the Draft Guidelines emphasizes that this valuation should be based on the most efficient technology

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<sup>53</sup> The Draft Guidelines, Annex A, Market characteristics and outcomes, Measuring profitability, paragraph 13.

<sup>54</sup> The MEA value is the current cost of acquiring assets which yield equivalent services to those currently used by the firm, based on the most efficient technology and optimal configuration.

available at the time and assumes that assets are optimally configured. This is the case even if the assets in question actually use legacy technology and are not ideally situated for current market conditions.

### ***Financial capital maintenance***

80. For our purposes it is important that we measure the return being made on capital invested. In calculating this return the whole of the change in the value to the business of its assets (after allowing for acquisitions and disposals) must be charged to the profit and loss account to reflect the continuing costs of supply.
81. This proposition follows from the definition of continuing costs in terms of the prices of resources which would arise in a highly competitive market with easy entry and exit for new producers. No commercial competitors would come into an industry if they did not expect to be able to recover the decline in values of their assets, as well as earn a normal profit (the opportunity cost of capital). They would measure their return on investment after recovery of funds sufficient to maintain the real value of the financial capital they had invested.
82. This system of accounting is called financial capital maintenance (FCM).<sup>55</sup>

### ***Comparability, materiality and lack of unnecessary complexity***

83. This section sets out the aspects of financial information that are particularly relevant to our profitability assessment.<sup>56</sup>

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<sup>55</sup> FCM is a system of accounting which regards the capital of the business as a fund attributable to the proprietors and profit as the surplus arising after that fund has been maintained. Assets are stated at their value to the business. This is the definition contained in The Byatt Report's glossary on p136. There it is defined in real terms, ie after allowing for changes in general purchasing power.

<sup>56</sup> The paragraphs on 'Comparability and Materiality' draw heavily from 'The qualitative characteristics of financial information' chapter of *The Statement of Principles for Financial Reporting, 1999*, UK Accounting Standards Board.

### *Comparability (and consistency)*

84. Financial information gains greatly in usefulness if it can be compared with similar information about the entity for some other period or point in time in order to identify trends in financial performance and financial position. Information about a particular firm is also much more useful if it can be compared with similar information about other entities in order to evaluate their relative financial performance and financial position. Information in financial statements therefore needs to be comparable as far as is possible.
85. Comparability generally implies consistency throughout the reporting entity within each accounting period and from one period to the next. However, consistency is not an end in itself. Consistency can also be useful in enhancing comparability between entities, although it should not be confused with a need for absolute uniformity.
86. As noted in paragraphs 68 and 200 all the Majors prepare financial information in accordance with UK or international accounting standards. As a result we would expect a certain level of consistency in the accounting treatments adopted both between one accounting period and the next and between one Major and another.

### *Materiality*

87. We only require adjustments to be made to financial information supplied to us by the Majors that is likely to make a material difference to our assessments.
88. An item of information is material if its misstatement or omission might reasonably be expected to influence the economic decisions of users (here, the CC) of that information. Whether information is material will depend on the size and nature of the item in question judged in the particular circumstances of the case. The factors to be

taken into account are set out below. It will usually be a combination of these factors, rather than any one in particular, that will determine materiality.

- (a) The item's size is judged in the context both of the financial information as a whole and of the other information available to users that would affect their evaluation of that financial information. This includes, for example, considering how the item affects the evaluation of trends and similar considerations.
- (b) Consideration is given to the item's nature in relation, for example, to the transactions or other events giving rise to it.

89. If there are two or more similar items, the materiality of the items in aggregate as well as of the items individually needs to be considered.

#### *Lack of unnecessary complexity*

90. We also place value on the simplicity (but not at the expense of either comparability or materiality) of the financial information used in the assessment. What we mean by this is that, rather than seeking to make elaborate numerical adjustments (eg in relation to the age profile of tangible fixed assets) or numerical adjustments involving a high degree of professional judgement (eg efficiency adjustments), we plan to incorporate such aspects, important though they may be, qualitatively into our assessment and interpretation of the Majors' profitability. A by-product of this approach is that the numbers that we rely on in our assessment are more likely to be recognized by the individual firms concerned.

#### **Financial information: application of basis of preparation principles**

91. Our position is that information prepared under HCA in accordance with either UK or international accounting standards will be a good starting point for our purposes in

many if not all cases.<sup>57</sup> For example, for many assets and liabilities which are quickly turned over such as trade debtors and creditors the CCA values will not differ significantly from the HCA values when general inflation is low.

92. The purpose of this section is therefore to run through potential exceptions to this approach. For each potential exception we set out the following elements as appropriate:

(a) *Background*: we set out the essential contextual information needed to understand the accounting issues that the CC is aware of at the time of writing.

(b) *Current accounting treatment*: we set out our understanding of the Major's current accounting treatment as understood from reading the accounting policy notes set out in their statutory financial statements, their responses to our FQ and our own research into current accounting practice. Note that the treatment adopted for statutory purposes may not necessarily accord with the Majors' views as to what they think is appropriate for assessing their profitability here.

(c) *Majors' views*: we set out and respond to the Majors views (if any) as set out in their responses to the FQ.

(d) *Planned treatment*; we set out our planned approach on how the potential exception should be accounted for together with our reasoning.

93. Note, however, that the principles outlined in the Financial information: basis of preparation principles section apply regardless of whether any particular issue is specifically handled below.

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<sup>57</sup> The Draft Guidelines, Annex A Market characteristics and outcomes, *Measuring profitability*, paragraph 8.

## ***Recognition of tangible fixed assets***

### *Leased assets*

#### *Background and current accounting treatment*

94. Some firms acquire the right to operate assets, for example, mineral bearing land or plant and machinery, by taking out a leasing contract rather than purchasing the assets outright. Whilst in the former situation the firm may not be the legal owner of the asset it is, for all practical intents and purposes, able to derive the economic benefits from owning the asset.
95. Where assets are financed by leasing arrangements which transfer substantially all the risks and rewards of ownership of an asset to the lessee (finance lease), the assets are treated as if they had been purchased and the corresponding capital cost is shown as an obligation to the lessor. The finance costs are written off to the profit and loss account over the period of the lease, and the assets are capitalized on to the balance sheet and depreciated. All other leases are treated as operating leases. Operating leases are akin to the hire of an asset. Rentals payable under operating leases are charged to the profit and loss as incurred.<sup>58</sup>

#### *Majors' views and planned treatment*

96. Hanson stated that some of the operating assets it leased and had accounted for as operating leases, needed to be treated as finance leases (ie capitalized) to obtain a more accurate view of its economic capital employed.<sup>59</sup>
97. In its FQ response Hanson estimated its ROCE using the template we had provided it and proposed a number of adjustments including one for leased assets in order to, in its view, obtain an accurate representation of the profitability of each of the

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<sup>58</sup> The current UK accounting standard is Statement of Standard Accounting Practice (SSAP) 21 *Accounting for leases and hire purchase* (revised January 1989).

<sup>59</sup> [X]

relevant Great Britain operations. For its cement business the impact of this adjustment was [X] percentage points.<sup>60</sup>

98. The relevant UK accounting standard defines a finance lease as a lease that transfers substantially all the risks and rewards of ownership of an asset to the lessee.<sup>61</sup> We plan to rely on how firms implement this standard and its international equivalent (as reviewed by the firm's auditor) to police the dividing line between which transactions should be treated as if they were asset purchases and which transactions should not. We therefore do not plan to make any adjustments for assets accounted for as operating leases.

### ***Measurement basis for valuation of tangible fixed assets***

99. The standard approach to the valuation of all tangible fixed assets is that they are stated at historical cost or revalued amount, net of accumulated depreciation and any provisions for impairment. Any revalued amounts have typically been frozen at some point in the past and therefore do not necessarily reflect the current value to the business. Both freehold land<sup>62</sup> and assets in the course of construction (AICC) are not depreciated. However all other tangible assets are depreciated based on their historical cost (or valuation) less their estimated residual value.
100. In order to give context to the following discussion we summarize the current approach taken by the Majors to determining the *gross* carrying value of their tangible assets in their statutory financial statements.

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<sup>60</sup> [X]

<sup>61</sup> Definition of a finance lease within SSAP 21: *Accounting for leases and hire purchase contracts*, August 1984.

<sup>62</sup> Except mineral bearing land. See paragraph 138.

TABLE 6 Principal gross valuation methodologies adopted by the Majors in their statutory financial statements

<i>Principal gross valuation methodology</i>			
	<i>Land</i>	<i>Cement works</i>	<i>Mineral bearing land</i>
<b>Lafarge</b>			
<i>UK statutory</i>			
Assets acquired in Redland plc in 1997			Value in use
Assets acquired in Steetly plc in 1991			Value in use
Assets acquired in Blue Circle plc in 2001	<----- Fair value----->		
For all other assets	HC	HC	HC
<i>Principal gross valuation methodology</i>			
	<i>Land</i>	<i>Plant &amp; equipment</i>	<i>Mineral bearing land</i>
<b>Cemex</b>			
<i>UK statutory</i>			
Current	HC	HC	HC
Planned (from 2012)	One-off FV revaluation as at 12/09 on adoption of IFRS		
<i>Principal gross valuation methodology</i>			
	<i>Land</i>	<i>Plant &amp; machinery</i>	<i>Mineral bearing land</i>
<b>Hanson</b>			
<i>UK statutory</i>			
Some assets not acquired in recent past	NRV	not stated	Value in use
Most recent revaluation date	70s to 90s	70s to 80s	1989
For all other assets	HC	HC	HC
<i>Principal gross valuation methodology</i>			
	<i>Land</i>	<i>Plant &amp; machinery</i>	<i>Mineral bearing land</i>
<b>Tarmac</b>			
<i>UK statutory</i>			
Some assets not acquired in recent past	<----- Not stated ----->		
Most recent revaluation date	1987	not applicable	1996
For all other assets	HC	HC	HC
<i>Principal gross valuation methodology</i>			
	<i>Land</i>	<i>Plant &amp; machinery</i>	<i>Mineral bearing land</i>
<b>Aggregate Industries</b>			
<i>UK statutory</i>			
Asset acquired up to and including 2008	NRV	RC	Value in use
Most recent revaluation date	2008	2008	2008
For all other assets	HC	HC	HC

Key: HC = historical cost; NRV = net realisable value; RC = replacement cost; FV = fair value (which in practice can mean RC, NRV or value in use).

Source: Majors' 2010 statutory financial statements and CC analysis [88].

101. Some Majors (Hanson and Tarmac) also choose to capitalize the interest costs that are directly attributable to the construction of a tangible fixed asset. In the case of Tarmac this is limited to certain significant capital projects. In principle this treatment leads to double counting ie this interest cost is factored into both the cost of the asset and the cost of capital. As such capitalized interest should not be included in the cost base for tangible fixed assets.

*Plant and machinery worth replacing*

102. As set out in paragraph 74 we are referring to the situation where an asset's value to the business exceeds its recoverable amount.

*Current accounting treatment*

103. The Majors value their plant and machinery at historic cost (or revalued amount) as described in paragraph 99.

*Planned treatment*

104. The relevant valuation basis here will be the MEA valuation ie what a new entrant would pay for the assets. This is the cost of a brand new plant adjusted for, among other things:
- (a) its age ie so that its net value will reflect how many more economically productive years are expected from it; and
  - (b) any lower operating costs associated with operating a brand new plant.
105. The MEA value for an existing asset will not be its historical cost adjusted for inflation when there has, for example, been a material change in the technology deployed

since when the asset was first acquired. For example, Hanson estimated the MEA values for its grey cement fixed assets to be less than [§] per cent of inflated cost.<sup>63</sup>

106. However, where MEA values are likely to approximate indexed historical costs, it is acceptable to use an appropriate price index to revalue assets. These indices should be asset specific, rather than being general inflation indices as the object of the exercise is to estimate the replacement cost and not maintain its original purchasing power.

*Practical application of MEA valuation principles to cement production plant and machinery*

107. A key focus will be on MEA valuations at the start of the period of our analysis (ie 1 January 2007) particularly where the assets are long-lived such as those at cement works. While we do not believe there has been any radical change in technology between 2007 and 2011 affecting MEA values,<sup>64</sup> our view is that the modern equivalent technology at the beginning of this period was a dry process plant adapted to use alternative fuels<sup>65</sup> on a brownfield site. This is the plant that a new entrant could have bought had it entered the market at this date.
108. There are, of course, certain site-specific factors which a potential purchaser would factor in when determining the amount worth paying for a particular cement works in a particular location such as favourable transport links, especially rail and sea links.<sup>66</sup> As these factors open up the market as well as potentially reduce costs, we plan to handle such factors qualitatively rather than quantitatively within the MEA valuations. See Assessment and Interpretation, paragraph 213.

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<sup>63</sup> [§]

<sup>64</sup> Note that whilst technology may not have changed between 2007 and 2011, changes in the market environment over this period may still affect the MEA as the optimal configuration in 2011 may not be the same as that in 2007, eg via the impact of the Emissions Trading Scheme (ETS).

<sup>65</sup> Tarmac noted that the two cement works closed in 2008 (Lafarge's Westbury and Cemex's Barrington plant) were 'wet process' plants [§].

<sup>66</sup> These factors are also relevant to aggregates.

- *Specific area on which we would welcome comments: the specification of a brand new cement works*

109. We would welcome input, particularly from the Majors, regarding which additional features a brand new cement works commissioned for delivery at 1 January 2007 would have had, together with any evidence to support this view. For example, we have, as yet, no view on the capacity for such a works which would minimize the production costs for each tonne of cement over the long-run.

### *Plant and machinery not worth replacing*

#### *Background and current accounting treatment*

110. All the Majors closed or mothballed some of their assets in the period under review in response to the significant downturn in demand which in turn led to excess production capacity in Great Britain. For example Lafarge closed its Northfleet (2008) and Westbury (2009) cement works and Cemex its Barrington (2009) cement works.
111. On closing or mothballing plant, if not before, firms would need to check that their book values for these assets do not exceed their recoverable amount.<sup>67</sup> As already explained in paragraph 75 when discussing the concept of value to the business, the recoverable amount is the higher of the amount that can be obtained from selling the fixed asset (its net realisable value or NRV) or its value to the business in use (its discounted present value). Any reduction in the carrying value of an asset due to impairment then flows through to the profit and loss of that period.

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<sup>67</sup> This is the accounting treatment set out in Financial Reporting Standard 11 (FRS11): *Impairment of fixed assets and goodwill (1998)*, UK Accounting Standards Board, [www.frc.org.uk/Our-Work/Publications/ASB/FRS-11-Impairment-of-Fixed-Assets-and-Goodwill/FRS-11-Impairment-of-Fixed-Assets-and-Goodwill.aspx](http://www.frc.org.uk/Our-Work/Publications/ASB/FRS-11-Impairment-of-Fixed-Assets-and-Goodwill/FRS-11-Impairment-of-Fixed-Assets-and-Goodwill.aspx).

112. When Lafarge mothballed and then closed both its kilns at its Westbury plant it wrote down the carrying values of the kilns and associated assets to zero and reflected the impairment in its profit and loss account.<sup>68</sup>

*Planned treatment*

113. Clearly when a firm has chosen to close a plant with no possibility of resurrection then the recoverable amount is the asset's scrap value (or NRV). However, where a firm chooses to mothball rather than close a plant, the value to the owner of the mothballed plant is its investment (or option) value. In other words the surplus capacity which is worth retaining for eventual future use should be valued as an investment, at the discounted cost of the capacity which it would otherwise be necessary to build later.<sup>69</sup>
114. Therefore, so long as the standard accounting approach has been adopted to impaired assets, then the resultant values should reflect their value to the business at that point in time. Subsequent revaluations of these assets should reflect their subsequent value to the business at the relevant balance sheet dates.

*Fully depreciated assets still in use/highly depreciated assets*

*Background and current accounting treatment*

115. Some firms may find they are still using fixed assets long after they have been fully written off in their financial statements. Economic useful lives used in most<sup>70</sup> depreciation calculations are only estimates. If unbiased estimates of economic useful lives are used, there will be an element of averaging with some assets lasting longer than originally envisaged and others not.

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<sup>68</sup> As referred to (in part) in *Lafarge Cement UK Plc Annual Report and Financial Statements*, 31 December 2010, p37. The accounting transactions were reported in more than one accounting period.

<sup>69</sup> The Byatt Report, Volume I, p27, paragraph 116.

<sup>70</sup> One exception is mineral bearing land where depreciation is based on tonnage extracted.

116. In such cases the carrying value (or book value) of the asset is zero and there would be no charge to the profit and loss in the period. This would still be the case even if assets are valued on a replacement cost basis as it is standard practice to use the same depreciation methodology and estimate of economic useful lives under both CCA and HCA accounting.
117. Also, depending on the age profile of assets, the financial statements of otherwise identically operated firms employing the same accounting policies, would estimate different levels of capital employed: the older the assets are on average, the lower the calculated capital employed will be. A steady state situation would be where, taking the fixed asset base as a whole (and excluding non-depreciable assets such as land and AICC), assets were half way through their expected useful lives.

*Majors' view and planned treatment*

118. Hanson pointed out that a significant proportion of the assets in its cement business were acquired between 1980 and 2000, a number of which are now fully depreciated despite still being in economic use.<sup>71</sup>
119. Hanson also pointed out that at the beginning of 2012 the gross book value of its cement business assets, including those that were fully depreciated, stood at £[REDACTED] million on a HCA basis whereas their net book value (NBV) stood at £[REDACTED] million, a ratio of 32 per cent, significantly less than the 50 per cent ratio one would expect in a steady state situation.<sup>72</sup>
120. Hanson also noted that the MEA approach to asset valuation still required the calculation of depreciated MEA values to estimate capital employed. If assets were towards the end of their useful lives, there would be a risk of using an

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<sup>71</sup> [REDACTED]  
<sup>72</sup> [REDACTED]

unrepresentatively low figure for capital employed. This in turn could lead us to misdiagnosing Hanson's profitability.<sup>73</sup> One potential solution would be to assess the capital employed as an average figure over the life of each asset. This could be approximated as the half-way point ie to divide gross asset values by two. This approach would be an approximation because this average capital employed would be an undiscounted average.<sup>74</sup>

121. Cemex also commented that, after a physical cleansing check in 2011, it had found that 40 per cent of the assets used in the reference markets had a zero book value under UK GAAP<sup>75</sup> despite these assets still being in productive use. Under IFRS, the accounting basis adopted by its parent for its group financial statements, this proportion was considerably less.<sup>76</sup>
122. To ascertain the potential significance of the maturity, or conversely the infancy, of the fixed asset bases of the Majors in the first instance we gathered information from the tangible fixed asset note of the Majors' statutory financial statements. We analysed this information relating to plant and machinery assets to calculate the extent to which these assets were depreciated.<sup>77</sup> We also noted the estimated useful economic lives given by the Majors' in the same set of financial statements.

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<sup>73</sup> [§]

<sup>74</sup> [§]

<sup>75</sup> Generally accepted accounting practice (GAAP).

<sup>76</sup> [§] Note that Cemex's figures refer to the *number* of items and not their potential materiality to its capital employed.

<sup>77</sup> % not yet depreciated = net book value (NBV)/gross book value (GBV) for plant and machinery (or equivalent) assets at the year-end date. No adjustment was made for any (minor) amounts disclosed for assets in the course of construction (AICC).

TABLE 7 The proportion of which the Majors' plant and machinery assets are not yet depreciated

	<i>per cent</i>				
	<i>Major's plant and machinery assets</i>				
	<i>Lafarge*</i>	<i>Cemex†</i>	<i>Hanson‡</i>	<i>Tarmac§</i>	<i>Aggregate Industries¶</i>
Not yet depreciated (%)	51	52	33	45	47
Asset lives (years)					
Max	40	36	20	40	20
Min	5	10	5	5	3

Source: The Majors' financial statements. See footnotes.

\*Lafarge Cement UK Plc, year ended December 2010 (company statements).

†Cemex UK Operations Ltd, year ended December 2010.

‡Castle Cement Ltd, year ended December 2010.

§Tarmac Limited, year ended December 2010.

¶Aggregate Industry Holdings Limited, year ended December 2008.

123. From this initial analysis, which includes assets relating to cement operations of Lafarge, Cemex, Hanson and Tarmac, it is evident that Hanson's plant and machinery assets are more depreciated than the other Majors (33 per cent against around 50 per cent for the other Majors). However, we also note that Hanson appears to have adopted much more conservative estimates of useful economic lives for plant and machinery than the other Majors. The exception here is Aggregate Industries which does not have any cement production operations in Great Britain.

124. We agree with Hanson that it would cost money for Hanson (or a new entrant) to replace fully depreciated assets that it is still using. Assuming the assets are worth replacing, then the gross MEA value for such assets at the balance sheet date<sup>78</sup> should be ascertained in line with the principles set out in paragraphs 78 and 79. The next step would be, at the balance sheet date, to make a fresh estimate of total expected economic life (ie from date of original acquisition to date of expected final use). This life should then be used to calculate accumulated depreciation to date. This way both the asset values within capital employed and the related depreciation charges to the profit and loss would both reflect an estimate of their economic costs and be internally consistent with one another.

<sup>78</sup> For example, at December 2006, the start date for the period of analysis.

125. We are not expecting the Majors to re-evaluate the total economic useful lives of their assets across the board, only when there is good reason to suspect that such an exercise would have a material impact on the assessment of performance.
126. We are aware that differences in the asset profile for otherwise identically operated firms would impact the estimation of ROCE in any one period. However, we are not persuaded that this is an issue of such significance (once action is taken to re-evaluate total expected useful asset lives) to warrant a complete change in approach to evaluating the Majors' financial performance in this case.
127. In particular we do not plan, as suggested by Hanson, to estimate capital employed by assuming that all assets were half way through their economic useful lives by dividing gross asset values by two, not least because one would expect higher operating costs to be associated with older plant.
128. See also the section on Assessment and Interpretation, paragraph 214.

### *Mineral bearing land*

#### *Background*

129. Firms operating in the aggregates extraction business will either own or lease an individual site or, alternatively, negotiate an option agreement with landowners to extract minerals from their land. In addition royalties will be payable in all cases except where the business owns the land outright.
130. Investments in any one particular site will tend to be of a 'one-off' nature in that although long term, once all the minerals worth extracting have been extracted,<sup>79</sup> the business will move on and seek to extract minerals elsewhere. There can be very

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<sup>79</sup> In some cases there may be a phased series of land deals or extensions.

long lead times between identifying a new site as a candidate for extraction, seeking and gaining permission to extract, and then any extraction activity actually occurring and the site being finally depleted and restored in the manner expected. We understand from the Mineral Product Association (MPA) that even though the planning process can be a drawn out and fraught process that 90 per cent of applications to extract submitted by its members are ultimately successful.<sup>80</sup>

131. If a firm purchases sites then substantial amounts of capital could be tied up for several years without earning any income. When mineral bearing land is sold its value will reflect its income generating potential.
  
132. If there is an economic downturn firms may choose to mothball or even close sites if and when they judge it not worthwhile to continue extracting, at least in the short term.
  - *Option agreements to secure mineral bearing land*
  
133. The MPA told us that most new aggregates sites are now acquired under option to take a lease. Once an operator had identified a piece of attractive land that it thought was mineral-bearing, he would approach the landowner and ask if he could perform test drills. If these test drills were to prove successful, then the deal would be for the landowner to give the operator the option to enter into a lease on the land which would pay the landowner a royalty per tonne as the minerals were extracted.
  
134. The MPA told us that if the operator did not obtain planning permission, the option would fall. However, if permission were to be successful, the landowner would most likely be able to insist that operations<sup>81</sup> start within a certain period. Moreover, once

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<sup>80</sup> [X]

<sup>81</sup> Subject to taking into account whatever conditions have been attached to the planning permission. Planning permission attaches to the land and not the applicant or the landowner.

the operator had started to extract, and sometimes even before he had started, there could be a requirement to pay a minimum royalty payment ie there could be an onerous rental agreement between the operator and the landowner. Overall this approach to securing mineral bearing land was less capital-intensive and more flexible than buying land outright.<sup>82</sup>

- *Specific area on which we would welcome comments: option agreements*

135. We would welcome input, particularly from the Majors, regarding:

(a) in practice how varied are the arrangements for securing access to mineral bearing land;

(b) how material to operators' overall portfolios are sites originally acquired under option arrangements; and

(c) how do operators account for the transactions and events resulting from such option arrangements, particularly when they are onerous.

#### *Current accounting treatment*

136. In line with the standard approach to asset valuation set out in paragraph 99, mineral bearing land is stated at historical cost<sup>83</sup> or revalued amount, net of accumulated depreciation and any provisions for impairment. Typically revalued amounts have been frozen at some point in the past and therefore do not necessarily reflect the current value to the business.

137. Firms are expected to restore sites once they have completed their quarrying activities. For example, they must dismantle and remove plant and roadways at their sites, and restore land as agreed. As this obligation gives access to future economic benefits,<sup>84</sup> firms recognize both a provision within their liabilities and an asset within

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<sup>82</sup> [X]

<sup>83</sup> Such cost will include cost of getting the land ready to be extracted, eg overburden.

<sup>84</sup> These economic benefits fall within the definition of an asset as set out in paragraph 71.

their tangible fixed assets of equal but opposite value. This asset is valued at the total estimated cost of restoring the land in the future discounted back to the present day at their cost of capital and depreciated as described in the next paragraph. The provision to restore the site should also be included within capital employed.

138. Unlike for other tangible fixed assets, mineral bearing land depreciation is based on the tonnage of material extracted in the period against estimated total reserves ie it reflects an estimate of consumption in the period. This depreciation charge is alternatively described as the mineral depletion charge. Therefore the net value of mineral bearing land should reflect the best estimate at the time of the extent to which total mineral reserves worth extracting have not yet been extracted.

*Planned treatment*

139. The value to the business of the mineral bearing land associated with an individual site is likely to be its market value. This in turn will reflect the value that is expected to be generated from extraction. In contrast the replacement cost of the mineral bearing land associated with an individual site will be of limited significance when it is impossible to maintain the output at that site indefinitely. Investments will therefore tend to be of a 'one-off' nature.<sup>85</sup>
140. Assuming that the land has minerals commercially worth extracting, the market value is likely to be closely related to the discounted present value of the expected output less running costs and net closure costs. That is to say that, within the hierarchy of establishing which valuation basis gives the value to the business (as set out in Figure 1 at paragraph 76), the recoverable amount is its value in use.

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<sup>85</sup> The Byatt Report, Volume II, paragraph 5.62, when discussing Depletable Resources.

141. Hanson confirmed that this indeed is the approach taken to any valuations of mineral assets. It noted that in the consolidated financial statements of its parent company, Heidelberg Cement, Heidelberg valued these assets using the multi-period excess earnings method (MEEM). KPMG,<sup>86</sup> which carried out a revaluation exercise for Heidelberg Cement, defined the MEEM as follows:

The MEEM measures the present value of the free cash flows attributable to the subject asset during the remaining life of the asset.

The free cash flows are those in excess of fair returns on all contributory assets that are necessary for the realization of these cash flows.

142. However, it would be a wholly circular exercise for the asset values of mineral bearing land to be revalued at the end of each period at such a market value in order for us to assess profitability, let alone excess profitability. For this purpose we need a valuation basis that both avoids circularity and yet is still economically meaningful.

143. The approach which would achieve this is to estimate the gross value of the investment in mineral bearing land at a level which maintains the purchasing power of capital invested in the site and then to depreciate, and if necessary impair, the assets valued on such a basis in line with the normal depreciation policy for mineral bearing land. Consequently in order to establish the gross valuation the investments in mineral bearing land should be indexed up from the point(s) of purchase to the balance sheet date using a suitable purchasing power index so that the real value of capital invested is maintained through time.

144. Note that such an approach is also fully consistent with the financial capital maintenance.

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<sup>86</sup> [X]

145. See also the section on Assessment and Interpretation, paragraph 214.

## ***Recognition of intangible fixed assets***

### *Carbon allowances*

#### *Background<sup>87</sup> and accounting treatment*

146. The European Union (EU) has set up a scheme to incentivize heavy emitters of carbon such as cement producers to reduce their emissions. The EU now obliges such heavy emitters to deliver sufficient carbon allowances at the end of each phase of the scheme to cover the carbon emitted as a by-product of their activities in the intervening period. The EU has granted free allowances to all cement producers which cover the levels of carbon they have emitted based on historical production levels.
147. The EU has set up an exchange on which of these carbon allowances are fully tradable and find their own market price. Some emitters need to purchase at least some allowances on the open market to satisfy their obligations. To the extent cement producers are able to outperform historical efficiency levels at historical output levels, or reduce output below the maximum level permitted by the number of allowances they hold, they can either sell their surplus allowances at the prevailing market price or retain their surplus allowances for future use (subject to their use within a certain timeframe, namely a given trading phase of the scheme).
148. A new entrant to cement production should not be disadvantaged against existing producers as they would obtain as many free allowances as an existing plant of the same capacity.<sup>88</sup>

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<sup>87</sup> The background description is not intended to be an authoritative description of the EU's carbon trading scheme, rather a concise summary sufficient to illuminate the associated accounting issues.

149. There appear to be two approaches of accounting for these carbon allowances. The fully articulated approach<sup>89</sup> recognizes the following transactions:

TABLE 8 The fully articulated approach to accounting for carbon allowances

<i>Transaction or event</i>	<i>Accounting treatment</i>
The government (in the form of the EU) grants the cement producer allowances which have a market value	The cement producer recognizes an intangible asset and an equal but opposite government grant at the price prevailing at the outset of the scheme.
The cement producer produces cement	<p>The cement producer makes a provision to surrender allowances to cover the level of carbon it has emitted for the cement produced in the year.</p> <p>The cement producer also recognizes that the government has given it free allowances and amortizes an appropriate portion to the profit and loss account. (The cost of making the provision and the income from the government grant will net out to zero if the initial efficiency and output expectations of the scheme are met.)</p> <p>At the end of the year the cement producer revalues in line with changes in the market price of carbon allowances:</p> <ul style="list-style-type: none"> <li>• the value of the intangible asset;</li> <li>• the value of the government grant; and</li> <li>• the value of the provision to deliver allowances.</li> </ul>
At the end of each year the cement producer surrenders carbon allowances to the EU to extinguish the provision	The cement producer nets off the provision to deliver allowances relating to the year just elapsed against the intangible asset.
And so on until the end of the relevant trading phase of the scheme	<p>By the end of the scheme the intangible asset will have been completely netted off (assuming initial expectation have been realized) against the provision to deliver allowances.</p> <p>In addition the government grant will have been fully expensed to the profit and loss.</p>

Source: CC.

150. The other approach, which is much simpler, appears to be to recognize only the sales or purchases (or conceivably transfer charges to other group companies) of carbon allowances on the open market. The net result in terms of impact on operating profit and net assets is the same with both approaches at the end of the relevant trading phase. However, to the extent a cement producer adopting the fully articulated approach has not sold any excess carbon allowances resulting from its outperformance, or from a reduction in its output, by the end of an intervening

<sup>88</sup> This would still remain the case under the next trading phase of the scheme (ie Phase III from 1 January 2013 to 31 December 2020), when new entrants would be allocated free allowances based on the efficiency and capacity of their cement works.

<sup>89</sup> For a detailed worked example, which includes purchases of further rights, see Emissions worked example from HM Treasury [www.hm-treasury.gov.uk/frem\\_guidance.htm](http://www.hm-treasury.gov.uk/frem_guidance.htm). Note that in this example allowances are surrendered at the end of the scheme.

accounting period, then it is able to recognize the value of these excess carbon allowances on its balance sheet.<sup>90</sup>

151. Hanson is the only Major cement producer who has adopted something approximating the former approach whilst the other Major cement producers have confirmed to us that they have adopted the latter approach.<sup>91</sup> The other Major cement producers, however, do not explicitly refer to their accounting treatment in their statutory financial statements.<sup>92</sup>
152. There is currently no definitive guidance on the proper accounting for emission allowances, with the UK Accounting Standards Board<sup>93</sup> noting that the achievement of the most appropriate accounting requirement was constrained by other accounting requirement relating to intangible assets and grants.

*Majors' views and planned treatment*

153. Hanson noted that it earned €[REDACTED] million by selling unused CO<sub>2</sub> allowances between 2005 and 2011 and that as the EU Emissions Trading Scheme evolved, [REDACTED].<sup>94</sup> It also argued that the intangible asset should be recognized within its capital employed.<sup>95</sup>
154. In the interests of transparency and simplicity, we plan, for the purpose of assessing profitability, that only the sales, purchases or transfers of carbon allowances be recognized in the analysis. We agree with Hanson that the trading scheme introduces a dynamic to the situation and we therefore plan, among other things, to perform a sensitivity analysis including and then excluding these market transactions.

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<sup>90</sup> This would represent the net balance on the following items: carbon allowances (intangible asset), government grant (funding 'liability') and provision to surrender allowances.

<sup>91</sup> [REDACTED]

<sup>92</sup> The same set of financial statements were reviewed as set out in Table 5 at paragraph 122.

<sup>93</sup> Urgent Issues Task Force Information Sheet #71 *Emissions Rights*, 3 December 2004

[www.frc.org.uk/getattachment/92a51e44-df3b-45ae-9dc7-03b35085ab70/UITF-Information-Sheet-71-Accounting-for-Emissions.aspx](http://www.frc.org.uk/getattachment/92a51e44-df3b-45ae-9dc7-03b35085ab70/UITF-Information-Sheet-71-Accounting-for-Emissions.aspx).

<sup>94</sup> [REDACTED]

<sup>95</sup> [REDACTED]

However, we disagree that it is necessary to factor the value of the intangible asset within capital employed. This is because this asset would be matched by an equal but opposite combination of a government grant and a provision to surrender allowances to the EU.

155. Our planned treatment of carbon allowances for the purposes of this profitability assessment will not influence how we treat carbon allowances in other parts of our analyses.

### *Purchased goodwill*

#### *Background and current accounting treatment*

156. Some firms grow organically, some through acquisition. Some Majors have made acquisitions and some have been acquired. Purchased goodwill is the part of a parent firm's investment in its subsidiary that it has not been able to attribute to separately identifiable assets and liabilities. Although it is not an asset in itself, it is *part of a larger asset (the investment)*.<sup>96</sup>
157. In the consolidated financial statements for the group the practice is to recognize this purchased goodwill as an intangible fixed asset which is then subject to an annual impairment review.<sup>97</sup>

#### *Majors' views and planned treatment*

158. Lafarge stated that the very significant level of goodwill in its UK cement business associated with Lafarge SA's acquisition of Blue Circle in 2001 was relevant to our profitability assessment. It believed that the historical cost asset values for its cement business *inclusive of* its purchased goodwill were indicative of the likely replacement

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<sup>96</sup> Statement of Principles 1999, UK Accounting Standard Board, paragraph 8.13.

<sup>97</sup> FRS11 *Impairment of Fixed Assets and Goodwill*, UK Accounting Standards Board, 1998.

costs of the physical assets and therefore should be included as part of capital employed.<sup>98</sup>

159. Other Majors did not specifically comment on the treatment of goodwill in their narrative responses to the FQ but did in fact include goodwill within the analysis of their assets.
160. A new entrant into the market setting up its own operations would not purchase goodwill. It is not an asset that such a new entrant would need to buy. In any case it is not an asset that a new entrant could separately purchase without purchasing the entirety of the business from another operator. Lastly, but not least, the level of purchased goodwill will potentially reflect the capitalization of future super-normal profits,<sup>99</sup> and therefore an asset which would be inappropriate to include within capital employed when assessing the level of underlying profitability.
161. Therefore goodwill should be excluded and the individual assets obtained through acquisition need to be revalued, in common with all other operational assets, using the value to the business principles as set out in paragraphs 72 to 79.

### *Planning and consent costs*

#### *Background and accounting treatment*

162. There can be long lead times for firms operating in the aggregates business to locate, acquire, explore and obtain the necessary permissions to extract minerals before any revenue is generated from an individual site. We understand it can take

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<sup>98</sup> [X]

<sup>99</sup> A measure of expectations of profits in excess of the cost of capital.

up to ten years<sup>100</sup> or more for the whole process in relation to a new aggregates site (as opposed to an extension for an existing site).

163. There appears to be no specific UK standard covering such expenditure apart from that covering the purchase of the site.<sup>101</sup> Whilst this expenditure is not research and development costs, it would appear that the principles embodied in the relevant standard regarding development costs<sup>102</sup> could apply here, ie that expenditure should be written off in the period of expenditure except in the prescribed circumstances when it *may* be deferred to future periods. That is to say, among other criteria, there is a clearly defined project; the related income is separately identifiable; and that the outcome of the project is reasonably certain regarding both its technical feasibility and ultimate commercial viability. Most UK firms, however, do not capitalize any of their development expenditure.

*Majors' views and planned accounting treatment*

164. Hanson pointed to its costs incurred in obtaining planning permission across its operations. Hanson would not be able to run its businesses without incurring these costs. It argued that such expenditures for our purposes should be treated as an intangible asset, rather than an expense incurred in the operations of the business, and as such an adjustment should be made to its capital employed.<sup>103</sup>
165. In order to estimate the size of the adjustment Hanson had assumed its current expenditure was representative of ongoing planning and consent activity. It used the budgeted spend for its Planning, Permits & Estates department as a proxy for annual

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<sup>100</sup> Competition Commission, *A report on the anticipated construction materials joint venture between Anglo American PLC and Lafarge S.A.*, 1 May 2012, Appendix S, paragraph 45.

<sup>101</sup> There is, however, an international standard IFRS6 *Exploration for and Evaluation of Mineral Resources (December 2004)*. Here expenditure incurred after the entity has obtained legal rights to explore in a specific area can be capitalized before the technical feasibility and commercial viability of extracting a mineral resource are demonstrable. Such expenditure is subject to impairment testing.

<sup>102</sup> Statement of Standard Accounting Practice 13 *Accounting for Research and Development (SSAP13 revised 1989)*.

<sup>103</sup> 

expenditure. It noted that the economic life of planning and consent costs was difficult to ascertain as there was a large variation around the time span for which consent could apply. Hanson therefore had assumed a ten-year economic life for planning and consent activities. There would be no overall impact on the profit and loss as expenditure on such activities would be replaced by a similarly sized depreciation charge.

166. Whilst there may be a case to capitalize (subject to impairment testing) expenditures during the lead time up to when extraction begins, this appears not to be accepted UK accounting practice, no doubt in part because of the uncertainty concerning the ultimate commercial viability of any individual site.
167. It is also likely that these ongoing activities in a mature business like Hanson's will be in a steady state, meaning that the likelihood of any distortion of absolute profit levels, if not the level of capital employed, is minimal.
168. It is important for this analysis that, in recognition of the need for pan-Major consistency, all Majors adopt a similar approach to accounting for such expenditure. As no other Major raised this as an issue and Hanson's analysis in relation to its aggregate operations indicated that this potential adjustment would be worth a small percentage [X] per cent<sup>104</sup> of its total (unadjusted) capital employed (in contrast to a significant percentage [X] per cent in relation to its tangible fixed asset revaluations), we do not plan to make an adjustment for this type of expenditure.

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<sup>104</sup> [X]

## *Skilled workforce and other intangibles*

### *Background and accounting treatment*

169. Firms train their employees so that they can perform their jobs well, both in current and future accounting periods. It is standard practice to write off the costs of training and developing staff as incurred.

### *Majors views and planned accounting treatment*

170. Hanson pointed out that it had intangible assets that had not been valued in its accounts. It highlighted in particular its skilled and trained workforce. It gave the example of the technicians Hanson employed on each of its cement sites who have had specialized training that enable them to ensure the accurate chemical specifications of the cement produced. Another intangible asset was the relationship that Hanson had with the community, such as the communities that reside near the cement sites. That was essential for Hanson's smooth operation, as complaints from the community could result in a cessation of production.<sup>105</sup>
171. We have analysed these costs from the perspective of a new entrant. A new entrant would also have to employ the required personnel at the prevailing market rates (which will reflect their skills and competence) and train these staff in much the same way as Hanson does. They would also need to build and maintain a relationship with the local communities much like Hanson does. These are normal costs of doing business and we do not see a good case for treating them in any way other than as revenue expenditure.

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<sup>105</sup> 

172. We also note that such expenditure would not fall within the definition of an asset as outlined in paragraph 71. This is because the rights or other access to such benefits cannot be controlled independently of the business as a whole.<sup>106</sup>

### ***Measurement of economic costs and revenues within profit and loss account***

173. As set out at paragraph 69 economic (or continuing) costs are the costs of resources used at a price they would be traded at in a highly competitive market, where entry to and exit from the market is easy.

### ***Depreciation***

#### ***Current accounting treatment***

174. Standard practice is to depreciate the gross value of the asset (historical cost or revalued amount) at rates calculated to write this value (less any estimated residual value) off evenly over its expected useful life. The exception to this approach relates to the depreciation of mineral bearing land. Here depreciation, alternatively described as the mineral depletion charge, is based on the tonnage of material extracted in the period against estimated total reserves.

175. It is also standard practice when a fixed asset is impaired to charge to the profit and loss account the reduction in its carrying amount.

176. There is no charge to the profit and loss for fully depreciated assets.

#### ***Planned treatment***

177. As set out in paragraph 73 we state that assets should be valued at their value to the business. As a result depreciation charges to profit and loss account should be based on these values, and not on their historical costs or revalued amounts.

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<sup>106</sup> See paragraph 4.21 Statement of Principles (1999) UK Accounting Standards Board, under *Controlled by the entity* within section on Asset definition.

However, the approach to depreciating assets should not otherwise change, for example based on tonnage extracted for mineral bearing land. This element of depreciation is called the current cost depreciation charge. Likewise impairments to the value of assets as described in paragraph 111 should also flow through the profit and loss in the period in which they occur.

178. As already noted in paragraph 80 in relation to describing the FCM concept, the whole of the change in the value to the business of its assets (after allowing for acquisitions and disposals) must be charged to the profit and loss account to reflect the continuing costs of supply. As a result gains or losses in the value to the business not ascribable to either current cost depreciation or impairment should also flow to the profit and loss. These charges would arise from either changes in the benchmark modern equivalent asset or changes in the replacement cost of an identical asset due to asset price inflation or deflation. These charges are sometimes referred to as asset holding gains or losses.

#### *Majors' views*

179. Hanson stated that the use of MEA values may not be consistent with FCM concept, particularly in the case where the assets incorporate technological improvements which reduce the replacement cost relative to the cost of the original asset. It argued that the resulting value for economic capital employed would incorporate investor losses.<sup>107</sup>
180. This is, however, not the case as, in line with the FCM concept, any such losses would flow to the profit and loss in the period in which they occur.

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<sup>107</sup> 

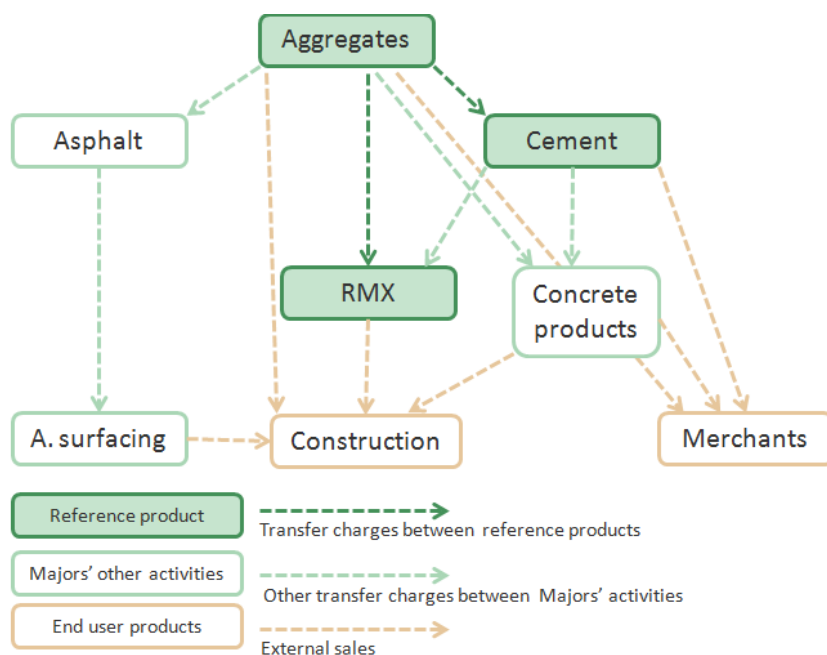
## *Transfer charging*

### *Background and current accounting treatment*

181. The Majors run a variety of operations, not all of which are subject to this market inquiry. In addition while some of their operations may align fairly closely to one of the reference products (eg cement in the UK) they may not be a perfect match (eg grey cement in Great Britain). Furthermore, all of the Majors are part of global groups where other parts of the business, particularly the headquarters function may provide services causally related to the provision of reference products but for which the relevant subsidiaries are not charged for.
182. Moreover, much of the Majors' operations are vertically integrated as typified in Figure 2. For example, the aggregates operation would provide aggregate materials to its downstream cement, RMX and asphalt operations. These individual operations may neither be separate businesses within the group nor legal entities in respect of which statutory financial statements are required to be prepared. If there is no operational separation, there will be no need for transfer charges.

FIGURE 2

**Transfer charges between activities of vertically integrated construction materials producers (plus sales to external parties)**



Source: CC.

Note: Merchants refers to both wholesale and retail sellers of building materials such as builders' merchants and DIY retailers.

[X]

*Majors' views and planned accounting treatment*

183. For the purposes of this market inquiry we requested that the Majors separate for accounting purposes each of their Great Britain aggregates, cement and RMX operations from all their other operations. This requires them to create accounting transactions between these operations if none already exist, for example if their aggregate and RMX operations operate as a single business, the aggregate business would need to record sales transactions and the RMX a purchase transactions of equal but opposite value.

184. The issue for the profitability assessment is that such sales and purchases should reflect the price that a new entrant of similar scale selling the same outputs or purchasing the same inputs would face entering a competitive market ('the market price'). However, it is not always the case that the Majors' existing transfer charges

reflect market prices. For example, one Major [redacted] noted that its internal transfer prices not across legal entity boundaries were not required to be set at market rates. Over the past few years a gap had opened up between the (higher) price that its RMX business paid its aggregates business compared with an open market price and as a result it had worked out an adjustment to reflect these transactions at market prices.<sup>108</sup> The impact of this adjustment would be to shift profits from aggregates to RMX so that measured profitability would more closely reflect market prices. Another Major also commented that some profit had been retained upstream within its aggregates business at the expense of its downstream RMX business as a result of its transfer pricing practices.

185. There may also be transactions between the reference products and other parts of the groups which also should reflect market prices. An example of this would be recharges for central costs from group HQ.
186. Transfer charging may give rise to debtor and creditor balances to reflect the terms on which firms operating in a competitive market do business with one another. These intercompany balances, and only these balances, should be included within trade debtors and creditors.
187. The Majors also sell construction materials to each other ('cross-sales'), which have amounted to up to and over 50 per cent of external sales by value in some years for certain Majors in individual markets.<sup>109</sup> These cross-sales should also reflect market prices for the purposes of our profitability assessment.

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<sup>108</sup> [redacted]  
<sup>109</sup> [redacted]

## *Pension costs*

### *Background*

188. Major firms in this sector have historically provided defined benefit pensions to their employees. The costs of providing the benefits under these schemes have escalated in recent years and all of the Majors have either closed or are consulting on closing their schemes to new entrants. Most schemes have fallen into a deficit and firms have had to make extra contributions to rectify the shortfall. These defined benefit schemes are being replaced by defined contribution schemes where the risk of any shortfall in investment returns falls on the individual employee.

### *Current accounting treatment*

189. All the Majors identify in their statutory financial statements the current service cost of pensions,<sup>110</sup> ie the estimated cost of providing the promised additional pension benefits earned by their workers employed during the period. This cost represents the increase in the employer's obligation to pay benefits in the future discounted to the present day by, in line with current accounting standards,<sup>111</sup> the current rate of return on high quality corporate bonds in equivalent currency and term to the scheme liabilities.
190. In most cases the Majors have accounted for these defined benefit pension costs on an accruals basis ie the cost reflected in the profit and loss current reflects the costs incurred during the period (ie after allowing for any accruals or prepayments at the balance sheet date) rather than reflecting the timing of when, for example, payments are made into the legally distinct bodies which administer the defined benefit pension scheme.

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<sup>110</sup> Although this is not necessarily the only pension cost recognized in the profit and loss. See paragraph 194.

<sup>111</sup> FRS17 *Retirement Benefits (2000)*, UK Accounting Standards Board.

191. For 2010 statutory reporting purposes,<sup>112</sup> however, both Hanson Quarry Products Ltd and Lafarge Aggregates Ltd have accounted for their defined benefit pensions on a cash basis. Here the defined benefit schemes cover a wider set of group employees and, based on advice from their actuaries, the company directors have been unable to split the overall schemes assets and liabilities between the various companies. Accordingly employer contributions to the scheme had been expensed as the liability for payment arose.
192. This difference is potentially material to the profitability assessment as at the total scheme level there is a material difference between the disclosed current service cost (lower figure) and the cash contributions (higher figure) for the period, presumably because the cash contributions in part relate to remedying pension deficits.

*Majors' views and planned treatment*

193. The current service cost is the relevant measure of defined pension costs here as it represents the cost that a new entrant would incur were it to offer a similar defined benefit scheme to its employees in the period.
194. The implication of this is that all other pensions costs (or gains) recognized in performance statements<sup>113</sup> such as the profit or loss account should be excluded including:
- (a) actuarial gains resulting from using CPI rather than RPI to estimate future obligations. Hanson stated that such gains reported in its 2011 results should be excluded from our assessment<sup>114</sup> and we agree;

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<sup>112</sup> The same set of financial statements was reviewed as set out in Table 5 in paragraph 122 plus Hanson Quarry Products Ltd (2010) and Lafarge Aggregates Ltd (2010).

<sup>113</sup> Note that practice differs among the Majors (in part due to whether accounting under FRS17 *Retirement Benefits* or IFRS) as to where individual elements of the overall cost are recognized, eg whilst current service cost is always included within operating profits, sometimes actuarial gains or losses are included within operating profits and sometimes not.

<sup>114</sup> [REDACTED]

(b) actuarial gains resulting from closing a pension scheme to future accrual. Hanson stated that such curtailment gains reported in its 2010 results should be excluded from our assessment<sup>115</sup> and we agree;

(c) past service costs relating to current employees; and

(d) the cost (or income) resulting from past underestimates (or overestimates) of the cost of providing pension benefits.

195. This approach also means that any defined benefit pension costs that have been accounted for on a cash basis need to be restated on to an accruals basis ie the current service cost for the period in questions needs to be estimated.

196. The logical consequence of this approach to pension costs is that any pension benefit liability (or asset) should not be included within capital employed as the net liability or asset would reflect the net of the following three shortfalls (or excesses) in estimated:

(a) current or past service pension costs;

(b) interest costs associated with the pension liability; and

(c) investment returns on assets in the defined benefit scheme.

197. It follows from paragraph 193 that a new entrant would not have a pension liability (or asset). In addition the latter two elements of the overall pension costs as set out in paragraph 194 (ie the financing costs and investment returns) are outside the scope of the activities we are reviewing.<sup>116</sup>

198. Contributions to defined contribution schemes should be expensed to the profit and loss as incurred as these contributions equate to the current service cost. This accounting treatment is in any case universal practice.

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<sup>115</sup> [X]

<sup>116</sup> See paragraph 63.

## Context of analysis

199. As explained under the discussion of transfer charging in paragraphs 181 to 186 we have requested that the Majors to separate for accounting purposes each of their Great Britain aggregates, cement and RMX operations.
200. The Majors, in common with all other limited liability companies operating in the UK over a certain size, are required to prepare, have independently audited and publicly file financial statements drawn up in accordance with UK or international accounting standards. Differences between UK and international accounting standards largely<sup>117</sup> relate to presentational matters such as how transactions are labelled, classified and aggregated.
201. All firms also produce management financial statements to help them run their businesses. These management accounts are tailored to the particular informational requirements of each individual firm and can look very different from a firm's statutory financial statements. Nevertheless both sets of statements will be ultimately derived from the same basic accounting records for the transactions undertaken by the firm. Because the basic accounting records reflect the firm's chosen accounting policies and treatments, unless a firm has specifically made adjustments to reflect a different accounting treatment for their management information, the basis of preparation for management accounting information, if not their detailed presentation, will reflect the requirements of UK or international accounting standards.
202. It has been a one-off exercise for the Majors to supply us with the financial information requested. In order to do this they have modified and augmented their existing management accounting information covering the period 2007 to 2011 in

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<sup>117</sup> There are exceptions most notably the treatment of financial instruments, which for the purposes of this analysis are, as explained in the section on Scope of relevant operational revenues, costs, assets and liabilities, paragraphs 62 & 63, out of scope.

order to generate the separation of accounts between their aggregates, cement and RMX activities on a basis in the first instance consistent with their existing accounting policies and practices.

203. In addition we invited the Majors to make further adjustments, together with an explanation for each individual adjustment, that they thought appropriate in order to calculate an economically meaningful ROCE for each activity for each year.
204. As such the information supplied by the Majors has neither been audited or otherwise independently reviewed before being submitted to us. However, we do expect the base information provided to us described in paragraph 202 in terms of the accounting policies adopted (if not the presentation) to be consistent with the accounting policies and treatment adopted in its statutory financial statements unless we have been explicitly informed otherwise.

### **Assessment and interpretation of profitability**

205. We set out our general approach to profitability assessment as contained within the Draft Guidelines in paragraphs 21 to 24. There we explained that our approach is to carefully interpret levels of profitability benchmarked against the cost of capital. This section explains some of the factors that we believe may be relevant to this profitability assessment.

### ***Efficiency adjustments***

206. In so far as cost efficiency considerations affect MEA valuations, particularly as at 1 January 2007, then we expect these considerations to impact directly on the financial analysis. Otherwise we do not plan to make any efficiency adjustments, for example, where seemingly similarly placed firm B appears to be less cost efficient than firm A. Instead we plan to factor the results of such comparative cost analysis

into our qualitative assessment. As a result we plan to compare average unit costs and prices across the Majors and draw inferences from that when interpreting quantitative results.

207. It may be the case that operational sites, particularly for aggregates and cement, may be co-located and furthermore have favourable transport links, particularly rail and sea links. These sites will in most cases be more attractive to potential purchasers than those without these attributes. Their attractiveness may not just stem from cost efficiencies but also because such transport links open up the market for the materials produced well beyond their locality. Again, we plan to bring such factors into our profitability assessment qualitatively.

208. See also paragraphs 210 to 214.

### ***Sensitivity analysis***

209. Where it is practical to do so, we will conduct sensitivity analysis (eg analysis of ageing of tangible fixed assets, treatment of carbon allowances, particular indices used).

### ***Interpretion***

210. There are a number of issues which have been raised earlier in this working paper that will affect our interpretation of the levels of profitability observed. We handle each one below.

### ***Shock drop in demand for heavy building materials***

211. As noted in paragraph 15 there has been a shock drop in demand for heavy building materials across Great Britain of the order of 30 per cent since the peak. Firms have as a result sought to reduce the scale of their operations. We would expect that

measures taken by firms to right size their businesses would manifest themselves cost-wise through the following charges to the profit and loss account over the period of the analysis and we will interpret accordingly:

- (a) impairment charges to assets, especially relating to plant and machinery either permanently close down or mothballed, in the period in which it was recognized that it was no longer economic to keep them running; and
- (b) redundancy costs for personnel no longer required, following the closure of plant and any aggregates sites taken out of active operation.

### *Stability of demand*

212. As noted in paragraph 40 the current levels of demand in the reference markets do not reflect the relatively stable (and higher) levels of demand seen between 2001 and 2007. We therefore may consider that the period of review (FY07 to FY11) may not be representative of either the competitive conditions which had been sustained prior to the downturn in 2007 or the competitive conditions which may exist under more stable conditions that might be associated with a mature market in the future.

### *Site specific factors affecting the profitability of individual sites*

213. As noted at paragraph 108 and again at paragraph 207 there are certain site-specific factors which a potential purchaser would factor in when determining the amount worth paying for a particular set of assets. As these factors open up the market as well as potentially reduce costs, we plan to handle such factors qualitatively rather than quantitatively.

### *Age profile of tangible fixed assets and investment in mineral bearing land*

214. We have already discussed the relevance of the age profile of assets to our planned profitability measure, namely return on capital employed (ROCE) between paragraphs 117 to 127 when discussing highly depreciated assets. This is also

potentially an issue when it comes to interpreting the profitability arising from the investment in mineral bearing land. We therefore plan to use high level summaries of such asset profiles to help us interpret profitability.

### **Glossary of terms**

215. We use a number of specialist financial terms throughout this working paper. The table below brings together those terms which are used more than once within the paper and the explanations provided are specific to the context of this working paper. Where the terms are introduced and discussed we also give cross-references to the relevant paragraphs.

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TABLE 9 Glossary of financial terms

<i>Term</i>	<i>Explanation</i>	<i>Paragraphs</i>
AICC	Assets in the course of construction	99
CCA	Current cost accounting	77
	A system of accounting which consistently applies <b>value to the business</b> valuation principles to assets and liabilities.	
Cost of capital	The minimum return that investors in a project expect to receive over the period of that investment. It is an opportunity cost and can be seen as the the yield on capital employed in the next best alternative use.	58
Economic costs	The costs of resources used at a price they would be traded at in a highly competitive market, where entry to and exit from the market is easy. The value of resources consumed and assets utilized should reflect their current <b>value to the business</b> , not their historical cost.	69
FCM	Financial capital maintenance	80 to 82
	A system of accounting which regards the capital of the business as a fund attributable to the owner and profit as the surplus arising after that fund has been maintained. Assets are stated at their <b>value to the business</b> .	
FQ	Financial questionnaire	2
	The FQ addressed to the Majors in which the CC set out in brief the proposed approach to assessing profitability on a return on capital employed ( <b>ROCE</b> ) basis and requested financial information relating to the periods 2007 to 2011.	
FRS	Financial Reporting Standard	
	The second of two generations of authoritative accounting standard currently applicable when preparing UK statutory financial statements.	
HCA	Historical cost accounting	68
	A system of accounting which values assets and liabilities at their historical cost.	
IFRS	International Financial Reporting Standard	
	The authoritative international accounting standards that UK firms can choose to apply when preparing their statutory financial statements.	
MEA	Modern equivalent asset	78 to 79
	The MEA value is the cost of replacing an old asset with a new one with the same service capability, allowing for any differences both in the quality of output and in operating costs.	
NRV	Net realisable value	75(a)
	The amount that can be obtained by selling an asset net of selling expenses.	
Draft Guidelines	Draft Guidelines for Market Investigations published for consultation by the CC on 15 June 2012.	7
Recoverable amount	The higher of an asset's value in use and its net realizable value ( <b>NRV</b> ).	74 to 76
ROCE	Return on capital employed, a measure of profitability = profit for a period divided by the value of net assets relevant to the same period expressed as a percentage.	
SSAP	Statement of Standard Accounting Practice	
	The first of two generations of authoritative accounting standard applicable when preparing UK statutory financial statements.	
Value in use	The discounted present value of the cash flows expected from continuing use and ultimate sale of an asset by the present owner.	72 & 75
Value to the business	The loss an entity would suffer if it were deprived of an asset. Also referred to as <i>deprival value</i> or <i>value to the owner</i> .	73