Technical Paper M 1
China Clay

Cornwall Council
January 2012

N.B. This is a live document that will be updated.
Technical Paper 1
China Clay

Contents
1. The geological background of china clay (kaolin)
2. Current production methods and reserves of china clay
3. Markets, transport and use of china clay
4. Government planning policy and guidance for china clay
5. Cornwall local policy development history for china clay
6. Future needs and likely patterns of supply for china clay
7. Safeguarding the resource and associated infrastructure for china clay
8. Key issues for planning policy development for china clay

Figures
Figure 1: Granite Outcrops in SW Britain
Figure 2: Cornwall: Geology, currently worked and other permitted china clay sites.
Figure 3: UK total and export sales of kaolin 1980-2007
Figure 4: Proposals Map Inset 1a Cornwall Minerals Local Plan 1997
Figure 5: St Austell China Clay Tipping and Restoration Strategy: Preferred Tipping Areas
Figure 6: St Austell China Clay Tipping and Restoration Strategy: Restoration Proposals

Table 1 Status of permitted china clay extraction sites in Cornwall
Table 2: Summary of the policies from Chapter 7, Cornwall Minerals Local Plan 1997
Table 3: Notes on the St Austell China Clay Tipping and Restoration Strategy Preferred Tipping Areas
Appendices

Appendix 1  Synopsis of a Freedonia Study of World Markets for Kaolin published on 1 December 2009

Appendix 2  Synopsis of Roskill’s The Economics of Kaolin, 12th edition published 01/11/2006

1. The geological background of china clay (kaolin)

1.1 China clay (or kaolin) is a product of altered granite, which has been affected by an interaction of the groundwater with the feldspar minerals within the granite to form kaolinite.

1.2 Cornwall has five large bodies (‘plutons’) of granite and many smaller outcrops rising from a large parent body, the Cornubian Batholith, which is mainly concealed by Devonian and Carboniferous strata. These were formed from molten rocks deep in the earth’s crust, during and after the period of Variscan earth movements, between 300 and 270 million years before the present.

1.3 In the case of Cornwall’s granite deposits, the alteration is patchy in quality and spatially. The kaolinised zones within the granite tend to be funnel-shaped or trough-like in cross section, several hundreds of metres across at outcrop, and narrowing downwards. Some of the kaolinised bodies are very extensive and deep-seated, with the stems of more than 300m below surface. Kaolinised granite is more friable and generally softer than unaltered rock and consists mainly of quartz or mica, unaltered feldspar (potassium feldspar tends to be less readily altered than the plagioclase feldspars) and kaolinite.

1.4 China clay resources are found within 3 of the larger granite bodies namely the Land’s End peninsula, Hensbarrow (north of St Austell) and Bodmin Moor, and in smaller bodies at Godolphin/Tregonning and Belowda.

1.5 Further information about china clay (kaolin) can be found in the British Geological Survey Mineral Planning Factsheet http://bgs.ac.uk/mineralsuk/planning/mineralPlanningFactsheets.html and the BGS “Mineral Resource information for Development Plans, Cornwall: Resources and Constraints 1997”.

[Figure 1: Granite Outcrops in SW Britain
Source Mineral Planning Factsheet Kaolin, CLG BGS 2009]
2. Current production methods and reserves of china clay.

2.1 The primary kaolin deposits of south-west England are world class in terms of their size and quality. They have yielded over 165 million tonnes of marketable clay since production began in the middle of the 18th Century. Although significant quantities were extracted from the Bodmin Moor and Land’s End granites in the past, production has recently ceased in these areas. Commercial exploitation of the china clay in Cornwall is now confined to the western and central parts of the Hensbarrow (St Austell) granite.

Figure 2: Cornwall: Geology, currently worked and other permitted china clay sites.

Table 1 Status of permitted china clay extraction sites in Cornwall

<table>
<thead>
<tr>
<th>Site</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheal Remfry Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Melbur Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Virginia Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Treviscoe Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Rostowrack Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Goonvean Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Bloomdale Pit</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Pit Name</td>
<td>Status and Details</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Trelavour Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Hendra Pit</td>
<td>Active (currently working for mica deposition only)</td>
</tr>
<tr>
<td>Blackpool Pit</td>
<td>Active (not currently working – part of site is part of Eco-community proposal, although area with large china clay resource will be retained for future extraction)</td>
</tr>
<tr>
<td>Dorothy/Littlejohns/Great Longstone Pits</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Longstone Pit</td>
<td>Active (not currently working)</td>
</tr>
<tr>
<td>Gothers Pit</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Carpalla Pit</td>
<td>Active (currently working residue dredging)</td>
</tr>
<tr>
<td>Wheal Prosper Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Goonbarrow Pit</td>
<td>Active (not currently working)</td>
</tr>
<tr>
<td>Gunheath Pit</td>
<td>Active (currently working for secondary aggregates only)</td>
</tr>
<tr>
<td>Wheal Martyn Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Greensplat Pit</td>
<td>Active (currently working)</td>
</tr>
<tr>
<td>Gover Pits</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Trethowel Pits</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Penhale Pit</td>
<td>Active (not currently working – part of site is part of Eco-community proposal)</td>
</tr>
<tr>
<td>Baal Pit</td>
<td>Active (not currently working – site is part of Eco-community proposal)</td>
</tr>
<tr>
<td>Rocks Pit</td>
<td>Active (not currently working)</td>
</tr>
<tr>
<td>Lantern Pit</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Rosemellyn Pits</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Molinnis</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Garker Pit</td>
<td>Not currently working (Long term working area)*</td>
</tr>
<tr>
<td>Wheal Rashleigh Pits</td>
<td>Not currently working (Long term working area)*</td>
</tr>
</tbody>
</table>

*NB In addition:*

a) there are related sites with permissions for china clay plant and china clay waste tipping.

b)* under the Review of Mineral Planning Permissions, Environment Act 1995: Sites defined as “Active” may be worked without further determination of planning conditions, subject to the provisions of the Environment Act 1995; sites defined as Long Term Working Areas may not be worked unless a scheme of working and restoration and new conditions has been approved by the Mineral Planning Authority.
2.2 The British Geological Survey Mineral Planning Factsheet on Kaolin indicated that UK sales of kaolin were 1.36 million dry tonnes in 2008 (88% of this was produced in Cornwall) and that, at current rates of production, there are proven reserves in and around existing pits to sustain production for of at least 50 years. Using this information it is estimated that Cornwall’s reserves of china clay exceed 60 million tonnes.

![Figure 3: UK total and export sales of kaolin 1980-2007](Source UK Minerals Yearbook BGS 2008)

2.3 A recent decline in UK production from its peak in 1988 of 2.78 million tonnes is due to the increased competition in Western Europe paper markets resulting from imports, particularly from the Amazon basin and from alternative white pigments such as calcium carbonate.

2.4 Extensive planning permissions for winning and working of china clay in the Hensbarrow area extend to some 88 square kilometres, although the area of active extraction, tipping, handling and processing sites is much smaller. The planning permissions are subject to Periodic Reviews under the Environment Act 1995 and the majority of these permissions are due to expire in 2042.

2.5 Traditionally, china clay is extracted from the kaolinised granite by “wet mining”. High pressure jets of water (‘monitors’) are used to erode the working faces and wash out kaolin in suspension. The slurry produced gravitates to the base of the pit from where it is pumped to the surface for processing. Ripping, drilling and blasting of the granite are also used to access the reserves and improve yields, with unaltered granite removed for tipping or processing into aggregate. Recently, dry mining has been introduced in some areas, with the intention of allowing more selective extraction, reducing energy costs and improving yields. In this technique, the kaolinised granite is extracted by shovel and truck and is transported to a primary screening plant to remove oversize
material. The undersize fraction is disaggregated by high pressure jets of water for subsequent processing in the conventional way.

2.6 Processing of china clay is essentially based on wet refining and thickening in which fine kaolinite is removed from coarser impurities such as quartz, using the different settling velocities associated with specific gravity and particle size. Kaolinite is concentrated in the finer particle size fractions and settles much more slowly than silt or sand-size particles. The cut between commercial kaolin and waste is normally at <15 microns, but there some loss of coarser kaolinite particles with the oversize fraction. Froth is now increasingly used to selectively remove coarser kaolinite particles; this is followed by grinding to break down the kaolinite aggregates and to produce the desired particle size distribution. The introduction of flotation technology has improved kaolinite recovery and has also allowed the retreatment of mica waste residues, into which coarser kaolinite previously had been lost. Clays from different areas are blended at the refinery to meet the requirements of specific customers.

2.7 The refined clay is thickened in settling tanks and pumped in slurry form to the drying plant. It is then filter pressed to remove more water before progressing to the energy intensive drying process. Modern drying plant use natural gas to provide heat and power for a number of drying units, being located close to dryers and enclosed in buildings which provide sound insulation. The exhaust heat is ducted in large insulated pipes to the dryers and this reduces the emissions of greenhouse gases as well as reducing the energy costs, which constitute a significant element of clay production costs. Alternatively tube presses can be used which produce clay at 18% moisture which require no heat.

2.8 On average, the material extracted from the pits contains 12 to 15% of commercially-saleable clay, the remainder being regarded in the past as waste which needed to be tipped on adjacent areas, thus impacting upon the local environment. In the past some waste materials were sold to the local construction industry for use as an aggregate. The quantity of this "secondary" aggregate sold has increased significantly since the introduction of the Aggregates Levy which is a tax imposed upon the sale of Primary aggregates quarried from green field sites. In 2007-2008 in excess of 2 million tonnes of secondary aggregates derived from china clay waste produced in the Hensbarrow area were sold.

3. Markets, transport and use of china clay

3.1 Refined china clay has many industrial uses grouped into three main markets. Firstly, about 50% of the annual UK production is used as filler and, more recently at a much reduced level, as coating for paper. Secondly, the ceramics industry accounts for some 30% of production exported mainly to Europe, the Middle East and Asia. The clays of the western Hensbarrow area are important for the production of ceramics, having suitable standards...
of brightness, strength and flow. Thirdly, the remaining 20% of production is used for other industrial processes especially in paint, rubber and plastics.

3.2 Britain is one of the world’s largest producers of china clay, after Brazil, USA and China. Exports are valued at about £130,000,000 annum and china clay is the UK’s second most valuable minerals export after hydrocarbons. China clay sales have been on a declining trend since a peak output of 3.26 million tonnes in 1988 to most half that level in 2008.

3.3 Clays are sold in slurry form, as dried pellets, in powder form, and as a loose product.

3.4 About 77% of the china clay produced is exported to market by sea (until recently from the Ports of Fowey and Par, but the latter closed at the end of 2007). It is delivered to the port mainly by rail or via a private haul road linking the Ports of Par and Fowey. About 13% of clays are transported to market entirely by rail. About 10% is delivered by road.

4. Government policy/guidance for china clay

4.1 The background to government policy in the St Austell China Clay Area can be traced back to the post war years when the national government set a high priority upon reconstructing the nation’s economy. China Clay was considered to be a strategic mineral of national importance and its exploitation was considered to underpin the economy of Mid Cornwall. The government set up a Standing Conference for China Clay in 1949 to “co-ordinate the views of the local planning authorities, the industry, the China Clay Council and government departments on matters such as development plan provision for china clay working, waste disposal and the problems encountered with the granting of planning permissions”. The findings of the final report of the China Clay Conference were used in the development of planning policy for Cornwall since the mid 1950s.

4.2 Minerals Policy Statement 1: Planning and Minerals was published on 13 November 2006. This is the extant overarching planning policy document for all minerals in England, providing advice and guidance to planning authorities and the minerals industry. It is intended to ensure that the need by society and the economy for minerals is managed in an integrated and sustainable way against its impact on the environment and communities. It replaces Minerals Planning Guidance (MPG1) Note 1: General considerations and the development plan system. Unlike the latter document which did make specific reference to china clay and related issues, Minerals Policy Statement 1 does not provide specific advice for china clay operations. However, it sets out the generic national objectives for minerals, linked to policies for minerals concerning:
• Exploration
• Survey
• Safeguarding
• Protection of heritage and countryside
• Supply
• Bulk transportation
• Environmental protection
• Efficient Use
• Restoration

4.3 Whilst each of the above is relevant to china clay operations, it is worth highlighting specific national policies below which are of special relevance the china clay industry, because of its strategic importance serving national and international markets (warranting the safeguarding of the china clay resources) and because of the need to export bulky products over large distances (warranting the safeguarding of appropriate sustainable transport infrastructure). The china clay industry is an important element of the local economy with a reduced, but significant workforce. Current (direct) employment in the industry in Cornwall is about one thousand, compared with an equivalent amount in 1974 of six thousand. In addition the industry has a significant spin-off of indirect employment in supporting industries and services.

4.4 The industry has affected the landscape significantly in Mid Cornwall where some 88 km sq is affected by china clay planning permissions and where there is a continued need for reclamation.

The following are extracts from national minerals policy:

Safeguarding mineral resources policy
• define Mineral Safeguarding Areas (MSAs) in LDDs, in order that proven resources are not needlessly sterilised by non-mineral development, although there is no presumption that resources defined in MSAs will be worked;
• in unitary planning areas, define MSAs in LDDs to alert prospective applicants for non-minerals development to the existence of valuable mineral resources;

Safeguarding sites for mineral infrastructure policy
• safeguard existing, planned and potential rail heads, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, particularly coal and aggregates, including recycled, secondary and marine-dredged materials;

Protection of Heritage and Countryside
• do not normally grant planning permission for a proposed mineral development on land within or outside a Site of Special Scientific Interest (SSSI), if it is likely to have an adverse effect on a SSSI (either individually or in combination with other developments);
• consider carefully mineral proposals within or likely to affect regional and local sites of biodiversity, geodiversity, landscape, historical and cultural heritage;

Supply policy
• identify at the regional level, those minerals which are of national and regional significance and include policies for them in Regional Spatial Strategy (RSS); (subsequently the government has indicated its intention to abolish the RSS’s)

Bulk transportation policy
• seek to promote and enable the bulk movement of minerals by rail, sea or inland waterways to reduce the environmental impact of their transportation;
• promote facilities at ports and rail links that have good communications inland, so that bulk minerals can be landed by sea and distributed from ports, as far as is practicable, by rail or water;
• safeguard and promote rail links to quarries where there is potential to move minerals by rail.

Efficient use policy
• maximise the potential for minerals waste to be used for recycling or in-site restoration, but if not required for these purposes and where practicable, identify a market for its potential use;

Restoration policy
• take account of the opportunities for enhancing the overall quality of the environment and the wider benefits that sites may offer, including nature and geological conservation and increased public accessibility, which may be achieved by sensitive design and appropriate and timely restoration;
• consider the opportunities that sites may offer for the development of new woodland areas and for providing networks of habitats;

4.5 The Planning and Minerals Practice Guide which accompanies MPS1 offers examples and principles of good practice and background information. China Clay is identified in Table 1 which is a list of minerals extracted in England, other than those for which a specific Annex is given in MPS. It is also identified in Paragraph 164 as a mineral which is economically important and required in England in substantial quantities. Paragraph 59 identifies and encourages the potential use of china clay waste for aggregate purposes.

4.6 Mineral Planning Guidance 7: Reclamation of mineral workings was published in November 1996 but remains extant and provides generic guidance on reclamation. It also some specific advice relating to china clay:

4.7 C31 The extraction of china clay is confined to Cornwall and Devon, where in localised areas (St. Austell in Cornwall and Lee Moor in Devon, in particular) it is the predominant use of the land. Clay production has occurred for over 150 years, but in the last 20-25 years there has been a progressive and substantial change in the
scale of mineral extraction. The industry now produces in the order of 25 million tonnes of waste each year, most of which is tipped outside the limits of the pits. Most of the 3,000 hectares of land already affected by pits, tips and lagoons in the St. Austell area are covered by old permissions with limited provisions for reclamation. In contrast, the Lee Moor area is covered by more modern permissions, which provide a framework to contain tipping to discrete areas and to provide conditions for more sustainable after-uses of the land.

4.8 C32 The Department commissioned a research study to review the practices and information on the landscaping and revegetation of china clay waste tips ("Landscaping and revegetation of china clay wastes"). The report recommended the need for more long-term and broadly based reclamation and landscape strategies for the area, which took account of existing tips and future tipping requirements, and considered both long-term objectives and short-term improvements to the local environment. To ensure the long-term success of the reclamation it was proposed that a land-use led approach to the design of tips was necessary.

4.9 C33 A range of constraints to reclamation were identified, including:
- the continued need to dispose of very large volumes of waste, with limited opportunities for back-filling voids;
- the presence of many old, steep angled tips which limit the possibility of over tipping or regarding, but which provide prominent unnatural landforms, which are unsuitable for many after-uses;
- the physical and chemical characteristics of the waste, the local climate and the degree of exposure on some sites restricting vegetation establishment and development, and encouraging erosion;
- the presence, within and adjacent to the tipping areas, of locally important semi-natural habitats, and areas of interest developed following natural colonisation of older tipped areas;
- the presence of settlements within the tipping areas.

4.10 C34 For new tips, it should be possible to identify appropriate after-uses within the tipping areas and design the tips accordingly. For existing tips, the after-uses will be constrained by the opportunities to alter the landforms. The ability to achieve a specific after-use depends in part on the viability of the vegetation, which is influenced by site and climatic conditions. Table 6 provides a summary of after-use options, while Table 7 summarises the options for landscape improvements of the wider area.

4.11 C35 The china clay industry and MPAs concerned have accepted the main recommendations from the study, and the Government looks to them to implement these recommendations through phased reviews of existing old mineral permissions, in any new proposals for working and tipping, and in statutory plans.
South West Regional Spatial Strategy (RSS) Policy

4.12 Although national mineral planning policy (Minerals Policy Statement 1 2006) requires that minerals which are of national and regional significance should be identified and policies for them included in the Regional Spatial Strategy (RSS), the government has recently indicated its intention to abolish the RSS’s) through legislation. However, a recent Court of Appeal has ruled that Council Development Plans would be unlawful if they were based on the government’s stated intention to abolish Regional Spatial Strategies.

4.13 Regional Spatial Strategies (which incorporates Regional Transport Strategies (RTS) are intended to provide a broad development strategy for each region for a fifteen to twenty year period. The RSS also informs the preparation of Local Development Documents (LDDs), Local Transport Plans (LTPs) and regional and sub-regional strategies and programmes that have a bearing on land use activities.

4.14 Following the Panel’s report on an Examination in Public of the Draft RSS, a submission was made to the Secretary of State in early 2001 and the Secretary of State published a revised document with proposed modifications in July 2008. These modifications have not been finalised to date: a further Sustainability Appraisal is being undertaken to test reasonable alternatives to the modifications concerning housing, business and other development.

4.15 The Secretary of State’s proposed modifications relevant to minerals and minerals transport are not fundamental. Therefore it is unlikely that these are likely to change significantly as a result of the additional Sustainability Appraisal. Key elements are summarised below:

4.16 The fact that minerals extraction generates significant volumes of freight traffic, and that china clay and stone markets are important focuses of freight flows is acknowledged. Policy RTS5 states that relevant plans and strategies should include policies and proposals that maintain and enhance the role of certain ports including that of Fowey which serves a niche market (and which should be give priority to the preparation of a “masterplan” to identify future landside infrastructure requirements and demonstrating how conflicts between existing and future uses in the port or on adjacent land can be managed).

4.17 The national importance of china clay to the paper manufacture, ceramics, tableware, sanitaryware, and pharmaceutical industries and the need to safeguard access to the resources in Mineral Development Frameworks is noted in the RSS. Policy RE10 indicates that the “Mineral Planning Authorities should seek to make provision for the supply of aggregates and other minerals to meet the South West’s contribution to national requirements” and “should
work with Local Planning Authorities to identify and collaborate in safeguarding mineral resources of local, regional or national economic importance from sterilisation by other forms of development. In order to promote the delivery and bulk transport of minerals by rail and/or water, existing railheads, wharfage and other handling facilities will be safeguarded and opportunities for new ones should be identified where appropriate”. In view of the large scale of the clay workings, a co-ordinated approach to mineral and other forms of development is recommended and consideration should be given, where appropriate to the preparation of Area Action Plans.

4.18 The RSS acknowledges that the `waste’ from china clay production and the reworking of old tips is a major source of secondary aggregate in the south west, and that collaborative work should be undertaken to identify the scope for China Clay waste to construction markets outside Cornwall and Devon. A relevant policy is included which will be covered in the aggregates topic paper.

Update


4.20 In addition, the Localism Bill is progressing through Parliament. The aims of the new legislation include decentralising and strengthening local democracy, empowering communities and the introduction of neighbourhood planning. Information on the Localism Bill can be viewed at https://www.gov.uk/government/topics/local-government

5. Cornwall Local Policy Development History for China Clay

5.1 Since the incorporation of the recommendations of the findings of the China Clay Conference in the mid 1950’s, the development plan for Cornwall defined areas believed to contain deposits of china clay and associated minerals and areas intended for the working of china clay.

5.2 Subsequently further work by the china clay companies and local highways and planning authorities resulted in the Long Term Strategy for the St Austell China Clay Area and Short Term Plans which were to be used as material planning considerations prior to the adoption of Structure and Local Plans. The Long Term Strategy identified the existing and proposed areas for china clay pits, china
clay waste tips and micaceous waste disposal areas as well as “Island Settlements” (11 settlements to be the focus of community growth and to be excluded from china clay working).

**Cornwall Structure Plan**

5.3 The policies of the Cornwall Structure Plan 2004 have been saved and will remain extant until replaced by Cornwall Local Development Framework. It is less specific than the earlier Structure Plan of 1997 concerning china clay and minerals because the Cornwall Minerals Local Plan had been adopted in the intervening period. In the background to Policy 5 (Mineral Resources) it explained that “The industry is dominated by china clay extraction of a scale of national significance and directly employs approximately 3,500 people”.

5.4 Policy 5 states that “Mineral resources should be conserved and managed to provide a steady supply of minerals to meet needs subject to environmental and social considerations and the need for high standards in restoration and aftercare. Development should ensure:
- the conservation of the mineral resources;
- a steady supply of minerals is available;
- impacts on the environment are minimised and encouragement is given to the use of secondary or recycled aggregates;
- an increased use in non road based transport;
- the improvement of operational standards at all mineral workings;
- that high standards of restoration and aftercare are secured on a progressive basis;
- that adequate overall capacity for mineral wastes arising in Cornwall is provided for during the Plan period.

**Cornwall Minerals Local Plan 1997**

5.5 This Plan, which was adopted in 1997, covered the whole of Cornwall and set out Local Policy for Minerals in line with national and regional guidance (as it was in 1997) relating to all mineral sectors. As a result of ongoing monitoring, a Review of the Plan was commenced in 2003. This review took into account changes in planning guidance and legislation, in particular that relating to the reform of the planning system (Planning and Compulsory Purchase Act 2004) working towards the production of a Cornwall Mineral Development Framework. (However, since the amalgamation of the former County and District/Borough Councils for Cornwall, to form the unitary Cornwall Council, minerals policy for Cornwall will be included in the Cornwall Local Development Framework). In 2007 the Secretary of State confirmed that the majority of policies in the Cornwall Minerals Plan should be “saved”, prior to the adoption of superseding minerals policy. Information about the “saved” policies can be view at: [http://www.cornwall.gov.uk/default.aspx?page=17398](http://www.cornwall.gov.uk/default.aspx?page=17398)
5.6 The following policies or chapters are specific to china clay and related matters.

5.7 Chapter 4 deals with safeguarding the mineral resource. It includes Policy S1, a policy safeguarding important mineral deposits from sterilisation and seeking to prevent development which would be incompatible with mineral extraction and related activities. It identifies mineral consultation areas, including china clay consultation areas, which are subject to this policy.

5.8 Chapter 5 dealing with the Control of Mineral Workings in general to prevent and reduce the impacts of working on the environment, communities and amenity includes:

- Policy C7 which seeks to ensure that an adequate buffer zone is maintained between mineral development and neighbouring incompatible non mineral development or land uses. The final paragraph of the policy indicates that mineral development will not be permitted within the buffer zones delineated for the St Austell China Clay Area except for landscaping schemes.

- Policy C12 which highlights the need to safeguard the dedicated mineral wharfs at Fowey and Par which served the china clay and related industry. “Development which would lead to the loss of marine wharves dedicated to the purposes of mineral importation and export will not be permitted. Dedicated mineral wharves are indicated on the Proposals Map at Fowey and Par”.

5.9 Chapter 7 contains a suite of policies specific to the St Austell China Clay Area and which are complemented by Proposals Map Inset 1a which identifies the areas subject to each policy.

Figure 4: Proposals Map Inset 1a Cornwall Minerals Local Plan 1997
Table 2: Summary of the policies from Chapter 7, Cornwall Minerals Local Plan 1997

<table>
<thead>
<tr>
<th>Policy reference</th>
<th>Summary of Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC1</td>
<td>Policy favouring extraction of china clay resources in identified “areas believed to contain china clay resources” subject to exceptions</td>
</tr>
<tr>
<td>CC2</td>
<td>Policy favouring disposal of china clay waste in specified areas subject to exceptions including where there is no suitable alternative sites for backfilling.</td>
</tr>
<tr>
<td>CC3</td>
<td>Policy against disposal of china clay waste in Areas of Special Environmental Concern unless there is an overriding need and having regard to other factors including the strategic context.</td>
</tr>
<tr>
<td>CC4</td>
<td>Policy favouring ancillary development within identified plant development areas subject to exceptions.</td>
</tr>
<tr>
<td>CC5</td>
<td>Policy prohibiting mineral development within the boundaries of Island Settlements</td>
</tr>
<tr>
<td>CC6</td>
<td>Policy prohibiting mineral development affecting identified Protected Routes unless a suitable alternative is provided.</td>
</tr>
<tr>
<td>CC7</td>
<td>Policy prohibiting mineral development which would prejudice the existing Newquay to Par railway line, the development of the St Austell to Newquay railway link or the re-opening of discussed railway lines on identified safeguarded routes.</td>
</tr>
</tbody>
</table>

5.10 Chapter 8 provides a description of China Clay in other areas without any specific policies for these areas.

5.11 Chapter 10 deals with the related topic of Secondary Aggregates explaining the council’s encouragement of the use of secondary aggregates, particularly, from the St Austell China Clay Area and including Policy SE1 which favours development for the recycling, handling and transfer of mineral waste for secondary aggregates subject to exceptions.
5.12 This Long Term Strategy was prepared jointly by the mineral planning authority and china clay industry for the period up to 2050 and beyond. A Geographical Information System was used to develop and examine different tipping scenarios (with a range of tipping profiles) to accommodate the predicted levels of solid china clay waste (above that which could be sold for secondary aggregates or backfilled in exhausted pits or parts of pits) on land with lesser environmental and operational constraints. A range of adopted environmental and operational objectives were used to test the scenarios and identify a number of Preferred Tipping Areas (PTAs) to accommodate the china clay industry’s future tipping needs with least impact upon the areas of environmental designations/notifications. The Preferred Tipping Areas were located as close as possible to the pits generating the china clay waste and are identified in the following plan together with the table below (which includes an update):

![Preferred Tipping Areas Plan]

**Figure 5: St Austell China Clay Tipping and Restoration Strategy: Preferred Tipping Areas**

**Table 3: Notes on the St Austell China Clay Tipping and Restoration Strategy Preferred Tipping Areas**

<table>
<thead>
<tr>
<th>Preferred Tipping Area</th>
<th>Notes</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaverigan</td>
<td>PTAs to create a final landscaped profile and meet Imerys’ long term tipping needs in</td>
<td>Planning permission has been granted for these tips and tip construction and</td>
</tr>
<tr>
<td>Scarcewater</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Activity Description</td>
<td>Status</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rostowrack Tip</td>
<td>PTAs to enhance existing tipped landforms and meet Goonvean’s long term needs in the Western china clay district</td>
<td>Development of these PTAs has not been implemented to date</td>
</tr>
<tr>
<td>Wheal Arthur</td>
<td></td>
<td>Landscaping is underway</td>
</tr>
<tr>
<td>Whitemoor/Dubbers/Old Pound</td>
<td>PTA to partially meet Imerys’ long term tipping needs in the Karslake District and enhance existing tipped landforms</td>
<td>Tip construction and reprofiling is underway</td>
</tr>
<tr>
<td>Watch Hill (Blackpool tip)</td>
<td>PTA mainly to enhance the existing tipped landform</td>
<td>Partial reprofiling has been undertaken</td>
</tr>
<tr>
<td>Biscovillack (East of Blackpool pit)</td>
<td>PTA to enhance to the profile of Carrancarrrow tip and meet Imerys’ long term tipping needs for the Blackpool District</td>
<td>Imerys submitted a planning application in order to implement the PTA but withdrew it following its decision to close Blackpool Pit.</td>
</tr>
<tr>
<td>Greensplat Tip</td>
<td>PTA to enhance the profile of the existing tip and meet Goonvean’s long term tipping needs in the Carthew District</td>
<td>There has been incremental growth of the existing tip</td>
</tr>
<tr>
<td>Coldvreath/Hensbarrow</td>
<td>A large scale PTA to meet Imerys’ tipping needs in the Carthew District and consolidate existing tipped landforms and create a final external landscaped profile along the northern edge</td>
<td>This PTA has not been implemented and is unlikely to be needed to fulfil revised operational plans. Reprofiling and restoration of Hensbarrow has resulted in partial enhancement of the current tipped landform.</td>
</tr>
<tr>
<td>Prosper Tip</td>
<td>A small PTA to meet some of Goonvean’s tipping needs in the Eastern District and enhance the existing tipped landform</td>
<td>There has been incremental growth of the existing tip</td>
</tr>
<tr>
<td>Wheal Proper/Goonbarrow</td>
<td>A further PTA to meet Goonvean’s tipping needs in the eastern district and enhance and integrate the</td>
<td>There has been incremental growth and reprofiling of the tip at Wheal Prosper and significant</td>
</tr>
</tbody>
</table>
existing tipped landscape reprofiling and restoration of tips to the east of Goonbarrow pit.

Rocks/Kerrowmoor A PTA to augment and reshape the existing Kerrow Moor Tip to be integrated with backfilling at Rocks Pit. This PTA is in abeyance as there is no demand for tipping space. The old Anchor tip has been removed and restored.

Penhedra Tip A PTA with lesser capacity but which would facilitate an enhanced restoration scheme. Penhedra Tip has been reprofiled and restored.

5.13 In addition a landscape-led “masterplan” was produced to integrate restoration and after-use proposals throughout the whole area.

5.14 The Strategy was adopted by Cornwall County Council as Supplementary Planning Guidance in 2000 and was updated for the Blackpool Operational Area in 2003. (At this time there was an urgent need for more tipping space to accommodate china clay waste from the anticipated expansion of Blackpool Pit, and the 2003 update identified a Preferred Tipping Space).

5.15 Following a radical restructuring by Imerys Minerals Ltd in 2007, including the closure of the Port of Par, surplus refinery and drying plant at Par, Burgullow/Blackpool and Goonbarrow and the
closure/mothballing of several china clay pits throughout the area (including Blackpool Pit), the company made a successful bid to government to for Eco-town status, using land surplus to its china clay operations. The principles of Eco-town status are set out in a supplement to Planning Policy Statement 1:

5.16 Imerys is now a partner in Eco-bos, a joint venture company, planning to develop 5 Eco-communities (under the Eco-town concept). Cornwall Council is commissioning independent studies of the china clay resources affected by the Eco-town proposals, including an assessment of the quantity, quality and viability of these resources and related matters. This information will be used to update policy and related areas in the St Austell China Clay Area. For information about the Eco-bos proposals and their sites see http://www.eco-bos.com/

Cornwall Minerals Development Framework/ Cornwall Local Development Framework

5.17 Since the reform of the planning system (as required by the Planning and Compulsory Purchase Act 2004), work has been undertaken to replace the Cornwall Minerals Local Plan. Initially, Cornwall County Council was working towards the production of a separate Cornwall Mineral Development Framework. However, since the amalgamation of the former County and District/Borough Councils for Cornwall to form the unitary Cornwall Council minerals policy for Cornwall will be included in the Cornwall Local Development Framework.

5.18 To progress this work consultations/ stakeholder participation has been undertaken to date on the following publications:


These documents can be viewed on Cornwall Council’s Planning Consultation Portal
http://consult.cornwall.gov.uk/portal/planning/

Following the consultation on the Cornwall Minerals Development Framework: Core Strategy Revised Report on Preferred Options, 2008, a report detailing the comments received, Mineral Planning Authority considerations and officer recommendations was
considered by Cornwall Council’s Cabinet, Planning Policy Advisory Panel in November 2009.
http://democracy.cornwall.gov.uk/Published/C00000663/M00002120/$$ADocPackPublic.pdf

5.19 It is important, in developing new minerals policy for incorporation into the Cornwall Local Development Framework, to have regard to the wealth of preceding mineral stakeholder input.

5.20 Comments received from key china clay stakeholders and others about china clay and related issues have been transcribed in detail in Appendix 3: Comments received from respondents concerning china clay and related matters in the Cornwall Minerals Development Framework Core Strategy Revised Report on Preferred Options May 2008, Mineral Planning Authority considerations and officer recommendations.

5.21 Key areas of concern expressed were:

- That mineral safeguarding policy should be balanced appropriately against the need for regeneration in the St Austell China Clay Area, particularly following the recent redundancies made by Imerys, and to facilitate the restoration of surplus and despoiled land and buildings.

- In particular Imerys Minerals Ltd and the Kaolin and Ball Clay Association were concerned that the Council intended to continue to safeguard the port facility at Par.

6. Future needs and likely patterns of supply for china clay

6.1 Increased competition in the global markets for paper clays (since the 1990’s) has reduced profitability for many producers. The industry, including the companies in Cornwall, has responded by effecting structural change and investing in more efficient production methods. Recent years have seen closures in the US and UK and expansion in Brazil. Brazil has enormous deposits of high quality china clay in the Amazon basin, and low production costs, making it highly competitive globally, despite the additional shipping costs.

6.2 It is estimated that global demand for china clay will increase by about 2% per annum to reach 25 MT in 2013, and that recovering demand for china clay in paper production will offset lower growth in the ceramics market during this period. These overall predictions are a combination of 2 trends: a period of growth in recovering western markets; and a deceleration of demand in the faster growing emerging markets.¹ Developing countries are becoming increasingly important to global china clay demand and are expected to account for the majority of demand in 2013, a trend

¹ Freedonia Study of Markets for Kaolin 1.12.2009
which is likely to continue. The world market for china clay is projected to be worth $3.5 billion in 2013.

6.3 It is thought that growth in the ceramics market will expand most rapidly in Asia and Latin America with their growing populations and economies. Other growing markets are likely to include use in the oil and gas industry, where it is used in hydraulic fracturing; and in fibreglass industry where it is used as a re-enforcing agent. Markets in refractory clays in developed countries are likely to decline because of substitute materials.

6.4 Globally, Brazil is expected to overtake the US as the leading exporter of china clay by 2013, gaining market share in Western Europe, a key market for Cornwall’s producers.

6.5 Global capacity is currently estimated at 27-30MT pa. Imerys controls the largest sector, producing just under 6MT pa.²

6.6 In summary, although global markets for china clay are likely to continue to expand, competition in the industry is likely to remain keen. The china clay industry in Cornwall has reacted to these trends as follows, seeking to provide a strong, competitive base in Cornwall in the future.

- Both Goonvean and Imerys have invested heavily in more efficient plant and machinery over the last decade, to provide competitive production platforms for the future. Production incurs high energy costs and both companies have invested and innovated to reduce these costs e.g. installing efficient Combined Heat and Power Plant and making preparations for future investment in renewable and low carbon energy.

- Goonvean remains a privately owned company, mining clay from the owner’s land. It purchased additional reserves in 1995, and since then has doubled its capacity and invested in new computer controlled refining and blending plants. Goonvean’s current investment is in wet mining and separation plant. Goonvean offers specialist services, including the production of specialist pharmaceutical clays.

- Imerys is part of the French owned global company which has production facilities for china clay and other minerals in 47 countries worldwide. It has restructured its production in Cornwall significantly since 2006 with over 800 redundancies. It has closed production from a number of pits and plant areas, and mothballed production at pits with significant reserves in the short term. The focus of Imerys’ production is currently in the western and central St Austell China Clay Area, and in the more profitable ceramic and coating clay markets. In the Western, Fal District, where production of ceramic clays is concentrated,

Imerys has changed from its traditional “wet mining” system to “dry mining”, reducing the energy required per tonne of china clay produced by 60%.

- Both companies offer a range of specialist clays and a service which tailors clay blends to the specific needs of clients.

- Substantial reserves of china clay remain in the St Austell China Clay (Hensbarrow) area. These are believed to exceed 60 million tonnes. (See section 2).

7. Safeguarding the resource and associated infrastructure for china clay

7.1 The principles of government policy to safeguard proven mineral resources from needless sterilisation and to safeguard existing, planned and potential rail heads, wharfage and associated storage, handling and processing facilities for the bulk transport by rail and sea are of direct relevance to planning policy formulation in Cornwall.

Safeguarding china clay resources

7.2 Currently an extensive area, the St Austell China Clay mineral consultation area, is safeguarded through saved policy S1 of the Cornwall Minerals Local Plan. The St Austell China Clay mineral consultation area includes areas believed to contain china clay reserves, associated areas identified for china clay plant, and intervening areas, incorporating areas with potential for future china clay waste tipping and ancillary uses. Areas within the “Island Settlements” (excepting buffer zones) are excluded from the mineral consultation area.

7.3 The china clay resource is of very limited distribution nationally and internationally, suggesting that, as a starting point, there should be careful consideration of safeguarding all delineated resources, including those found in the Hensbarrow (St Austell China Clay Area) and in Bodmin Moor, West Penwith and Tregonning/Godolphin, particularly where there are likely to be development pressures.

Evidence provided by the British Geological Survey (BGS)

7.4 Current advice produced by the British Geological Survey (BGS) (under review) for CLG is that mineral planning authorities should use BGS maps mineral resource maps to identify resource areas for safeguarding unless further evidence has been produced by the relevant mineral industry, indicating amendments are necessary. The BGS Cornwall Map identifies areas of measured/indicated china clay resources and inferred china clay resources (based upon china

---

clay industry exploration and evaluation). This information is consistent with that contained in the St Austell China Clay Long Term Strategy 1970 and broadly carried forward into the Cornwall Minerals Local Plan 1997.

**Additional information provided by the industry or mineral planning authority direct research.**

7.5 Since 2004, Goonvean and Imerys, individually, have recommended amendments to the china clay resource areas shown in the development plan, suggesting some areas of marginal expansion on the boundaries of clay resources, and, in the case of Imerys, some large previously worked areas which they wish to be deleted from the resource maps. The latter areas are generally coincident with their proposals, as joint venture partners in Eco-bos, for regeneration in the Eco-communities development in the St Austell China Clay Area.

7.6 However, the resource assessment information providing evidence for these proposed changes is held by the china clay industry and is commercially confidential. Therefore, Cornwall Council is progressively procuring independent geological and viability assessments of currently identified china clay resources falling in areas which the industry is proposing to delete. These will inform the council on any amendments to the china clay resource map information underpinning safeguarding policy in the Cornwall Local Development Framework. (It will also inform decision making on future planning applications for Eco-communities development).

**Proposed criteria for safeguarding china clay**

7.7 Current national practice guidance is to safeguard proven deposits which are, or may become, of economic importance in the foreseeable future. The above mentioned independent assessments are intended to advise on this matter in any areas of doubt. National guidance is under review but should be followed until replaced.

**Proposed areas for safeguarding china clay**

7.8 Proposed areas for safeguarding china clay will be revised as information becomes available, and will be identified in the Mineral Consultation Areas Maps published as part of the Natural Resources Annual Monitoring Report, which are subject to saved policy S1 from the Cornwall Minerals Local Plan. The revised areas will eventually be included in the Proposals Map for the Cornwall Local Development Framework.

---

4 A mineral resource is a concentration of material of economic interest with reasonable prospects for eventual economic extraction, subdivided in order of increasing geological confidence into Inferred, Indicated and Measured categories. A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource.
Safeguarding china clay infrastructure for bulk transport and associated areas

7.9 National policy is to safeguard existing, planned and potential rail heads, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, particularly coal and aggregates, including recycled, secondary and marine-dredged materials.

7.10 Currently land at and near the ports of Par and Fowey, the mineral railway line between Lostwithiel and Fowey, the private haul road which connects the processing works at Par and the (now closed) Port of Par with the Port of Fowey, and linking china clay pipelines are safeguarded through saved Policy S1 of the Cornwall Minerals Local Plan.

7.11 The Council commissioned an independent assessment, relating to the bulk transport of minerals and the Ports of Fowey and Par which was completed in 2009. This provided evidence to inform future development framework policy concerning the ongoing need for safeguarding at these ports. (The former Cornwall County commissioned this study following objections by Imerys to Council’s Preferred Option to continue to safeguard land at both ports, despite Imerys’ closure the Port of Par). The study indicated that there is sufficient capacity at the Port of Fowey to accommodate forecasted exports of secondary aggregates from Cornwall alongside china clay exports.

7.12 Subject to consultation, it is anticipated that china clay and related secondary aggregate infrastructure for bulk transport and associated handling, storage and processing areas will continue to be safeguarded at the Port of Fowey (including the associated mineral railway line, sidings and railheads and private haul road, identified, pipelines and processing and handling/storage areas at East Par).

8. Key considerations for planning policy development for china clay

8.1 Consideration 1 - To safeguard important china clay and related resources and infrastructure (bulk transport and related processing, storage, handling facilities) for future use and prevent their direct and indirect sterilisation by other development in a fashion which is compatible with opportunities to diversify the economy and develop the Eco-communities.

8.2 Consideration 2 - To maintain a sustainable and efficient supply of minerals, and to encourage the sustainable use of minerals including the exploitation of China Clay and Cornwall’s secondary aggregate resources, in a fashion which is compatible with

---

5 MDS Transmodal “Fowey par Bulk Transport Study” 2009
opportunities to diversify the economy and develop the Eco-communities.

8.3 **Consideration 3** – To enable the mutually beneficial co-existence of existing and developing communities with the china clay and other mineral industries based on the areas rich mineral resources.

8.4 **Consideration 4** – To provide guidance for the comprehensive and long term restoration of mineral workings in the St Austell China Clay Area which benefits communities, provides opportunities for regeneration and enhances the landscape, wildlife habitats and the conservation of the historic environment.
Appendix 1

Synopsis of a Freedonia Study of World Markets for Kaolin published on 1 December 2009

http://www.marketresearch.com/Freedonia-Group-Inc-v1247/Kaolin-6830341/

Global demand to reach 25 million metric tons in 2013
Global demand for kaolin is forecast to grow nearly two percent per year to 25 million metric tons in 2013. Over the forecast period, demand for kaolin in paper production is expected to improve, offsetting an expected slowdown in the ceramics market. In general, kaolin demand in advanced economies is projected to recover from the declines of the 2003-2008 period, while demand in the faster growing emerging markets will decelerate.

Developing countries to capture majority of demand
Developing countries are becoming increasingly important to global kaolin demand. In 2008, the advanced economies of Japan, the US and Western Europe accounted for slightly more than one-half of kaolin consumption, down from two-thirds just ten years earlier. Given strong demand gains in the emerging markets of Asia, the developing countries are expected to account for the majority of global kaolin demand in 2013.

Paper market to rebound from recent declines
Demand for kaolin in paper is forecast to rebound from the declines seen between 1998 and 2008. Over that period kaolin suffered from competition with alternative materials (notably calcium carbonate), and that competition is expected to moderate in coming years. By 2008, much of the practical substitution of kaolin by calcium carbonate had already taken place. In addition, emerging markets such as China are expected to post strong gains as their paper industries expand.

Brazil to surpass US as leading exporter of kaolin
International trade in kaolin is widespread, with approximately one-half of kaolin consumed outside of its country of origin in 2008. This is partially due to the concentration of kaolin production in the US, China and Brazil. By 2013, Brazil is expected to surpass the US as the world’s leading exporter of kaolin, gaining market share in Western Europe and Asia at the expense of the United Kingdom and the US. Brazil boasts sizable deposits of high-quality kaolin, making it economical to produce kaolin there, despite the additional shipping costs.

Prices to rise more slowly
Kaolin prices are forecast to grow more slowly through 2013 than they did between 2003 and 2008, as more moderate growth of energy costs reduces inflationary pressure. The average price of kaolin sold will also be restrained by the relatively slow growth of the paper market, where kaolin prices are highest. In dollar terms, the kaolin market is projected to grow two percent per year to more than $3.5 billion in 2013.
Appendix 2

Synopsis of Roskill’s The Economics of Kaolin, 12th edition published 01/11/2006

http://www.roskill.com/reports/kaolin

KAOLIN

Capacity expansions make Brazil the second largest kaolin producer

The kaolin industry has been suffering from increased competition in its main market, paper, since the 1990s. This has led to poor profitability for many producers. The industry is responding to this situation by effecting structural changes, including capacity closures in the USA and UK and expansions in Brazil. Output is concentrated in relatively few countries (USA, China, Brazil, UK and the Czech Republic), which account for 66% of the total. US production grew by an average of 1.2%py from 5.4Mt in 1973 to 7.8Mt in 2005, while Brazilian output rose by an average 10.1%py between 1990 and 2005. Global consumption of kaolin is estimated at 23Mt in 2005. The largest market is as an extender or filler, mainly in paper and paint. These markets used an estimated 13.75Mt or 62.5% in 2005. The main threat facing kaolin in paper is its cost compared to that of alternative minerals, especially calcium carbonate. However, kaolin is increasingly used in conjunction with calcium carbonate to produce high quality printing and writing paper. World paper and board production is forecast to rise by an average 3%py up to 2010, with printing and writing paper output expanding by 4.5%py over the same period. Rising paper production will consume more minerals but much of the increase, especially in filler applications, will be of calcium carbonate rather than kaolin. As a result kaolin demand in this sector is expected to grow at 1%py to 2010.

Report highlights

Global kaolin capacity is estimated at 27-30Mtpy, with six companies each controlling more than 1Mtpy, of which Imerys of France is by far the largest controlling an estimated 5.9Mtpy. These companies control over half of all capacity. Ownership of capacity in developed countries has become steadily more concentrated because of low profitability and pressure from consumers for higher specification products.

Kaolin is an integral part of many traditional ceramics but is mainly used in whitewares such as sanitaryware, floor and wall tile, tableware and decorative ceramics. Kaolin use in sanitaryware and tiles will expand most rapidly in Asia and Latin America because of population and per capita growth. Growing markets are in proppants used in oil and gas wells and supports for catalysts in the oil and gas industry. Overall, the use of kaolin in traditional ceramics is forecast to rise by an average of 1%py to 2010.
Kaolin is used in the manufacture of reinforcing fibreglass. Production of fibreglass is concentrated in the USA, EU and Japan. The world market for reinforcement fibreglass has been growing at 3-4%py, and is expected to continue, with demand for kaolin in this application forecast to rise by 3%py to 2010.

The steel industry is the main market for refractories but refractory clays have been largely replaced with higher alumina products such as mullite, calcined bauxite and tabular alumina. Kaolin consumption in this sector is expected to decline in developed economies and rise in industrialising ones.

In 2005, exports of kaolin from USA, UK and Brazil were reported as almost 6.8Mt compared with an estimated world production of 22.9Mt. This pattern is expected to continue, but shipments from Brazil are taking market share in the paper sector from producers in the USA and UK.
Appendix 3


Since the reform of the planning system (as required by the Planning and Compulsory Purchase Act 2004), work has been undertaken to replace the Cornwall Minerals Local Plan. Initially, Cornwall County Council was working towards the production of a separate Cornwall Mineral Development Framework. However, since the amalgamation of the former County and District/Borough Councils for Cornwall to form the unitary Cornwall Council minerals policy for Cornwall will be included in the Cornwall Local Development Framework.

To progress this work consultations/stakeholder participation has been undertaken to date on the following publications:


These documents can be viewed on Cornwall Council’s Planning Consultation Portal http://consult.cornwall.gov.uk/portal/planning/


Key areas of concern expressed were:

- That mineral safeguarding policy should be balanced appropriately against the need for regeneration in the St Austell China Clay Area, particularly following the recent redundancies made by Imerys, and to facilitate the restoration of surplus and despoiled land and buildings.
In particular Imerys Minerals Ltd and the Kaolin and Ball Clay Association were concerned that the Council intended to continue to safeguard the port facility at Par.

Transcription of china clay comments received, MPA considerations and officer recommendations

General comments: Goonvean, Imerys and the Kaolin and Ball Clay Association
Goonvean, Imerys and the Kaolin and Ball Clay Association welcomed the opportunity to set the spatial framework for the future in a strategic fashion which “should provide the focus and flexibility to guide the drafting of the Mid Restormel (Clay Country) Action Plan”.

Imerys provided broad information for inclusion in the evidence base indicating “it is a world leader in adding value to minerals” having over 250 industrial sites in 47 countries employing over 17,500 people worldwide. Its core business is to mine and process minerals from its strategically located global reserves. Its products have many applications in everyday life including construction, personal care, paper, paints, plastics, ceramics, telecommunications and beverage filtration. “Cornwall remains a key part of Imerys’ China Clay production portfolio. Despite recent changes in ... local business operations, there is still a significant output from Cornwall, with an annual clay production of 1.2 million tonnes, of which 88% is exported to over 60 countries. The China Clay industry contributes significantly to the UK balance of payments and the local economy. Imerys’ continued commitment to Mid Cornwall china clay business is demonstrated by the Company’s recent investment programme of £35 million to create a new production platform for clay to the paper industry. Similarly the research and development centre at Par Moor employs around 120 people and is the largest R+D facility operated by Imerys world wide”. The company seeks to be an integral part of the local community and welcomes the timely consultation following a recent restructuring, establishing a new operational footprint and maximising the regeneration of surplus land for regeneration.

The Core Strategy is viewed by the Company (Imerys) as a spatial framework which should provide the focus and flexibility for drafting the Mid Restormel (Clay Country) Action Plan that will provide the detail to assist proposed developments and land use. The Framework should provide a balance between the needs of the China Clay industry and the regeneration of the Clay Country.

Imerys considers it important that the Mineral Planning Authority fully recognises the significant ongoing restructuring within Imerys and the impacts this is having upon production platforms.

MPA considerations
Noted. Information from this aspect of Imerys submission should be included in the evidence base. It is agreed that the Core Strategy should
provide an appropriate framework for the Mid Restormel (Clay Country) Action Plan.

**Officer recommendations**
No changes are required in relation to these comments, but some information should be used in the evidence base describing the importance of the China Clay Industry in Cornwall and internationally.

**SWRDA**

*Comment*
The South West RDA agrees with the principle of the need to safeguard access to mineral reserves (including metalliferous mining and china clay). This will provide opportunities for the private sector to continue/recommence mineral related activities in the future.

However, the South West RDA considers that this safeguarding should complement, where possible, the growth, regeneration and investment initiatives being progressed for Cornwall.

It is hoped that the MDF will complement (and not compete with/preclude) the wider growth, regeneration and investment initiatives that have emerged through initiatives such as the Sustainable communities, new growth Points and Eco Towns. This will ensure that the Core Strategy is "effective" in accordance with principles of PPS12 and will be flexible and capable of delivery.

An informed/evidence approach should be adopted to the Spatial Strategy and Safeguarding and not just a standardised 'blanket' approach as proposed in the previous MDF. This will ensure that the Core Strategy is "justified" in accordance with the principles of PPS12 and founded on a robust and credible evidence base.

**MPA considerations**
The support for the principle of safeguarding mineral reserves is welcomed and the need for a complementary approach to safeguarding and Cornwall's growth, regeneration and investment initiatives is acknowledged. The mineral planning authority has consistently engaged in site specific discussions about regeneration initiatives where potential conflicts with safeguarding mineral resources arise (such as those in the Camborne Pool Redruth Area and the St Austell China Clay Area) and has taken a reasonable and evidence based approach. This will continue through the proposed "Safeguarded sites for mineral resources and infrastructure Development Plan Document" which will be site specific. It must also be borne in mind that safeguarding policy is written with an exception being permitted in cases of overriding need for non-mineral development.

**Officer recommendations**
No changes are proposed to the current approach to safeguarding. It is intended to continue to develop the evidence base to support decision making on the safeguarding of mineral resources and infrastructure.
Transport issues relating to China Clay and Secondary Aggregates

Kaolin and Ball Clay Association

Comments
The inclusion of Par is not justified or appropriate in the light of up-to-date evidence and may not be deliverable.

It is noted that the text at paragraph 5.4.4 recognises the current transportation of china clay through the ports at Fowey and Plymouth. The preceding paragraph also mentions the considerable rail freight of china clay that is linked to Fowey and Parkandillick).

This is an accurate representation of the industry, but the diagram on page 25 would appear to include the port of Par which is constrained as to the capacity of vessels that it can take and is no longer suited to the shipping of china clay.

Delete the ship symbol from the vicinity of Par on the Diagram on page 25.

Because of its restrictions it would not be suitable for future shipping of china clay which is now concentrated at Fowey.

MPA considerations
Whilst use of the port of Par for exporting china clay has recently ceased, there is currently insufficient evidence to justify abandoning the principle of identifying the port for the export of minerals. The mineral planning authority will seek further evidence from the owners of the port and will commission an independent expert study which assesses the potential for the use of the Ports of Fowey and Par for the bulk transfer of minerals. This study will have regard to the potential future use for export of secondary aggregates as well as china clay.

Officer recommendations
A decision on whether or not to include the ship symbol in its current format on the Port of Par will be made in the context of the findings of and consultation about the Ports of Fowey and Par Bulk Transport Study.

Imerys Minerals Ltd
Comments
The paragraph is not justified on the up to date evidence as summarised below and therefore may not be the most appropriate strategy. It is unlikely to be effective because it may not be deliverable and lacks flexibility.

It is noted that paragraph 5.4.4 recognises that Fowey is the sole shipping port for china clay products produced in Cornwall. This comment is correct. Following a sharp decline in china clay shipping movements via Par Dock during the past five years, Fowey is now the only port in Cornwall which handles china clay. Fowey can accept ships of a size which meet the current and future economic demands of the business and its
customers in terms of vessel size as well as facilitating shipments of all types and forms of china clay products.

It is noted that the plan, 'Cornwall: Transport' (page 25) identifies Par as a 'Mineral Wharf'. Par dock is tidal which constrains its use in terms of vessel size and loading efficiencies. The decline of china clay products and other commercial cargoes passing through Par dock have lead to the closure of the dock for commercial traffic.

Fowey has the capability of handling any foreseeable increase in china clay output as well as any potential movements of secondary aggregate from the mid-Cornwall area.

The north-eastern wharf at Par Dock may be available for any suitable shipment of other commercial cargo in the foreseeable future should the need arise. It should be emphasised that Par Dock will not be required for the movement of china clay by sea within the plan period.

Delete the 'Mineral' Wharves' key reference shown on the 'Cornwall: Transport' diagram on page 25 which relates to Par Docks.

Table 6.1d and e - Issues, Problems and Challenges to be considered in developing the Core Strategy for Minerals in Cornwall - Cornwall: transport (page 34) states, "The ports of Fowey and Par are important strategic ports of the export of china clay and secondary aggregate". This should read "Fowey is now the principal strategic port of the export of china clay and secondary aggregate".

Similarly, within the same table, under 'problems' the statement, "The ports of Fowey and Par face increasing pressure from other development." Reference to Fowey should be deleted as such pressures are not apparent to Imerys. With regard to Par "pressure from other development may be viewed as being an opportunity to assist in safeguarding a commercial wharf for future use through associated investment.

MPA considerations

Whilst use of the Port of Par for exporting china clay has recently ceased, there is currently insufficient evidence to justify abandoning the principle of identifying the port for the export of minerals and as a minerals wharf in the plan on page 25. The mineral planning authority will seek further evidence from Imerys, the owner of the port, and others and will commission an independent expert study which assesses the potential for the use of the Ports of Fowey and Par for the bulk transfer of minerals. This study will have regard to the potential future use for export of secondary aggregates as well as china clay. Imerys and others will be consulted on the findings of the report and the implications for the policy status of Par in the Core Strategy.

The suggested amendments to Table 6.1d are acceptable.

The pressures for other development at the Port of Par are significant and
immediate, given the proposals to develop the Port of Par within Imerys' Eco-town proposals. Therefore the matter of whether or not to safeguard mineral wharfs/ at Par and the detailed consideration of any boundaries for a related safeguarding area, are considered to be of critical importance to the Core Strategy (given the preferred option to provide for increased export levels of secondary aggregates from the St Austell China Clay Area).

**Officer Recommendation**

A decision on whether or not to include the ship symbol in its current format on the Port of Par should be made in the context of the findings of and consultation about the Ports of Fowey and Par Bulk Transport Study. The matter of whether or not to safeguard mineral wharfs/ at Par and the detailed consideration of any boundaries for a related safeguarding area, are considered to be of critical importance to the Core Strategy (given the preferred option to provide for increased export levels of secondary aggregates from the St Austell China Clay Area) and therefore it is recommended that these be addressed in detail in the Cornwall Minerals Development Framework Core Strategy, rather than waiting to address the issue in the proposed Safeguarded Sites for Mineral Resources and Infrastructure Development Plan Document.

The suggested amendments should be incorporated in Table 6.1d.

**Table 6.1d Issues, problems and challenges to be considered in developing the Core Strategy for Minerals in Cornwall**

**Imerys Minerals Ltd**

**Comments**

Issues, Problems and Challenges to be considered in developing the Core Strategy for Minerals in Cornwall - Cornwall: transport states, "The ports of Fowey and Par are important strategic ports of the export of china clay and secondary aggregate". This should read "Fowey is now the principal strategic port of the export of china clay and secondary aggregate".

Similarly, within the same table, under Problems' the statement, "The ports of Fowey and Par face increasing pressure from other development." Reference to Fowey should be deleted as such pressures are not apparent to Imerys. With regard to Par "pressure from other development" may be viewed as being an opportunity to assist in safeguarding a commercial wharf use through associated investment.

**MPA Considerations**

The suggested amendments to 6.1d are acceptable.

The opportunity for other development to assist in safeguarding a commercial wharf use at the Port of Par through associated investment should be fully considered in the analysis of safeguarding.

**Officer recommendations**
The suggested amendments should be incorporated in Table 6.1d.

**CPR Regeneration**

**Comments**

This doesn't address the conflict between extraction and regeneration objectives.

**Suggested amendments**

Insert issues:

The extraction of minerals may present a conflict with other land use and development interests.

Previous mineral extraction influenced the distribution of the population who are no longer dependant on that industry.

Substitute the following for bullet point 7:

Mineral extraction has an impact on the environment and the community.

Insert problem:

Potential conflicts of land use will restrict or deter alternative development proposals.

**MPA consideration**

Accept bullet point 7 and the additional "problem"

**Officer recommendation**

Incorporate the suggested changes in the Cornwall Mineral Development Framework Core Strategy and or related evidence base.

**7 Spatial vision and strategic objectives**

**The Kaolin and Ball Clay Association (UK)**

**Comments**

The absence of the global nature of the minerals business is unjustified and it is therefore not an effective strategy

There is a new Vision for the Revised Report and the Association welcomes the reference to ‘a world class thriving minerals industry’. The County will be aware that the industry includes a world leader in industrial white minerals and that it is very much a player in the global economy. This position on the world stage is also noted in relation to metal ores at
paragraph 8.1.2 of the Revised Report.

The Vision should reflect this as a major aspect that contributes to Cornwall’s distinctiveness.

**Suggested amendments**
The beginning of the Vision statement should read:-

“ In 2026 Cornwall will have a world class thriving minerals industry that serves local, regional and national needs, as well as contributing to global supply by the export of minerals by rail and sea, whilst;..........................”

The global nature of the minerals industry in Cornwall is a major aspect of the County’s distinctiveness.

**MPA considerations**

Agree that Cornwall's past and current role as a globally important exporter of minerals has contributed to its distinctiveness, and accept the suggested change to the vision is an improvement.

**Officer recommendations**

Incorporate the suggested change in the Cornwall Mineral Development Framework and related evidence base.

**Imerys Minerals Ltd and Goonvean Ltd**

**Comments**

This vision is not justified or effective based on the up to date evidence as summarised below.

Approximately 88% of china clay produced in Cornwall is exported overseas which has been recognised with the Core Strategy as "contributing significantly to the UK balance of payments", something which has been the case, historically, without global trade industry would not exist, in Cornwall.

It is suggested that the significance of the Industry in Cornwall and the global trade of China Clay is reflected within the vision.

**Suggested changes**

Insert the words 'and contributing to global supply' after '.....regional and national needs'.

**MPA considerations**

Agree that Cornwall’s past and current role as a globally important exporter of minerals has contributed to its distinctiveness, and accept the suggested change to the vision is an improvement.
Officer recommendation
Incorporate the suggested change in the Cornwall Mineral Development Framework and related evidence base.

Table 8.4 Spatial strategy for china clay in Cornwall

The Kaolin and Ball Clay Association (UK)

Comments
The preferred option for the spatial strategy is not the most appropriate and is not justified on up-to-date evidence. It is likely to be ineffective and lack deliverability.

The Industry has over a number of years contracted and moved away from some areas historically worked for china clay in Cornwall. This has been due to a number of factors such as, dwindling reserves and quality, accessibility, improved technology and economic investment. In general terms the contraction has seen, first a move away from the deposits in the far west of the County and more recently those on Bodmin Moor.

Whilst resources may exist, there is little prospect of the china clay deposits in these dispersed areas being attractive to work in the period to 2026.

The Spatial Strategy for this period should therefore concentrate on the St Austell China Clay Area and the multi–sized sites that currently operate. The Association supports Option 3, subject to amendments that reflect the above.

Suggested amendments

Option 3 – Concentrated

A concentrated pattern of multi-sized operations in the Hensbarrow Area, having regard to the sensitivity of the local environment and linked to export destinations by sustainable transport modes, influenced by world market conditions."

The proposed option would be deliverable, effective and up to date.

MPA considerations

The Preferred Option included the Bodmin Moor and the wider Hensbarrow areas to allow some flexibility for a re-expansion into some of the recently closed operational areas, should market conditions be favourable. However, it is appropriate to accept the advice of the industry body (the Kaolin and Ball Clay Association), which is attuned to the likely industry response to future changes in market conditions.

Officer recommendation
The Spatial Strategy for China Clay in the Cornwall Minerals Development Framework should be that supported by the Kaolin and Ball Clay Association i.e. "concentration" (an adapted version of Option 3) instead of "partial concentration" (Option 2).

**Cornwall AONB Partnership**

**Comments**

It needs to be demonstrated fully how the "scarcity of china clay resources" is considered to be an exceptional circumstance. The Preferred Option 2 is not supported, in that it is not considered to give appropriate protection for the natural beauty of AONB. Option 1 and 2 would have an adverse impact on the landscape, and accordingly option 3 is supported, in that it provides the context for appropriate protection in the AONB.

**Suggested amendments**

Option 3 should be the 'preferred option' and provide the policy context for policy 4. There is conflict with the consolidation/expansion of large operations in the AONB and the requirement under option 2 to "have regard to the sensitivity of the local environment".

**MPA consideration**

The mineral planning authority's Preferred Option for the Spatial Strategy for China Clay in Cornwall was for operations to be concentrated in the wider Hensbarrow and Bodmin Moor deposit areas. This would allow for the industry which produces nationally and internationally scarce materials required for multiple essential products used by society, to re-expand into former working areas, including the Area of Outstanding Natural Beauty where the china clay is not exhausted, should the need arise, and should suitable mitigation measures be assured. However, in the light of the up to date evidence referred to by the Kaolin and Ball Clay Association, a more concentrated Spatial Strategy for China Clay is considered to be acceptable. This would place less pressure on the Area of Outstanding Natural Beauty over the lifetime of the plan.

**Officer recommendation**

Incorporate the suggested change to Option 3 for the Spatial Strategy for China Clay.

**Goonvean Ltd**

**Comments**

The preferred option for the spatial strategy is not the most effective and is not justified on up-to-date evidence.

The industry has over a number of years contracted and moved away from some areas historically worked for china clay in Cornwall. This has
been due to a number of factors such as, dwindling reserves and quality, accessibility, improved technology and economic investment.

The Spatial Strategy for this period should therefore concentrate on the St Austell China Clay Area and the multi-sized site that currently operate. Goonvean Ltd supports Option 3, subject to amendments that reflect the above.

**Suggested amendments**

"Option 3 - Concentrated

A concentrated pattern of multisized operations in the Hensbarrow area, having regard to the sensitivity of the local environment and linked to export destinations by sustainable transport modes, influenced by world market conditions."

**MPA consideration**

The Preferred Option included the Bodmin Moor and the wider Hensbarrow areas to allow some flexibility for a re-expansion into some of the recently closed operational areas, should market conditions be favourable. However, it is appropriate to accept the advice of Goonvean Ltd and the industry body (the Kaolin and Ball Clay Association), which is attuned to the likely industry response to future changes in market conditions.

**Officer recommendation**

Cornwall Minerals Development Framework should be that supported by Goonvean Ltd i.e. "concentration" (an adapted version of Option 3) instead of "partial concentration" (Option 2).

**Imerys Minerals**

**Comments**

The preferred spatial strategy is not justified on the up to date evidence as summarised below and is not the most appropriate strategy. It is unlikely to be effective because it may not be deliverable and it lacks flexibility.

Option 3 - The "Concentrated" spatial strategy is considered by Imerys to be the Preferred Option for China Clay in Cornwall. Option 2 is not supported by Imerys.

China Clay operations in the Bodmin area finally ceased in 2002 following the closure of Hawks Tor in 1989, Park Pit in 1998 and Stannon Pit in 2002. The outlying deposit was relatively poor in quality and was unsuitable for more modern markets and customers. The sites have and are being restored. South West Water has now incorporated Park Pit into their strategic water supply network and it is possible that Stannon Pit may also form part of the network in the near future. There is no foreseeable economic demand for china clay from the Bodmin area within
the plan period.

Similarly, operations in the western part of Cornwall ceased several decades ago and again there is no foreseeable economic demand for china clay from this area.

Imery's recent restructuring has created an operational footprint which is concentrated in the Hensbarrow china clay deposit area. This footprint can provide sufficient clay product to meet foreseeable national and global demand during the plan period.

Through the restructuring of the operations opportunities for regeneration and restoration will arise not only in the 'eastern part of the Hensbarrow area' but also at locations across the wider Hensbarrow area.

Pit development has lead to much larger, amalgamated extraction areas at some locations whilst other comparatively smaller sites are operated or will be operated, on an individual basis.

**Suggested amendments**

Option 3 should be shown as the Preferred Option for China Clay in Cornwall.

Replace 'Mainly larger' with 'multi-sized'.

Delete 'Western and Central part of'.

Delete '...the eastern part...' under 'Key advantages and disadvantages'.

**MPA consideration**

The Preferred Option included the Bodmin Moor and the wider Hensbarrow areas to allow some flexibility for a re-expansion into some of the recently closed operational areas, should market conditions be favourable. However, it is appropriate to accept the advice of Imerys which is attuned to the likely industry response to future changes in market conditions.

**Officer recommendation**

The Spatial Strategy for China Clay in the Cornwall Minerals Development Framework should be that supported by Imerys i.e. "concentration" (an adapted version of Option 3) instead of "partial concentration" (Option 2).

**Royal Society for the Protection of Birds**

**Comments**

Some china clay resources include areas with significant impacts or opportunities for BAP habitats e.g. heathland.

Option 2: Whilst the option may protect the Penwith area in the short term, the option will have an impact on a number of SSSIs or BAP habitats. It is unclear what the size of the protected area or habitat affected is compared to the other options.
**Suggested amendments**
The RSPB has the following recommendations to mitigate the impacts of this Policy option:

* Habitat recreation and restoration targets should be set at the application stage as identified in the relevant SNA

* Compensation may also be required to offset losses of habitat outside protected areas.

**MPA consideration**
These comments are welcomed, and apply equally to the recommendation (on advice from the china clay industry) to select a more focussed preferred option similar to Option 3 (Concentrated Option).

**Officer recommendation**
The recommended points for mitigation should be included within the text for the proposed revised preferred option.

**Natural England**

**Query/Advice**
Query relates to point below re references throughout the Core Strategy to landscape designations but not to national/international nature conservation designations, for example - Re p62 Tregonning Hill and Lower Bostraze & Leswidden are SAC and SSSI (no mention in the CS)

Re bullet 2 P55 - as well as AONB some parts of Bodmin Moor also fall within nature conservation designations including SSSI.

**MPA consideration**
The SACs and SSSIs should continue to be protected predominantly through the national, regional and saved structure plan policies and this should be clearly referenced in the Core Strategy and the related evidence base.

**Officer recommendation**
Noted. The Spatial Strategy for **China Clay** makes reference to needs for these materials to be met predominantly from outside the Area of Outstanding Natural Beauty and the World Heritage Sites (with exceptions for the scarcer materials). The reason for this is that the Area of Outstanding Natural Beauty and the 10 Areas of the World Heritage Site are discrete areas with distinct spatial expression, whilst the SAC and SSSI designations are spatially much more dispersed. SACs and SSSIs continue to be protected, but predominantly through national and regional and saved structure plan policy.

**Policy 4 Preferred spatial strategy for china clay**

**The Kaolin and Ball Clay Association (UK)**
Comments
The spatial strategy is not the most appropriate and is not justified on up-to-date evidence. It is likely to be ineffective and lack deliverability.

Whilst the options reflect, to a large extent, various patterns of operation, past, present and potential future; the policy refers to resources, which could create a distinction between resources and reserves, implying that the spatial strategy does not cover existing permitted sites. It should therefore be amended to reflect the Association’s position in relation to the Preferred Option and to avoid any confusion between resources and reserves.

We note that the term ‘resources’ is used throughout the Core Policies section, but there is reference to reserves at the start of the Development Management Policies under ‘Mineral Safeguarding Areas –Resources’. It appears not to be further used in the context of the policies, which refer to resources.

We wonder if this is because the BGS maps are resource maps in the sense that they identify known mineral deposits, but are only able to infer the presence of reserves by the mineral permission overlays.

Whatever the reason, a definition of the terms used in the policies should be given to clarify and interpret the text, proposals and policies.

Suggested amendments (Alternative policy)
“The extraction of China Clay will be concentrated at number of multi-sized mineral operations located within the Hensbarrow Area, where local circumstances are appropriate.”

The proposed spatial strategy would be appropriate, effective and deliverable.

MPA consideration
The mineral planning authority's Preferred Option for the Spatial Strategy for China Clay in Cornwall was for operations to be concentrated in the wider Hensbarrow and Bodmin Moor deposit areas. This would allow for the industry to re-expand into former working areas where the china clay is not exhausted, should the need arise. However, in the light of the up to date evidence referred to by the Kaolin and Ball Clay Association, a more concentrated Spatial Strategy for China Clay is acceptable.

It may be necessary to review and clarify the use of the terms reserves and resources.

Officer recommendation
Incorporate the suggested change for the Spatial Strategy for China Clay review and clarify the use of the terms reserves and resources in the Cornwall Mineral Development Framework Core Strategy.

Cornish Chamber of Mines and Minerals
The Chamber supports the representations being made by the Kaolin and Ball Clay Association (UK).

**Cornwall AONB Partnership**

**Comments**
Paragraph 8.1.21 It needs to be demonstrated fully how the "scarcity of china clay resources" is considered to be an exceptional circumstance. The Preferred Option 2 is not supported, in that it is not considered to give appropriate protection for the natural beauty of AONB. Option 1 and 2 would have an adverse impact on the landscape, and accordingly option 3 is supported, in that it provides the context for appropriate protection in the AONB.

**Suggested amendments**
Option 3 should be the 'preferred option' and provide the policy context for policy 4. There is conflict with the consolidation/expansion of large operations in the AONB and the requirement under option 2 to "have regard to the sensitivity of the local environment".

**MPA consideration**
The mineral planning authority’s Preferred Option for the Spatial Strategy for China Clay in Cornwall was for operations to be concentrated in the wider Hensbarrow and Bodmin Moor deposit areas. This would allow for the industry which produces nationally and internationally scarce materials required for multiple essential products used by society, to re-expand into former working areas, including the Area of Outstanding Natural Beauty where the china clay is not exhausted, should the need arise, and should suitable mitigation measures be assured. However, in the light of the up to date evidence referred to by the Kaolin and Ball Clay Association, a more concentrated Spatial Strategy for China Clay is considered to be acceptable. This would place less pressure on the Area of Outstanding Natural Beauty over the lifetime of the plan

**Officer recommendation**
Incorporate the suggested change to Option 3 for the Spatial Strategy for China Clay.

**Goonvean Ltd**

**Comments**
The spatial strategy is not the most effective and is not justified on up-to-date evidence.

Whilst the options reflect, to a large extent, various patterns of operation, past, present and potential future; the policy refers to resources, which could create a distinction between resources and reserves, implying that the spatial strategy does not cover existing permitted sites. It should therefore be amended to reflect Goonvean’s position in relation to the Preferred Option and to avoid any confusion between resources and reserves.
We note that the term 'resources' is used throughout the Core Policies section, but there is reference to reserves at the start of the Development Management Policies under 'Mineral Safeguarding Areas - Resources'. It appears not to be further used in the context of the policies, which refer to resources.

A definition of the terms used in the policies should be given to clarify and interpret the text, proposals and policies.

Suggested amendments
"The extraction of China Clay will be concentrated at number of multi-sized mineral operations located within the Hensbarrow Area, where local circumstances are appropriate".

MPA consideration
The mineral planning authority's Preferred Option for the Spatial Strategy for China Clay in Cornwall was for operations to be concentrated in the wider Hensbarrow and Bodmin Moor deposit areas. This would allow for the industry to re-expand into former working areas where the china clay is not exhausted, should the need arise. However, in the light of the up to date evidence referred to by Goonvean Ltd, a more concentrated Spatial Strategy for China Clay is acceptable.

It may be necessary to review and clarify the use of the terms reserves and resources.

Officer recommendation
Incorporate the suggested change for the Spatial Strategy for China Clay review and clarify the use of the terms reserves and resources in the Cornwall Mineral Development Framework Core Strategy.

Imerys Minerals

Comments
Policy 4 is not justified on the up to date evidence as summarised below.

For the reasons given in Imerys' comments in respect of Strategies, Activities and Actions - China Clay - Preferred Spatial Strategy for China Clay in Cornwall - Preferred Option 2, the reference to Bodmin Moor should be removed.

For reasons given in Imerys' comments in respect of Strategies, Activities and Actions - China Clay - Preferred Spatial Strategy for China Clay in Cornwall - Preferred Option 2, the wording of Policy 4 should be changed.

Suggested amendments
Policy 4 should be worded, 'Extraction of scarce China Clay will be undertaken at multi-sized sites located within the Hensbarrow area where local circumstances are appropriate'.

MPA consideration
The mineral planning authority's Preferred Option for the Spatial Strategy for China Clay in Cornwall was for operations to be concentrated in the wider Hensbarrow and Bodmin Moor deposit areas. This would allow for the industry to re-expand into former working areas where the china clay is not exhausted, should the need arise. However, in the light of the up to date evidence referred to by Imerys, a more concentrated Spatial Strategy for China Clay is acceptable. However, it is planned to remove the word "scarce" (geologically, all China Clay is scarce within the U.K.), and to refer to operations rather than sites, in the Policy to enhance clarity.

**Officer recommendation**
The Policy should be changed to "The extraction of China Clay will be concentrated at number of multi-sized mineral operations located within the Hensbarrow Area, where local circumstances are appropriate."

**Natural England**

**Comments**
Query relates to point below re references throughout the Core Strategy to landscape designations but not to national/international nature conservation designations, for example - Re p62 Tregonning Hill and Lower Bostraze & Leswidden are SAC and SSSI (no mention in the CS)

Re bullet 2 P55 - As well as AONB some parts of Bodmin Moor also fall within nature conservation designations including SSSI.

**MPA consideration**
Noted. The Spatial Strategies for Aggregates and Building Roofing and Ornamental Stone make reference to needs for these materials to be met predominantly from outside the Area of Outstanding Natural Beauty and the World Heritage Sites (with exceptions for the scarcer materials). The reason for this is that the Area of Outstanding Natural Beauty and the 10 Areas of the World Heritage Site are discrete areas with distinct spatial expression, whilst the SAC and SSSI designations are spatially much more dispersed. SACs and SSSIs continues to be protected, but predominantly through national and regional and saved structure plan policy.

**Officer recommendation**
The SACs and SSSIs should continue to be protected predominantly through the national, regional and saved structure plan policies and this should be clearly referenced in the Core Strategy and the related evidence base.

**Restormel Borough Council**

**Comments**
China Clay Table 8.11

The spatial strategy options for china clay range from a highly concentrated approach (similar to that being pursued by IMERYS) to a more dispersed approach that seeks to safeguard resources across the
China clay area and elsewhere in the county. The Preferred Option is one of a partially dispersed strategy that recognised that there are important reserves within the wider clay area and also on Bodmin Moor. Potentially this could lead to conflict with other regeneration proposal in the clay area. Table 8.11 sets out a Preferred Option for safeguarding clay reserves as indicated by the British Geological Survey.

Observations

It is recommended that the spatial strategy for china clay be supported but every effort is made to avoiding possible conflicts with regeneration objectives.

MPA consideration
The mineral planning authority will reconsider the options. Additional summary information has been supplied by Imerys to update the BGS information identifying china clay resource areas. This was supported by related commercially confidential information.

Officer recommendation
The Cornwall Minerals Development Framework Core Strategy should provide for the safeguarding of the resources identified as measured and indicated by the British Geological Survey, refined where the findings of the information provided by the industry has been ratified by the mineral planning authority.

Cornwall RIGs

Comments
There is no mention of global competition, which will determine the future of Cornish china clay. This will surely be the major factor determining options.

MPA consideration
International competition is covered in bullet point 3.

Officer recommendation
No change.

South West Regional Assembly

Comments
Access to China Clay reserves should be safeguarded through policies in the Core Strategy. We agree that options for either dispersed or concentrated working of china clay would lead to unsustainable development and in case of the latter, to early exhaustion of reserves. In turn, Option 2 also provides the opportunity to ensure a continuous market supply of secondary aggregates, and making use of sustainable modes of transport. We therefore support this option in the light of draft RSS policies RE10 and RE12, and also welcome the preparation of the Mid Restormel Action Plan to maintain a co-ordinated approach to mineral and other forms of development.
MPA consideration
The china clay industry has proposed an adapted Option 3 which is a concentrated pattern of multisized operations in the Hensbarrow Area. This is less restricted than the original Option 3 in the Revised Report on Preferred Options, and the MPA accepts this Option as it is based upon industry forecasts of markets and the industry investment programme.

Officer recommendation
A revised version of Option 3 with a concentrated pattern of multisized operations in the Hensbarrow Area should be accepted as the Preferred Option for the Core Strategy.

North Cornwall District Council

Comments
The policy options put forward for china clay vary in the degree to which clay working is concentrated in the Hensbarrow area or is more widely dispersed across other china clay deposits such as those in Bodmin Moor and West Penwith.

This approach continues to support the main area of production around Hensbarrow but also supports the continuing employment in the rural Bodmin Moor area. Given the changing nature of the industry in recent years and the scarcity of the china clay resource this seems a sensible approach to take over the plan period.

MPA consideration
Noted

Officer recommendation
No change as a result of these comments, but following information received from the china clay industry it is now recommended that the spatial strategy for the china clay industry should be to focus china clay workings in the Hensbarrow area.

Government Office for the South West (GOSW)

Comments
These policies use the phrase "where local circumstances are appropriate". This policy wording is unclear and imprecise and should be clarified to make clear to the reader exactly what is intended.

MPA consideration
Noted. The policy should be reviewed and its precision should be enhanced. e.g. “where local circumstances are appropriate” could be replaced with “where there are no significant adverse impacts upon the environment, amenity and highways”.

Officer recommendations
The policy should be reviewed to eliminate the phrase “where local circumstances are appropriate”.
Please note the relevance of policies spatial strategies and relating to the use and export of secondary aggregates from china clay waste as these are largely complementary to those relating to china clay. (Please see topic paper on aggregates for more details).

8.2 Safeguarding

The Kaolin and Ball Clay Association (UK), Goonvean Ltd

Comments
The principle of safeguarding has long been one that the china clay industry has supported and contributed to. The establishment of the Mineral Consultation Areas for china clay was achieved by the planning authorities and the industry working together. We believe that this is the best way to achieve effective and meaningful safeguarding to realise the Vision of a world class thriving minerals industry. Our responses are set against this view.

The Association/Goonvean have noted the ways in which the County Council propose to deal with this issue, but we find it difficult to envisage how the various layers and means of protection will operate. In particular we note the absence of any reference to the established Minerals Consultation Areas and their relationship to the new designations.

We would welcome discussion with the Mineral Planning Authority at an early date to tease out the details and to construct a framework that will fit the industry for the future. We are also mindful that the new Unitary Authority will be in place within the next 12 months and wish to keep the lines of communication open and responsive to this change.

MPA consideration
The Core Strategy sets out the Preferred Options for the principles to be employed in the site specific identification of Minerals Safeguarding Areas within Safeguarded Sites for Mineral Resources and Infrastructure Development Plan Document. Following the formation of Cornwall Council (a unitary authority), the district/borough councils and the county council will no longer exist, so there will be no need for formal consultation by the districts/borough concerning planning applications in mineral consultation areas. However, it is intended that internal consultations should be undertaken by the Development Management teams with the Natural Resources team concerning minerals policy issues within mineral consultation areas. The latter are an administrative tool ensuring proper liaison within and adjacent to Minerals Resource and Minerals Infrastructure Safeguarding Areas.

Officer Recommendation
The evidence base to the Cornwall Minerals Development Framework should include an explanation of Cornwall Council's internal consultation procedure relating to mineral consultation procedures. Discussions on this
The subject will be undertaken with the Kaolin and Ball Clay Association/Goonean Ltd.

**Imerys Minerals Ltd**

**Comments**

Safeguarding - Paragraph 8.2.5 - Page 60

This paragraph is not justified on the up to date evidence as summarised below and is not the most appropriate approach to safeguarding facilities. It is unlikely to be effective because it lacks flexibility.

This paragraph advises that the mineral planning authority must safeguard facilities for the bulk of transportation of minerals by rail and sea. It is suggested that the mineral planning authority should consider the foreseeable economic viability of facilities when considering safeguarding particular infrastructure rather than the implied blanket safeguarding of all bulk transport facilities.

It is important to stress that not every facility for the bulk transportation of minerals by rail and sea need be safeguarded in particular when it is not viable, needed or has become obsolete through various factors.

**Suggested amendment**

Replace the words 'must safeguard' with the wording 'may consider safeguarding facilities.'

**MPA consideration**

Mineral Planning Guidance 1 Planning and Minerals sets out national policies for mineral planning, which include advice to safeguard existing, planned and potential facilities for the bulk transport and handling, processing and handling of minerals. The proposed change does not reflect the national policy. However, a slight adaptation of the current wording is proposed.

**Officer recommendation**

Additional wording should be inserted into the current text of 8.2.5 to highlight aspects of the national guidance: Insert "follow national guidance to" after "the mineral planning authority" and before "safeguard", and insert " (particularly in Cornwall for china clay and secondary aggregates)" after "the bulk transportation of minerals".

**Table 8.7 Options for safeguarding resources of china clay waste (secondary aggregates)**

**The Kaolin and Ball Clay Association (UK) and Goonvean Ltd**

**Comments**

The Association recognises the principle of safeguarding the secondary aggregate resource, but would caution that this should not adversely impact on the ability to extract china clay or tip its mineral waste.
Consideration should also be given to the impact that any resultant approach or policy would have on the permitting process under the Mining Waste Directive.

The Association supports the Preferred Option (Option2), but the resources to be safeguarded need not necessarily be homogenous, as the industry currently supplies secondary aggregates from non-homogenous sources.

We would also ask that any plan or policy should be developed in close consultation with industry to avoid the potential for conflict with future development.

**Suggested amendments**
Delete "(i.e. those that are homogeneous)."

The proposed policy would be appropriate and deliverable.

**MPA consideration**
Noted. The identification of potential future areas for safeguarding is being developed jointly with the industry through Geographical Information System led study. Replace the bracketed clause (and the similar one within Option 3) to refer to resources of a suitable quality and quantity.

**Officer recommendation**
Amend the reference to "homogeneous" resources in the Cornwall Minerals Development Framework Core Strategy/evidence base. In addition following the sustainability appraisal of the options, the preferred Option for inclusion in the document should be changed to Option 3, which is considered to be more sustainable.

**Imerys Minerals Ltd**

**Comments**
This option (Preferred Option 2) lacks flexibility and is not justified as being the most appropriate approach to safeguarding china clay waste for secondary aggregate purposes.

Option 2 is supported by Imerys but the resources to be safeguarded need not necessarily be homogenous.

**Suggested amendments**
Delete '(i.e. those that are homogenous)'.

**MPA consideration**
Noted. The identification of potential future areas for safeguarding is being developed jointly with the industry through Geographical Information System led study. Replace the bracketed clause (and the similar one within Option 3) to refer to resources of a suitable quality and quantity.

**Officer recommendation**
Amend the reference to "homogeneous" resources in the Cornwall Minerals Development Framework Core Strategy/evidence base. In
addition following the sustainability appraisal of the options, the preferred Option for inclusion in the document should be changed to Option 3, which is considered to be more sustainable.

Table 8.8 Options for safeguarding infrastructure used in connection with the loading/transportation or processing or secondary aggregate

The Kaolin and Ball Clay Association (UK) and Goonvean Ltd

Comments
There is a tension inherent in safeguarding infrastructure used for secondary aggregate purposes within the china clay operations. It would be possible for such safeguarded facilities to interfere with the development of china clay operations.

It would not be appropriate, for instance, to safeguard the internal haul road network for secondary aggregates, above and beyond the protection given to it for china clay purposes. To do so may inhibit pit, tip or plant development.

The present favourable position with regard to aggregate production and sales has been as a result of the two industries working together for a number of years to maximise the secondary aggregate resource and it is likely that they will continue to do so.

The distinction between options lies only in the words in bold type and the facilities referred to are identical.

The safeguarding of specific facilities, if any, should be identified in close discussion with both industries. We would suggest therefore that there is a further option for safeguarding relevant facilities and this is set out below.

Suggested amendments
“Safeguard those facilities, for use in connection with the processing or bulk loading/transportation of secondary aggregates, which have been identified as important to the future production of secondary aggregates from china clay waste.”

The proposed option would be justified and effective

MPA consideration
The mineral planning authority will reconsider the preferred options and the need to provide flexibility for future variations in demand for secondary aggregates and china clay. Following input from consultees, the issue of identifying areas to safeguard for the bulk transport of minerals at Fowey and Par has been identified as a key matter which should be incorporated in the Core Strategy. Expert evidence will be sought concerning the potential need for and suitability of sites at the ports of Fowey and Par for the bulk transportation of secondary aggregates. The industry will have an opportunity to input to the study brief to provide
such evidence. Further liaison will be undertaken with the industry to seek
to establish technical requirements and suitable locations for safeguarding
other sites prior to final identification within the proposed "Safeguarded
sites for mineral resources and infrastructure" Development Plan
Document.

The issue of safeguarding for shared mineral uses will be carefully
considered.

Officer recommendation
Incorporate the principle of the suggested change in the Cornwall Minerals
Development Framework Core Strategy/related evidence. Use the expert
study concerning the bulk transport potential of the Ports of Fowey and
Par as evidence which will inform site specific policy regarding
safeguarding in these locations.

Imerys Minerals Ltd

Comments
This option is not justified on the up to date evidence as summarised
below and is not the most appropriate approach to safeguarding facilities.
It is unlikely to be effective because it may not be deliverable and lacks
flexibility.

Option 2 is not supported by Imerys.

The infrastructure required in connection with the processing and
transportation of secondary aggregates will vary according to the sources
of secondary aggregates.

Regarding the bullet points in Option 1 (as reiterated in Options 2 and 3) a
definition of 'legally active' is not given.

Imerys suggests that pipelines are not an appropriate mode of
transporting secondary aggregate due to physical constraints; and , Par
Docks, for reasons given by Imerys in response to Characteristics of Area
- Cornwall: Transport - 5.4.4 and strategies, Activities and Actions -
Aggregates - Spatial Strategy for Aggregates in Cornwall, is not
considered suitable for safeguarding as a wharf facility for transportation
of secondary aggregates by sea going vessels. The bullet point relating to
pipeline corridors and the reference to Par as a wharf facility should be
deleted.

Suggested amendments
A further option is proposed and which should be preferred:

'Safeguarding those facilities, for use in connection with the processing or
bulk loading/transportation of secondary aggregates, which have been
identified as being important to the future production of secondary
aggregates from china clay waste.'

MPA consideration
"Legally active" applies to sites which are defined as Active under the Environment Act 1995 (section 96). In practice, this means sites where operations may continue or may be re-activated without the need for the submission of a further application to determine updated planning conditions under that legislation, and in the St Austell China Clay Area that effectively means the defined "Operational Areas", but not the "Long Term Working Areas".

It is noted that although the movement of secondary aggregates to the ports by pipeline has been considered in principle in the "MIST" study undertaken in 2005, there have been no further pilot tests of the technique or identification of corridors, therefore it would be appropriate to remove the reference to pipeline corridors.

It is acknowledged that the infrastructure required in connection with the processing and transportation of secondary aggregates may vary according to the sources of secondary aggregates, and this should be investigated in preparation for the Safeguarded Sites for Minerals Resources and Infrastructure Development Plan Document (see below).

The mineral planning authority will reconsider the preferred options and the need to provide flexibility for future variations in demand for secondary aggregates and china clay. Following input from consultees, the issue of identifying areas to safeguard for the bulk transport of minerals at Fowey and Par has been identified as a key matter which should be incorporated in the Core Strategy. Expert evidence will be sought concerning the potential need for and suitability of sites at the ports of Fowey and Par for the bulk transportation of secondary aggregates. The industry will have an opportunity to input to the study brief to provide such evidence. Further liaison will be undertaken with the industry to seek to establish technical requirements and suitable locations for safeguarding other sites prior to final identification within the proposed "Safeguarded sites for mineral resources and infrastructure" Development Plan Document.

The issue of safeguarding for shared mineral uses will be carefully considered.

**Officer recommendation**

Incorporate the principle of the suggested change in the Cornwall Minerals Development Framework Core Strategy/related evidence. Use the expert study concerning the bulk transport potential of the Ports of Fowey and Par as evidence which will inform site specific policy regarding safeguarding in these locations.

Clarify meaning of "legally active" in the document.

**Table 8.11 Options for safeguarding the china clay resource**

*The Kaolin and Ball Clay Association (UK) and Goonvean Ltd*
Comments
We have previously made reference to the BGS map and note that it provides a valuable baseline for identifying mineral deposits. However the map was produced some 10 years ago and we believe that the Hensbarrow Area should be looked at in the light of up-to-date information.

We would support the Preferred Option 2, subject to some slight change to reflect this position.

Suggested amendments
“Safeguard resources identified as measured and indicated by the British Geological Survey, as refined by up-to-date information from the industry.”

MPA consideration
The mineral planning authority will reconsider the options including the proposed change. Additional summary information has been supplied by Imerys to update the BGS information identifying china clay resource areas. This was supported by related commercially confidential information.

Officer recommendation
The Cornwall Minerals Development Framework Core Strategy should provide for the safeguarding of the resources identified as measured and indicated by the British Geological Survey, refined where the findings of the information provided by the industry has been ratified by the mineral planning authority.

Imerys Minerals
Comments
These options are not justified on the up to date evidence as summarised below and are not the most appropriate approach to safeguarding the china clay resource in Cornwall. They are unlikely to be effective as they may not be deliverable and lack of flexibility.

The British Geological Survey information on mineral resources in Cornwall was compiled and published in 1997. Subsequent extraction, operational changes, changes to specifications and the market place have altered the economic resource base. The Industry is best placed to provide information on those changes that have taken place during the last eleven years.

To ensure that the approach to safeguarding china clay is based on sound evidence it is suggested that a further option is considered which uses the BGS data as a starting point but is updated through information sourced from the Industry.

Suggested amendments
A further option is proposed and should be preferred;
Safeguard resources identified as measured and indicated by the British Geological Survey as refined by more recent information supplied by the Industry.'

**MPA consideration**
The mineral planning authority will reconsider the options including the proposed change. Additional summary information has been supplied by Imerys to update the BGS information identifying china clay resource areas. This was supported by related commercially confidential information.

**Officer recommendation**
The Cornwall Minerals Development Framework Core Strategy should provide for the safeguarding of the resources identified as measured and indicated by the British Geological Survey, refined where the findings of the information provided by the industry has been ratified by the mineral planning authority.

**South West Regional Assembly**

**Comments**
China Clay reserves in Cornwall are of national importance and should be safeguarded. Whilst we cannot provide guidance on economically viable areas, we would like to emphasise that economic circumstances might change and hence the industry's view on working potential reserves. Hence option 2 appears to be reasonable and is to be supported as it also provides opportunities for regeneration.

**MPA consideration**
Support for Option 2 is welcomed, although it is intended to refine the BGS information by using more up to date information where this has been supplied by the industry and ratified by the mineral planning authority.

**Officer recommendation**
No further changes are required in respect of these comments.

**Table 8.12 Options for safeguarding the micaceous residue dams**

**The Kaolin and Ball Clay Association (UK)**

**Comments**
Protecting all mica dams is not the most appropriate option and is not justified in the light of current available evidence.

The industry has recovered clay from residues in the past and there may be a prospect of further recovery. It is understood that an assessment of the potential economic resource in mica dams is being undertaken within the industry.

The Association believes therefore that there is a further option in respect
of micaceous residue dams which allows for this information to inform the identification of relevant resources. We would suggest the following.

**Suggested amendments**

"Safeguard micaceous residue dams identified as important mineral resources"

**MPA consideration**

The mineral planning authority accepts that the proposed change is reasonable. Evidence will be gathered concerning the scale and nature of micaceous residues to inform the proposed Development Plan Document about safeguarded sites for minerals and minerals infrastructure.

**Officer recommendation**

Incorporate the suggested change in the Cornwall Minerals Development Framework Core Strategy and evidence base.

**Goonvean Ltd**

**Comments**

Protecting all mica dams is not the most effective policy.

The industry has recovered clay from residues in the past and there may be a prospect of further recovery.

Goonvean Ltd believes therefore that there is a further option in respect of micaceous residue dams which allows for the identification of relevant resources. We would suggest the following.

**Suggested amendments**

"Safeguard those micaceous residue dams identified by the china clay industry, as important mineral resources".

**MPA consideration**

The mineral planning authority accepts that a proposed change is reasonable, although does not consider that the word "identified by the industry" are necessary. Evidence will be gathered from the industry concerning the scale and nature of micaceous residues to inform the proposed Development Plan Document about safeguarded sites for minerals and minerals infrastructure.

**Officer recommendation**

Create a new preferred option to safeguard important micaceous residue dams as important mineral resources in the Cornwall Minerals Development Framework Core Strategy and related evidence base.

**Imerys Minerals Ltd**

**Comments**

This option is not justified and is not the most appropriate approach to safeguarding facilities. It is unlikely to be effective as it may not be deliverable and lacks flexibility.
Imerys is best placed to provide information on the economic viability of micaceous residue dams and the potential for their reworking in the future.

It is suggested by Imerys that there is an option to safeguard those micaceous residue dams where it has been proven that there are potential and viable resources which, could be worked in the foreseeable future.

Suggested amendments
Insert the words 'where it is known that there is an economic resource capable of being worked' after the wording of Option 1.

MPA consideration
The mineral planning authority accepts that the proposed change is reasonable. Evidence will be gathered concerning the scale and nature of micaceous residues to inform the proposed Development Plan Document about safeguarded sites for minerals and minerals infrastructure.

Officer recommendation
Incorporate the suggested change in the Cornwall Minerals Development Framework Core Strategy and evidence base.

Table 8.13 Options for safeguarding infrastructure associated with china clay production

The Kaolin and Ball Clay Association (UK) and Goonvean Ltd

Comments
The option is not sufficiently flexible to adapt to the changes that have taken place and would lack deliverability.

The Association/Goonvean Ltd understands the need for the continuing safeguarding of infrastructure that would serve the future of the industry. However there is also a need to recognise the changes that have taken place and the manner in which any future changes may evolve.

This evolution is unlikely to require the resurrection of redundant infrastructure, as the industry has focused on those facilities that will serve china clay production now and into the future.

The bullet points under each option are the same and we would suggest therefore that there is a further option that focuses on these points. It should also recognise the requirements of economic viability, to avoid the retention of redundant plant that could become a safety hazard or create an adverse environmental impact

Suggested amendments
Safeguard the following facilities for use in connection with the processing, transportation or bulk loading of china clay:

Railheads/sidings within or directly adjacent to operational china clay extraction/processing sites
Pipeline corridors connecting the resource areas to processing plants or wharf/port facilities
Wharf facilities
Mineral railways serving (currently and historically) china clay production areas
Important internal haul roads

where there is a realistic future economic and practical need

MPA consideration
The intention is to safeguard the sites for the facilities rather than the facilities in their own right: it is acknowledged that it would be undesirable, inappropriate and indeed, in most instances, not feasible to safeguard redundant plant or buildings.

The proposed additional text is considered to be reasonable in principle.

Following input from consultees, the issue of identifying areas to safeguard for the bulk transport of minerals at Fowey and Par has been identified as a key matter which should be incorporated in the Core Strategy. Expert evidence will be sought concerning the potential need for and suitability of sites at the ports of Fowey and Par for the bulk transportation of secondary aggregates. The industry will have an opportunity to input to the study brief to provide such evidence. Further liaison will be undertaken with the industry to seek to establish technical requirements and suitable locations for safeguarding other sites prior to final identification within the proposed "Safeguarded sites for mineral resources and infrastructure" Development Plan Document. The mineral planning authority will reconsider the preferred option in the light of the industry comments and an independent study by experts of the bulk transport potential of Par and Fowey.

Officer recommendation
Incorporate the principles of the suggested change in the Cornwall Minerals Development Framework Core Strategy/related evidence, making a reference to "sites for the following facilities" and including "Refinement, Processing and Storage facilities" as an extra bullet point.

Use the expert study concerning the bulk transport potential of the Ports of Fowey and Par as evidence which will inform site specific policy regarding safeguarding for minerals related infrastructure at Fowey and Par within the Core Strategy.

Clarify meaning of "legally active" in the document.

Imerys Minerals Ltd

Comments
Option 3 is considered by Imerys to be the Preferred Option for safeguarding infrastructure associated with china clay production subject to the inclusion of additional wording as set out below. Option 2 is not
supported by Imerys.

Imerys has made significant changes to its operational footprint since the adoption of the existing Minerals Local Plan in March 1998. As a result infrastructure has been rationalised, made more efficient and removed where those facilities have no further use.

The most recent restructuring of Imerys businesses within Cornwall has lead to a more concentrated infrastructure footprint which has the capacity to deal with current and foreseeable demand for China Clay. As a result, infrastructure which has been considered by Imerys to have no further role to play within a modern clay production system, has either been decommissioned and/or removed from site or will be in the near future. That land is then either considered for regeneration or restored.

It is important and relevant to note the infrastructure owned by Imerys can become health and safety, environmental and/or financial burdens to Imerys when closed. If safeguarded, where there is no foreseeable and/or justifiable need to retain the facility/infrastructure then the business could be needlessly prejudiced.

Whether or not infrastructure has been used within the last ten years (Option 2) it may be the case that, for good reason, infrastructure may need to be decommissioned and/or demolished. Again, if infrastructure is needlessly safeguarded, the issues stated above could prejudice Imerys.

As per Imerys' comments in respect of Strategies, Activities and Actions - Options for safeguarding infrastructure associated with china clay waste (secondary aggregate) resource production - Preferred Option 1, it is suggested that the mineral planning authority can only safeguard infrastructure that is currently in-situ which would be economically viable or required within the foreseeable future for the loading, transportation or processing of clay.

Regarding the bullet points in Option 1 (as reiterated in Options 2 and 3) a definition of 'legally active' is not given. Par Dock, for reasons given by Imerys in response to Characteristics of Area - Cornwall: Transport - 5.4.4, is not considered suitable for safeguarding as a wharf facility for transportation of China Clay to sea going vessels.

**Suggested amendments**
Option 3 should be shown as the Preferred Option for safeguarding infrastructure associated with china clay production subject to the insertion of the words 'to have a realistic economic and practical value in the foreseeable future' and delete 'to have the potential for use' - after 'considered' and before 'in connection with...'.

Delete the reference to Par as a wharf facility.

Provide a definition of 'legally active'.

**MPA considerations**
The intention is to safeguard the sites for the facilities rather than the facilities in their own right: it is acknowledged that it would be undesirable, inappropriate and indeed, in most instances, not feasible to safeguard redundant plant or buildings.

The proposed additional text is considered to be reasonable in principle.

Following input from consultees, the issue of identifying areas to safeguard for the bulk transport of minerals at Fowey and Par has been identified as a key matter which should be incorporated in the Core Strategy. Expert evidence will be sought concerning the potential need for and suitability of sites at the ports of Fowey and Par for the bulk transportation of secondary aggregates. The industry will have an opportunity to input to the study brief to provide such evidence. Further liaison will be undertaken with the industry to seek to establish technical requirements and suitable locations for safeguarding other sites prior to final identification within the proposed "Safeguarded sites for mineral resources and infrastructure" Development Plan Document.

The mineral planning authority will reconsider the preferred option in the light of the industry comments and an independent study by experts of the bulk transport potential of Par and Fowey.

"Legally active" applies to sites which are defined as Active under the Environment Act 1995 (section 96). In practice, this means sites where operations may continue or may be re-activated without the need for the submission of a further application to determine updated planning conditions under that legislation, and in the St Austell China Clay Area that effectively means the defined "Operational Areas", but not the "Long Term Working Areas".

Officer recommendation
Incorporate the principles of the suggested change in the Cornwall Minerals Development Framework Core Strategy/related evidence, making a reference to "sites for the following facilities" and including "Refinement, Processing and Storage facilities" as an extra bullet point.

Use the expert study concerning the bulk transport potential of the Ports of Fowey and Par as evidence which will inform site specific policy regarding safeguarding for minerals related infrastructure at Fowey and Par within the Core Strategy.

Clarify meaning of "legally active" in the document.

Restormel Borough Council

Comments/Observations
Table 8.13 safeguards clay related infrastructure including rail sidings, pipeline corridors, internal haul roads and wharf facilities at Fowey and Par.

It is recommended that the spatial strategy for china clay be supported
but every effort is made to avoiding possible conflicts with regeneration objectives.

**MPA consideration**

The mineral planning authority will reconsider the preferred options and the need to provide flexibility for future variations in demand for secondary aggregates and china clay. Following input from consultees, the issue of identifying areas to safeguard for the bulk transport of minerals at Fowey and Par has been identified as a key matter which should be incorporated in the Core Strategy. Expert evidence will be sought concerning the potential need for and suitability of sites at the ports of Fowey and Par for the bulk transportation of secondary aggregates. The industry will have an opportunity to input to the study brief to provide such evidence. Further liaison will be undertaken with the industry to seek to establish technical requirements and suitable locations for safeguarding other sites prior to final identification within the proposed "Safeguarded sites for mineral resources and infrastructure" Development Plan Document.

The issue of safeguarding for shared mineral uses will be carefully considered.

The current safeguarding policy makes provision for exceptions in cases of overriding need for non-mineral uses.

**Officer recommendation**

The expert study concerning the bulk transport potential of the Ports of Fowey and Par should be used as evidence which will inform site specific policy regarding safeguarding.

### 8.3 Core policies and development management policies

**Imerys Minerals Ltd**

**Comments**

Strategies, Activities and Actions - China Clay - Paragraphs 8.3.50 and 8.3.51 - Page 121:

These paragraphs are not justified on the up to date evidence as summarised below and are not effective because they are in part undeliverable.

For the reasons given in Imerys' comments in respect of Strategies, Activities and Actions - China Clay - Preferred Spatial Strategy for China Clay in Cornwall - Preferred Option 2, the reference to Bodmin Moor should be removed from paragraphs 8.3.50 and 8.3.51 for consistency.

**Suggested amendments**

Delete 'and Bodmin Moor' from Paragraphs 8.3.50 and 8.3.51.

**MPA consideration**
The suggestion is acceptable in the light of the recommendation for Policy 4.

Officer recommendation
The references to Bodmin Moor should be removed form paragraphs 8.3.50 and 8.3.51 and "large scale" should be replaced with "multi sized" in paragraph 8.3.50

**Restormel Borough Council**

**Comments**
As identified above the mineral policies could lead to conflicts with some regeneration proposals but these are probable all resolvable with careful planning. The policies in the plan are also clearly important in safeguarding existing important minerals employment within the borough.

**MPA consideration**
Noted. There is ongoing liaison with Imerys relating to site specific aspects of the Ecotown proposals.

**Officer recommendation**
No change.

**Policy 5 Sustainable and efficient supply and use of minerals**

**The Kaolin and Ball Clay Association (UK) Goonvean Ltd and Imerys**

**Comments**
In view of the different reasoning within the safeguarding options at Section 8.2, the policy should not qualify the nature of the minerals to be safeguarded, in the manner proposed. As presently drafted this Policy would not appear inclusive of some of the proposed safeguarded minerals, such as secondary aggregates and mica.

This comment is also relevant to Core Policy 7, where it is repeated.

It is suggested that i) is re-worded.

In addition, for clarity and to be consistent with MPS1 reference should be made to ‘an adequate and steady supply to meet the needs of society and the economy.’

**Suggested amendments**
Amend i) to read:-

"safeguarding minerals of economic importance and where necessary, conserving scarce and important minerals as far as possible, whilst ensuring an adequate and steady supply to meet the needs of society and the economy, “

**MPA consideration**
The proposed change enhances Policy 5 and is acceptable in principle.

**Officer recommendation**

Incorporate the suggested change in the Cornwall Minerals Development Framework Core Strategy with the exception of retaining the word appropriate: (“safeguarding minerals of economic importance and where appropriate, conserving scarce and important minerals as far as possible, whilst ensuring an adequate and steady supply to meet the needs of society and the economy.”

**Policy 6 Sustainable transport of minerals**

The Kaolin and Ball Clay Association and Goonvean Ltd

Support this policy as drafted.

**Policy 7 Safeguarding**

The Kaolin and Ball Clay Association (UK) and Goonvean Ltd

**Comments**

In view of the different reasoning within the safeguarding options at Section 8.2, the policy should avoid qualifying the nature of the minerals to be safeguarded, in the manner proposed. As drafted this Policy is not, arguably, inclusive of some of the proposed safeguarded minerals, such as primary and secondary aggregates, which are not scarce.

Its effect relies heavily on the interpretation of ‘scarce and important’. Metalliferous minerals, for instance, are stated at paragraph 8.2.43 as ‘not scarce nationally’; paragraph 8.1.5 states that aggregates are ‘generally not scarce’ and paragraph 8.2.16 states, when considering secondary aggregates, that ‘china clay waste is not considered a scarce resource’. It would appear that these minerals may not be covered.

A more positive note also needs to be given to avoiding potentially conflicting uses, within and in the proximity to Mineral Safeguarding Areas (MSA) and existing permitted sites.

We assume that the reference to ‘existing permitted sites’ is only necessary because there will be some existing mineral operations that will not benefit from a MSA and that it is not intended to be a means of distinguishing between resources and reserves.

We have referred to the BGS map previously and we are concerned that the continued reference to ‘resources’ begs the question as to the level of protection intended to be given to reserves i.e. existing permitted sites.

**Suggested amendments**

“Core Policy: Safeguarding

The Mineral Planning Authority will safeguard mineral deposits of economic importance and infrastructure through the identification of Mineral Safeguarding Areas. The Mineral Planning Authority will seek to
avoid potentially conflicting uses, within and in the proximity of Mineral Safeguarding Areas and/or existing permitted mineral sites.”

MPA consideration
The points made are broadly accepted, although reference to existing permitted sites should not be necessary, as any permitted sites considered to be of economic importance should already be included as Mineral Safeguarding Areas.

Officer recommendation
The Cornwall Minerals Development Framework should include a Safeguarding Policy which is revised along the lines suggested.

Safeguarding page 85
The Kaolin and Ball Clay Association (UK) and Goonvean Ltd

Comment
The reference only to MSAs including china clay resources that may warrant future working reinforces our concern as to the intentions in respect of identifying MSAs. It would seem to suggest that existing workings may be excluded, although the options for safeguarding refer to the BGS map.

The wording of the first bullet point should be amended to include existing workings and a criterion of quality, to those areas to be included in MSAs. The fifth bullet point should be amended to give flexibility to the identification of mica dams for any safeguarding provision.

Suggested amendments
The first bullet point to read:

“Existing china clay workings and china clay resources which are of sufficient size and quality to warrant, potentially, future working and in a location reasonable well linked to transport infrastructure.”

Fifth bullet point to read:

“Potential reserves of secondary aggregates and some micaceous residue dams……”

MPA consideration
The term resources was intended to include permitted reserves as well as other resources. Accept the points made by the Kaolin and Ball Clay Association.

Officer recommendation
The suggested changes should be incorporated in principle in the Cornwall Minerals Development Framework Core Strategy and related evidence base.

Imerys Minerals Ltd

Comments
It is unclear as to whether Policy 7 refers to existing permitted mineral sites or purely those areas beyond those permitted areas.

It is not made clear within the text whether the policy will only prevent conflict 'in the proximity of' Mineral Safeguarding Areas and/or existing permitted minerals sites or also within those areas. This is a core policy which needs to be understood.

With regard to the first bullet point on Page 85 it is suggested that the words 'and quality' are added after 'sufficient size' and in the fifth bullet point the word 'some' should replace 'existing'.

To reflect preceding comments made by Imerys on safeguarding it is suggested that Policy 7 is reworded.

Suggested amendments
'The Mineral Planning Authority will safeguard mineral resources of economic importance and infrastructure through the identification of Mineral Safeguarding Areas. The Mineral Planning Authority will seek to avoid potentially conflicting uses, within and in the proximity of Mineral Safeguarding Areas and/or existing permitted mineral sites.'

MPA consideration
The points made are broadly accepted, although reference to existing permitted sites should not be necessary, as any permitted sites considered to be of economic importance should already be included as Mineral Safeguarding Areas.

Officer recommendation
The Cornwall Minerals Development Framework should include a Safeguarding Policy which is revised along the lines suggested.

Policy 10 Mineral safeguarding areas - resources

The Kaolin and Ball Clay Association (UK) and Goonvean Ltd

Comments
The policy is contrary to national policy and not the most appropriate policy in the light of the safeguarding options

Comments
It is noted that paragraph 8.3.13 states that this policy relates to applications for non-mineral development within MSAs. The policy should make this clear.

Whilst it is recognised that there is proposed a separate policy for infrastructure; the terms of reference for this policy should also be expanded to include incompatibility with mineral waste disposal or ancillary operations. This is alluded to in paragraph 8.3.13, which states that the mineral planning authority would oppose applications for development that would be incompatible with current or future working.
We would interpret this in the wider sense of the ‘working’ of minerals to include waste disposal and ancillary operations, which has been the accepted use of the word.

**Suggested amendments**

“Non-mineral development will only be granted within Mineral Safeguarding Areas (resources) where the applicant has demonstrated that:

i) the proposal will not sterilise the mineral resource or be incompatible with extraction, mineral waste disposal or ancillary operations, or............”

**MPA consideration**

The reference in Paragraph 8.3.13 (last sentence) should be changed to "development" rather than "non-mineral development" and the reference to "development" in the policy should be retained, as there may be cases where mineral development (such as the tipping of mineral waste or the construction of ancillary buildings) may sterilise resources.

Government Office South West has advised that the policies (development management policies for mineral resources and infrastructure safeguarding and the core policy for safeguarding) contain an element of overlap/duplication which may lead to duplication and it is intended to amalgamated these.

The suggested addition to i) is considered to be reasonable and necessary within a combined policy.

**Officer recommendation**

The reference in Paragraph 8.3.13 (last sentence) should be changed to "development" rather than "non-mineral development". The first word of the policy should continue as "development". The Kaolin and Ball Clay Association proposed change to i) should be incorporated into a single amended policy on safeguarding for incorporation in the Cornwall Minerals Development Framework Core Strategy. This should relate to the safeguarding of mineral resources and mineral infrastructure sites from sterilisation as well as from the establishment of incompatible development in the wider vicinity.

**Imerys Minerals Ltd**

**Comments**

Due to the practicalities of extracting and processing China Clay extensive areas of land are required for accessing minerals at depth as well as facilitating associated tipping of minerals wastes.

In line with BGS/CLG advice it may be necessary to extend Mineral Safeguarding Areas beyond the resource boundary to safeguard against 'proximal development'.

In line with the MPS1’s Planning and Minerals: Practice Guide, when
considering Minerals Safeguarding Areas the economic importance of those minerals within the foreseeable future should be assessed. An additional criterion could also apply to areas which may no longer be deemed economic, due to unexpected changes to working practices, specifications or other environmental constraints within the plan period that could be deemed suitable for non-mineral development.

The words 'scarce and important' should be deleted from 8.3.13.

Imerys questions whether a single policy could incorporate both Policy 10 and Policy 11.

Suggested amendments
For consistency with other policies the words 'Non-mineral' should be inserted before 'development' at the beginning of Policy 10.

Imerys suggests that the words 'or be incompatible with extraction, mineral waste disposal or ancillary operations' should be inserted at the end of (i).

Imerys suggested that a further criterion should be inserted within the policy as follows:

Insert the word 'or' after criterion (v).

Insert 'vi. the safeguarded resource does not have economic importance within the foreseeable future,'

MPA consideration
The reference in Paragraph 8.3.13 (last sentence) should be changed to "development" rather than "non-mineral development" and the reference to "development" in the policy should be retained, as there may be cases where mineral development (such as the tipping of mineral waste or the construction of ancillary buildings) may sterilise resources.

Government Office South West has advised that the policies (development management policies for mineral resources and infrastructure safeguarding and the core policy for safeguarding) contain an element of overlap/duplication which may lead to duplication and it is intended to amalgamated these.

The suggested addition to i. is considered to be reasonable and necessary within a combined policy and the suggested addition of criterion vi. is considered to be reasonable.

Officer recommendation
The reference in Paragraph 8.3.13 (last sentence) should be changed to "development" rather than "non-mineral development". The first word of the policy should continue as "development". Imerys' proposed change to i) and addition of vi) should be incorporated into a single amended policy on safeguarding for incorporation in the Cornwall Minerals Development Framework Core Strategy. This should relate to the safeguarding of
mineral resources and mineral infrastructure sites from sterilisation as well as from the establishment of incompatible development in the wider vicinity.

**Policy 11 Mineral safeguarding areas - infrastructure**

**The Kaolin and Ball Clay Association (UK) and Goonvean Ltd**

**Comments**
We wonder if this policy could be merged with Policy 10. Policy 11 contains reference to the use of the site and to infrastructure.

We would also question the purpose of iii) which seems to suggest that minerals infrastructure may be required to relocate in the face of opposing non-mineral development.

**Suggested amendments**
Delete iii) and consider merging with Policy 10

The proposed change would make the policy justified and effective

**MPA consideration**
The mineral planning authority has considered the suggestion, raised in the comments, of a single policy to include policies 10 and 11, and intends to merge Policies 7, 10, 11 and 12. This also follows advice from the Government Office for the South West that it may be appropriate to merge Policies 10 and 11, and potentially the equivalent Core Policy (Policy 7). Additionally, incorporation of Policy 12 would reflect Mineral Planning Guidance 1 Planning and Minerals: Practice Guide (paragraph 32) which indicates that safeguarding from incompatible proximal development should be considered.

Continued inclusion of iii. is considered to be advisable, to allow for circumstances where the relocation of important mineral infrastructure is provided for by agreement with the operator.

**Officer recommendation**
It is proposed to include an amalgamated single policy for safeguarding mineral resources and infrastructure, which also encompasses the effects of proximal development, in the Cornwall Mineral Development Framework Core Strategy.