DERBYSHIRE AND DERBY MINERALS LOCAL PLAN

Towards a Minerals Local Plan:

Winter 2021/2022 Consultation

Proposed Draft Plan

Background Paper
Cement

December 2021

Derbyshire County Council

Derby City Council

Contents

1. Introduction and Background

1.1 This is one of a series of papers providing background information to accompany the preparation of the new Minerals Local Plan. The new Plan will include strategies and policies concerning the extraction of industrial limestone for cement purposes. This paper provides detailed information regarding the economic considerations of working the mineral; national and local policy considerations; the way in which the mineral is worked and existing resource and future supply implications. It concludes with the issues that the Plan will need to address.

1.2 Cement is a manufactured product. It is made by heating a carefully controlled mixture of limestone and clayey raw material at very high temperatures to firstly produce cement clinker which is then finely ground together with gypsum/anhydrite to create the finished cement, a dry white/grey powdery substance. The most important use of cement is in the production of mortar and concrete.

1.3 Cement is an essential constituent of concrete, which is a mixture of cement, and coarse and fine aggregate. When mixed with water it can be placed in situ or cast in moulds making it a highly versatile building material. Mortar (a mixture of cement, fine aggregate and water) is used for joining structural block and brickwork and plastering. Both concrete and mortar are vital and essentially irreplaceable construction materials for the building and civil engineering industries.[1]

2. National and Local Planning Policy

2.1 The National Planning Policy Framework (NPPF)[2], specifically relating to the preparation of local plans, requires Mineral Planning Authorities (MPAs) to identify strategic priorities including any relevant cross-boundary issues and to

[1] BGS, Minerals Planning Factsheets – Cement, March 2014
[2] National Planning Policy Framework, July 2021 Paragraph 21

develop strategic policies to address them. Such policies should set out an overall strategy for the pattern, scale and quality of development and make sufficient provision for strategic matters which includes the supply of minerals. The policies should also provide a clear strategy for bringing sufficient land forward, and at a sufficient rate, to address objectively assessed needs over the plan period, in line with the presumption in favour of sustainable development.

2.2 The NPPF[3] recognises that it is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs. It also recognises that since minerals are a finite resource, and can only be worked where they are found, it is important to make best use of them to secure their long-term conservation. The NPPF requires that local plan policies provide for the extraction of mineral resources of national and local importance including cement-making materials.

2.3 National planning policy[4] requires that MPAs plan for a steady and adequate supply of industrial minerals by:

a) co-operating with neighbouring and more distant authorities to ensure an adequate provision of industrial minerals to support their likely use in the industrial and manufacturing processes;
b) encouraging safeguarding or stockpiling so that important minerals remain available for future use;
c) maintaining a stock of permitted reserves to support the level of actual and proposed investment required for new or existing plant and the maintenance and improvement of existing plant and equipment[5].

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[3] National Planning Policy Framework, July 2021 Paragraph 209

[4] National Planning Policy Framework, July 2021 Paragraph 214

[5] These reserves should be at least 15 years for cement primary (chalk and limestone) and secondary (clay and shale) to maintain an existing plant and at least 25 years for cement (primary and secondary) to support a new kiln.

Duty to Co-operate

2.4 Local Planning Authorities and County Councils (in two tiers areas) are under a duty to co-operate with each other and with other prescribed bodies on strategic matters which cross administrative boundaries. Joint working is particularly important in identifying whether development needs that cannot be met within a particular plan area could be met elsewhere.

2.5 Strategic policy making authorities should collaborate to establish cross border matters which they need to address in their plans and in accordance with the new NPPF produce one or more statements of common ground. These should document the cross-boundary matters being addressed and progress in co-operating to address these.

Planning Practice Guidance

2.6 Planning Practice Guidance (PPG)[6] sets out that the local plan should make it clear what is intended to happen in the area over the life of the plan, where and when this will occur and how it will be delivered. It adds that this can be done by setting out broad locations and specific allocations of land for different purposes, through designations where particular considerations apply and through criteria-based policies to be taken into account when considering development.

2.7 PPG sets out guidance[7] on how MPAs should plan for the steady and adequate supply of minerals in one or more of the following ways (in order of priority):

- designating Specific Sites – where viable resources are known to exist, landowners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction.

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[6] PPG, Paragraph: 002 Reference ID: 12-002-20140306

[7] PPG, Paragraph: 008 Reference ID: 27-008-20140306

- designating Preferred Areas, which are areas of known resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction, and/or
- designating Areas of Search – areas where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply.

2.8 PPG[8] provides specific advice on how MPAs should plan for industrial minerals. It suggests that recognition should be given to any marked differences in geology, physical and chemical properties, markets and supply and demand between different industrial minerals which can have different implications for their extraction. Such differences include:

- geology influencing the size of a resource, how it may be extracted and the amount of mineral waste generated;
- the market demand for minerals to be of consistent physical and/or chemical properties, resulting in the fact that industrial minerals are often not interchangeable in use;
- the potential for the quality of a mineral extracted from a single site varying considerably;
- the economic importance of the mineral as a raw material for a wide range of downstream manufacturing industries;
- some industries are dependent on several industrial minerals and the loss of supply of one mineral may jeopardise the whole manufacturing process.

2.9 PPG[9] also sets out advice on the best way of providing for sufficient stocks of permitted reserves at individual sites. It advises that stocks of permitted reserves should be used as an indicator to assess whether further permitted reserves are required at an industrial minerals site. Stocks of permitted reserves should be calculated when a planning application is submitted to extract the mineral (through either a site extension or a new site) or when capital investment is proposed e.g. for a new kiln. The overall amount required

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[8] PPG, Paragraph: 086 Reference ID: 27-086-20140306

[9] PPG, Paragraph: 088 Reference ID: 27-088-20140306

should be directly linked to the scale of capital investment to construct and operate the required facility. For cement making, the stock of reserves should be at least 15 years for primary minerals (chalk and limestone) and secondary (clay and shale) to maintain an existing plant and at least 25 years (primary and secondary) to support a new kiln.

Adopted saved local planning policy

2.10 The adopted Derby and Derbyshire Minerals Local Plan contains a saved[10] policy (MP25) to allow for the extraction of industrial minerals. Notwithstanding that the Plan was adopted in 2002, the policy is broadly in accordance with the NPPF policies for planning for industrial minerals.

3. Cement Manufacture

3.1 There are a number of different types of cement; Ordinary Portland Cement (OPC), also known as CEM I, is the most widely produced both in the UK and elsewhere. However, blended or composite cements, for example CEM II, are becoming more important.

3.2 The process of manufacturing cement involves mixing together limestone or chalk and clay/ shale which are then fired in a rotary kiln to a temperature of about 1400 -1500 degrees Celsius. Small amounts of other materials, such as silica sand, may be added to optimise the mix. During firing, water vapour is given off first, followed by CO2, indicating the decomposition of first the clay/shale and then the limestone to a mixture of anhydrous compounds known as cement clinker. Depending on how the material is handled prior to being fed into the cement kiln there are three basic types of process: the dry, semi-wet/semi dry and wet processes. The moisture content of the raw material (3% for hard limestone and over 12-16% for chalk) is the main criterion governing the process used. Over the decades there has been a move away from the wet process to the more energy efficient dry process.

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[10] Under Paragraph 1(3) of Schedule 8 to the Planning and Compulsory Purchase Act 2004

3.3 On exit from the kiln, clinker is cooled from approximately 1200 degrees Celsius to less than 150 degrees Celsius. The clinker is then conveyed and stored in dedicated silos in readiness for being milled into cement. The milling process involves finely grinding the cooled cement clinker, typically with 5% gypsum/anhydrite to form the final cement.

3.4 Previous reference has been made to the growing importance of blended or composite cements; in the UK these are mainly produced by fine grinding cement clinker with either Pulverised Fuel Ash (PFA) from coal fired power stations, granulated slag from the iron industry or limestone fines, together with gypsum or anhydrite. As well as being cheaper these secondary materials also provide additional technical benefits as both PFA and slag have cementitious properties that improve the long-term strength and durability of concrete. The quantity of PFA, slag or limestone fines used also reduces the amount of cement clinker required and consequently the amount of primary minerals needed. Their long-term availability is not assured, however, in view of the existing and expected future decline in coal fired power generation and steelmaking in the UK.[11]

3.5 The milled cement is conveyed to cement silos in readiness for despatch, either bagged or supplied in bulk. It is then transported to the customer either by road or rail.

3.6 Cement plants are large consumers of raw materials (and energy intensive) with about 1.6 dry tonnes of materials being required for each tonne of cement clinker produced. Modern cement plants are highly capital intensive; the construction of a new plant costs around £250 million. Ongoing capital investment at individual plants can also typically amount to several million pounds a year. Cement raw materials must be available in sufficiently large quantities to justify these large capital investments. Consequently, modern cement operations are usually large-scale and long-lived. The economies of

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[11] UK Minerals Forum – Trends in UK Production of Minerals 2014

scale needed to make them viable demand long reserves of raw materials and mean that a typical plant has cement clinker capacity of between 0.48 million tonnes per annum (mtpa) to 1.5 mtpa.[12]

3.7 Cement manufacture is, by its nature, energy and carbon intensive. The production of cement generates CO2 emissions from:

- Quarrying and transport of raw materials to the processing plant
- Calcination which is the process of producing the cement clinker (Limestone is calcinated at high temperatures to produce lime leading to the release of waste CO2)
- Thermal Combustion derived from the burning of fossil fuels to heat the kilns to the high temperatures required
- Transport of the finished product to the market.

3.8 Approximately 90% of CO2 emissions are attributable to the production of clinker[13] with the remaining 10% attributable to quarrying and transport. In clinker production approximately 60% of CO2 emissions are derived from the calcination process and 40% from thermal combustion. In 2018, it was estimated that the concrete and cement production accounted for 1.5% of UK CO2 emissions. Of the 7.3 million tonnes of carbon dioxide produced in 2018; around 4.4 million tonnes were 'process emissions' from clinker production, 2.2 million tonnes from fuel combustion and the remainder from electricity use and transport. Significant progress has been made in reducing emissions which have decreased by 53% since 1990.This has been achieved through a move toward using alternative low carbon waste-derived fuels and increasing the use of by-products, recycled materials and waste from other industries to substitute for clinker. In 2018, the sector took 43% of its kiln fuel thermal input from waste derived sources, including pre-treated industrial and municipal solid wastes (domestic waste), discarded tyres, waste oil and solvents, plastics, textiles and paper residues, biomass crops, agricultural residues,

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[12] BGS Minerals Planning Factsheet, March 2014

[13] The product of fusing together of clay and limestone which is the first stage in the cement manufacture

logs, wood chips and residues, sewage sludge etc. avoiding the use of just under 500,000 tonnes of coal. In addition, cement manufacturers replaced 7% of their raw materials with waste derived alternatives e.g. pulverised fuel ash. Further reductions may be achieved if product and design standards allow for lower carbon cement formulations and these are adopted by the market. However, to realistically meet 'net zero' emissions from cement production by 2050 carbon capture, transport and storage will need to be technologically and economically feasible

4. Resources

4.1 The availability of suitable raw materials is normally the determining factor in the location of a cement works. The manufacture of Portland cement requires raw materials that contain the four main components; lime, silica, alumina and iron oxides. Limestone or chalk is the main source of lime and typically accounts for 80-90% of the raw mix. Clay or mudstone accounts for some 10-15% and provides most of the silica, alumina and iron oxides to optimise the mix. The quality of the cement clinker is directly related to the quality of the raw materials used.

4.2 The United Kingdom is fortunate in having very large resources of the raw materials used in cement manufacture; limestones of various geological ages are widespread. They vary considerably in their chemistry and thickness and thus their suitability for cement manufacture on a large scale. Dolomites and magnesian limestones are unsuitable because of their high magnesia content. This precludes the use of limestones (dolomites) of Permian age in England. Carboniferous Limestones are the most important source of raw material for cement production; they occur extensively as thick deposits that are easy to work and which are generally of relatively high purity. Within the Plan area the Carboniferous Limestones are an important deposit for cement production whilst the Permian Limestones in the east are unsuitable for this purpose.

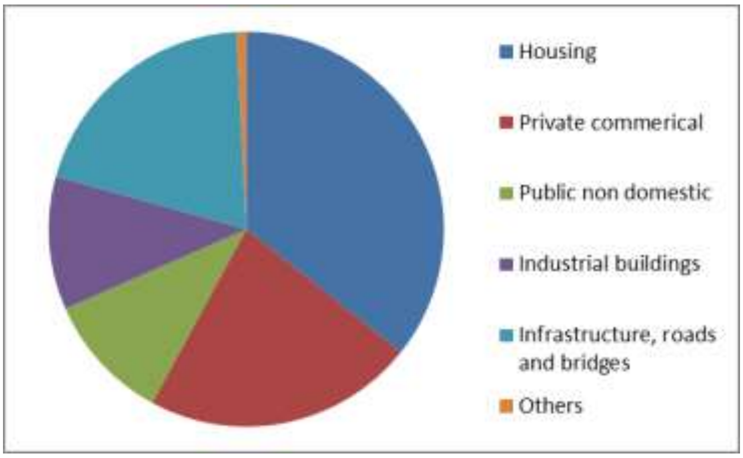
4.3 Resources of clay and mudstone/shales suitable for cement manufacture are widespread and usually obtained from quarries adjacent to cement plants.

The majority of plants using Carboniferous Limestone use stone from the Visean (Upper Dinantian) Stage and in many instances a shale formation lies immediately above the limestone and is consequently used. Shale and marl are however imported from quarries in Staffordshire to the Plan area's only cement works at Tunstead.

5. Need

5.1 The main demand for cement is linked to its use in the production of mortar and concrete. These products are widely used in all construction sectors, such as house building, road construction, bridges, and dams and in other infrastructure projects such as railways, airport facilities, hospitals, schools, new offices and shops. The demand for cement, therefore, is reliant on economic activity as a whole but particularly construction activity, which can be highly cyclical.

Figure 1 below shows how cement was used in the United Kingdom, 2009[14]



Economic importance

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[14] The UK cement industry, Mineral Products Association Cement, 2009

5.2 The value of UK sales of Portland cement, including blended cements was £656 million in 2011. Some 2,500 people are employed directly in the industry, with a further 15,000 jobs supported indirectly.[15]

5.3 The second cement kiln line at Tunstead involves £200 million of investment, the 30-month construction period will involve up to 800 construction personnel and, once complete, will generate almost 60 full time jobs and approximately 40 elsewhere in the UK. [16]

6. Supply

National production

6.1 The production of limestone/chalk for cement manufacture has declined significantly over the years from around 27 million tonnes in 1974 to 8.8 million tonnes in 2014[17].This is partly due to a decline in cement production from approximately 18 million tonnes in 1974 to around 9 million tonnes in 2014[18]. This decline may well be closely linked to the decline in aggregate demand, the shift away from concrete-intensive major civil engineering projects in recent years and economic recession. However, it may also, in part, reflect a decline in the more energy intensive wet process using chalk (with its much higher moisture content) in favour of limestone using the dry process. In addition, there has been a reduction in domestic cement capacity, increased imports and increasing use of blended cements where a proportion of the cement is replaced by other materials.[19] More recent figures from 2015 - 2019 suggest that cement production is rising and was up to 9.4 mt by 2017 with a slight fallback to 9.0 mt in 2019[20]. The rise in production possibly reflects an increase in new house building which has been rising steadily since 2010.[21]

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[15] BGS Factsheet, Cement, March 2014
[16] Planning Application CM1/0309/240 Non-Technical Summary, Socio-Economics, 2009
[17] UK Minerals Yearbook, BGS, 2015
[18] UK Minerals Yearbook, BGS, 2015
[19] UK Minerals Forum – Trends in UK Production of Minerals, 2014
[20] Minerals Products Association website, Annual Cementitious Statistics 2001-2019

[21] UK Government statistical data sets - House building, UK historical calendar year series

6.2 There are five main producers of cement in the UK: CEMEX UK Cement, Hanson Cement, Breedon Cement, Lafarge Cement and Tarmac. The UK's supply of cement is produced at just 11 plants; UK Cement plants with details of their operating clinker capacity, raw materials and transport is set out in Figure 2.[22] The information has been updated to reflect the merger of companies[23]. Cement plants in Derbyshire, the Peak District National Park and Staffordshire are particularly important for supplying the nearby conurbations of Greater Manchester and the West Midlands.

6.3 In the late 1970s, the UK was a significant exporter of cement. However, increasing competition in overseas markets has led to a decline in exports and from 1987 onwards the UK has become a net importer of cement.[24] It is not difficult to see how cement manufacture could be driven overseas through higher energy costs and penalties on carbon emissions, so making the UK increasingly dependent on imports of this 'strategic' material.[25]

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[22] BGS Minerals Planning Factsheet, Cement, March 2014
[23] Minerals Products Association website, Cement 2018

[24] BGS Minerals Planning Factsheet, Cement, March 2014
[25] UK Minerals Forum – Trends in UK Production of Minerals, 2014

Figure 2: Cement Plants with details of Clinker Capacity, Raw Materials and Transport, 2014 (updated to 2018 to reflect the merger of companies)

Company	MPA	Plant	Cement clinker capacity (thousand tonnes/year)	Process	Raw Materials	Transport
Tarmac	Derbyshire	Tunstead	1095	Dry	Carboniferous limestone/ mudstone	Road/Rail
Tarmac	Vale of Glamorgan (South Wales)	Aberthaw	500	Dry	Jurassic limestone/ mudstone/ and Carboniferous Limestone	Road
Tarmac	East Lothian (Scotland)	Dunbar	900	Dry	Carboniferous limestone/ mudstone	Road/Rail
Hanson Cement	Rutland	Ketton	1390	Dry	Jurassic Limestone and mudstone	Road/Rail
Hanson Cement	Lancashire	Ribblesdale	750	Dry	Carboniferous limestone/ mudstone	Road/Rail
Hanson Cement	Flintshire (North Wales)	Padeswood	820	Dry	Carboniferous limestone and colliery spoil	Road
CEMEX UK Cement	North Lincolnshire	South Ferriby	750	Semi Dry	Chalk and Kimmeridge Clay	Road
CEMEX UK Cement	Warwickshire/ Bedfordshire	Rugby	1500	Semi Wet	Chalk and Jurassic Mudstone	Road
Lafarge	Tyrone (Northern Ireland)	Cookstown	480	Semi Dry	Carboniferous limestone/ mudstone	Road
Lafarge	Staffordshire	Cauldon	900	Dry	Carboniferous limestone/ mudstone	Road
Breedon Cement	Peak District National Park	Hope	1300	Dry	Carboniferous limestone/ mudstone	Road/Rail

Cement production in the Plan area

Tunstead, Tarmac

6.4 The availability of raw materials is normally the determining factor in the location of cement works and since limestone generally comprises 70-90% of the mixture, it has the greatest influence on siting. Within the Plan area there is one operational cement plant located at Tunstead on the Carboniferous Limestone resource. It is operated by Tarmac and supplied by the two adjoining quarries Tunstead and Old Moor (part of this quarry lies within the Peak District National Park (PDNP) outside of the Plan area).

6.5 Large scale quarrying began at Tunstead in 1929 and later at the adjoining Old Moor Quarry in the mid-1980s. The two quarries together are about 350 hectares (ha) and are worked in tandem, principally for geological reasons, to form one of the largest quarry complexes in Europe extracting about 6 million tonnes of stone a year for both aggregate and industrial limestone uses. The quarry complex benefits from a dedicated freight railway line that is connected to the national network with rail depots in Leeds, and London; approximately half of the quarry products are sent out by rail.

6.6 Whilst Tunstead Quarry was originally established to provide high quality limestone for the chemical industry, which continues, both quarries also supply stone to the energy and construction industries and for the manufacture of cement. Planning permission for the original cement plant at the quarry was granted in 1964 and production began in 1966. In 2000, planning permission was granted for the construction of a replacement cement kiln (now known as 'K1') with an associated rail loading facility. K1 was commissioned in 2004 and now has an operational capacity of about 1 million tonnes per annum (mtpa). A planning application[26] for a second cement kiln (K2) at Tunstead was approved in 2011, which will increase overall capacity to 2.15 mtpa. The date when the new kiln is anticipated to be operational is not known but is likely to be towards the end of the Plan period. When constructed the new kiln will have a basic operational capacity for Portland cement production of 1 mtpa but would be designed to enable the reception of imported Pulverised Fuel Ash (PFA) (maximum of 250,000 tpa), for blending with cement to produce a product called 'CEM II' which would increase capacity to 1.15 mtpa. The flexibility to manufacture this product will only be introduced if the market for CEM II dictates. The permitted reserves of industrial limestone at Tunstead and Old Moor quarry are substantial[27] and

[26] Planning Application CM1/0309/240 Planning Statement, March 2009
[27] Permitted Reserve information supplied in confidence for Annual Mineral Surveys, Minerals Aggregate Working Party,2017

according to the Operator, even with production at the maximum level suggested including K2, are sufficient to last well beyond the plan period which ends in 2036, also taking into account the minimum 25 year stock of permitted reserves required by the NPPF to support the development of a new kiln. The expiry date for the Tunstead permissions is 2042 and for the Old Moor permissions is 2040.

6.7 At the Tunstead plant, the main raw materials to make cement - limestone and clay – are both sourced on site and make up 80% of the materials required for cement making. Small quantities of 'correctives' are imported to add to the raw meal; these include marl, shale, mill scale and silica sand. The dry crushed limestone consists of a mixture of Chee Tor and Woo Dale stone extracted from both Tunstead and Old Moor quarries. Most of the clay required comes from the quarry in the form of slurry resulting from the washing of limestone for the production of chemical stone for industry. This is thickened to a paste and the excess water re-used in the washing plant. However, approximately 60,000 tpa of shale is imported from Kingsley Quarry and 120,000 tpa of marl is imported from Keele Quarry; both quarries are located in Staffordshire. Importation of these raw materials is expected to increase proportionately with the commissioning of K2. However the date for the development of K2 is presently unknown. NPPG sets out that in planning for minerals extraction, mineral planning authorities, local planning authorities and other public bodies are expected to cooperate on strategic cross border matters. The MPA are liaising with Staffordshire County Council in order to ensure that supplies are maintained. Further information is available in the Duty to Co-operate Report.[28]

6.8 Cement kilns are both energy and carbon intensive. To reduce the demand for and impact of fossil fuel alternatives such as tyre chips, meat and bone meal

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[28] Towards a Minerals Local Plan: Autumn/Winter 2021 Consultation, Duty to Co-operate Report - Evidence of Co-operation September 2021

and solid recovered fuel from waste are being used increasingly at the Tunstead plant. This will continue to be the case with the operation of K2.

Cement production in close proximity to the Plan area

6.9 In line with the Duty to Cooperate regime and in view of the need to ensure a stock of permitted reserves of cement raw materials to support cement manufacture and the fact that two cement plants lie close to the Plan area it is important to assess if those sites will impact on cement making raw materials within the Plan area.

Hope, (operated by Breedon Cement), Peak District National Park

6.10 Hope cement works operated by Breedon Cement, lies approximately 10 km from the County boundary, and is located within the Peak District National Park. It has a production capacity of around 1.5 mtpa and is supplied by adjoining quarries i.e. (Hope Limestone Quarry and Hope Shale Quarry) also operated by Breedon Cement. The company also blends imported pulverised fuel ash (PFA) (up to 0.1 mtpa) with shale as a partial shale replacement in the production of cement clinker.

6.11 Information supplied by the Peak District National Park Authority (PDNPA)[29] indicates that based on current annual production of approximately 1.58 mt (2012) there are about 22 years (2034) of limestone reserves remaining. The situation with shale is more complex in that the resource is split into high and low sulphur shale and the degree that shale is substituted by PFA has a major impact on the life of shale reserves. Without the importation and blending with PFA only low sulphur shale can be used reducing the lifespan of shale reserves to an estimated 6 years (2018). However, using the combined high and low shale reserves with PFA would extend the lifespan of the reserves to over 50 years (2064). This period of time figure would rise if the use of PFA were to be increased to further supplement or entirely replace the use of shale.

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[29] Email to Derbyshire CC from Peak District National Park 16/5/14

6.12 The PDNPA estimates that there is more than 15 years' worth of supply of limestone at the quarry (21.8 years) but assuming the annual figure of 1.58 mt is maintained then by 2019 the quarry would not have a minimum 15 year stock of permitted reserves and the operator may seek to extend the quarry. Recent correspondence from the PDNPA[30] indicates that on 10/9/2018 the PDNPA issued pre-application advice in respect of a 8.3 ha extension to the quarry to release 20 mt of high grade limestone. It will be for the PDNPA to determine any planning proposals in their area to enable the continued operation of Hope Cement works. The NPPF however requires that great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, it adds that planning permission should be refused for major development other than in exceptional circumstances. The outcome of any planning proposals in the PDNP may impact on cement production from within the Plan area; the MPA will monitor this situation in liaison with the PDNPA.

Cauldon, Lafarge, Staffordshire

6.13 The second nearby cement plant, Cauldon, operated by Lafarge Cement, lies approximately 0.6 km away over the border in Staffordshire. It has a capacity of approximately 0.9 mtpa and is supplied with limestone from an adjacent quarry. Based on the information that we have on permitted reserves it is unlikely that Cauldon quarry would impact on limestone or clay/shale resources within the Plan area over the Plan period.

7. Conclusions - Issues for Making Provision for the Supply of Cement-making Raw Materials

7.1 There are sufficient permitted reserves of limestone at Tunstead quarry to support cement manufacture throughout the plan period even allowing for the commissioning of the permitted second cement kiln at the site.

[30] Email from PDNPA to DCC dated 7/9/2021

7.2 Secondary cement making materials are imported to Tunstead from Kingsley and Keele quarries in Staffordshire. Permitted reserves are sufficient to maintain supply throughout the plan period even allowing for the commissioning of the permitted second cement kiln at the site. The Councils will need to co-operate with Staffordshire County Council to monitor this supply.

7.3 At Hope cement plant, which lies in the PDNP, additional reserves of limestone will be required in the near future to maintain sufficient stocks of permitted reserves to support cement manufacture. The outcome of this issue is unclear at this stage. It may have repercussions for the Plan area in terms of an increase in the need for cement-making materials. The Councils will need to co-operate with the PDNPA to monitor this situation.

7.4 In order to cater for any unforeseen demand the plan will need to adopt a policy approach that would allow for additional reserves of primary and secondary minerals to be worked where they are needed to support the manufacture of cement, taking into account the need to ensure a stock of permitted reserves to support investment as set out in the NPPF.