East Lothian Council

LOCAL DEVELOPMENT PLAN 2

Background Paper – Minerals

Issue No 011

Context: NPF Spatial Strategy, Policy 1 (Tackling the Climate and Nature Crisis), Policy 2 (Climate Mitigation and Adaptation) Policy 3 (Biodiversity), **Policy 5 (Soils), Policy 8 Green Belts, Policy 23 Health and Safety, Policy 29 Rural Development, Policy 33 Minerals**

Minerals are required for development and maintenance of existing infrastructure, as fuel and other uses. The primary policy on Minerals in NPF4 is Policy 33, which sets out the intention 'to support the sustainable management of resources and minimise the impacts of the extraction of minerals on communities and the environment'.

NPF4 advises that LDPs should support a landbank of construction aggregates of at least 10 years at all times, whilst promoting sustainable resource management, safeguarding important workable mineral resources of economic or conservation value, and take steps to ensure these are not sterilised by other types of development.

LINKS TO EVIDENCE

	Location of minerals
ELC 347	East Lothian, Midlothian, West Lothian and City of Edinburgh – Mineral Resources map – British Geological Survey 2008
ELC 348	Carbon and Peatland 2016 map (Scotland's Soils)
ELC 349	Soil maps of Scotland (Scotland's Soils)
	Extraction and Reserves of minerals
ELC 351	2019 Aggregate Minerals Survey for Scotland – Scottish Government, published 2023
ELC 352	Mineral Products Association 10th AMPS 2022 Annual Mineral Planning Survey Report
ELC 353	BGS Mineral Planning Factsheets (accessed view the National Environment Council Open Research Archive)
ELC 354	BGS Midland Valley of Scotland Shale Reports

	Policy and Guidance
ELC 356	Planning Advice Note 50: Controlling the environmental effects of surface mineral working and Annexes
ELC 357	Scotland's National Peatland Plan, NatureScot
ELC 358	Guidance for Peatland Restoration and the Historic Environment in Scotland, Association of Local Government Archaeological Officers
ELC 359	Circular economy and waste route map to 2030: Consultation

SUMMARY OF EVIDENCE

Mineral resources in East Lothian include coal, limestone, hard rock, sand and gravel, and potentially shale gas and oil. There is also some peat. Peatland is protected under NPF4 Policy 5: Soils. NPF4 Policy 33: Minerals does not support extraction of fossil fuels other than in exceptional circumstances, and does not support the development of unconventional oil and gas at all. Policy 33 provides policy resisting sterilisation of mineral deposits of economic value, and criteria for sustainable extraction of minerals and borrow pits.

Construction aggregates

aggregates are needed for construction of transport and renewable energy infrastructure, housing and other development types. The most important sources for primary aggregates in Scotland are crushed rock (from igneous rock, sandstone and limestone) and sand and gravel. The BGS regularly surveys producers of construction aggregate and planning authorities to estimate demand, supply and reserves. East Lothian lies in the East Central Scotland market region for construction aggregate. The region comprises the three Lothian Authorities, Edinburgh, Fife and Scottish Borders Council areas.

The amount of reserve for construction aggregates, both crushed rock (24 years) and sand and gravel (33 years) considerably exceeds the 10 year land bank for construction aggregate required by NPF4. If LDP2 is adopted in 2026 as planned, assuming no new permissions have been or are granted in the East Central Scotland market area, there would still remain 8 years of reserve of aggregates at the end of the LDP2 period and 17 years of sand and gravel.

Sustainable Resource Management

Construction waste is a significant part of the waste stream, with very little reuse, though levels of recycling have steadily risen since the late 1980s. There are significant levels of development planned in East Lothian, which is likely to both use resource and generate construction waste.

Safeguarding important workable mineral resources

There are mineral resources of sand and gravel, crushed rock and limestone which are currently either being worked or which have planning consent. There is a recently lapsed consent for sand and gravel working at Skateraw. In addition, there are reserves of coal, some of which may be economically extractable if other policy criteria were met. There is likely to be some building stone remaining in previously worked local quarries. Subject to environmental criteria being met, there could be conservation benefits from its extraction. There are likely to be other places which have stone suitable for building.

There appears to be some potential for extraction of shale oil and shale gas, though there is considerable uncertainty around this. There is currently a moratorium on its extraction.

SUMMARY OF STAKEHOLDER CONSULTATION

The Council carried out extensive consultation with the local community and other stakeholders. Engagement activities ran for 14 weeks, between June and September 2023. Specific meetings were held with NHS Lothian and East Lothian Economic Development colleagues. As well as public wide consultation and general consultation information was also gathered from surveys with young people (of various ages), individuals with particular needs including accessible housing needs, gypsy travellers and general consultation with key agencies, the development industry and the public.

A Summary of Evidence Report Engagement Report (Document 027) has been completed for all the consultation undertaken in the development of the Evidence Report. A summary of the engagement carried out can be found in that report.

Few comments were made explicitly about minerals. Both the general and children's consultation noted the protection of the environment as a concern, which is relevant for minerals planning.

A comment was made by a member of the public at one of the public events about quarry restoration at Dunbar. Through consultation on the Tree and Woodland Strategy, comment was made about the need to secure tree planting as part of restoration of mineral sites.

A variety of views were expressed over housing numbers and other development via the online questionnaire and at public events, which will in turn drive local demand for minerals (see 'Housing' and other topic papers).

One of the suggestions made through the secondary school questionnaire to tackle climate change was to limit new building. This would reduce demand for minerals. 'Doing something about recycling' was also suggested.

A child from Cockenzie Primary School commented that using coal for energy is not good.

WHAT THIS MEANS FOR THE PROPOSED PLAN? WHAT ARE THE KEY ISSUES FOR THE LDP TO ADDRESS, FROM POLICY ANALYSIS?

Development Management Policy: Policy towards minerals proposals is set out in NPF4 and it may be that no further policy is required in LDP2.

Construction Aggregates: Reserves of construction aggregates are sufficient for a 10 year land bank assuming LDP2 is adopted in 2026. There is therefore no immediate need to seek new reserves. However, the position should be kept under review as demand levels vary. The Mineral Products Association recommends that larger projects be required to supply an overall estimate of minerals to be used in their development to manage demand. This idea is worth consideration and would ideally apply across the market area.

Sustainable Resource Management: How to promote sustainable resource management taking on board any actions emerging from the Circular Economy and Waste Route Map once adopted. Can LDP2 do anything further to promote best practice? Can LDP2 support reused and recycling at a local level? Does LDP2 need to plan for regional re-use hubs for construction waste?

Safeguarding important workable mineral resources LDP2 should consider whether any resources should be specifically identified and safeguarded, including

- Existing operational mineral sites - crushed rock, sand and gravel, limestone;
- Sites which have consent but are not currently operational
- Sites which have previously had consent
- Old quarries which formerly supplied building stone
- Other mineral resources where there is a support for extraction

AREAS WHERE THERE IS AGREEMENT OR DISPUTE ON ISSUES AND POSSIBLE APPROACHES

No disputes were identified.

Evidence

Source and Demand for Construction Aggregates

What are aggregates[1]?

Aggregates are normally defined as "hard, granular materials which are suitable for use either on their own or with the addition of cement, lime, or a bituminous binder in construction" Aggregates may be natural, manufactured or recycled.

Natural aggregates—aggregates from mineral sources which have been subject to nothing more than physical processing (crushing and sizing).

Manufactured aggregates—aggregates of mineral origin resulting from an industrial process involving thermal or other modification e.g. slag.

Recycled aggregates—aggregates resulting from the processing of inorganic materials previously used in construction e.g. construction and demolition waste

In Britain, however, it is common practice to distinguish between primary aggregates and alternative sources, such as secondary aggregates and recycled aggregates.

Primary aggregates are produced from naturally occurring mineral deposits, extracted specifically for use as aggregates and used for the first time

Secondary aggregates are usually defined as aggregates obtained as a by-product of other quarrying and mining operations or other industrial processes

Recycled aggregates arise from various sources including demolition or construction of buildings and structures

Need and demand for aggregates

The most important sources for primary aggregates in Scotland are crushed rock (from igneous rock, sandstone and limestone) and sand and gravel. Historically the UK has been self sufficient in primary aggregated, and also a net exporter.

Aggregates are needed for construction of transport and renewable energy infrastructure, housing and others. They are the second largest tonnage of material used in construction. Demand is driven by construction and economic activity as a whole. Although use of recycled aggregates has increased the BGS consider it is likely that a major proportion of future aggregate demand will be supplied by primary aggregate as there is not enough material which can be recycled to meet demand. Most aggregate is used in production of concrete for buildings and structures, for roads, constructional fill, railway ballast or mortar. Most sand and gravel is used for concrete, but also mortar and drainage layers.

NPF4 policy requires LDPs to take a landbank approach to construction aggregates. A stock of reserves (sites with planning permission) sufficient for ten years supply should be provided at all times.

The British Geological Survey collate information on aggregate minerals based on regular surveys[1] of operators and planning authorities. This provides information on national and regional sales, inter-regional flows, transportation, consumption and permitted reserves of primary aggregates. The most recent survey (published 2023) used 2019 as the base year avoid the years impacted by Covid-19. The BGS survey had a response rate of around 45% for active quarries. Surveys are also carried out by the Mineral Producers Association. The BGS report notes that there are discrepancies between their sales data and that of the MPA (sales in Scotland of sand and gravel sales were reported by BGS at 3.74 Mt, while the MPA reported 5.5Mt, crushed rock was 16.36Mt and 23.8Mt respectively). The BGS note that these discrepancies and the level of non-responses could be a significant factor in drawing useful conclusions from the data.

Aggregates have a variety of end uses, some of which are industrial rather than aggregate use. Information on industrial use was collected as some of these may be able to be used as aggregate if necessary. For sand and gravel, concreting aggregate was the main product. Crushed rock was mainly used for roads, but also concrete, fill, railway ballast and armourstone for coastal defence.

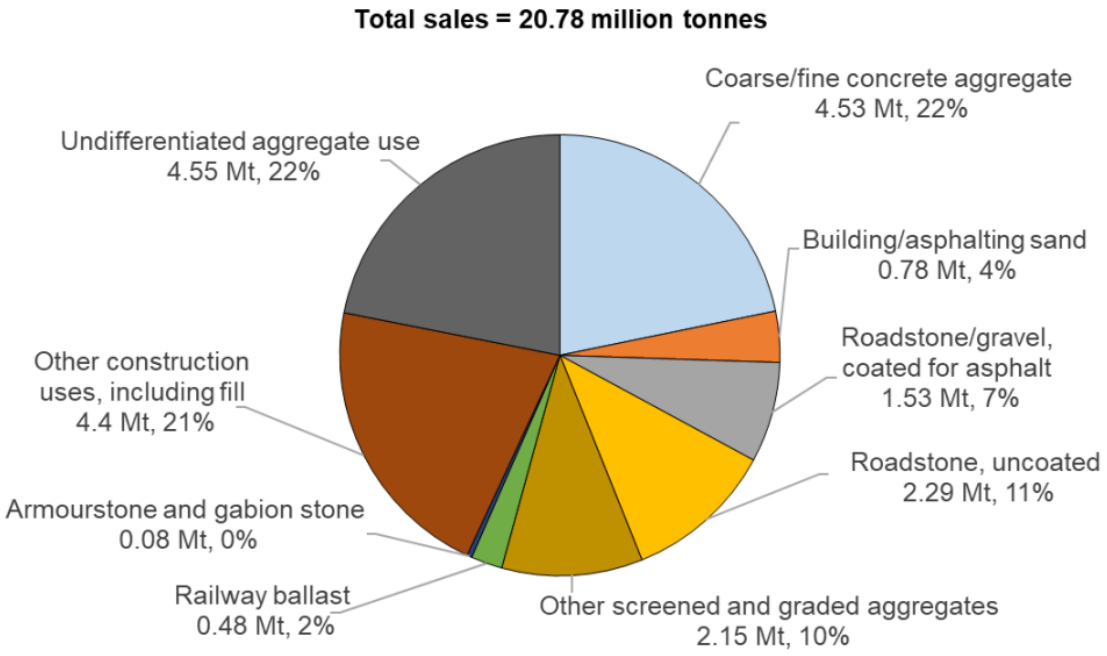


Figure 1 Sales of primary aggregates in 2019 by end use, reproduced from BGS Survey 2019

Market areas are defined in the BGS survey. East Lothian lies in the East Central Scotland market region, comprising the three Lothian Authorities, Edinburgh, Fife and Scottish Borders Council areas. However the difficulties in defining a market area within Scotland, with its varied population and geology, are recognised.

[1] See "Collation of the results of the 2019 Aggregate Minerals Survey for Scotland" 2023, British Geological Survey for the Scottish Government

The BGS looked at where products went, to understand inter-regional movement, though the noting the figures should be treated with caution as quarry operators do not always know the end destination. Overall in Scotland, 68% of movement of aggregate was by road. The BGS survey found total consumption of primary aggregates in Scotland was about 14.6Mt in 2019. The East Central Scotland Region had the second highest consumption of any region.

What are 'reserves'?

'Reserves' are considered to be primary aggregates in sites with valid planning permission in both active and inactive sites. Sites which are 'dormant' under the Town and Country Planning (Scotland) Act 1997 have not been included, as although they may contain aggregate they cannot be worked until new schemes of conditions have been determined.

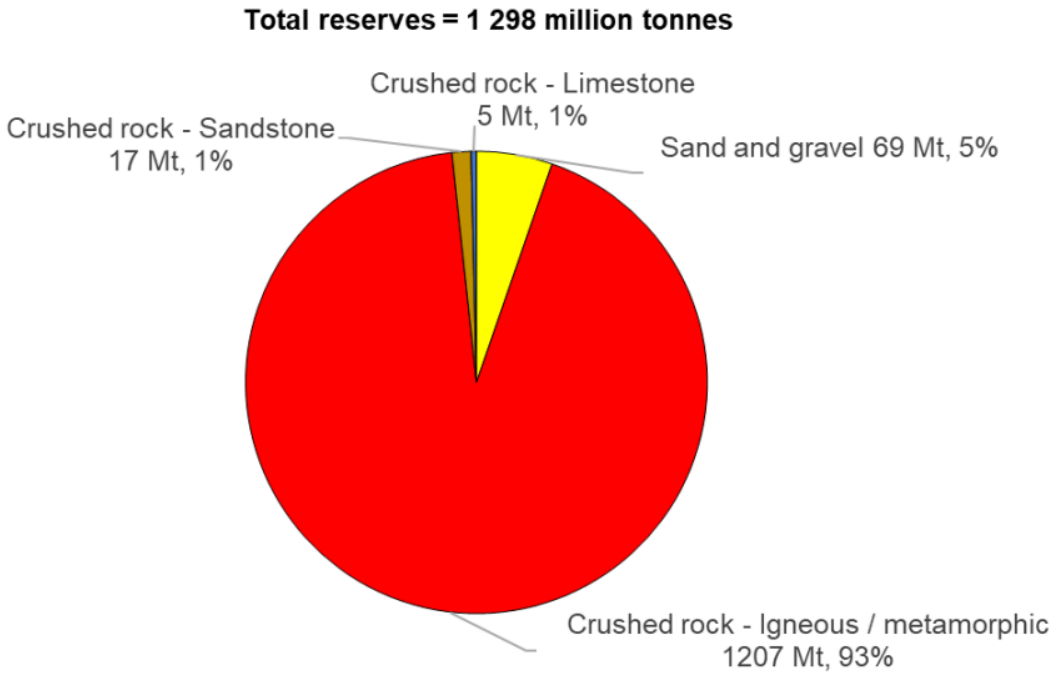


Figure 2 Reserves of Primary Aggregate by Mineral, Scotland. BGS survey 2019.

In Scotland as a whole, the BGS survey found sand and gravel reserves in 2019 were 18 years output, crushed rock 72 years.

In 2019, there was 2.9Mt of sales of aggregate in East Central Scotland, of which three quarters was crushed rock and a quarter sand and gravel. Consumption was 2.6Mt.

East Central Scotland had 31,600 000 tonnes of sand and gravel reserves, almost half of the total for Scotland, and the highest of any region. Consumption of sand and gravel was 480,000 tonnes and sales 739,000 tonnes. This region was the leading exporter of sand and gravel (348,000 tonnes), which mainly went to the Forth Valley Region, though there was also both export to and import from West Central Scotland. Imports of sand and gravel were 89,000 tonnes. At this rate of consumption, there would be over 65 years of sand and gravel in reserve for the region. The maximum supply

from active sites at 2019 sales levels in years is 33. No applications were made for sand and gravel extraction in the region in 2019.

Crushed Rock

In the East Central Scotland Region, there were 51,218,000 tonnes of reserves of crushed rock reported in the BGS survey of 2019. Sales of crushed rock were 2,142,000 tonnes, and consumption was 2,105,000 tonnes. The region exported 335,000 tonnes of crushed rock, and imported 299,000 tonnes, a small proportion of the overall amount used. At this rate of use, there would be over 24 years of crushed rock reserve. This matches supply from active sites at 2019 sales levels. There were five new planning permissions granted for crushed rock in East Central Scotland in 2019. No applications were refused.

Future demand

The picture for Great Britain as a whole looks a lot more challenging. The Mineral Products Information 10th Annual Mineral Planning Survey report considers that some of the regions responsible for national supply are facing challenges in maintaining their reserve base given levels of demand. Demand includes a nationally significant infrastructure programme, housing, commercial and renewable energy projects. The MPA considers that a way to improve the visibility of demand from major projects including housing and so improve demand projections, would be to require projects to prepare an upfront mineral resource assessment and supply audit as part of the consenting process for the scheme. This could allow for better planning for future demand.

Future use of aggregates may not follow past patterns. If rates of construction, including housebuilding, transport infrastructure and renewables increase, as well as general economic activity, the reserves of construction aggregates would be used up more quickly. However, as at 2019 and assuming similar rates of use, there were sufficient reserves to last well beyond the plan period. This is the case even allowing for 6 years of use of aggregates since the survey was carried out, taking us to the expected year of adoption of LDP2. Therefore, LDP2 will not be required to identify further sites for mineral workings over this period. However, this should be kept under review as the position may change depending on demand.

Promotion of Sustainable Resource Management

The circular economy and waste hierarchy seek to avoid, reduce and reuse items.

Lifecycle analysis can support decisions on sustainable resource use. Where the potential for re-use and recycling is considered from the outset, the need for new mineral extraction and materials can be reduced. Re-use of construction material and use of recycled aggregate reduces pressure on mineral reserves in this market area and elsewhere. NPF4 Policy 13 requires LDPs to promote sustainable resource management. NPF4 Policy 12 aims to encourage, promote and facilitate development that is consistent with the waste hierarchy, and requires development proposals to seek to reduce, reuse or recycle materials. Circular Economy Materials Management Facilities are a Scotland wide National Development in NPF4.

Waste facilities

Circular economy facilities are defined in NPF4 as a) facilities for managing secondary materials and b) recycling facilities.

East Lothian currently has 22 SEPA licensed waste sites, of which 12 were operational in 2022[2], and two of which were waste transfer sites (East Lothian Council's Macmerry Depot and the West Fortune Site operated by Drem Landfill Limited). The total licensed capacity was 2,751,088 tonnes, of which 2,169,478 tonnes was in operational sites. There was a total input into these sites of 642,385 tonnes. Sites receiving over 100,000 tonnes were Dunbar Energy Recovery Facility (324,353 tonnes), Dunbar Landfill (150,059 tonnes), operated by Viridor Dunbar Waste Services Ltd and Viridor Waste Management Limited, and Smeaton Bing (131,716 tonnes) operated by Hamilton Waste and Recycling Limited.

Sustainable materials

The choice of materials and construction methods, including recovered or recycled materials, and designing so that buildings and materials can be re-used, influences resource use over the lifecycle of the development and beyond. NPF4 Policy 12 (iv) seeks the use of materials with the lowest forms of embodied emissions, such as recycled and natural construction materials. The performance of the building in operation must also be taken into account to meeting NPF4 policy on reduction of carbon emissions overall. Sometimes the objectives of these policies may indicate a different choice of material.

NPF4 Policy 14 Design includes support for development proposals consistent with the six qualities of sustainable places, which includes 'Sustainable': supporting the efficient use of resources that will allow people to live, play, work and stay in their area, ensuring climate resilience, and integrating nature positive, biodiversity solutions. This is explained in Annex D as designing for transition to net zero, including energy/carbon efficient solutions, retrofitting, reuse and repurposing and sharing of existing infrastructure and resources. The quality 'Adaptable' includes design for durability and longevity. Although energy efficiency is part of good design, it can sometimes this aim can pull against the other design objectives.

Design policies of the current LDP do not include the energy efficiency of design nor materials. The LDP does not demand life cycle analysis of greenhouse gas emissions. The Council's Design Guidance for New Housing Areas reflects this, though does encourage use of natural materials such as stone for other design reasons. The Council does not currently have access to in house expertise to appraise life cycle analysis reports submitted in support of planning applications.

Reducing Construction Waste

Construction waste varies with the level of construction and demolition taking place, but can be a significant part of the waste stream. Progress on targets of reducing overall waste arisings is strongly linked to the scale of construction and demolition activity. Scottish Ministers have set a target of recycling and reusing 70% of construction and demolition waste, which has been met every year since 2011. This overall target does not however take into account the carbon cost of different waste streams.

There is some potential for material from other waste streams, including domestic, to replace primary aggregate for some applications. In Great Britain use of recycled and secondary aggregates started to rise in steadily from 1989 when it sat at 9% of all consumption, a level that had been

[2] See SEPAs Data Visualisation webpage https://www.sepa.org.uk/data-visualisation/waste-sites-and-capacity-tool/ (accessed 02/02/2024)

constant since the 1950s. Such aggregates now make up just under a third of all aggregates supplied in Great Britain[3].

The following graph shows construction and demolition waste, by type, across Scotland as a whole. As can be seen soil was the main component, followed by mineral waste. Metallic waste was lesser in terms of quantity however due to the carbon cost of manufacture may be higher in terms of proportion of embodied carbon. In addition to construction waste produced through commercial development, construction and soil waste was also around 1/7th of Scottish household waste in 2021.

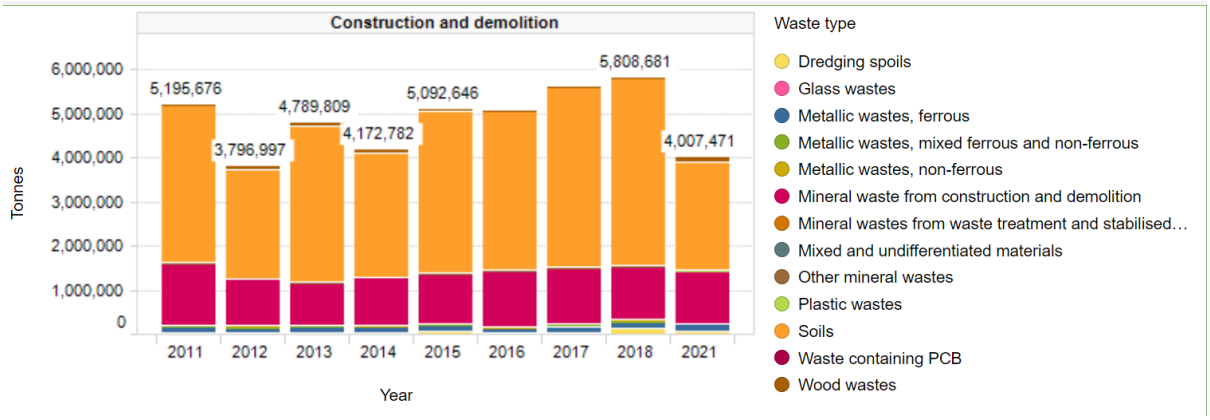


Figure 3 Construction and demolition waste, by type, from SEPA website at https://informatics.sepa.org.uk/WasteAllSources/

The Scottish Government is currently consulting on "Scotland's Circular Economy and Waste Route Map to 2030". This notes that Reduce and Reuse are the first goals of the waste hierarchy. A draft objective is to embed circular construction practices. A proposed priority action is to support the development of regional Scottish hubs and networks for the reuse of construction materials and assets. Other relevant proposed actions are to:

• Develop new and promote existing best practice standards in circular practices within the construction sector, and assess the options for both voluntary and mandatory compliance (ongoing)
• Investigate and promote options to incentivise and build capacity for the refurbishment of buildings (by 2026/27)

• Investigate and promote ways to reduce soil and stones disturbance, movement and volumes going to landfill (by 2026/27)

• Review opportunities to accelerate adoption of climate change and circular economy focussed purchasing in construction (from 2024)

• Consider how devolved taxes can incentivise the use of recycled aggregates and support circular economy practices (ongoing)

Achieving this will mean incentivising sustainable construction practices, reducing whole life carbon emissions, adopting sustainable procurement practices among others. Estimates in the Routemap suggest that only 5-10% of materials used in construction or from demolition are reused. A regional approach to creating hubs to store, stock and source used construction materials is currently thought the best.

[3] Mineral Products Association Statistical Workbook, available from Facts & Figures (mineralproducts.org)

Soil becomes waste when it leaves a development site, incurring charges and the need to meet waste regulations. There is therefore an incentive for developers to retain this material onsite. This can be a sustainable solution in that it avoids HGV movements. However it can also lead to loss of soil as a resource and also its use as 'fill' in ways that are not desirable in design terms. A good understanding of the proposed levels and engineering works of development is needed to find the best solution.

Supporting recycling in operational buildings

Planning can also help the circular economy by planning development in a way that makes recycling easier for the occupants. Scotland has a target of minimum of 60% of household waste being recycled. Overall in Scotland in 2022, 43%[4] of such waste was recycled. East Lothian achieved a rate of 54%[5], considerably above average. Design of development proposals can help make recycling easier and so improve rates.

Safeguarding important workable mineral resources - Construction aggregates

Sand and gravel

In East Lothian most of the sand and gravel was deposited by glaciers and rivers. Winning sand and gravel may therefore result in the loss of some of these glacial features from the landscape.

Sand and gravel working is ongoing at Yester Mains, following an original planning consent in 1974 (74/00224/HIS_M). The site was extended in 2011 (10/00863/PM), planning consent allowing for working for the following 21 years (i.e. to 2032), after which the extension site to be recontoured and restored.

[4] Scotland's Circular Economy and Waste Route Map to 2030 Consultation
[5] East Lothian Council website accessed 31/01/2024 https://www.eastlothian.gov.uk/news/article/14165/east_lothian_in_top_ten_local_authorities_for_household_waste_recycling_rates

Figure 4 Longyester sand and gravel quarry in 2005

Planning consented was granted in 2010 for sand and gravel working at a 5 hectare site at Skateraw. However, permission lapsed without it being implemented.

Both of these sites were previously safeguarded through the current LDP.

Crushed rock

In East Lothian, one application has been granted in East Lothian since the adoption of the LDP 2018, for extraction of hard rock as an extension to existing workings at Markle Mains (18/01403/PM).

Figure 5 Markle Mains quarry

Markle Mains quarry, between Haddington and East Linton, was first operated by Lothian Regional Council from 1979-1984. Quarrying re-started in 1996, the site currently being operated by Geddes Group, winning hard rock used for construction including in East Lothian. In June 2020 the Council agreed to extend the life of the quarry up to October 2042, and in December of that year agreed a physical extension to the site. Restoration will be carried out when quarrying ceases.

There is also planning consent for extraction of hard rock at Bangley Quarry (P/00964/89, P/00518/97 and 04/00813/FUL). Quarrying has been carried out there since the 1970s. No quarrying has been carried out at the site since 2008, and all associated buildings and structures have been removed, however planning permission remains extant for mineral extraction. In 2018 permission was granted for the erection of an anaerobic digestion plant there (17/00922/P). The continuation of quarrying is compatible with the Anaerobic Digestion plant. At that time, the operator confirmed some 3.5 million tonnes of reserves remain in the quarry, which they continued to have permission to extract. The output of the quarry, were works to restart, were considered at that time to be in the order of 100,000 tonnes per year (around 5000 HGV loads). Under new conditions deemed to be approved in 2005 (05/00804/S10) the extraction of minerals must cease no later than 21 February 2042, and restoration of the site, including removal of all buildings and structures, is to be undertaken within 24 months.

Both of these sites are safeguarded in the current LDP.

Limestone

The limestone at Oxwellmains south of Dunbar is the most extensive outcrop in central Scotland. Limestone has been worked since the late 18th century, with the most recent quarrying commencing in 1961, followed by the cement works in 1963. Limestone is the main raw material used in cement making; it is also used in farming to improve soil, and for water treatment. Cement is important in creating buildings including homes, and infrastructure. The Dunbar Cement is the only cement works in Scotland. According to its operator, Tarmac, it generates around £8 million annually for the local economy[6].

[6] About us | Dunbar Quarry (tarmac.com)

At Oxwellmains, strip mining is used, which allows for rapid restoration. Working is moving in a south westerly direction, with some parts now under restoration. The former North West quarry, now known as Whitesands Quarry, has been subject to an agreement with RSPB Scotland, and is being left for wildlife to restore naturally.

Figure 6 Oxwellmains: current quarrying with restored site to the northeast (©Crown copyright OS licence no. 100023381)

The level of housebuilding in East Lothian will have increased demand for cement, both for use in the houses themselves and associated infrastructure such as roads, footways and buildings such as schools. However, cement produced by Dunbar Cement Works, based on lime quarried on the adjacent site, supplies a much wider area than East Lothian and the East Central Scotland area.

This site is safeguard in the current LDP.

Building stone

Building stone is used for masonry, walls, pavements and elsewhere. The stone should be hard enough to withstand weathering, but soft enough to cut to shape. As most buildings in East Lothian were historically built of stone won nearby, this can impart a distinct character to groups of buildings, villages and towns (the exception being roofing materials, which were generally slate, which is not found locally, or pantiles). For example, many older buildings in the eastern hillfoot villages are made of locally won old red sandstone.

Figure 7 Distinctive red sandstone used for buildings in Garvald

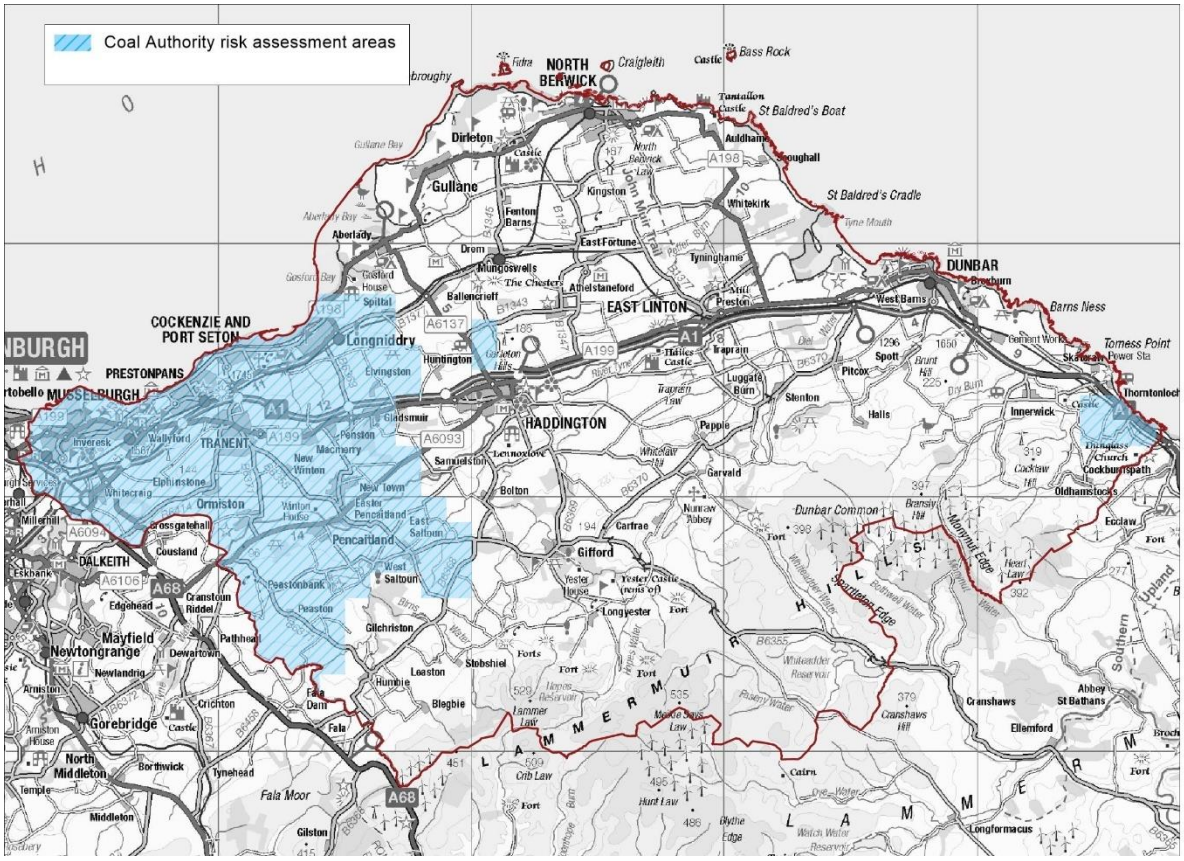
East Lothian has at least 18 former sandstone quarries, which provided stone for many of our older buildings, including those in Conservation Areas.

There is demand for building stone for repair of historic buildings, and for some new building. For repairs or other works to traditional buildings, it can be desirable to source stone that closely matches the original. Use of stone from local quarries could help achieve this.

The council has records of some old building stone quarries, but these were not safeguard in the current LDP. Some of these old quarries are now Local Geodiversity Sites, though some further small-scale working may be acceptable.

Coal

The west of East Lothian is on the Lothian coalfield, where there is a very long history of coal extraction. This area broadly corresponds to areas in which development may require a Coal Mining Risk Assessment due to the legacy of former coal mining. These areas are shown on the map below. It is possible that there may remain some coal reserves that could be economically recovered there.



The last coal mining that took place in East Lothian was the opencast at Blindwells, which has now ceased operation. An application for further open casting at Harry's Burn, Elphinestone was refused in 2000 (upheld at appeal).

The current LDP did not identify any areas of search for opencast coal. Instead, Policy MIN6: Opencast Coal Extraction provides that opencast coal extraction will be supported where it was acceptable under Policy MIN8: Mineral Extraction Criteria. Policy MIN8 requires that there be no significant adverse community or environmental impact. No applications for coal extraction have been made since the adoption of the LDP. Decisions on proposals would now also take into consideration NPF4 Policy 13: Minerals, which only supports fossil fuel extraction in exceptional circumstances. It is not clear that there are any sites within East Lothian where coal extraction would meet environmental and community impact criteria, even if extraction was justified as an exceptional case.

Pulverised Fuel Ash

Cockenzie Power Station, now demolished, was fed on coal from East Lothian and further afield. The ash from the power station was fed via a pipe to ash lagoons at Musselburgh, to create new land at Levenhall Links. This area has now become valuable both for outdoor recreation, with boating ponds and walkways, but also for bird life. The site is protected from erosion by a sea wall, which protects the area and avoids the release of the fuel ash into the Firth of Forth.

Pulverised fuel ash does have some value for use in bound and grout applications in construction and manufacturing. Its use was inhibited by uncertainty over the point at which the waste should be considered to be fully recovered and therefore not 'waste' within the meaning of the EU Waste Framework Directive. The fuel ash here has been beneficially used in the creation of new land.

However, its value as a mineral also remains, and there may be circumstances in which its recovery is the best solution for it.

Figure 8 Pulverised fuel ash at Musselburgh Ash Lagoons, prior to landscaping

Figure 9 Curlews and Oystercatchers at the landscaped bird scrapes at Musselburgh ash lagoons

Peat

There is some peat in East Lothian, mostly in the Lammermuirs, but this is not worked. Most of the peat in East Lothian is either within a SSSI or Local Biodiversity Site. Peatland has considerable value for storing carbon, preventing its release as carbon dioxide to air. NPF4 Policy 5 Part c sets out the circumstances where development on peatland will be acceptable, which are limited but include essential infrastructure and renewable energy generation where the contribution of the area to greenhouse gas emission reduction targets are optimised. The intent of this policy is to protect carbon rich soils, restore peatland and minimise disturbance from development.

NPF4 Policy 33 on minerals does not support development proposals that would sterilise mineral deposits of economic value unless there is an overriding need and prior extraction cannot

reasonably be undertaken. There may therefore be some very limited circumstances where development on peat is accepted, and prior extraction should be considered in such cases. There is some demand for peat as a gardening material. It is also sold occasionally as a material for use in stoves. Although it is very unlikely to be acceptable under current national policy to extract peat for these or other uses as a standalone proposal, using peat removed from accepted development sites could reduce extraction in other areas. The impact on carbon emissions would have to be considered.

Figure 10 There are some areas of peat in the Lammermuirs

No sites for peat (as a mineral resource) are safeguarded in the current LDP.

Shale oil and gas

Scottish Ministers currently have a moratorium on the development of unconventional oil and gas in Scotland, reflected in NPF4 Policy 33b. There is considerable uncertainty over the availability of this mineral, and whether, even were this policy position to change, whether it could be recovered while meeting environmental aims.

The British Geological Survey reported[7] on carboniferous shales in the Midland Valley of Scotland in 2014. The study area of the Midland Valley area extends from Girvan to Greenock in the west, to Dunbar and Stonehaven in the east. Not all of this area contains potentially prospective carboniferous shales. These lie beneath an area from Glasgow to Edinburgh, extending into western parts of East Lothian, broadly following the coal field. The map below shows the Midland Valley and the focussed study, based on geological data suggesting the potential presence of carboniferous shales.

[7] See Midland Valley of Scotland Shale Study, BGS 2014 https://www.gov.uk/government/publications/bgs-midland-valley-of-scotland-shale-reports

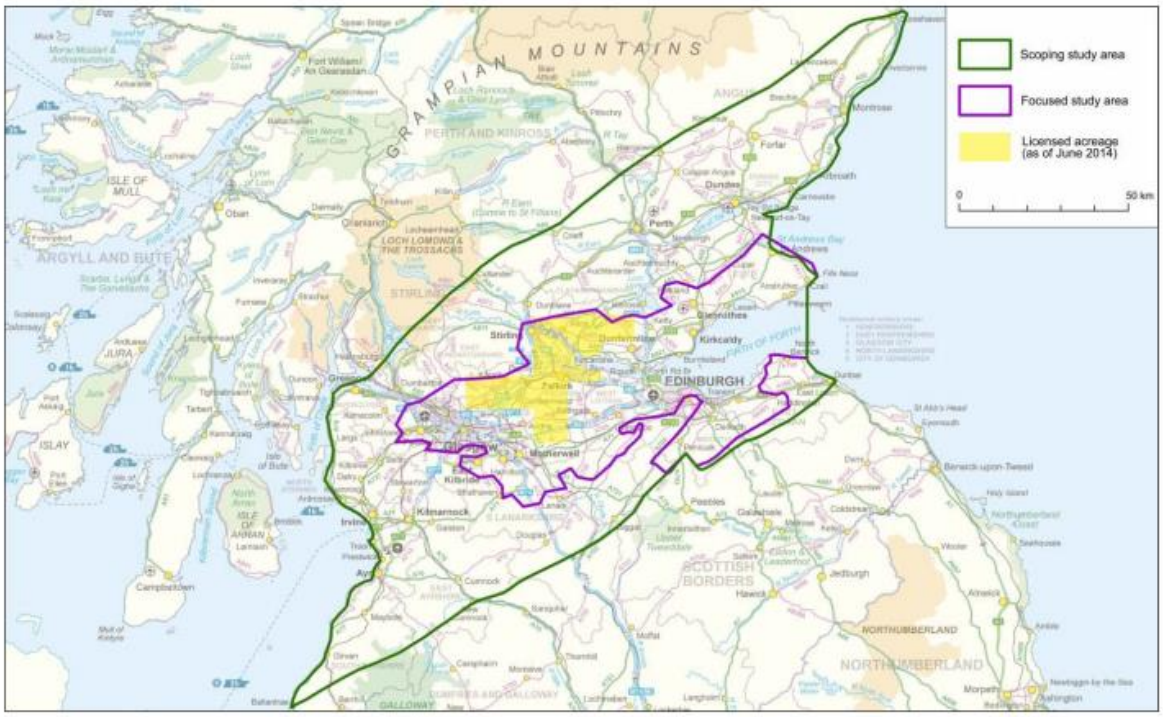


Figure 11 Extract from BGS The Carboniferous shales of the Midland Valley of Scotland: Geology and Resource Estimation

BGS note that seismic and well datasets available at that time were of limited distribution and variable quality. The study warned of limited certainty about the resource due to complex geology and lack of good quality data, together with more clay rich mineralogy than that of areas of shale extraction in the USA. However, the data presented "clearly show that the Midland Valley of Scotland Carboniferous shale resource contains high total organic carbon content shales mature for shale oil and shale gas". Noting the caveats above, it found *potential* for a significant volume of gas- and oil-mature shale to be present in four mature shale intervals beneath a mining-related depth cut-off: a total in-place gas resource of 49.4 – 80.3 – 134.6 tcf (1.40 – 2.27 – 3.81 tcm) and a total in-place oil resource of 3.2 – 6.0 – 11.2 billion bbl (421 – 793 – 1,497 million tonnes). The study concluded is not yet possible to make an estimate of the amount of shale oil and shale gas that might ultimately be recoverable.

As this mineral is mined at depth (unlike say sand and gravel which is at the surface) it is also not clear what the requirements would be for land in terms of location and area at the surface to allow for its recovery. This means it is difficult to identify how much or where land could be safeguard against future extraction of this mineral, were the policy position against its extraction to change.

STAKEHOLDER CONSULTATION

As well as consultation with the general public engagement was also carried out with children and young people. Few comments were made on minerals, though comments were received on protection of the environment and amenity (reported elsewhere) which is relevant for minerals planning.

Online Survey

No comments were received directly on minerals. A variety of views were expressed over housing numbers, and other development which will in turn drive local demand for minerals (see 'Housing' topic paper). Views were also expressed on protection of elements of the built and natural environment which affects minerals planning.

Public Events

A suggestion was made at the Dunbar event regarding what LDP2 needed to consider was "restoration of quarry and surrounding area into nature restoration". A path from the cement works through this area was also suggested.

Secondary School engagement

A short questionnaire was distributed to all state secondary schools in East Lothian. A question was asked on 'what would you like to see done to help climate change'? 'Limit new building' was one answer to this. This would reduce demand for minerals. Protection of nature and green areas was also suggested, which is a consideration for minerals planning.

Primary School engagement

Minerals was not (as would be expected) a topic discussed through primary school engagement. Key findings included the care children showed for woodland, green spaces, trees and habitats and for the world around them generally. Climate changes was also a concern.

A comment was made that: "it's not good when you collect it [energy] from coal under the ground and all the pollution goes up into the world" – child at Cockenzie Primary School. One of the items identified as important to children for the next Local Development Plan was (in relation to climate change) 'more recycling facilities'. This would support recycling of construction waste.

Other

A comment was made through the linked consultation on the Tree and Woodland Strategy regarding the need to make sure that requirements for tree planting in relation to mineral sites are carried out

WHAT THIS MEANS FOR PROPOSED PLAN

See summary sheet above.