

Brief November 2011

UK Minerals Forum Working Group 1

Distributing minerals to future markets

The UK Minerals Forum, hosted by the CBI Minerals Group, draws together key stakeholders to raise awareness of issues and identify potential solutions, in the sustainable use of indigenous UK minerals. The Working Group, chaired by Paul Wilcox, was convened to consider the distribution of aggregates and coal to future markets over the long term.

The brief for the working group (the 'group') was to consider two nationally important minerals aggregates (specifically hard rock) and coal and determine what is required to maintain their effective continued distribution to future markets in the UK over the period 2010 to 2042. The work of the group was informed by an Aggregates Strategic Research Programme (ASRP) funded report, Distributing bulk aggregates to future markets produced by a consortium led by Colin Buchanan for Mineral Industry Research Organisation (MIRO). This report provided a detailed territorial analysis of existing and future resources, and the constraints and opportunities for the future haulage of bulk aggregates from all areas of England.

1 Existing and future resources

1.1 Minerals can only be worked where they naturally occur and this is the case irrespective of whether they are found on land or offshore. The great majority of aggregates consumed in the UK, including hard rock, are sourced domestically, but for a number of years the bulk of coal burnt in the UK has been imported.

- 1.2 According to what has been geologically mapped and investigated so far at a strategic level, substantial resources of coal remain in the ground in the UK which may be capable of being recovered through mining or exploited by means of in situ gasification.
- 1.3 As regard aggregates, while sand and gravel are widely distributed, and significant tonnages are dredged from the seabed in UK waters, hard rock suitable for use as crushed rock aggregates is unevenly distributed in the UK. South east and eastern England are largely devoid of surface hard rock resources of suitable quality. While the group has not looked at other ASRP funded work on underground mining of aggregates our transport conclusions are likely to apply to any mined supplies in the future. There are however extensive resources of suitable hard rock in western and south-west England, parts of the Midlands, northern England, Wales, Scotland and Northern Ireland.

- 1.4 The ability in the future to plan for mineral supplies locally will be dependent on the availability of accurate and detailed geological data. The data currently available from British Geological Survey (BGS) is not always sufficiently detailed to allow for delineation of specific areas for future working.
- 1.5 However, the evidence available to the group suggests that the key limiting issue may be the UK's future ability and indeed willingness to exploit those resources rather than their physical and technical accessibility, due to the level of policy constraints imposed by those responsible for operating and participating in the planning system. Developer confidence in the system may also be a factor.

2 Existing and future transport network

- 2.1 The predominant means of transporting aggregates and associated value added products to their markets is by road and most of the aggregates produced in the UK travel no more than 38 kms. Overall, the movement of aggregates by water is less than 1% and by rail 11%. The Group does not see scope for any significant increase in inland water transport except where there is a fortuitous local combination of favourable circumstances. However, some hard rock travels much further by rail because it forms the long distance strategic supply to areas of net shortage, notably in the north-west, east and south east England and London.
- 2.2 While the evidence available to the group indicates that there are currently no major insurmountable problems with on-site infrastructure and off-site distribution facilities to move materials to the market, there may still be some localised problems with the rail network. To connect new mineral production sites, especially for hard rock aggregates, to the rail network over anything but very short distances, will be very expensive. The Buchanan report suggests that the cost of a rail connection may be in the range of £1-25 million depending on complexity. We also understand that the rail regulatory/ bureaucracy processes, and the time they involve before a connection can be made, impose a significant restraint and deterrent to bringing forward new proposals. The recent McNulty review with its focus on driving down costs and increasing efficiencies could help in the long term to make rail infrastructure cheaper.

3 Existing and future markets

- 3.1 In 1989 over 272 million tonnes of primary aggregates were consumed in England and Wales (a peak) after which consumption has steadily fallen. Consumption has fallen more sharply in recent years due to the impact of the recession and in 2009 was 121 million tonnes, of which 13.2 million were transported by rail. Distribution is over a wide geographic area and to tens of thousands of sites, which means a very high proportion of all deliveries to customers are made by road (88.5% in England and Wales according to recent figures). In the case of most rail-hauled aggregate a break of bulk is required at a reception depot in or near a major market area and this, as the Buchanan report notes, can impose a cost penalty on rail because of the disproportionately high cost of onward short distance lorry movements. However, these costs can be offset where the materials go into added value plants producing asphalt and ready-mix concrete.
- 3.2 Coal is mostly used for energy generation through coal fired power stations and is distributed to a handful of locations. The total coal consumption in 2010 was 52 million tonnes (mt) with 42mt at power stations but by 2025 this could fall to 35mt and 25mt respectively. Trainload haulage is therefore the norm for imported coal, most deep-mined UK coal and production from some of the larger and longer-term opencast sites. Rail haulage is usually impracticable on the grounds of cost, time and accessibility for the smaller, shorter term opencast sites but the output from such sites can often be transported locally by road to central railheads. However, the higher market price of coal per tonne and higher capital investment required to open up major new resources compared to aggregates mean that new deep coal mines could better support the high costs of new rail connections.

4 Future supplies

- 4.1 The Group was unable within the time and resources to develop future supply scenarios but the ASRP-funded report *An evidence based approach to predicting the future supply of aggregate resources in England* produced by the BGS and others for MIRO suggests that the most important foreseeable shortfall in England in the medium to long term is among the four rail-connected igneous quarries in Leicestershire. Since the East Midlands is a major producing area nationally this shortfall will be a key issue for policymakers in England in securing sources of material for future markets.

5 Key issues

- The extent to which the new hard rock and coal resources that will be required in the next 30+ years can be developed and supplies from them delivered
- The extent to which domestic coal production and imports up to 2025 and beyond can be handled through the UK's rail network (40 million tonnes/year) and through the ports (30 million tonnes/year)
- The extent to which crushed rock aggregates can continue to be moved to London, the south east, eastern England and the north west by rail.

6 Possible solutions and planning and environmental implications

- 6.1 The group considers it essential for national policy to protect and secure development of those mineral resources needed to supply future markets. This could be achieved in England through:

A A new framework for policy for minerals of local and national importance

- To formulate policies to secure development of minerals of local and national importance, and identify significant deposits in terms of their quality and quantity. The work undertaken by the group suggests that coal and aggregates should be considered as minerals of local and national importance because of the demands they impose on the national transport networks. The group is therefore pleased to note that coal and aggregates are accorded the status of minerals of national importance in the government's consultative draft National Planning Policy Framework (NPPF) issued on 25 July.
- Similar policy recognition would be needed in the UK's devolved administrations.

B A clear planning policy framework

- 6.2 Within any planning policy framework for aggregates and coal there needs to be the following elements:
- An integrated approach to the delivery of key environmental, social and economic outcomes. While international and national designations protect habitats, landscape and the countryside must be considered, so too must the economic and social need for new aggregate resources that can maintain rail-linked strategic hard rock aggregate supply beyond the lives of the present generation of rail-linked quarries. In particular

the environmental damage caused by shifting long-distance aggregates supply back onto the roads by default must be taken into the policy balance and given due weight. The current comprehensive revision of policy into a National Planning Policy Framework is an excellent opportunity to do this. The draft NPPF recognises that while further permissions of mineral reserves in the designated protected areas are to be avoided, this may not always be practical in meeting its objective of 'ensuring a sufficient supply of material to provide the infrastructure, building, energy and goods the country needs

- Application as far as practicable of the proximity principle: the closer reserves are to existing centres of population the shorter distances aggregates will be transported
- Reduction in the use of road haulage as far as practicable where new sources of strategic supply are located at long distances from their markets. This will help reduce carbon emissions, divert additional pressure that would otherwise fall on the local and principal road networks and help the industry operate at higher environmental standards. The use of more sustainable transport modes is also supported in the draft NPPF
- Stronger protection of existing and potential sites in the market areas for the reception, processing and onward distribution of rail-hauled aggregate. The group welcomes the draft NPPF proposals for safeguarding existing, planned and potential rail heads, rail links to quarries, wharfage and associated facilities for minerals
- Where there are geological and geographical imbalances of resources, to continue to provide for supply from areas with extensive resources to areas where demand cannot be fully met from local resources within that area. This will require mechanisms to be maintained and where necessary improved inter-regional supply issues
- Maintain policy and regulatory support for coal at a national level, within whatever future level of coal burn is set by future UK energy policy and EU-regulated carbon markets and on the basis that the need to capture, transport and dispose of carbon dioxide could have locational implications for future coal-related developments
- Keep under review the impact of EU work on energy raw materials.

C Transport policy

- 6.3 The need to secure long-term rail freight paths for aggregates and coal on the increasingly congested existing network should be recognised and given appropriate policy support in national transport policy and investment planning. And where major new sources of hard rock are identified to replace sites ceasing production in the period 2011-2042, consideration must be given to how those new sources can be connected to the rail network at an acceptable cost to minimise default to the use of road haulage. This requires:
- Examination of the regulatory standards and procedures to make it easier to obtain suitable rail connections in reasonable time
 - Consideration given to the reinstatement of Freight Facilities Grants in England to offset the capital cost disadvantage of rail relative to road haulage. While the draft NPPF does not propose this reinstatement, it does call for planning strategies for the provision of viable transport infrastructure to support sustainable economic growth, including the provision of large scale freight interchanges.

D Action by the minerals and associated industries

- 6.4 The findings of the Buchanan research on the costs of short road hauls confirms that there is also a general need for further work by the aggregates and associated industries to ensure more efficient road delivery practices, for example maximising vehicle loads and reduce empty running.

7 Conclusions

7.1 Aggregates

- Significant policy support is needed at national and local levels to maintain the local supply of aggregates wherever possible
- Strategic sources of rail-linked hard rock quarries and associated distribution infrastructure need to be maintained
- Future strategic replacement sources of hard rock supply need to be identified and economically accessible from the rail network and supported by a concerted effort to deal with the present cost and procedural barriers to new or enhanced rail connections
- Help is required for contractors and clients to develop more efficient transport distribution.

7.2 Coal

- The UK's rail network and ports should be able to handle the future level of domestic coal production and imports up to 2025
- Coal resources in the UK capable of being exploited should be safeguarded nationally
- Energy prices and overall UK and EU energy, fuel, climate change and environmental policies will be the main factors determining coal burn and associated transport to market
- The implications of developing EU work on energy raw materials needs to be kept under review.

7.3 Overall the group concluded that:

- (1) The UK's present transport infrastructure for coal, both imported and indigenous, appears broadly sufficient in capacity and extent to meet foreseeable future needs, based on the present pattern of supply
- (2) Any substantial return to domestic coal production from major new deep mines, in place of at least some of the present majority of imports would need suitable rail access
- (3) While there is some scope to increase the volume of aggregate transported from present rail-linked production sites, spare capacity on the network is becoming limited
- (4) A step-change in the percentage of aggregate moved by rail from its pre-recession level of broadly 10% to, say, even 15% would be difficult to achieve simply because of the load on the network from increases in passengers and higher value freight traffic
- (5) The work by Colin Buchanan and Partners confirms that to develop new replacement quarries able to access the rail network at reasonable cost will need positive policy support from the government by less bureaucratic rail technical approvals, rail grants being reinstated in England and an integrated approach to the delivery of key environmental, social and economic outcomes
- (6) The working group's findings and the approach taken may also be relevant to other nationally important minerals.

8 Recommendations to UKMF

- 8.1 To engage with the coalition government, local government and statutory non-departmental public bodies and voluntary non-governmental organisations on the policy issues set out above.
- 8.2 To consider further how the mineral and associated industries can make a more determined effort to promote the efficient use of mineral transport so as to reduce their overall carbon footprint and other adverse environmental impacts.

Annex

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