

MANAGED AGGREGATES SUPPLY RESEARCH PROGRAMME FOR ENGLAND – AN OVERVIEW

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ABSTRACT

In 2007 the Departments for Communities and Local Government (CLG) and for Environment, Food and Rural Affairs (Defra) commissioned a series of studies examining aspects of the system of Managed Aggregates Supply that has operated since the early 1970s. The results have been published on the internet either by the British Geological Survey (BGS) or the Minerals Industry Research Organisation (MIRO). In addition, an overview of the whole programme has been published by BGS in hard copy, the text for which was prepared by the author. This paper briefly discusses the main issues for aggregates supply which the overview identified from the component reports of the programme. It concludes with some personal observations on the managed supply system from the author's experience as Deputy Director for Resources and Environment Policies in the Planning Directorate of CLG and its predecessor divisions and departments between 1997 and 2007.

*Hicks, L.B. 2010. Managed Aggregates supply research programme for England – an overview. Pp.35-40 in Scott, P.W. and Walton, G. (Eds) Proceedings of the 15th Extractive Industry Geology Conference, EIG Conferences Ltd, 186pp.
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INTRODUCTION

When the government commissioned a review of Managed Aggregates Supply in England in 1996 the then Department of the Environment (DOE), had provided since the 1970s through its Minerals Division, a “one stop shop” which combined three functions in one department. First, it led for Government on managed supply - the main day to day sponsorship issue for the construction minerals industries. Second, it was responsible for mineral planning policy, mineral plan scrutiny and ministerial mineral casework on call-ins, recovered appeals and conditions review appeals. Third, it discharged, in respect of mineral policy and ministerial casework, the Department's responsibilities and policies for countryside, habitat and environmental protection.

By contrast, by 2007-2008 this unitary approach had been split into four. The Department for Communities and Local Government (DCLG), as successor to the former DOE, is responsible (in different divisions, separated by a “Chinese Wall” reflecting the requirements of the Human Rights Act in ministerial decision-making and the centralisation of ministerial casework in the early 2000s) for only two – mineral planning policy and ministerial casework on mineral call-ins and recovered appeals. Sponsorship of the construction industries (including construction materials) passed in 2001 to the Department for Trade and Industry (DTI), itself reorganised in 2007 as the Department for Business, Enterprise and Regulatory Reform (DBERR) which in turn became the Department for Business, Innovation and Skills (BIS) in June 2009.

Following the split of the former Department of the Environment, Transport and the Regions (DETR, the

immediate successor to DOE), the newly-created Department for the Environment, Food and Rural Affairs (Defra) has, since 2001, been responsible (in various divisions) for policy on countryside, landscapes, habitats and environmental protection (water, pollution, waste). From 2007, it also took on from DCLG responsibility for legislation, policy and casework on marine minerals dredging in English waters. This work is now carried out by Defra's Marine and Fisheries Agency.

Finally, to complete the picture, the Government Offices for the Regions have since 2007 been fully responsible for scrutinising minerals policies in Regional Spatial Strategies and Development Plan Documents, where this is judged a regional priority.

Compared to the position at the time of the last review of managed aggregates supply in 1998, when consideration of the various issues on aggregates supply and its handling through the planning system in England was the responsibility of a single department, the subsequent ‘balkanisation’ of responsibilities will make the process of responding to the 2007-2008 research programme more complex and time-consuming. Matters that could be handled informally, often entirely by officials, will be more likely to be referred to ministers because they raise “cross-departmental” issues.

The reduction in the range of responsibilities for minerals to purely planning matters in DCLG in the period 2001-2007 coincided with, and indeed has reinforced, a reduction in the in-house professional expertise in minerals and applied earth science that had been available to government in its Minerals Division

since at least the late-1940s and the era of post-World War II reconstruction and planning. Though latterly lodged in the directorate responsible for land use (now “spatial”) planning, Minerals Division had retained its wider remit in the field of land use and natural resources. If informed staff, with relevant expertise and able to apply a professional understanding of applied extractive industry science and engineering to the arcane world of public administration, exist still within government, they are clearly no longer concentrated in one place or working to an integrated remit. It must therefore be questionable whether there is now a critical mass of internal expertise to advise government effectively on extractive industry matters in the round.

THE MANAGED SUPPLY RESEARCH PROGRAMME: 2007 – 2008

This programme comprised six studies in two groups. Four were funded by Defra’s Aggregate Levy Sustainability Fund (ALSF) allocation administered by MIRO, and e-published by MIRO. The reports are:

- Verney - Still relevant after 30 Years? Beyond The Way Ahead by the National Stone Centre (Department of the Environment, Scottish Development Department, Welsh Office. 1976: ‘The Verney Report’) (Thomas, 2008)
- The need for indigenous aggregate production in England by BGS (Brown *et al.*, 2008)
- Resource alternatives: Options for future aggregate supply in England by BGS (Mankelov *et al.*, 2008)
- Reasons for the decline in (permitted) aggregate reserves in England by Capita Symonds (Thompson *et al.*, 2008)

Two further studies prepared or overseen by BGS were funded by the joint BGS-DCLG Minerals Information Programme. They were reported as:

- Managing aggregates supply – a review of the current system and future options (Gunn *et al.*, 2008)
- A summary overview of the programme and its main findings – with special reference to the review of the system (Hicks, 2008)

Six main issues emerged from the research:

- is there a long-term need for aggregates to enable modern construction to continue, and if so at what level?
- what is the real position on present permitted reserves – how long will they last? What’s the trend?
- if England needs aggregates long-term and reserves will need replenishing, what are the constraints on and options for future supply?
- how has the Managed Supply system performed? Is it still needed? Or is there no problem that requires intervention in the market?
- if a Managed Supply system is still needed, is the present model fit for purpose or is there a better alternative?

- if the present system is still better than the realistic alternatives, can it be improved? If so, how?

These issues are now examined in turn.

IS THERE A LONG-TERM NEED FOR AGGREGATES?

To give reality to this somewhat abstract question it might be better stated as “Can we foresee how we could build without concrete or asphalt?” The core facts identified in Brown *et al.*, (2008) are that recent annual consumption of aggregates in England has been broadly in the range 210-220 million tonnes, 96% of this has come from English sources, and the total includes 55-60 mtpa of recycled and secondary material.

Looking ahead, there appears to be no credible alternative material on the horizon for bulk/heavy mass uses in construction. Before concrete and road asphalt took centre-stage, the Victorians used bricks, dimension stone, and iron/steel for their often impressive construction projects. But bricks and stone are also quarried, from sources that are becoming scarce and more expensive. Bricks are high in embodied carbon. Structural steel, the present-day equivalent of the Victorians’ rivetted iron fabrications, is a niche material valued for its high strength and low mass. It is and will surely continue to be used selectively. It is expensive, imported either as ore or in finished form, and very high in embodied carbon.

The inevitable conclusion is that aggregates aren’t going out of fashion as the basic construction material in the medium or near longer term, which for convenience we might take as being before 2042, a significant date in mineral planning. It follows as a reasonable assumption that if the economy doesn’t go through recession to a permanently lower level of activity, England needs a steady annual supply of aggregates in the range 200 - 220 million tonnes, at least to 2020 and probably longer.

WHAT IS THE POSITION ON PERMITTED RESERVES IN ENGLAND?

The position on aggregates reserves is complex. Any simplification of the analysis in ‘*Exploring the reasons for the decline in Aggregate Reserves in England*’ (Thompson *et al.*, 2008) needs to be treated with caution. Subject to that proviso, this study’s main findings are as follows.

For sand and gravel, government surveys show that permitted reserves fell by 29% between 1997 and 2005. The reductions were greatest in London (74%), the North East (55%), and the South East (50%). These figures include reserves in dormant sites, so the reduction is even greater if only active sites are considered. Notional landbanks (that is, the tonnage of already permitted reserves within a specified local area, usually expressed in terms of number of years’ supply at an average rate of output in recent years, in this case using sales figures) also show an overall decline nationally and in most regions. In detail, Thompson *et al.* (2008) found that 17 out of 42 mineral planning authorities (mpas) or groups of mpas with landbanks quoted in the reports of the Regional Aggregate Working Parties (RAWPs) were at or below the minimum of seven years given as a guideline in Mineral Planning Statement 1 (Department for

Communities and Local Government, 2006). At regional level, notional landbanks were found to be below seven years in London and South East; and below eight years in the South West and East Midlands

For crushed rock, government data show that permitted reserves fell by 13% over 1997-2005. However, accounting and reporting adjustments in the 2001 and 2005 surveys may have had some impact, with the underlying reduction not being as great. The notional national landbank based on sales figures shows a net improvement over this period, indicating that overall there would be 39 years supply if the same rate of depletion was maintained. No region with significant hard rock resources and production was found to have a notional landbank of less than 20 years

A number of conclusions may reasonably be drawn on the state of permitted reserves at the middle of the current decade. First, it is evident that sand and gravel reserves are becoming critical in some regions, and especially London and the South East. This matters because sand and gravel is typically produced relatively close to markets. While London's own supplies are naturally limited, the South East is still a substantial producer. For how long can this continue? London and the South East are already significantly dependent on extra supplies from other regions and marine dredging, one of the factors that concerned the Verney Committee in the early 1970s, as noted in National Stone Centre's (2008) report.

While crushed rock reserves still appear to be substantial taking England as a whole, since 1997 primary aggregate sales have not been fully replenished by new permissions. If the assumption about future demand continuing at broadly present levels is correct, action to permit new supplies from existing or new sources will be needed. Among other issues, over-reliance on a decreasing number of major hard rock sources remote from the main construction markets will mean an increasing level of embodied transport carbon in material delivered to sites.

CONSTRAINTS ON AND OPTIONS FOR FUTURE AGGREGATES SUPPLY IN ENGLAND

The report by Mankelov *et al.* (2008) starts by reviewing the range of constraints on potential sources of supply. First, there is a wide range of statutory designations, either preventing or restricting development at or close to sites of environmental or cultural significance. Binding international treaties govern Special Areas of Conservation (SACs) for animal and plant habitats and Special Protection Areas (SPAs) for birds under the European Union's "Natura 2000" programme, and wetlands used by migrating birds under the United Nations' Ramsar Convention. National protective designations include Sites of Special Scientific Interest (protecting habitats and geology, much of the latter and a significant part of the former having been generated by mineral working) and heritage listings covering valuable archaeological and historic sites. Statutory landscape protection is applied though restrictive planning policies in the National Parks and Areas of Outstanding Natural Beauty.

In addition, future mineral working is constrained by much existing development. It would be prohibitively expensive to acquire and remove roads, other essential infrastructure, and groundwater protection (even where that was acceptable socially or economically) and to remove local landscape and other protective designations.

Mankelov *et al.*, (2008) found that just taking the areas covered by the statutory designations and main settlements in 2005 (and therefore understating the overall impact) potential constraint affected 41% of total permitted aggregates reserves and 33% of sales. For sand and gravel the impact would be below average, affecting 12% of reserves, 25% of active sites and 10% of sales. The main impact is on crushed rock, potentially affecting 46% of total reserves, 45% of active sites and 49% of sales. For limestone, probably the most significant hard rock resource, 42% of reserves, 52% of active sites, 42% of sales would be covered. The potential impact on igneous rock is even greater, applying to 69% of reserves, 68% of active sites and 80% of sales. However, the data also show that permissions in constrained areas can still be obtained. While the permitted volume in 2001-2005 was down 32% nationally on 1997-2001, it was only 2% down in the main areas of protected designations, though, as would be expected given the restrictive planning policies applied to them, on a much smaller total tonnage. This rate of replenishment would, if sustained, slow the drawing down of reserves in the designated areas

Before looking at alternative sources of supply, Mankelov *et al.*, (2008) examined what could be lost from the English National Parks and Areas of Outstanding Natural Beauty (AONB), in view of their present strategic significance in terms of permitted reserves and hard rock supply on the one hand, and the presumption of restrictive planning policies continuing to be applied on the other. It found that sales in 2005 were 22.6 mt, and 41 out of the 94 active quarries in those areas do not have permissions beyond 2020. Fifty four quarries do not have permissions beyond 2042 (the legal cut-off set in 1982 unless a new or extended permission is in force).

None of the available options for future aggregates supplies for England offer problem-free solutions. Expanded production from quarries outside National Parks and AONBs would simply run down existing permitted reserves faster. Scope for extending many of the existing large production sites is becoming limited. In searching for sites for large new quarries outside National Parks and AONBs, the best prospects in terms of aggregate quality are Carboniferous limestone and igneous rock, but many potential resource areas are constrained by other designations. Future supply must also take account of the possibility of increasing the use of alternative materials. But scope for more than a modest increase looks limited. After substantial increases in recent years, the recycling of construction, demolition and excavation waste may be getting near its limit. Secondary aggregates from industrial by-products and other mineral working have reduced overall. Marine dredging remains an important source, particularly for London and the South East. However, a significant increase above fairly stable recent levels of supply would require additional consents and investment in new ships.

That in turn would require confidence that the recently established integrated decision-making process for marine development will be more positive towards increased aggregates dredging than the cautious approach seen in the first consents in the new Eastern English Channel resource area in recent years.

More aggregate could of course be sent to England from quarries in Wales. This already supplies six million tonnes a year, 34% of Welsh output. But planning policy in Wales is a devolved matter, and the present approach of the Welsh Assembly is, not surprisingly, that future aggregates permissions should meet assessed future need in Wales, not to supply England. As for large-scale marine transport, more land-won aggregate could in theory be moved by sea from Scotland from the Glensanda coastal superquarry, where some production is currently sold outside the UK, from Northern Ireland and, perhaps most promisingly, from a number of existing coastal quarries in Norway. However, the main obstacles to large scale bulk aggregate imports remain the limits of berth and stocking capacity at the small number of deepwater ports capable of accommodating bulk carriers of economic size, the competition for that limited capacity from higher value imports (including coal and natural gas) and restricted capacity in the transport networks inland of those ports. Finally, underground mining of hard rock aggregate could possibly extend the lives of existing quarries and perhaps overcome some (but by no means all) local environmental obstacles. But this option has not been tried so far on a sustained large scale in England, and would be more expensive than conventional opencast extraction.

The evidence is therefore that while each of these alternative sources of aggregates supply has the potential and capacity to contribute to further supply, each faces one obstacle or another that would need to be overcome. Mankelov *et al.*, (2008) perhaps wisely does not go on to state this explicitly; but conclude that the question of future sources of aggregate supply for construction requires serious study as an issue of national economic significance. In view of the present allocation of departmental responsibilities noted above, this would be a matter for DBERR. Such a study would need to be conducted before an appropriate response in revised national spatial planning policy could be devised.

THE PRESENT SYSTEM OF MANAGED AGGREGATE SUPPLY IN ENGLAND: HOW IT IS PERFORMING AND IS IT STILL NEEDED?

The wider background provided by the other studies in the programme sets the scene for further work undertaken and reported in Gunn *et al.*, (2008). This examined the performance of the present system of managed supply that has operated since the 1970s, the case for its retention, and, if retained, the options for addressing aspects of its performance felt to be capable of improvement.

Gunn *et al.*, (2008) estimate that the present system costs the government, industry and Mineral Planning Authorities about £950,000 per annum, or less than one penny per tonne. A survey of stakeholders, including

interested environmental NGOs, suggested its perceived strengths were founded in its record of success in delivering an adequate and steady supply over 30-odd years. It has a strong and rational evidence base, visibly “shares the burden” between regions, is integrated into the planning process – plans and decisions being open to public input – and consults on and publishes its supply Guidelines for planning policy-makers at regional and local authority levels. Because the system establishes “need” in advance on the basis of evidence agreed between the aggregates industry and the planning system, albeit at overall national level, “planning by appeal” where permissions are refused or not granted in full is greatly reduced.

Nevertheless, Gunn *et al.* (2008) also found that those consulted also perceived weaknesses in the system. They considered that it still largely projects forward existing patterns of supply and demand, and does not address demand reduction and end uses. They consider its technical base and long and complex data collection and evaluation processes can be a barrier to local political judgments and effective community input. The system’s data and forecasting can be unreliable, and its periodic outputs are not well integrated into regional and local plan-making cycles. Finally, it can favour larger operators with multiple sites and an ability to tailor production and applications, at least to some extent, to the results of the system in terms of plan allocations, and therefore can operate at the expense of SMEs lacking this flexibility.

In a limited review of arrangements in some other UK and EU administrations, Gunn *et al.* (2008) found that outside England, and to a reduced extent in Wales, no other country superimposes requirements aimed at managing supply on normal consenting processes at sub-national or local authority level.

Against this background, what are the future options for managed supply? Gunn *et al.* (2008) looked at:

- abandoning the system – letting the market interact with the planning system like other forms of development
- running managed supply at regional level – with no national demand forecasting, supply *Guidelines* or co-ordination of inter-regional issues
- taking major aggregates applications for over 0.5mtpa (about 30 cases a year) into the remit of the Infrastructure Planning Commission proposed in the then current Planning Bill
- creating a new statutory licensing framework for aggregates, based on extensive Permitted Development Rights and standard technical templates for matters like separation distances, protection of sensitive sites/receptors, impact mitigation etc. A new Compliance Body would operate by checks against standards, not judgment of merits
- keeping the present system, but considering whether and how to improve it

In evaluating the options, they found that abandoning the present system would offer no net advantages. This could not guarantee continuity of supply, and an

econometric study they commissioned predicted it would lead to cuts of 7-8% in successful applications, 5-6% in permitted tonnages, 10% in production, and an increase of nearly 60% in industry costs. In the absence of a structured and objective approach to forecasting need, the reversion to “planning by appeal” case by case would add costs for all parties. An objective observer might reasonably conclude that this option offered some distinct disadvantages.

They found that the regionally managed supply option would perform worse than the present system. Purely regional and local considerations would exclude from decisions the issue of providing aggregates to meeting need elsewhere, resulting in reduced supply, longer hauls, and higher prices.

The two more radical options examined, of adding aggregates production (if not mineral working generally) to the National Infrastructure Planning System being established in the then current Planning Bill, or of creating a wholly new statutory licensing system for aggregates, could be both faster and cheaper than present system to operate and should ensure adequate supply. But, loss of local involvement and accountability for a widespread form of development with potentially intensive impacts on extraction sites would reduce local political and community engagement and acceptability and risk hardening local opposition, certainly legally and possibly also through direct action. Both options would require complex legislation and expanded national bodies to administer them.

They concluded that while the present system may not be perfect, there is no credible alternative option that looks better on the key issues of performance and overall acceptability. However, it could be improved, and the recommended option was therefore to retain the system of managed aggregates supply in England, subject to considering the following:

- investigation of the factors affecting future demand for aggregates
- as an interim, short-term measure, replacing econometric demand forecasting by simpler projections based on average consumption
- wider stakeholder participation in the national and regional forums
- greater public and political involvement in the early stages of developing regional guidelines and sub-regional apportionments
- a study of the capacity of quarries to respond to demand
- monitoring the application of national policy for landbanks, generally and for material of special qualities, in planning decisions, and stronger national planning advice if required
- action to improve public awareness of how aggregates planning addresses social and environmental equity and differing regional circumstances

CONCLUSIONS

Standing outside the largely editorial function of reviewing over 500 pages in the reports in this research programme to prepare the text for the overview (Hicks, 2008) what should an impartial observer make of it all? Here is a personal view.

There is no doubt that the system of managed aggregates supply can feel old fashioned – “1970s” and “corporatist”. It dates from the era of the National Economic Development Council (“Neddy”) and its sectoral Economic Development Committees (“Little Neddies” – there was one for the Construction Industry). With the changes in machinery of government affecting planning, construction industry sponsorship and environmental protection noted above, the present Government was bound to consider the future of a system that is now well over 30 years old, including a “hands off” option.

Compared to what else is currently going on in the economy, not least in the construction sector and especially housing, policy-makers in government might well ask “Problem? What problem?” The fact is that managed supply has delivered the goods, with in recent years virtually none of the large-scale controversy that has continued to attach to other forms of potentially high impact development such as roads, airports, ports, power generation and waste incineration. Outside government, while a few thinkers in the major companies and the aggregates sector collectively may be concerned about the future, was this on the radar of the overall leadership of the construction industries before the credit crunch focussed corporate minds on immediate survival?

Yet some immovable truths remain. Modern construction can’t do without aggregates and there is no credible prospect that this will change in the foreseeable future. The realities of geology and the distribution of economic activity and population in England mean the marked regional imbalances in supply and demand will continue. When the figures are examined in detail it’s clear that permitted reserves overall are reducing, in some places landbanks are already getting tight, and that without new permissions this will become more widespread. In looking for future sources of supply, large-scale imports are not realistically a quick fix. That would require massive supply chain investment comparable to that made for coal in the last decade and currently in progress for liquid natural gas. The scarcity value of aggregate is not yet high enough to compete for limited deep-water port capacity or to drive further port expansion, which itself is usually highly contested on environmental grounds.

It also remains true that mineral extraction remains one of the least popular forms of development. Proposals to extract aggregates need careful and sensitive handling, and a sound evidence base that demonstrates the need for the material outweighs any adverse environmental impacts. The planning system is the forum for considering all the issues, and the data, analysis and apportionments inherent in the managed supply system are crucial to an orderly consideration of proposals to extract aggregates that balances all the sustainability considerations – economic, social, environmental and natural resources.

That said, the planning system is a neutral forum within which development proposals are impartially tested, both in plan-making and on individual applications. Managed supply is about delivering aggregates needed by the construction industry. In essence this is a materials supply issue. It requires an appropriate response from the Government overcoming the difficulties created by its departmental reorganisations over the past decade. The “planning department” (now DCLG) is not the minerals one-stop shop its predecessors were from about 1943 to 2001. It simply runs the planning system at national level. Despite its continuing policy responsibility for housing, and the benefits of managed supply in smoothing the processes of plan-making and development management, DCLG is not responsible for the efficiency and well-being of the construction industries that need aggregates. This task now falls to DBERR and it is that Department which must engage further to give the managed supply system positive and energetic backing, if it is not to be at risk of withering through lack of attention or resources.

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POSTSCRIPT – THE VERNEY REPORT: STILL RELEVANT AFTER 30 YEARS?

At the time of EIG 2008 at Cardiff in late June, the report of the study into the present relevance of the Verney Report (Thomas, 2008) was not available. It has since been completed. Within a comprehensive tour of present and past aggregates issues, this study found that Verney’s core preoccupation with aggregates supply in London and the greater South East remains a major strategic issue and a central purpose of the managed supply system. With hindsight, the Verney Committee over-estimated the role that sources outside those regions would play, whether land-won or from distant coastal super-quarries delivering bulk sea-borne supply. It underestimated both the contribution from local sources and alternative materials (since hugely expanded by recycled materials). But Verney’s identification of the importance of marine-dredged sand and gravel still holds good. Increasing constraints on local production are in practice likely to throw the spotlight back onto land-won supplies from other English regions. Given the questions about future permitted reserves, constraints on extended or new quarries and resources, and the rate of replenishment that were identified in the other reports, the study concludes that while Verney’s fears about future supply may have proved premature, they may not turn out to be inaccurate in the longer term. Maintaining an effective managed supply system may still be the best way to keep proving Verney wrong.

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