Contaminated Land


IMAGE: © Ben Blankenburg

The Land Remediation Industry

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If you speak to anyone involved in contaminated land remediation, most will say they have never been so busy. So are we experiencing a boom time, and if so, how long will it last? Thanks to a combination of regulatory and economic drivers, many believe the market will remain buoyant for a number of years, although we should correctly anticipate a period of stability before we eventually start to exhaust the economically-viable brownfield-land reserves.

It might be useful to note that in a report for the DTI's Environmental Industries Unit (*Emerging Markets in the Environmental Sector, Nov 2006*) dig and dump activities – reported here as forming almost half of the land remediation market – are excluded from the analysis of contaminated-land remediation (CLR) market figures, and included instead within the waste-management subsector. This report estimates CLR market size as £404M for 2005, growing to £630M by 2010 and £805M by 2015.

Total CLR market growth is expected to grow by 21 per cent from 2005 to 2010, which would represent a slowing of the market to an annual growth rate of 4 per cent. There of course needs to be certain amount of caution when considering future projections. For example, there will undoubtedly be a distortion again as the Olympic development starts.

Market Share

Within the CLR industry, there are generally understood to be two distinct sectors. The more traditional civil engineering sector, although now incorporating many enhancements, provides physical solutions including dig and dump, containment, solidification (the inclusion of solidification may be contentious as it needs definition) and soil washing. The other sector is formed by the 'new' technology providers. This market split is however arguably simplistic because, falling somewhere between these classifications, are sustainable solutions such as exploiting industrial wasteland for the growing of biofuels.

Looking at the contaminated land techniques taken up by the UK market, it is interesting to see that more traditional, physical solutions still continue to dominate. According to the Market & Business Development (MBDs) report, excavation and removal is projected to remain the most important solution for contaminated land treatment because of the relative speed, thoroughness and comparative cost-effectiveness provided by this solution, despite increasing landfill and transportation costs, and the reduction in the number of hazardous waste sites. A slight decline from a market share of 78 per cent in 2001 to 76 per cent in 2005 was offset by an increase in the sector value in 2005 of five per cent, taking it to £470M.

Alongside this, the containment market in 2005 rose by seven per cent to represent a value of £36M, and MBD forecast that demand for containment in 2007-2011 is likely to increase, taking market share from the excavation and removal sector. MBD argues that containment benefits from increases in landfill prices, and typically offers the next lowest cost solution.

Other physical techniques, such as soil washing, increased a market share to seven per cent, representing £40M in terms of value. Overall the physical solutions appear to represent approximately as much as 87 per cent of the sector.

Looking at the distribution of newer technologies being adopted by the UK marketplace, MBD reports that bioremediation is the most favoured technique, taking a five per cent share, possibly reflecting increased market confidence in this method as a result of an increasing number of successful projects using the technology.

Reaching £27.2M in 2006, the chemical treatment sector is projected by MBD to increase to £32.8M in 2011. Solidification is anticipated to continue to represent a moderate share of the total market, but the industry might see an increase in demand if further knowledge of the underlying engineering principles and long-term performance continues to promote acceptance and use of this technique.

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Finally, the thermal treatment sector is projected to remain the smallest sector in the total CLR treatment market, taking around £3M of the market share, a level that possibly reflects the relatively high cost of this treatment method compared with other techniques.

The number of UK remediation companies with the capability of offering treatments directly (ie in-house, rather than subcontracting) still falls under the 100 mark. A recent trade guide produced by CL:AIRE and the UK Trade & Investment's EISU reflected information gathered from 228 UK companies working on contaminated land and remediation (including technology providers, consultants, contractors, laboratories, equipment suppliers and manufacturers) and of those companies listed, 75 were contractors who provided technology-based remedial solutions.

Of course, the problem with any market analysis is (to quote Disraeli via Mark Twain) there are "lies, damned lies and statistics". So perhaps it would be best to simply draw out some broad trends:

The total land-remediation treatment market appears to be worth in the region of £1bn, or £600M if we exclude 'dig and dump'

The market will continue to grow, albeit at more modest rates. Legislation and socio-economic factors will continue to increase demand for land assessment and remediation and will facilitate growth in the industry

The sector continues to depend strongly on using physical techniques, primarily dig and dump, despite legislation

Technology-based solutions represent about 13 per cent of the market, valued at £80M, and provided by 75 companies.

One thing that this market view continues to show is that there are remedial technologies available for which a market has still not yet been proven. This is where CL:AIRE will continue to pay close attention to improving acceptance of sustainable technologies, by reporting UK projects and disseminating experiences widely. The issue of establishing confidence in remediation methods, particularly methods which are insitu and which are still considered to some as alternative, is still a major bottleneck in their wider market uptake. Clients expect individual remediation projects to be able to demonstrate the efficacy of their treatment method(s) and often require greater levels of certainty than may be required by the regulator. This verification of a remediation project set against its original objectives builds confidence around the combination of the technology, application and team delivering the results. In a broader context, third-party peer review or verification, good quality reporting, and knowledge transfer are essential in raising standards and imparting confidence in remediation projects and for remediation teams wishing to win new work. In a recent market survey undertaken by CL:AIRE 37 per cent of respondents said as a direct result of a CL:AIRE demonstration project they had felt comfortable enough to invest in that technology for themselves.

It is certainly interesting that the common thread appears to be the use of proven technology rather than cutting edge innovation. The emergence of soil-treatment centres has been much discussed in the past. There have been relatively small operations already established, but the emergence of the large-scale facilities may herald the future for hydrocarbon-contaminated soils. For widespread adoption the economic recycling of the treated material will be a key issue.

A twist on the idea of Treatment Centres is CLUSTER which is an initiative developed by CL:AIRE and funded by GrantScape, English Partnerships and National Grid. The proof of concept is currently taking place at Neeps End in Sheffield. Many contaminated sites are small and contain insufficient contaminated soil to justify onsite treatment. However, by collaborating with other sites, soil can be treated at one central location which would be the hub. The treated material may then be suitable for use on either the originating site or another site within the CLUSTER. An important principal is that a CLUSTER is local and temporary.

An important point to address in the continuing development of the remediation market is that, within the UK, one of the major constraints for industry is the shortage of appropriately skilled personnel. Throughout each of the major environmental disciplines, there are skill shortages, but a recent ENDS survey highlighted that the biggest skills demand was in contaminated land and remediation. Whilst within Environmental Consultancy the assessment of contaminated land is not the fastest growing sector compared with sustainable energy, waste management or IPPC, it remains the biggest single sector. So the demands for commercially-aware staff with contaminated land experience will continue to be a problem. Despite there being apparently innumerable university courses, the same number of graduates do not seem to appear in the marketplace. The often-cited reason is that salaries are relatively low, particularly at a junior level, and any reasonably numerate graduate will seek employment in far better paying industries. The situation is not helped by the lack in many cases of a career structure and industry-relevant training. Being able to afford to pay competitive salaries and developing staff will have to be a priority for the Land Remediation Industry if it is to expand within and beyond the UK.

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