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HORIZON SCANNING SR005

HSE HORIZON SCANNING INTELLIGENCE GROUP SHORT REPORT RECYCLING

1. Issue

Driven largely by environmental legislation such as the Landfill, Restriction of Hazardous Substances (RoHS), Waste Electrical and Electronic Equipment (WEEE) and End-of-Life Vehicle Directives, it seems likely that a burgeoning industry will develop to address the ever-growing demand for the recycling of a wide range of products and materials. According to the Environment Agency: "The UK produces around 400 million tonnes of waste annually - a quarter of which is from households and business. The rest comes from construction and demolition, sewage sludge, farm waste and spoils from mines and dredging of rivers."¹

Status: HSE Action

It is predicted² that in addition to pressures from the existing environmental directives, economic incentives and increasing public acceptance of recycled goods will encourage further growth in the industry. Already, over 100 companies list themselves as being involved in the recycling of "white goods" and other electrical and electronic equipment in response to the WEEE directive and increasing investment in new plant and the development of new processes is underway in other sectors. For example, waste metal processing companies are expanding into the recycling of End-of-Life Vehicles and the UK's first Lithium ion battery recycling plant is due to come into operation in the near future. There are also undoubtedly many more examples of expansion in the recycling of plastics, paper, glass, aggregates for the construction industry and other materials.

2. Relevance to Occupational Health & Safety

The basic steps in any recycling process are: Collection, Sorting and Reprocessing and examples of areas where health and safety issues might arise at each of these stages include:

Transport and Manual Handling - Over an 8-week period in early 2006, 9 fatalities were recorded in the Waste Industry, mostly related to the transportation of waste.³

Exposure to Biohazards and Toxic Materials - Concern has been expressed over the likely exposure to biohazards when handling putrescible waste, sorting textiles or dismantling cars, while the breaking up of items such as computers and TV's can expose workers to numerous toxic chemicals.

¹ Environment Agency website at: http://www.environment-agency.gov.uk/subjects/waste/?lang=_e

² - Waste & Resources Action Programme website at: <http://www.wrap.org.uk/index.html>

- Institution of Civil Engineers report "Quantification of the Energy Potential from Residuals (EFR) in the UK", March 2005, available at: <http://www.oakdenhollins.co.uk/industry-reports.html>

- Biffaward report "WEEE Remarket", July 2002:
<http://www.cylch.org/content/files/weeeremarketfinalreport.pdf>

³ BBC News report: <http://news.bbc.co.uk/1/hi/4766866.stm?ls>

Interaction with large-scale Processing Equipment – The reprocessing of waste materials can involve the use of a wide range of potentially hazardous equipment from balers, boilers, crushers, chippers, compactors and shredders to chemical processes for the recovery of metals, polymers and glass.

Through the Waste Industry Safety & Health (WISH) forum, HSE has already issued guidance on reducing risks, in particular in the priority areas of transport; the handling and sorting of waste and exposure to certain biohazards such as Leptospirosis.

3. Implications

Recent estimates from Waste Watch UK⁴ and others, suggest that up to 45,000 extra jobs will be needed in the industry if the government is to meet its target of recycling 25-30% of municipal waste alone, by 2010. With HSE figures showing that the waste and recycling industry has incident and fatal accident rates 4 and 10 times the national average respectively, any such projected increase in the workforce must raise concerns.

Many of the implications of growth in recycling will be readily apparent, such as those relating to the increase in transport and handling of goods and materials. However, there are a number of issues, which are less well understood and may warrant further investigation from a workplace health and safety perspective, some examples being:

- The impact of increasing segregation of waste, which could lead to greater concentration of potentially harmful materials, including e.g. the separation of food waste, which will lead to more collection and handling of “putrescibles”
- Novel processes, which are under development such as the anaerobic digestion of organics or WRAP projects on the separation of brominated fire retardants from waste electrical equipment.
- Existing “downstream” processes for recycling batteries, fluorescent lighting, cathode ray tubes (and in the future, LCD and plasma screens) etc
- The use to which recycled goods and materials are put, whether this is in the re-manufacture of consumer products or novel applications such as the generation of energy from waste or the use of recycled glass grit for shot cleaning or in concrete.

4. Recommendations

There is a great deal of evidence now that, driven largely by environmental pressures, the recycling industry will expand significantly in future. The likely implications of this expansion on the health and safety of both workers and the public, who come into contact with recycling activities, will be the subject of continued Horizon Scanning in collaboration with specialist colleagues within HSE.

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⁴ http://www.wastewatch.org.uk/research/view_research.aspx?id=7