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Waste: moves towards a global resource

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Waste: moves towards a global resource



BY ROSS FAIRLEY
partner,
Burges Salmon



BY ESTHER KIDDLE
solicitor and
chartered waste
manager,
Burges Salmon

LEGISLATIVE DRIVERS AND MARKET demands have transformed waste management from a disposal at the lowest price operation to a sophisticated global resource (materials/energy) trading organisation. The transition from disposal to resource recovery and reuse is not without its difficulties, but while the market continues to develop, legislation will continue to drive and encourage the transition towards the environmentally sound management of wasted resources.

The law governing waste management is complex and continually developing. In law, waste is divided and categorised by its chemical, physical and biological characteristics (eg inert, hazardous) and its source (eg municipal, household, commercial, industrial), and the layers of legislative controls are divided and apportioned according to the risks associated with each category of waste required to protect human health and the environment.

Even the sometimes apparently artificial divide between a product, including by-products, waste and the point at which waste 'ceases to be waste' creates a complex and lengthy argument of facts, law and intention. However, so long as a material, substance or object remains waste, no matter what its economic value, it is governed by the reams of national, European and international law aimed at controlling the treatment, handling and transport of waste. Most businesses produce, handle or deal with waste. With it becoming a useful resource, in-house teams are likely to have to address the legalities of waste management and shipment into the future.

THE MARKET

Waste management is big business. With ever-depleting natural resources, commodity prices fluctuating and increasing demand for materials, there has been a push, not just for environmental reasons, to capture and recirculate resources. Waste management in the UK is an estimated £10bn industry with the top 15 municipal waste management companies in Europe representing a £27.5bn industry (by sales) in 2008.

Access to resources has become a major strategic economic concern. Europe has the

world's highest net imports of resources per person, and its open economy relies heavily on imported raw materials. The share of imports in the EU and consumption of materials ranges from 47% for natural gas, 59% for coal and 83% for oil, 50% for copper, 65% for zinc and about 85% for tin, bauxite and iron ores, to 100% for a wide range of hi-tech metals such as antimony, cobalt, platinum, molybdenum (Eurostat figures, 2009).

In absolute terms, Europe is using more and more materials, and this trend has run for several decades. Of the 8.2 billion tonnes of domestic material consumption (DMC) in the EU in 2007, minerals accounted for 52%, fossil fuels for 23%, biomass for 21% and metals for 4%. Total DMC in the EU grew by 7.9% in the period 2000-07, and the material streams that increased the most were minerals for construction and industrial use (+13.8%) and metals (+9.8%).

Demand for resources, including materials recovered from waste, worldwide has grown tremendously over recent decades, driven by population growth, wealth and consumption of goods and services, with the former mainly in developing countries and the latter in developed countries, resulting in an ever-increasing flow of resources and waste from and to the environment and over national and international boundaries.

WASTE – A VITAL RESOURCE

In its sixth Environment Action Programme (2002–12), the EU set the objective of decoupling waste generation from economic growth. The European Commission's (the Commission) thematic strategy on the prevention and recycling of waste (EU, 2005) called for life-cycle thinking in waste policies and moving towards a 'recycling society'. And in its recent review of the thematic strategy (EU, 2011), the Commission also called for 'better information and forecasts of life-cycle-based environmental and health impacts of the waste policies with a specific focus on resource and climate policies'. This has in turn highlighted the opportunities for improved coherence between policies on waste and those on climate change and resource efficiency.

To help achieve these objectives, the EU has adopted various Directives to

reduce the environmental impact from waste, including the Waste Framework Directive (2008/98/EC), which aims to improve waste management, mainly by preventing waste and increasing recycling, and the Landfill Directive (99/31/EC), which introduced targets to reduce the landfilling of biodegradable municipal waste.

The dual aims of diverting waste away from landfill and increasing recycling (average 42% across the EU; 39.7% in England; 37.8 in Scotland and 44% in Wales in 2009) and available recyclates – has its environmental and economic advantages but has created some ongoing environmental and enforcement issues, especially in relation to the global ‘recyclate’ trade.

Increasing re-use, recycling and recovery has made waste management more complex as a European and even global waste market has evolved, especially for recycling. This becomes evident when considering transboundary shipments of non-hazardous waste – for example, the amount of waste metals, paper and plastics shipped from the EU to Asia increased by a factor of five to 11 between 1995 and 2007. Success has been achieved in some areas: for instance, recycled aluminium scrap and recycled iron and steel scrap now represent 40–56% of the output of EU metal production and improvements in the management of municipal waste since 1995 have seen a cut in the annual CO₂ emissions of 48Mt across the EU, Switzerland and Norway – mainly due to increased recycling and lower methane emissions from landfill.

The recyclate market is not without its critics, especially when it comes to exports to China (paper and plastics) and Waste Electrical and Electronic Equipment (WEEE).

THE CHINESE MARKET

China is the world leading importer of recovered paper and one of the worlds leading importers of recovered plastic. The UK provides the Chinese with 11% of its recovered paper and approximately 9% of its recovered plastic. The demand from China, reflected in the prices paid as well as the tonnage brought, is fuelled by the strong economic growth in the Chinese

‘The recyclate market is not without its critics, especially when it comes to exports to China (paper and plastics) and Waste Electrical and Electronic Equipment (WEEE).’

economy, especially the manufacturing industries requirement for resources to supply the consumer goods that we import and buy in Europe.

Ironically the CBI in China estimates that the top three demands for recovered plastic in China are packaging (43%), construction (20%) and appliances (14%) – appliances and packaging exported back to consumers in Europe and America!

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

The majority of UK WEEE is exported for reprocessing.

Many hazardous substances are associated with the various components of WEEE, too many and too variable to mention, but sub-standard and/or illegal treatment of WEEE is known and recognised on a domestic and international level as an ‘issue’ that needs addressing for the purpose of protecting the environmental and human health.

The WEEE Directive (Directive 2002/96/EC) sets a collection target of 4kg of WEEE per person and per year from private households. In addition, by 31 December 2006, manufacturers and importers were to achieve, for treated WEEE, recovery targets of 70-80% differentiated for the respective categories, as well as material and substance reuse and recycling targets of 50-75%. However, as the amount of electrical and electronic equipment (EEE) put on the market in many countries is far above 4kg per person/year, so these targets are under revision. Only 11 countries out of 23 have met the 4kg per person/year collection target, the remaining countries have either not met the target or not reported the information to the EU.

Member states are still building or expanding systems for collecting WEEE.

The collection rate achieved so far is only 23% by weight of amounts put on the market in 2006. There is evidence that considerably more than 23% of WEEE is collected but not reported, and that a substantial part of this undergoes sub-standard treatment in the EU or is illegally exported. This non-reported collection and trade is driven by the material value of some WEEE fractions.

Legislative drivers, demand and, in some instances, reprocessing capacity shortages, require the export of waste for recovery operations abroad, whether we like it or not. What this creates is a conflict; a conflict between the environmental protection, legislative developments and market economies.

EXPORT – TRANSFRONTIER SHIPMENTS OF WASTE.

Any export of waste from the UK brings into effect the Transfrontier Shipment of Waste Regulations 2007 (TSW Regulations) and restrictions on what can be exported to where and to what ends.

The legal history behind the current TSW Regulations started with the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal (the Basel Convention); considered to be the most comprehensive environmental agreement on hazardous and other wastes ever developed, which came into force in 1992.

The Basel Convention was as a direct response to international outrage from the publicity of the human and environmental costs caused by the practice of shipping hazardous waste to developing countries and to Eastern Europe by ‘toxic traders’ searching for a cheaper way of getting rid of waste in the late 1980s, including the 1982 Seveso incident in France. This was followed

by the formal adoption of the European Waste Shipments Regulation (the EU TSF Regulation), which entered into force in May 1994.

In simple terms, the UK and EU legislation covering the transfrontier shipment of waste can be summarised as follows:

1) The EU TSF Regulation:

- Although the export ban amendment to the Basel Convention has not been enforced globally, in the EU the export of hazardous waste to countries outside the Organisation for Economic Development (OECD) is prohibited.
- Export of non-hazardous waste to non-OECD countries, for example paper waste, has to be notified to the authorities in advance according to what each of the non-OECD countries has arranged with the EU.
- It is, in principle, possible to ship all kinds of waste within the EU whether the waste goes for disposal (for example, landfilling) or recovery.
- For shipments for disposal within the EU, the member states can implement a general or specific ban on import and export of waste.
- For shipments of hazardous and problematic waste for recovery within the EU, the member states have more limited possibilities for objection.
- All wastes for disposal, and hazardous and problematic waste for recovery, have to be notified before the shipment. The notification requires very detailed information on the waste shipment. However, only data at very general level are reported to the European Commission.

- Some of the new member states (for example, Latvia and Poland) have obtained derogation periods, which means that shipments from other EU countries to them must meet stricter criteria (in the case of some types of non-hazardous waste shipped for recovery) ie a notification procedure.

2) The TSW Regulations:

a) Prohibited exports.

- Exports for disposal are, apart from some very restricted exceptions, prohibited.
- Exports of hazardous waste to economically developing countries (those non-EU countries outside the OECD) such as China, India and Indonesia are prohibited, even if being sent for recovery.
- Exports of some types of non-hazardous waste to certain non-OECD countries outside the EU are prohibited.

b) Exports potentially permitted under notification controls.

- Hazardous waste for recovery in EU member states and OECD countries.
- Non-hazardous waste for recovery in 'new' EU member states – Latvia, Poland, Slovakia, Bulgaria or Romania.
- Some types of non-hazardous waste for recovery in some non-EU countries outside the OECD.

c) Exports potentially permitted under green list controls.

- Some exports of certain types of non-hazardous waste to be recovered are subject to green list controls, such as clean waste paper being sent for recycling in the Netherlands.

Every year about 2.5bn tonnes of waste and 100m tonnes of hazardous waste are produced in the 27 EU member states. Of this, it is estimated that 11m tonnes of notifiable waste (ie hazardous and/or problematic waste), of which 5m tonnes is hazardous waste, is exported within the boundaries of the EU. The European Union Network for the Implementation and Enforcement of Environmental Law Transfrontier Shipment of Waste (IMPEL-TFS), estimates that 15% of all transport movements in the EU involves the transport of waste.

It is recognised that there is a significant lack of quality data available for such waste shipments, which is considerably frustrated by the lack of uniform reporting across the EU. Many believe that as much as one quarter of waste exports within the EU are unreported.

Figures for the transboundary export of hazardous waste from the EU to non-OECD countries are as elusive as they are illegal under the EU TFS Regulation. A recent project by IMPEL-TFS, into the effective implementation of the EU TFS Regulation between October 2008 and June 2009 found that the percentage of transfrontier waste shipments in violation of the EU TSF Regulation was:

- 25.1% between October and December 2008;
- 17.5% between January and February 2009; and
- 14% between March and June 2009.

IMPEL-TFS and member states enforcement agencies, including the Environment Agency, continue to develop enforcement projects across European ports to tackle illegal exports of waste. The illegal export of WEEE has been identified as a particular and increasingly concerning issue, with a worse-case estimate of 41% or 3.4 million tonnes pa of WEEE being illegally exported.

The prevention of illegal shipments of hazardous waste remains high on the political agenda. The European Commission launched a consultation on possible EU legislative requirements for waste shipment inspections earlier this year. This is an

area of law where there have, as yet, been no moves towards EU harmonisation and inspections and controls of waste shipments currently vary significantly between member states, even though Article 50 of the EU TSF Regulation sets out certain obligations on member states to ensure effective inspection systems are put in place.

The illegal shipments of WEEE is not an issue that can be easily addressed, but as a matter of priority the EU is looking to provide greater controls, inspection and enforcement, including prosecutions, on the illegal transfrontier shipments of such waste materials. For businesses, non compliance is a reputational as well as a legal issue.

END-OF WASTE - THE RELEASE OF WASTED RESOURCES

There have been many court cases to decide when a substance, material or object ceases to be waste; the ‘end-of waste argument’. So many in fact, that the European Commission has taken a two-fold action.

First, a definition of the ‘end-of waste’ has been provided in the revised Waste Framework Directive (rWFD), including, in Article 6(1), a two stage process for end-of waste.

- a) The waste material goes through a ‘recovery operation’:

‘Recovery’ means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II of the rWFD sets out a non-exhaustive list of recovery operations.

- b) If the resultant products and/or materials:
 - are commonly used;
 - a market or demand exists;
 - meet technical requirements, legislation and standards; and
 - show no overall adverse environmental or human health impacts.

Secondly, the European Commission has set a mandate for setting up specific ‘end-of waste’ criteria for certain waste streams. The first, Regulation 333/2011, end-of waste criteria for iron and steel scrap, came into force in April 2011. Iron and steel are one of the world’s most recycled materials and amongst the easiest materials to reprocess, so demand for a simplification of the legal position to ‘free up’ and simplify

the trade of recycled iron and steel was high on the political agenda.

Other regulations are expected to follow for other waste streams including paper, glass scrap, copper scrap, compost and digestate output materials.

The development of detailed criteria for the end-of waste for specific waste streams aims to ease the transition from waste to resource; decrease the legislative burden on industry and increase resource recovery.

Why is end-of waste important? A material that is no longer classified as a waste is no longer subject to the European rules and restrictions on waste, including the transfrontier shipment regulations, requirements and restrictions on waste exports. It is hoped that market demand for recovered resources meeting specific criteria will pull the quality standards of recycled materials in a positive, more environmentally sound management, direction. Legislation working with the economy and recognising the global economics of waste as resources.

*By Ross Fairley, partner, and
Esther Kiddle, solicitor and
chartered waste manager (MCIWM),
Burges Salmon LLP.
E-mail: ross.fairley@burges-salmon.com;
esther.kiddle@burges-salmon.com.*