



Evaluation of the Waste Law Rules in All Countries

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ABSTRACT: Waste and wastes are terms for unwanted materials. Examples include municipal solid waste (household trash/refuse), wastewater (such as sewage, which contains bodily wastes or surface runoff), radioactive waste, and others. The term is often subjective (because waste to one person is not necessarily waste to another) and sometimes objectively inaccurate (for example, to send scrap metals to a landfill is to inaccurately classify them as waste, because they are recyclable). The terms can have various connotations, including pejorative tone (for example, "this spoiled food is nothing but waste now") or a squandering of potential (for example, "growing residential lawns in the desert is a waste of water").

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INTRODUCTION

"Wastes are materials that are not prime products (that is products produced for the market) for which the initial user has no further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose. Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Residuals recycled or reused at the place of generation are excluded [1]. Waste is a pressing environmental, social and economic issue. Increasing consumption and a developing economy continue to generate large amounts of waste - with more effort required to reduce and prevent it. While waste was viewed as disposable in the past, today it is increasingly recognized as a resource; this is reflected in the waste management shift away from disposal towards recycling and recovery [2].

Depending on its management, waste may impact both human health and the environment through emissions to air, soil, surface water and groundwater. But it can also represent loss of material resources (through metals and other recyclable materials), and has potential as an energy source.

Waste is generated at all stages of the materials life cycle:

- Extraction (mining waste);
- Production and distribution (industrial, hazardous and packaging waste);
- Consumption of products and services (municipal, and electric and electronic equipment waste);
- Treatment (e.g. sorting residues from recycling facilities, or incinerator slag) [3].

Sound management of waste can protect public health and benefit the environment whilst supporting conservation of natural resources. Around 5.2 tons of waste per capita were generated in 2008 in the EU. The largest waste streams in Europe originate from construction and demolition, mining and quarrying, along with manufacturing activities. Every EU citizen on average throws away 444 kg of household waste per year, and this figure is expected to increase. Previously, growing consumption and the trend towards smaller households were strong drivers of municipal waste generation. But these factors appear to be decoupling from municipal waste generation: per capita municipal waste generation in the EU-27 stabilized from 1999 to 2010. Member States differ greatly in terms of both their development of waste generation and its size [4]. The EU has seen a clear shift in waste management. In 2010, a large share (37%) of municipal solid waste (which represents 10% of the total waste generated in the EU) was still landfilled. Today the trend is to recycle/compost (38%), or incinerate with energy recovery (21%) instead, for different waste streams. Recycling benefits the environment by diverting waste away from landfill, thereby reducing pollutant emissions. It also helps meet the material demands of economic production, curtailing the need for extraction and refining of virgin materials.

Recycling also offers important economic and social benefits: it generates economic growth, fosters innovation, generates employment, and helps secure availability of critical resources. Recycling is vital for a major

European and global policy priority: the shift to a green economy that generates prosperity while maintaining a healthy environment and social equity for current and future generations.

The WFD obliges Member States to establish waste prevention programmes no later than 12 December 2013. The EEA is invited to review country progress in completing and implementing such programs. The WFD sets ambitious recycling targets for paper, metal, plastic and glass waste from households as well as for construction and demolition waste [5].

EU legislation also sets stringent requirements for landfills and incinerators: most waste treatment activities are regulated by the Landfill Directive (1999/31/EC), the Waste Incineration Directive (2000/76/EC), and the Industrial Emissions Directive (2010/75/EU). For special waste streams (e.g. packaging waste, end-of-life vehicles and waste electrical and electronic equipment), the waste hierarchy has been translated into concrete targets for recycling and/or recovery.

A life-cycle approach in policymaking ensures that impacts are assessed from cradle to grave; and avoids 'hiding' impacts by moving them to other countries or stages of production/consumption.

EU waste directives discourage landfilling and promote the recycling/recovery of waste. Another driver for the increasing economic importance of recycling is the upsurge in demand for materials, especially in booming Asian economies. The EEA will support the European Commission and European Parliament as well as EEA member and cooperating countries with a number of new waste indicators and a concept for reviewing waste prevention programs. It will also finalize recent analysis on landfill taxes, Transboundary shipments of waste as well as the resource potential for critical metals in e-waste in Europe [6]. These activities will contribute to a better implementation of waste policies in the EU. Waste is also one of the high priority areas in the EEA's international cooperation projects with European neighborhood countries.

Waste & Resources Action Program (WRAP) The Waste & Resources Action Program (WRAP) works with businesses, individuals and communities to achieve a circular economy through helping them reduce waste, develop sustainable products and use resources in an efficiency way. WRAP was established in 2000 as an independent not-for-profit company limited by guarantee. It receives funding from the Department for Environment, Food and Rural Affairs, the Northern Ireland Executive, the Scottish Government, the Welsh Government and the European Union [7].

WRAP developed the "Recycle Now" and "Love Food Hate Waste" initiatives. These aim to help businesses, local authorities, community groups and individuals recycle and reuse more, and reduce food waste.

Over recent years it has also brokered a number of voluntary agreements with business including:

- The construction sector – more than 700 companies have pledged to halve their waste to landfill by 2012
- The retail sector – through the Courtauld Commitment food and drink organizations are working together to reduce packaging waste. The sector is also seeking to reduce food waste, water usage and the use of materials in manufacturing and processing [8].

As European society has grown wealthier it has created more and more rubbish. Each year in the European Union alone we throw away 3 billion tons of waste - some 90 million tons of it hazardous. This amounts to about 6 tons of solid waste for every man, woman and child, according to Eurostat statistics. It is clear that treating and disposing of all this material - without harming the environment - becomes a major headache.

Between 1990 and 1995, the amount of waste generated in Europe increased by 10%, according to the Organization for Economic Cooperation and Development (OECD). Most of what we throw away is either burnt in incinerators, or dumped into landfill sites (67%). But both these methods create environmental damage. Landfilling not only takes up more and more valuable land space, it also causes air, water and soil pollution, discharging carbon dioxide (CO₂) and methane (CH₄) into the atmosphere and chemicals and pesticides into the earth and groundwater. This, in turn, is harmful to human health, as well as to plants and animals [9].

By 2020, the OECD estimates, we could be generating 45% more waste than we did in 1995. Obviously we must reverse this trend if we are to avoid being submerged in rubbish. But the picture is not all gloomy. The EU's Sixth Environment Action Program identifies waste prevention and management as one of four top priorities. Its primary objective is to decouple waste generation from economic activity, so that EU growth will no longer lead to more and more rubbish, and there are signs that this is beginning to happen. In Germany and the Netherlands, for example, municipal waste generation fell during the 1990s [10].

The EU is aiming for a significant cut in the amount of rubbish generated, through new waste prevention initiatives, better use of resources, and encouraging a shift to more sustainable consumption patterns.

The European Union's approach to waste management is based on three principles:

1. Waste prevention: This is a key factor in any waste management strategy. If we can reduce the amount of waste generated in the first place and reduce its hazardousness by reducing the presence of dangerous substances in products, then disposing of it will automatically become simpler. Waste prevention is closely linked with improving manufacturing methods and influencing consumers to demand greener products and less packaging.

2. Recycling and reuse: If waste cannot be prevented, as many of the materials as possible should be recovered, preferably by recycling. The European Commission has defined several specific 'waste streams' for priority attention, the aim being to reduce their overall environmental impact. This includes packaging waste, end-of-life vehicles, batteries, electrical and electronic waste [11]. EU directives now require Member States to

introduce legislation on waste collection, reuse, recycling and disposal of these waste streams. Several EU countries are already managing to recycle over 50% of packaging waste.

3.Improving final disposal and monitoring: Where possible, waste that cannot be recycled or reused should be safely incinerated, with landfill only used as a last resort. Both these methods need close monitoring because of their potential for causing severe environmental damage. The EU has recently approved a directive setting strict guidelines for landfill management. It bans certain types of waste, such as used tires, and sets targets for reducing quantities of biodegradable rubbish. Another recent directive lays down tough limits on emission levels from incinerators. The Union also wants to reduce emissions of dioxins and acid gases such as nitrogen oxides (NO_x), sulphur dioxide (SO₂), and hydrogen chlorides (HCL), which can be harmful to human health [12].

Environmental Costs: Inappropriately managed waste can attract rodents and insects, which can harbor gastrointestinal parasites, yellow fever, worms, the plague and other conditions for humans, and exposure to hazardous wastes, particularly when they are burned, can cause various other diseases including cancers. Toxic waste materials can contaminate surface water, groundwater, soil, and air which cause more problems for humans, other species, and ecosystems. Waste treatment and disposal produces significant greenhouse gas (GHG) emissions, notably methane, which are contributing significantly to global climate change [13].

Social Costs: Waste management is a significant environmental justice issue. Many of the environmental burdens cited above are more often borne by marginalized groups, such as racial minorities, women, and residents of developing nations. NIMBY (not in my back yard) is the opposition of residents to a proposal for a new development because it is close to them. However, the need for expansion and siting of waste treatment and disposal facilities is increasing worldwide [14]. There is now a growing market in the Trans boundary movement of waste, and although most waste that flows between countries goes between developed nations, a significant amount of waste is moved from developed to developing nations.

Economic Costs: The economic costs of managing waste are high, and are often paid for by municipal governments; money can often be saved with more efficiently designed collection routes, modifying vehicles, and with public education. Environmental policies such as pay as you throw can reduce the cost of management and reduce waste quantities. Waste recovery (that is, recycling, reuse) can curb economic costs because it avoids extracting raw materials and often cuts transportation costs. "Economic assessment of municipal waste management systems – case studies using a combination of life cycle assessment (LCA) and life cycle costing (LCC)"[15]. The location of waste treatment and disposal facilities often has an impact on property values due to noise, dust, pollution, unsightliness, and negative stigma. [The informal waste sector consists mostly of waste pickers who scavenge for metals, glass, plastic, textiles, and other materials and then trade them for a profit. This sector can significantly alter or reduce waste in a particular system, but other negative economic effects come with the disease, poverty, exploitation, and abuse of its workers.

DISCUSSION

Education and awareness in the area of waste and waste management is increasingly important from a global perspective of resource management. The Talloires Declaration is a declaration for sustainability concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources. Local, regional, and global air pollution; accumulation and distribution of toxic wastes; destruction and depletion of forests, soil, and water; depletion of the ozone layer and emission of "greenhouse" gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations, and the heritage of future generations. Several universities have implemented the Talloires Declaration by establishing environmental management and waste management programs, e.g. the waste management university project. University and vocational education are promoted by various organizations, e.g. WAMITAB and Chartered Institution of Wastes Management.

REFERENCES

1. MacBride, R., Waste, C. & Idaho, C.P.1953. P.89
2. Marshman, D.M.1973.What is Waste law? 24 AM. HERITAGE 103. P.123-126
3. Sullivan, O. & Michael, T.1992. Note: Waste law rules, 65 S. CAL. L. REV. 2421 .p.78-79
4. Rable, G.C.1980. Waste law: A Reappraisal, 26 CIVIL WAR HIST. 347 .p.321
5. Ackerman, F. 2000.Waste Management and Climate Change. Local Environment, 5(2): 223-229.
6. Austrian, F.G.2001. Third National Climate Report of the Austrian Federal Government. Vienna, Austria.
7. Barlaz, M. 1998. Carbon storage during biodegradation of municipal solid waste components in laboratory-scale landfills. Global Biogeochemical Cycles, 12(2): 373-380.
8. Barlaz, M. et al. 2004. Evaluation of a biologically-active covers for mitigation of landfill gas emissions. Environmental Science and Technology, 38(18):4891-4899.
9. Bates, J. & Haworth, A. 2001.Economic evaluation of emission reductions of methane in the waste sector in the EU: Bottom-up analysis. Final Report to DG Environment, European Commission by Ecofys Energy and

Environment, by AEA Technology Environment and National Technical University of Athens as part of Economic Evaluation of Sectorial Emission Reduction Objective for Climate Change, 73 pp.

10. Beck-Friis, B.G. 2001: Emissions of ammonia, N₂O, and CH₄ during composting of organic household waste. PhD Thesis, Swedish University of Agricultural Sciences, Uppsala, 331 pp.
11. Berge, N., Reinhart, D. & Townsend, T. 2005. A review of the fate of nitrogen in bioreactor landfills. *Critical Reviews in Environmental Science and Technology*, 35(4): 365-399.
12. Bernache-Perez, G., Sánchez-Colón, S., Garmendia, A.M., Dávila-Villarreal, A. & Sánchez-Salazar, M.E. 2001. Solid waste characterization study in Guadalajara Metropolitan Zone, Mexico. *Waste Management & Research*, 19: 413-424.
13. Bingemer, H.G. & Crutzen, P.J. 1987. The production of CH₄ from solid wastes. *Journal of Geophysical Research*, 92(D2): 2182-2187.
14. Binner, E. 2002. The impact of mechanical-biological pretreatment on the landfill behavior of solid wastes. *Proceedings of the workshop on Biowaste*, Brussels, April 8-10: 16.
15. Bockreis, B. & Steinberg, I. 2005. Influence of mechanical-biological waste pre-treatment methods on gas formation in landfills. *Waste Management*, 25: 337-343.