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Directions in Environmental Policy: EU Communication on By-Products

INTRODUCTION

This fact sheet summarizes the European Commission (EC) February 2007 By-Products Definition Communication [http://www.envirolinknorthwest.co.uk/Envirolink/News0.nsf/LookupUNID/D2A6713E8CA3D196802572950037E6AD?OpenDocument]. The Communication is designed to provide businesses and regulators with guidance in deciding when leftover materials from industrial production processes should be classed as waste and when as non-waste by-products. The fact sheet places the document in context by briefly describing examples of work undertaken to foster the appropriate reuse of industrial by-products and waste. It provides country examples that describe by-product beneficial uses, and it identifies some related U.S. resources on the topic. This fact sheet is not comprehensive; rather, it provides a starting point for readers interested in investigating the topic.

DEVELOPMENT OF THE EC BY-PRODUCTS DEFINITION COMMUNICATION

As part of its 2005 Thematic Strategy on the Prevention and Recycling of Waste [http://ec.europa.eu/environment/waste/strategy.htm], completed on December 21, 2005, the European Commission adopted a proposal to establish criteria regarding when some waste streams cease to be waste - for example, when composted biological waste becomes compost. The resulting February 2007 Communication on By-Products addresses existing law, as set down in the Waste Framework Directive [http://ec.europa.eu/environment/waste/legislation/a.htm] and interpreted by the European Court of Justice. It does not affect ongoing actions to revise the Waste Framework Directive

By-product materials from production processes come from a wide range of business sectors and can have very different environmental impacts. The impetus for the Communication in part can be found in concerns related to an uncertain llegal status for by-products and inconsistent interpretations of the definition of waste by EU Member States. These uncertainties and consistencies may result in an unequal treatment of businesses and, if useful products are wrongly classified as waste, impede the efficient use of resources. Both products and wastes may contain toxic materials and be a risk to human health and the environment. The Communication therefore addresses both environmental and market issues related to by-products.

By clarifying the definition of “by-product,” the Communication contributes to goals of the 6th Environment Action Programme of the European Community 2002-2012

[http://ec.europa.eu/environment/newprg/index.htm] to help achieve a decoupling of economic growth from waste generation in order to support sustainable development goals. The Communication also supports the objective of the EU's Thematic Strategy on Natural Resources http://ec.europa.eu/environment/natres/ to decouple economic growth from resource use. The effectiveness of guidelines in the Communication will be reviewed by the European Commission in 2010.

SUMMARY OF THE COMMUNICATION

The Communication defines "product" to include all material deliberately created in a production process and "by-product" as "a production residue that is not a waste." In turn, "production residue" is defined as "a material that is not deliberately produced in a production process." A production residue may be considered a by-product if it possesses characteristics that make it ready for further use in the economy; its further use must be a certainty without any further processing, and as part of a continuing process of production. It is important to note that, under EU waste law, terms such as "by product" have no meaning and that the Communication emphasizes the case-specific nature of any determinations. It also is important to recognize that, even when a material meets tests set out by the European Court of Justice (EJC), if it is discarded it is a waste.

The Communication identifies a three-part test, the result of decisions by the EJC and extensive case law on the subject, that relevant authorities should use case-by-case in determinations regarding industrial by-products for purposes of distinguishing them from waste. If there is a possibility that the material is not useable, does not meet the technical specifications that would make it usable (unless necessary actions to meet specifications are an integral part of the continuing process of production), or there is no market for the material, then it should be considered a waste. A change in these circumstances may enable authorities to determine that some or all of the material is a by-product

EJC decisions identify a number of other factors that may or may not be appropriate for use in distinguishing between wastes and by-products:

- if no use other than disposal can be envisioned, the use has a significant adverse environmental impact relative to alternatives, or the use requires special protection measures, the material appropriately may be considered a waste
- the treatment method used for the material in question cannot provide a definitive answer with respect to whether it is a waste
- the perception that a material is a waste may be a factor in determining whether it should be regulated as a waste
- if the undertaking for which a material is to be used seeks to limit the quantity of this material that is produced (for example because the material has no reuse value), this fact may indicate the material is a waste. The Communication acknowledges that rigid application of this last factor could discourage pollution prevention in some circumstances.

The Communication also addresses ways in which factors can be applied in practice. It provides several examples of materials that can be classified as waste or by-products and explains the rationale used. These examples include slags and dusts from iron and steel production, by-products from the food and drink industry used for animal feed, by-products from combustion processes, and off cuts generated by saw mills or excess material from a primary production process. A decision tree for waste *versus* by-product decisions accompanies the communication.

COUNTRY EXAMPLES

United Kingdom. The National Industrial Symbiosis Programme (NISP) [http://www.nisp.org.uk/article_main.aspx?feedid=news&itemid=1] is the first industrial symbiosis (IS) initiative to be launched on a national scale. IS brings together companies from all business sectors with the aim of improving cross industry resource efficiency through the collective commercial trading of materials, energy, and water and by sharing assets, logistics and expertise. The aims of IS are to achieve sustainable commercial opportunities for its members and to use resources efficiently. These goals are broader than beneficial use objectives, but beneficial use is an important ingredient in the strategy. Since April 2005, the NISP program has helped to divert more than 1.6 million tons of material from landfill sites and has created/attracted 25 new businesses. A network of 12 NISP offices exists in England, Scotland, and Wales. NIST has over 6000 members and has been recognized by the European Commission as one of five leading European examples of eco-innovation. NISP partly is funded by the United Kingdom's Department of Environment, Food and Rural Affairs.

Australia. Industry and business sustainability [http://www.environment.gov.au/settlements/industry/index.html] initiatives in Australia include strategies to use industrial wastes beneficially. These initiatives support a range of environmental goals, including cleaner production and eco-efficiency and the goal of achieving a zero waste society [http://www.zerowastewa.com.au/ourwork/specificprograms/iwr/] in Western Australia. Australia's Department of the Environment and Water Resources is developing partnership waste and recycling programs [http://www.environment.gov.au/settlements/waste/index.html] in a number of industrial sectors, including the use of voluntary agreements, to promote shared responsibility in achieving sustainability goals. Actions to reduce waste, by encouraging material efficiency, reducing the generation of waste, or enabling the recovery and reuse of discarded material, are critical elements of this work.

Denmark. Reuse of industrial byproducts is important to the application of industrial ecology, which entails creating a closed industrial system, analogous to a natural ecosystem, in which waste from one industry can be used as input for another. The Danish town of Kalundborg [http://www.indigodev.com/Kal.html] a showcase for this kind of industrial symbiosis [http://www.uneptie.org/pc/ind-estates/casestudies/kalundborg.htm].

UNITED STATES RESOURCES

Under Resource Conservation and Recovery Act (RCRA) regulations, the US Environmental Protection Agency (EPA) distinguishes between materials that are directly used or reused as products or as ingredients in the manufacture of products, and those that must be reclaimed before they can be used or reused. Materials that are used or reused without first being reclaimed are not considered either a solid or a hazardous waste. Materials that must be reclaimed/recycled prior to use or reuse, however, are considered a solid waste and may therefore also meet the definition of hazardous waste.

- definition of solid waste [http://www.epa.gov/epaoswer/hazwaste/dsw/index.htm] The site provides information on EPA regulations for hazardous secondary materials
- hazardous waste recycling [http://www.epa.gov/epaoswer/hazwaste/recycle/hazrecyc.htm]. This EPA site includes information on several types of secondary materials that are subject to less-stringent or relaxed management standards for collection and/or recycling
- industrial materials recycling [http://www.epa.gov/epaoswer/osw/conserve/priorities/bene-use.htm]. This EPA Resource Conservation Challenge site addresses alternatives for efficient materials management of industrial non-hazardous waste
- beneficial use section of EPA secondary material action plan [http://www.epa.gov/epaoswer/osw/conserve/action-plan/act-p2.htm] This section of EPA's 2005 Resource Conservation Challenge Action Plan addresses steps to promote appropriate uses of industrial byproducts
- reuse and recycling of industrial non-hazardous materials [http://www.epa.gov/reg5rcra/wptdiv/solidwaste/industrial/index.htm]. This EPA Region V site provides information on beneficial reuse practices and tools in the Midwestern United States
- beneficial use of industrial byproducts http://www.dnr.state.wi.us/org/aw/wm/solid/beneficial/]. This State of Wisconsin program encourages the beneficial use of industrial byproducts as an alternative to placing them in solid waste landfills. State staff assigned to the beneficial use program review larger proposed projects to evaluate potential impacts to human health or the environment.
- Chicago Waste to Profit Network [http://egov.cityofchicago.org/city/webportal/portalContentItemAction.do?BV_SessionID=@@@@1401792035.1178215346@@@@&BV_EngineID=ccceaddklefkjmjcefecelldffhdfhg.0&contentOID=536946868&contenTypeName=COC_EDITORIAL&topChannelName=Dept&blockName=Environment%2FWaste+Management%2FI+Want+To&context=dept&channelId=0&programId=0&entityName=Environment&deptMainCategoryOID=-536887205] The Chicago Waste to Profit Network, developed in cooperation with the City of Chicago, the State of Illinois, and the US EPA, facilitates the transformation of one company's waste, or byproduct, into an industrial input for another company through a multi-industry collaborative approach called byproduct synergy