

Policy Profile: The Application of Waste Legislation to Bio-Energy

The Renewable Energy and International Law (REIL) Project¹
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ABSTRACT

This article examines the EU Waste Directive and the implications of recent European case law for its implementation at national level. In particular, we consider how the directive has been implemented in the United Kingdom and the potential effects this may have on the use of forestry by-products as a bio-energy source. The analysis reveals that it is still unclear whether bio-energy materials derived from sawmill operations are 'waste' according to EU and consequently UK law. This uncertainty may pose a barrier to the uptake of biomass of renewable energy. However, a new Framework Directive on Waste has now been proposed, which, if adopted, will resolve much of this uncertainty. Most importantly, the proposed directive provides for automatic classification of certain materials as 'by-products', rather than waste, a reform that is likely to lead to exemption of woodchips, sawdust, bark and other forestry products from waste-related obligations. © Crown copyright 2006. Reproduced with the permission of Her Majesty's Stationery Office. Published by John Wiley & Sons, Ltd.

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Introduction

GREATER USE OF BIOMASS PRODUCTS AS A RENEWABLE SOURCE OF ENERGY WOULD HELP TO MEET several objectives. Replacing fossil fuels will reduce net CO₂ emissions, and the development of new markets for biomass products will encourage more active woodland management, promote rural development, increase income to woodland and farm owners and, in some instances, help to alleviate energy poverty. However, concerns have been raised over the potential for international and domestic waste legislation to create a disincentive to the development of the embryonic bio-energy industry. Classification of the products of timber processing such as woodchips, sawdust

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and bark as 'waste' may have consequences for both the forestry and energy industries in terms of compliance obligations and costs, and could therefore limit the uptake of biomass as a renewable energy source.

EU Definition of Waste

The legal definition of waste is set out by EU Council Directive 75/442/EEC on waste (the 'Framework Directive'), as amended by Council Directive 91/156/EEC, Art.1(a). This definition states

'Waste' shall mean any substance or object in the categories set out in Annex I which the holder discards or intends or is required to discard. The Commission has drawn up a list of wastes belonging to the categories listed in Annex I.

Annex I sets out the 'Categories of Waste', from which a 'List of Wastes'² was created by the European Environment Agency. The List of Wastes provides numerical references to clearly identify different types of waste. Included in the List of Wastes are

- general production waste including waste from forestry exploitation and
- wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture, including waste bark and cork, sawdust, shavings, cuttings, spoiled timber and wastes not otherwise specified.

But in this context what is a 'waste'? The concept of 'discarding' is central to the determination of a product as waste. Unfortunately, the Framework Directive does not define 'discarding'. Some commentators have regarded it reasonable to assume that Annex II of the Directive can offer indirect aid to the interpretation of 'discard'. Annex II contains two lists of operations (Annex IIA and IIB) that are to be subject to Article 4 obligations of the Directive (waste to be recovered or disposed of without threat to human health and the environment).

Annex IIA comprises a list of disposal operations and, given the significant overlap between the words 'discard' and 'dispose', it has been suggested that these are operations by which substances may be 'discarded' for the purposes of the Directive. However, it does not appear that the operations listed in Annex IIA apply to the use of the wood chips, sawdust and bark derived from sawmilling activities.

The situation with Annex IIB, Recovery Operations, is more complicated. It is unclear whether residues resulting from industrial processes that are reused (either with or without a recovery procedure) as part of a normal practice should be brought within the waste regulatory scheme. Although they are residues as listed in Annex I, they are not technically waste until discarded or there is an intention or requirement to discard. If they are not discarded, the fact that they are subject to an operation described in Annex IIB may not itself qualify sawmill conversion products as waste unless it is assumed that the operation automatically constitutes an act of discarding. Annex IIB includes the 'use principally as a fuel or other means to generate energy'. It is possible, therefore, that any sawmill conversion products used as an alternative to fossil fuels to produce steam for timber drying kilns would be classified as waste as they fall within an operation described in Annex IIB. However, the situation is not completely clear, as these conversion products have not been 'discarded' in the ordinary English meaning

² Commission Decision 2000/532/EC of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC hazardous wastes.

of the word. A recent study into the definition of waste recovery and disposal operations suggested that the lists contained in Annex II of the Framework Directive should be revised.³

Case Law on the Definitions of ‘Waste’ and ‘Discarding’

The definitions of ‘waste’ and related waste management terminology, such as ‘recovery’ and ‘disposal’, are essential elements for the implementation of the European waste management policy.⁴ As discussed above, the question of which actions constitute ‘discarding’ is crucial to the EU definition of waste but the legislation is relatively unclear on this issue. The European Court of Justice has taken a fairly cautious approach to the definition of ‘discarding’. The approach has been influenced by a deliberate desire to interpret ‘waste’ widely so as to limit its inherent risks and pollution.

Earlier case law relied heavily on the use of Annex II of the Framework Directive in interpreting the term ‘discarding’.

- In *Tombesi* (C-224/95 Criminal Proceedings against Euro Tombesi *et al.* [1997] ECR I-3561), the court stated that it was not worth trying to interpret the term ‘discard’ according to its normal meaning and that the term ‘waste’ and the disposal and recovery operations listed in Annex II should be read together. The term ‘discard’ should therefore be accorded a special meaning defined by reference to these and analogous operations.
- In *ARCO* (C-419/97 *ARCO Chemie Nederland Ltd et al. v. Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer et al.* [2000] ECR I-4475), the court stated that although it was possible to infer discarding from the carrying out of an Annex II operation, not every substance that underwent a recovery operation would thereby be classified as waste. In support of this view, the court pointed out that certain recovery operations could equally apply to the use of raw materials and that discarding might take place in circumstances not specified in Annex II. The court suggested that discarding might be inferred from the fact that the substance was treated by a common method of waste recovery or that the substance was commonly regarded as waste. The court also suggested that there might be evidence of discarding if the substance constituted a residue or by-product for which no use other than disposal could be envisaged or if its composition was not suitable for the use made of it.
- In *Palin Granit* (C-9/00 *Palin Granit Oy v Vehmassalon kansanterveystyon kuntahtyman hallitus* [2002]) and *AvestaPolarit* (C-114/01 *AvestaPolarit Chrome Oy, formerly Outokumpu Chrome Oy*), the court held that stone left over from stone quarrying, which was stored for an indefinite length of time to await possible use, was to be regarded as production residue rather than as a by-product and was therefore ‘waste’ within the meaning of the Waste Framework Directive. A substance produced other than as the primary aim of the process could be regarded as a by-product, which the undertaking wished not to ‘discard’ but to exploit or market without further processing prior to re-use, in which case it was not waste. The court held that a substance was only a by-product if its re-use was not a mere possibility but a certainty, without any further processing prior to re-use and as an integral part of the production process. The place of storage of leftover stone, its composition, and the fact, even if proved, that it did not pose any real risk to human health or the environment, were not relevant criteria for determining whether the stone was to be regarded as waste.
- In the *Petroleum Coke* case (C-235/02: Mario Antonio Saetti and Andrea Frediani), the court held that petroleum coke that is produced intentionally or in the course of producing other petroleum fuels in

³Report prepared by Okopol GmbH for Contract No. T34-3040/2002/341550/MAR/AZ dated March 2004.

⁴Implementation of Community Waste Legislation – Period 1998–2000 (Com (03)250), p. 138.

an oil refinery and is certain to be used as fuel to meet the energy needs of the refinery and those of other industries does not constitute waste within the meaning of the directive.

- In *Niselli* (C-457/02: criminal proceedings against Antonio Niselli), the court in November 2004 held that Annexes IIA and IIB are not exhaustive, and that the definition of 'waste' in the Framework Directive cannot be construed as covering exclusively those substances or objects intended for, or subjected to, the disposal or recovery operations mentioned in Annexes IIA or IIB. Furthermore, the definition of 'waste' should not exclude production and consumption residues that can be reused in a cycle of production, even if they do not require prior treatment or cause harm to the environment.
- Finally, in *European Commission v Kingdom of Spain* (C-416/02), the court in September 2005 further clarified the circumstances in which residue from an extraction or manufacturing process would be regarded as a by-product, rather than 'waste' within the meaning of the directive. Where a process results in the production of a residue, which the producer does not seek to discard but rather to exploit or market without any further processing, such residue will properly not be regarded as waste. The key factors leading to this conclusion are that the residue has an economic value without further processing, and that its re-use by or sale to an economic operator other than the producer is not a 'mere possibility', but a certainty.

These cases confirm that the question of whether products such as sawdust, woodchips and bark constitute 'waste' is currently dealt with under EU law on a case by case basis. They also suggest that the outcome will depend to a large extent on the level of certainty that these products will be directly used in some other commercial arrangement.

The UK Biomass Industry

The UK Government is a signatory to the Kyoto Protocol. Although increasing energy efficiency and decreasing demand are the government's main means to reduce emissions, a third policy element is to generate a rising proportion of power from renewable resources. The principal mechanism is the Renewables Obligation, which applies in England and Wales, the Renewables Obligation Scotland and more recently in the Renewables Obligation Northern Ireland. Suppliers are required to source increasing proportions of their electricity from renewable sources. Within the obligations, there is no differentiation among technologies, with the result that the early focus has been on wind projects. However, additional support has been provided by the UK Government for biomass projects in recognition of the value of having a broad based renewable sector. Since renewable policy is devolved, further support is available via the four separate administrations – England, Northern Ireland, Scotland and Wales.

The use of home-grown biomass represents a major opportunity for the forestry sector in the UK. Support for greater use of biomass as a renewable source of energy is clearly stated in the forestry strategies of England, Scotland and Wales. Although there are no targets for heat generation at a UK level, there is recognition, particularly in Scotland and Wales, that small to medium scale heat-only projects offer additional potential benefits – rural employment, greater conversion efficiency and therefore greater paying capacity to the grower, a means of addressing energy poverty and a reduced energy loss during transportation assuming more local end uses.

Wood can be sourced directly from the forests (from small stem portions – small round wood; side branches and/or the very tips of the stems – brush; stems that have been shaded out or died of disease – deadwood) or indirectly from sawmills from the conversion of large stems to sawn timber – conversion products. Other potential sources of woody biomass include arboricultural arisings and short rotation coppice. At present, the main potential sources are branches, arboricultural arisings and poor quality

stems having taken account of biological and environmental site constraints and also current markets for small round wood and conversion products; it is estimated that 1.3 million oven dried tones may be available, dependent on price and access. In future, as a result of the large scale conifer planting programme between 1950 and 1990, the total timber ready for harvesting is expected to double up to 2020, with a concomitant increase in potential woodfuel. Since much of the increased production will be harvested at large stem sizes, the majority of potential woodfuel is likely to become available in the form of sawmill conversion products rather than branches or poor quality stems. Developments with major resource requirements must therefore be confident of the conversion product element of their future supply chain.

In Britain, there is uncertainty about the classification by the regulators of various categories of potential woodfuel as waste. Environmental regulation is the responsibility of the Environment Agency in England and Wales and the Scottish Environmental Protection Agency in Scotland. Although this uncertainty is not the major barrier to the realization of many planned projects, it is a cause of concern to the embryonic woodfuel industry in Britain. The classification of sawmill conversion product as a waste leads to additional bureaucracy, financial cost and time for the suppliers – trucks transporting wood chips, sawdust and bark have been stopped by SEPA officials requesting evidence of licences for the transportation of waste. Furthermore, public perceptions about proposed developments, especially local and community projects, are likely to be much more negative if the resource is classified as a waste; this might also have a negative impact on the forestry sector image. Lastly, it is common practice for sawmills to use a proportion of the wood chips or sawdust as an alternative to fossil fuels to produce steam for timber drying kilns. This has been considered by a SEPA official to be combustion of fuel composed of solid waste, which changes the baseline for carbon monoxide emission levels applicable to the sawmills and would significantly increase operating costs.

The UK Forest Products Association (UKFPA) holds that ‘sawmill conversion products’ have defined markets, are produced to a specification and remain in the commercial chain of utility, and that production of these products is essential to the economic sustainability of the sawmill industry. For these reasons, the UKFPA is firmly of the opinion that these products should not be classified as waste. While the UKFPA has obtained confirmation from SEPA that ‘generally the sawmill products are not waste’, SEPA also emphasized that each case needed to be considered on its individual circumstances. The response of the Environment Agency is generally similar, though local officials may give different assessments.

We therefore investigated whether the products of timber processing other than sawn timber (wood chips, sawdust and bark) are categorized as ‘waste’ according to EU law and, if so, whether this poses a potential or real legal barrier to the development of biomass as a form of renewable energy in Britain.

UK Definition of Waste and Waste Management Licensing System

The Framework Directive is currently implemented in the UK through the *Waste Management Licensing Regulations* 1994 (the ‘Licensing Regulations’) that underpin the *Environmental Protection Act* 1990. This Act and the Licensing Regulations are aimed at preventing pollution of the environment or harm to public health through regulation of the treatment, storage and disposal of ‘controlled waste’.

With the adoption of the Framework Directive, any reference to ‘controlled waste’ and ‘waste’ under the Act and Licensing Regulations is taken to be a reference to ‘waste’ as defined by the EU Framework Directive.

Under sections 33(1)(a) and (b) of the *Environmental Protection Act* 1990, it is an offence to deposit controlled waste in or on any land, or to treat, keep or dispose of controlled waste in or on any land, or by means of any mobile plant, unless under and in accordance with a waste management licence.

Lower risk waste management activities such as reclamation and reuse are usually not seen as a threat to the environment or human health, and are therefore exempted from the requirement to obtain a waste management licence. Schedule 3 of the Licensing Regulations (as amended by the *Waste Management Licensing Amendment (Scotland) Regulations 2003* in Scotland and the *Waste Management Licensing (England and Wales) (Amendment and Related Provisions) Regulations 2005* in England and Wales) sets out around 45 categories of exempt activities, most of which are subject to specific constraints on waste types, quantities, capacities and duration of storage.

The relevant categories in relation to forestry, agricultural and municipal waste include

- (i) burning as a fuel any straw, poultry litter or wood, waste oil or solid fuel that has been manufactured from waste by a process involving the application of heat,
- (ii) the secure storage on any premises of the above wastes, which are intended to be burned as a fuel,
- (iii) the beneficial use of waste if it is put to that use without further treatment, and its use does not involve its disposal, and
- (iv) the storage of waste intended for beneficial use, insofar as that storage does not amount to disposal.

The Licensing Regulations adopt the 'Disposal Operations' and 'Recovery Operations' annexes to the Framework Directive. According to these lists, 'Use of waste principally as a fuel or for other means of generating energy' is a recovery operation and not a disposal operation. The 'beneficial use of waste' that does not amount to disposal is likely to include biomass energy generation.

Although the recovery, storage and disposal of biomass products are therefore likely to be exempt activities for the purposes of the License Regulations, such activities are required to be registered with the appropriate registration authority (the Environment Agency in England and Wales, and SEPA in Scotland), as required by regulation 18 of the Licensing Regulations.

The requirement to register the recovery, storage and disposal extends also to the transportation of waste. Under the *Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991* (England and Wales) (together the 'Registration of Carriers Regulations'), waste carriers are required to be registered to transport controlled waste by road, rail, air, sea or inland waterways. The Environment Agency and SEPA maintain registers of carriers and make them available for public inspection.

It is an offence under the Licence Regulations and the Registration of Carriers Regulations for an establishment or undertaking to carry on an exempt activity without being registered. This means that, despite the exemptions mentioned above, if forestry, agricultural or municipal waste products are classified as 'waste', those that wish to use these products as biofuels will still be required to obtain registration to recover and transport the waste, which imposes additional costs and administrative burdens.

Discussion

Despite the decisions in *Palin Granit* and *AvestaPolarit*, it is still unclear whether wood chips, sawdust and bark, as products of sawmill operations, are 'waste' according to EU law. Strong legal arguments could be made to the effect that when, during the sawmilling process, it is always intended that these products will be collected, transported to a generation site and used as an alternative to fossil fuels as a matter of ordinary business practice, they should not be considered to be waste and would not be considered to be such as a matter of ordinary legal construction. However, not all government entities have drawn this distinction with ease and classification is done on a case by case basis.

The application of waste definitions to products derived directly from the forest, such as small round wood and brash, has not been addressed here but the situation is likely to be even more complicated. For example, thinnings that do not have a profitable market may be left on the forest floor to decom-

pose but in areas with a vibrant bio-energy market the same trees could be felled for an immediate and identified energy use; in this case it seems unlikely that these could be classified as waste. Exactly the same dimension material could be created from the upper portion of mature trees at final harvest but this could well be classified as waste in the present circumstances because it is seen as a by-product of the snedding and crosscutting to produce the larger dimension logs. Such a classification might be less likely if this upper portion had a definite market at the time of felling, but the categorization as waste might be further strengthened if the brash were left on the ground to dry and shed the needles before it was collected. Thus there is even greater uncertainty about the classification of forestry material because the management system must also be considered.

Until this uncertainty is clearly resolved, it poses a legal barrier to the development of this form of renewable energy. One solution is to agree a set of guidelines for specific circumstances where woodchips, sawdust and bark from sawmilling operations and small round wood and brash from forest operations will *not* be considered waste. For example, where these products are the subject of a supply contract to a biomass generator, they should not be considered waste as they are never discarded or unwanted. Clear and practical guidelines would assist to redress the uncertainty that has been generated by the current state of the law.

Proposed New EU Framework Directive and Related Guidelines

In the EU, new legislation has recently been proposed that may help to clarify these issues for member states (the 'proposed directive'). If adopted, the proposed directive would replace the old directive and may resolve many of these outstanding concerns. The Thematic Strategy on Waste, created as part of a suite of Thematic Strategies for 2005–06 and under which the proposed directive has been developed, identified waste as a priority area for the simplification of Community legislation, and has proposed a variety of reforms, which may remove the barriers to renewable energy associated with waste legislation. The strategy aims to bring waste legislation in line with existing EU legislation promoting biomass renewable energy generation: notably, the Directive on the Promotion of Electricity Produced from Renewable Energy Sources, the Biomass Action Plan and the forthcoming Forestry Action Plan, to be released in 2006.

Specifically, the Commission has foreshadowed the release of guidelines to distinguish between waste and non-waste by-products. The guidelines, though not yet released, will be based on the jurisprudence of the European Court of Justice and are likely to resolve the uncertainty created by the different approaches taken in the case law. These guidelines are likely to have a significant impact on the forestry and agricultural industries, where residues and by-products are conserved for certain use in bio-energy production.

In addition, the proposed directive seeks to maximize energy recovery from waste, including municipal waste, by introducing efficiency thresholds to classify waste treatment in municipal incinerators either as recovery or disposal. A 'recovery' classification would allow the recovered products to be considered as 'goods', making it easier to use them for energy purposes.

Finally, the proposed directive contains a provision by which 'end of waste' status may be accorded to appropriate waste streams under a comitology process. Such a process is likely to lead to the classification of those products intended for biomass energy generation as 'goods', rather than as 'waste', thus alleviating the burden that may otherwise be placed on the renewable energy industry. The Commission will identify eligible waste streams by considering two criteria: first, whether there is a net environmental benefit in re-classifying the waste, and whether there is a market for the secondary material.

Conclusion

In our view, it is not possible to definitely determine, on a general level, whether wood chips, sawdust and bark are categorized as 'waste' under current EU and UK law. Rather, the circumstances surrounding the production and disposal or use of these products will determine whether they constitute waste on a case by case basis. Recent decisions of the European Court of Justice confirm the view that what is 'waste' is a question of circumstances rather than the nature of the product itself.

However, legal arguments could certainly be made to support the view that wood chips, sawdust and bark, at least in specific circumstances where these products are directly destined for a specific use (such as use as a biofuel), do not constitute waste and should not attract the additional legal obligations imposed on entities who create, store and transport waste. The strength of these arguments, and therefore the likelihood of their success, will depend on the details involved and will differ on a case-by-case basis. The proposed directive on waste is likely to create greater certainty in this area, and in light of the concerns raised by the forestry and bio-energy industries, should resolve the issues favourably for the development of wood biomass as a renewable energy source.