



Department
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Food & Rural Affairs

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Wood Waste Landfill Restrictions in England: Call for Evidence

Analysis

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Introduction

The 2011 Review of Waste Policy in England announced Government's intention to consult on introducing a restriction on the landfilling of wood waste in 2012. In July 2012, we launched a consultation in the form of a call for evidence on restricting wood waste to landfill. The Call for Evidence (CfE) set out Government understanding and invited views on the management of wood waste and measures to divert wood waste from landfill. The Call closed on 28 September. 37 written responses were received. Alongside the CfE we held three workshops with stakeholders. Our analysis of responses and the workshop outputs is below.

Executive Summary

Support for a restriction varies across sectors. Landfill tax remains the key driver for diverting wood waste from landfill and had widespread support among the responses. Some respondents thought the continuation of the landfill tax escalator would effectively divert wood waste from landfill and negate the need for a restriction.

Suggested benefits of a restriction included: improved collection and sorting infrastructure; legal certainty which could drive innovation and investment in infrastructure; more producer responsibility leading to less waste; greater diversion of wood waste from landfill on a faster trajectory and moving wood waste up the waste hierarchy. Some respondents believe that whilst available evidence points to the decline of wood waste to landfill there is always the possibility that without a restriction this trend may not continue (particularly if the end of the recession sees an increase in wood waste arisings).

A number of concerns/ barriers to a restriction were raised by respondents. Phasing was an issue as long lead in times (5-10 years) would be necessary to allow Energy from Waste (EfW), collection and sorting infrastructure to develop. Related was the need to progress identification of wood waste treatments which impact on end markets. Practical difficulties such as enforcement and the burden of proof and responsibility, storage capacity, space for segregation and an increase in costs were mentioned. The potential financial burden on SMEs who were seen as being harder hit at the current time was a concern. Potential unintended consequences were also flagged. Restrictions, particularly put in place too early, may lead to an increase in

informal burning, fly tipping and illegal exports. This is likely to place additional requirements on regulators and require extra resource.

Segregated wood waste to landfill has been falling since 2009 and is very low. Non segregated wood waste has also been falling but the type and quantity of wood waste in mixed streams remains difficult to determine and identify. Respondents disagreed with our figures, believing that less wood waste was going to landfill than we had indentified.

Our analysis suggests that wood waste to landfill is likely to continue to decline without further Government intervention. Furthermore a restriction in this present economic climate is likely to impose additional costs on businesses, especially SME's. Therefore we do not believe that this is the right time to introduce a restriction on wood waste to landfill. We will review and monitor the wood waste area closely and in addition we plan to carry out work to address the remaining gaps in our evidence knowledge base, alongside the action underway by the Environment Agency (EA) and WRAP which will help to manage wood waste.

Stakeholder views on a restriction

Support for a restriction varies between sectors. Discussions at the stakeholder workshops held alongside the call for evidence in September 2012 with wood recyclers, the construction industry and timber trade organisations suggest that many in the industry are no longer as supportive of a restriction. This is contrary to the verbal support expressed at a meeting earlier in 2012. The changing opinion suggests that considering a restriction in more detail and discussing issues more widely led industry to realise that the issues are not simple and may not be best addressed by a restriction.

The written responses do come across as somewhat more supportive of a restriction than the verbal discussions we had with stakeholders. However, when we delve into the detail of the responses it is clear that a number of issues and concerns have been raised.

Support for a restriction varied between sectors in the written response. The main wood trade association¹ is not supportive of a restriction at this present time supporting instead a continued increase in landfill tax beyond 2014. Continuation of the landfill tax escalator as a means to drive wood waste out of landfill was a common theme across several responses. Others in the wood industry remained in

¹ Wood Recycler's Association (WRA)

principle supportive of a restriction (see below for the timber trade views). Some of the issues raised are outlined later in this document.

The Chartered Institution of Wastes Management did not think there was a need to introduce landfill restrictions as the other drivers already in place are effective, and suggest considering other measures. One waste management company suggests reviewing the current situation post 2014, allowing for current drivers and incentives to fulfil their function, whilst another waste management company does not believe a restriction is enforceable or practical. The Environmental Services Association (ESA) suggests that Government action would be better focussed elsewhere, i.e. ensuring that the waste hierarchy regulations are enforced and complied with (specifically by the waste producers).

The local authority bodies are not in support of a restriction as they have concerns about enforcement, collection and sorting capability, and administration burden. They also raised the issue of banning biodegradable waste as an alternative.

The energy companies² and timber trade organisations³ are supportive of a restriction but raise concerns. The energy companies would like to see an extensive lead-in time if a restriction were to be introduced, but are concerned that introducing any additional legislation will be an additional cost burden and felt that alternative measures should be considered. The timber trade organisations believe that infrastructure for collection and disposal needs to be improved and other routes such as segregation at source and recycling ahead of energy needs need to be explored with assistance from government. During discussions at their stakeholder workshop, the timber trade raised concerns that the current economic climate and any further government action resulting in additional cost, will have a negative impact on their business.

The construction and demolition organisations are in support of a restriction. They however have concerns with the availability of onsite space and the additional supervisory/labour costs it is likely to incur. They only see a restriction working when combined with other measures. Environmental interest groups are supportive of a restriction as a way of diverting wood waste from landfill more quickly, but that it should be part of a wider consideration in the disposal and management of biogenic waste. They also note that there may be practical implications in certain sectors and note that a restriction could encourage increased capacity in energy recovery.

² RWE Npower Renewables & Dalkia

³ TREP – Timber Resources and Efficiency Partnership (umbrella body for timber trade organisations)

Scope of a restriction

The definition of wood waste came up quite a number of times, specifically with the trade associations, forestry industry and LA bodies. The wood trade association clearly feels that Defra needs to clarify the definition of wood waste (what is in and out of scope) with a clear distinction between treated and visibly clean wood. The forestry industry representative agreed that clearer distinction is needed between the different streams of waste. Some respondents firmly said that certain types of wood waste eg. sawmill by-products should not be included in a restriction because they are not defined as wood waste in the *“Guidance on the Legal Definition of Waste and its applications”* (August 2012), whilst a few wondered why they are not included.

Wood waste is graded with grades affecting end markets. The Publicly Available Specification for the requirements and test methods for processing waste wood (PAS 111), affirms the grading system developed by the Wood Recyclers Association and is generally accepted by the wood recovery industry (recyclers and end users) who base transactions on these grades⁴. The wood trade association agree that the grading system (which they developed) is effective although not widely used by the whole industry, perhaps because some sectors refer to wood waste as treated or untreated rather than using grades A-D. Whilst quite a few other respondents agreed the system was effective, concerns were raised about whether the system was being universally applied. This different understanding of the grading system could potentially be an issue for a restriction as grade C treated wood waste, which is only suitable for burning in Waste Incineration Directive (WID) compliant plants⁵, might mistakenly be sent to alternative markets. An unintended consequence of a restriction mentioned by one respondent was the possible mixing of lower grade (treated) wood waste with high grade wood waste in order to pass it off as higher grade.

⁴ **Grade A:** "Clean" recycled wood - material produced from pallets and secondary manufacture etc and suitable for producing animal bedding and mulches.

Grade B: Industrial feedstock grade - including grade A material plus construction and demolition waste, this is suitable for making panelboard.

Grade C: Fuel grade - this is made from all of the above material plus that from municipal collections and civic amenity sites and can be used for biomass fuel.

Grade D: Hazardous waste - this includes all grades of wood including treated material such as fencing and track work and requires disposal at special facilities.

⁵ The Industrial Emissions Directive replaces seven existing EU Directives including the Waste Incineration Directive. It applies to new installations from 7 January 2013 and from existing installations from 2014 or 2015 depending on activities carried out. More information is available - <http://www.environment-agency.gov.uk/business/regulation/137903.aspx>

Wood waste arising and going to landfill

The main sources of wood waste are: construction and demolition (C&D); packaging; municipal; and joinery and furniture manufacture. Respondents were invited to comment on how the wood waste producing sectors would evolve without further policy intervention. Some believed that C&D arisings will increase as the economy improves, although the C&D industry disagree citing ongoing moves to reduce waste and meet environmental objectives. Some believed municipal wood waste would fall, others felt that there would be no change. It was thought that packaging wood waste will decline due to recycling targets.

Segregated wood waste to landfill has been falling since 2009 and is under 20,000 tonnes (t). However, the type and quantity of wood waste in mixed streams going to landfill are difficult to determine and estimates vary. Estimates for non segregated wood waste to landfill suggest that in 2011 it was around 700,000t (the CfE used provisional figures of around 600,000t). Respondents queried our figures believing the amount of wood waste going to landfill was less but were unable to provide more accurate data. Better understanding of the type of wood waste going to landfill is required – many respondents mentioned the growth in the use of MDF and composite materials with small amounts of wood that are not cost effective to separate out.

The assessment of the BAU for wood waste estimated a decline in landfilling from over 800,000t in 2009, to under 300,000t by 2024. Although the analysis was completed in 2009, the trend to 2011 has approximately tracked actual outcomes. The analysis suggests that a significant amount of the current wood waste landfilled (over half) will be diverted to alternative treatments in the normal course of events, as a result of the current suite of policy instruments. Most of the respondents agreed with the BAU trajectory. Others were unable to provide firm evidence to dispute the BAU trajectory (although some said that the recession ending might cause wood waste arisings to increase having a knock on effect). The data shows that wood waste is likely to decline further without additional Government intervention. On further diversion above the BAU trend, a number of respondents mentioned the need for segregation of wood waste to drive diversion.

Sorting wood waste and identifying treatments

Wood waste arises in different fractions ranging from untreated, pre-consumer off-cuts to treated wood containing preservatives and via a variety of post-consumer waste streams. The separation of wood waste from other waste streams is particularly important as the data shows that the majority of wood going to landfill does so in mixed loads and because segregation is likely to drive diversion.

Most of the wood trade organisations agreed that wood waste could be separated from other waste streams. The degree of separation depends on volumes and costs and some materials, such as upholstery, may be difficult to separate out. Some LA bodies agreed but all had concerns about the practicality, such as space, and costs. Waste management companies agreed that wood waste could be separated but raised issues with products containing very small amounts of wood and believed an absolute ban on wood waste to landfill would create difficulties and increase UK business costs. For C&D/ SMEs the main concerns were cost and lack of space to separate the wood waste.

Respondents were asked how practical it would be to apply a restriction to mixed loads. Whilst a few respondents thought this would encourage segregation at source, and a few thought it practical where there were facilities/ markets in place (including export) others responding to the question raised concerns around cost, diversion to informal markets or enforcement. A majority of respondents felt that the producer of waste should be responsible for segregating waste to encourage a culture of less waste and get them thinking about waste from the onset.

Views on separating the different grades are mixed. Some mention market demand driving whether wood is separated into grades. A number mention the difficulty in visually identifying treatments on wood and in identifying the different grades of wood. Many see grade A as easier to separate than other grades. These responses show that identifying treatments on wood waste and therefore applying grading to the wood waste is not straightforward.

Demolition and municipal waste streams were mentioned as sectors where sorting wood waste might prove particularly difficult. A large volume of wood arising from these streams could be automatically described as grade C and as a result some training on wood types, testing methods and how to recognise contaminated and hazardous wood waste may be required (although this would require EA and industry working together to identify treatments – see below).

Whilst identifying and testing for the various treatments on wood was clearly a common theme among respondents, we were surprised that more concerns weren't

raised (although environmental groups and some others raised it as a key issue). There is currently no way of identifying invisible treatments on wood waste. Some respondents (especially environmental groups) mentioned the need to reduce contaminants on wood as a long term solution. The Environment Agency wants to work with the industry to find out more about these 'invisible' treatments e.g. how, where, which ones are used and whether and how they can be identified and segregated, and the associated environmental risks. In the interim the EA are proposing to produce a Regulatory Position Statement (RPS) to cover exemption and permitting issues around treated and untreated / visibly clean wood and would like to work with the industry on this. Putting in place a restriction before there is a way of identifying treatments on wood waste could cause problems and issues up the supply chain. The EA will review the position after a year and during this time we would want to see industry gathering the necessary evidence.

Markets

The main markets in the wood waste industry in the UK are: panelboard; biomass/energy; animal/ poultry bedding; mulches (soil conditioners and composting), equine surfaces and pathways and coverings. There is also a growing export market (for recovery) in wood waste. Anecdotal evidence also suggests that a considerable amount goes to informal markets.

We understand the bulk of the wood that is currently sent to landfill to be low grade wood (i.e. Grade B, C and D). Grade B can be used in panelboard but Grade C can only be used in a WID compliant plant. It is likely that the main viable market for this wood waste, if a restriction on landfilling were imposed, would be incineration for energy recovery in a WID compliant plant.

Most respondents agreed that wood waste diverted from landfill by a restriction is likely to be of low grade and that the waste will be diverted to energy recovery via incineration. A number of respondents also told us that wood waste is likely to decline in quality due to the increasing use of materials such as MDF and chipboard in products which could mean we see an increase in Grade B and C in future years. Nearly all respondents thought if a landfill restriction were to be introduced more EfW infrastructure would be required and a number also outlined the need for collection and sorting infrastructure which the majority (especially wood trade association) felt has the potential to provide employment and income for the local economy. This could potentially be overcome by work which WRAP is taking forward on collection hubs for wood waste. There were calls for Government to support the development and improvement of markets but also to understand the consequences before making any proposals.

UK biomass facilities' demand for wood waste doubled between 2007 and 2010. However, lower grade wood waste must go to WID compliant facilities. A number of respondents do not believe that planned WID compliant biomass plants will be sufficient to deal with wood waste diverted from landfill. Current biomass facilities and those already under construction expect to have a wood waste demand totalling circa 1.1Mt and it is projected that by 2015 there will be only 0.5Mt of wood waste available as a feedstock to support new biomass facilities⁶. This is in the context of the over 20Mt of identified biomass projects in the UK which plan to use wood of all types (UK and import, virgin and recovered waste) as a feedstock. However, it is not clear what proportion of these biomass facilities would be WID compliant.

Respondents also mentioned the cost of transporting wood waste. It is not cost effective to transport long distances and therefore the location of facilities will be important. Around 40% of wood waste arisings are generated in London, South East England and North West England due to the higher population density and significant construction and manufacturing activities. This means that rather than a couple of large scale WID compliant plants being built, a number of small scale WID compliant biomass plants may be required dotted around the country, in particular in these areas. Until such facilities are built putting in place a restriction could result in an increase in fly tipping and other illegal activities and high costs of enforcement as there are likely to be regional imbalances between supply and demand. More work needs to be done to determine the regional and technological capacity gap.

One basis for looking at a wood waste restriction had been that this may give certainty to the EFW market of a reliable feedstock source going forward and encourage investment. The responses and workshops suggest that wood waste diverted from landfill may not be enough to provide this certainty as large scale EFW plants will require more feedstock than wood waste alone will provide. Eligibility for ROCs⁷, which can be fundamental to the financial viability of a biomass project, turns on biomass energy content. Whereas forestry and biomass crops have a biomass content close to 100%, low grades of recovered wood may have a biomass energy content as low as 80%, below the 90% threshold for ROCs eligibility. This can be addressed by using a blend of forestry, fuel crops and recovered wood to achieve the required biomass energy content. However, biomass operators often are unable to secure finance for infrastructure on the basis of ROC's, because of the difficulty in proving the biomass energy content⁸.

It is likely that export will continue where this is the most cost effective option although some respondents thought that some wood waste would be diverted from export.

⁶ 2011 Briefing Report: The UK Waste Wood Market, Tolvik Consultancy, 2011

⁷ Renewable Obligation Certificates

⁸ Market Situation Report: Realising the value of recovered wood, WRAP 2011

The Call for Evidence identified some unregulated informal markets which were also mentioned at the stakeholder workshops. The majority of respondents agree that informal markets exist and mentioned other routes such as export, on/off site burning (for heating), home composting, mixed loads to landfill, agricultural fertiliser and informal re-use (which does not appear in statistics).

Discussion at the stakeholder workshops and written responses identified possible unintended consequences if a restriction was put in place (especially without a long lead in time). These include increased fly tipping, disposal by burning, more wood waste diverted to incineration, and the potential to mix low grade wood waste with high grade to disguise the quality.

Storage

Wood waste prices fluctuate and in order to achieve the best possible prices the wood industry may want to store wood waste. The problem of wood waste storage was mentioned in particular the fact that the Environment Agency (EA) and the local Health and Safety Executive are very strict about the size of wood waste piles. The industry mentioned a desire to relax these if there was a restriction. However the EA have had to tighten up dock side storage as there has been stockpiling of wood waste due to fluctuations in the export market as a result of mild winters in Scandinavia. The EA have subsequently withdrawn the low risk position and are issuing a Regulatory Position Statement shortly. A recent spate of fires at wood recyclers has resulted in the wood recycling trade association writing their own guidance. Therefore it would not be appropriate to relax wood waste storage requirements.

Lead-in time

Introducing a restriction on wood waste to landfill would require a lead-in period to allow local authorities and industry to make necessary adjustments and for infrastructure, particularly WID compliant plants and possibly sorting mechanisms, to develop. Previous work suggested it would be difficult to implement landfill restrictions in less than five years, particularly for wood waste where there is a strong reliance on treatment infrastructure.

The majority of respondents suggest a lead in time of between 5-10 years, however one mentioned a lead-in time of months and one other suggested less than five years.

Costs and benefits

The 2010 Landfill Bans Feasibility Study⁹ provides the most recent bottom up analysis of costs and benefits of diverting wood waste from landfill to either recycling or energy recovery. This approach compares the costs of a restriction, such as collection, treatment and enforcement costs; to benefits, such as environmental gains from reduced methane emissions. This study estimates a positive net present value for a wood waste restriction of £20m to £50m depending on the type of restriction. However, the analysis is sensitive to the assumed rate of methane capture as this affects the potential for environmental benefits from diverting wood waste from landfill.

Defra also carried out a cost benefit analysis based on this study, using the same methodology but a different assumption for methane capture, based on existing Government assumptions. This results in a negligible or negative net present value of £0m to -£50m depending on the type of restriction. As there is a level of uncertainty around the appropriate methane capture rate to use, we are undertaking research to narrow the uncertainty. If this results in the methane capture rate being lower than currently thought, it would mean that the potential benefits of a restriction are consequently higher. However, based on currently available information, our analysis concludes that a restriction would have a negligible or negative impact overall.

Environmental issues

A few respondents, particularly environmental organisations, raised the potential impact on the environment especially as a restriction could result in more energy recovery facilities (e.g. due to increased certainty with regards to domestic feedstock) which could result in increased imports (especially if the domestic feedstock volumes end up not being as much as anticipated). Environmental groups want to see Government focus on getting the most energy out of waste (not the most waste into energy) and the environmental groups (and others) would like to see wood waste moved up the hierarchy away from incineration.

⁹ http://www2.wrap.org.uk/downloads/FINAL_Landfill_Bans_Feasibility_Research.e943330d.8796.pdf

Restricting wood waste to landfill is likely to result in reduction of GHG emissions. In the majority of cases, routes that end in energy recovery as a final disposal, via recycling into panelboard or animal bedding, are more sustainable in terms of carbon savings. All routes show significant carbon savings compared to disposal to landfill, and diverting wood waste from landfill to any of the routes identified would deliver significant carbon savings. Carbon sequestration was mentioned by some respondents and this has been identified as an area where it would be helpful to improve our evidence base so we can understand whether there are carbon benefits in leaving wood in landfill.

Government and industry actions to help manage wood waste

There are other government and industry actions underway which will help manage wood waste and potential further initiatives suggested by stakeholders.

The landfill tax will remain the key driver to divert waste from landfill. Landfill tax is currently £64 a tonne and will rise by £8 a year to £80 a tonne in 2014/15, keeping a minimum floor under that level until 2020. There was widespread support for landfill tax among the responses. Some respondents thought the continuation of the landfill tax escalator would effectively divert wood waste from landfill and negate the need for a restriction.

Some respondents mentioned the need for more action on the reuse of wood waste. Improving the re-use/recycle sector was a common theme in the written responses and at the stakeholder workshops particularly with the wood trade association and the construction and demolition companies and LAs¹⁰. The construction and demolition companies were keen to mention the pallet recycle scheme whilst the wood trade association flagged up the development of the wood re-use market. We will be launching a call for evidence shortly to inform the Waste Prevention Programme which will give further opportunity to shape some of these ideas.

Some respondents suggested opening up household waste recycling centres at a fee to SMEs. They feel this could be a good way of helping tackle diverting wood waste from landfill. Local Authority respondents favoured producer responsibility schemes as a way of increasing the recycling and recovery rates. Research on wood waste collection hubs has been undertaken by WRAP. The research showed that four areas had commercially viable potential: wood recovery through

¹⁰ Local Authority Bodies

composting operations; Local Authority Civic Amenity Recycling Centres; collection clusters for SME wood businesses; and reverse logistics for wood sector businesses. WRAP are tendering for feasibility studies which should lead to trials demonstrating their operational, technical and commercial viability. The ultimate aim of the work will be to support the development, or further optimisation, of the waste wood collection and supply chain including smaller businesses which do not produce sufficient wood waste to make skip based collections viable. Ultimately this should help reduce the amount of waste wood that is still being sent to landfill. The technical, environmental and where possible, commercial outcomes of the feasibility studies will be widely disseminated.

As a result of the difficulty the wood industry face in identifying treated and untreated wood the EA is working with the industry to find ways of identifying and segregating treatments including the environmental risks they pose when treated wood is recovered in various ways. It will be important for the industry to support the EA in this area, providing information and evidence where possible.

The Call for Evidence approach was appreciated by stakeholders. Opening up the evidence base early on and testing our interpretation of issues was welcomed. Some respondents suggested more joined up thinking between government and industry on wood waste as a useful approach to future policy proposals. There were some concerns raised by stakeholders about ROCs incentivising energy recovery over recycling, although we do not have evidence to suggest this is actually happening – and wood waste is one material where there can be valid deviation from the waste hierarchy (see the Defra Waste Hierarchy Guidance). We will continue to work closely with DECC on RoCs and RHI and their impact on wood waste.

Next steps

On balance, looking at the BAU trajectory which suggests that wood waste to landfill will decline without further government intervention, and taking into account the concerns raised by stakeholders, we do not believe that the time is right to introduce a restriction on wood waste to landfill. This is especially true in the current economic climate as a restriction will result in costs to business. In addition there are actions underway by the EA and WRAP which will help to manage wood waste.

We will, however, keep the wood waste situation under review and look to address gaps in our wood waste evidence base such as future EfW capacity (and the regional and technological capacity gap), the nature of the wood waste going to landfill, and carbon sequestration of wood waste in landfill. We will also take into account any new evidence emerging from further work on methane emissions and capture rates from landfill.