

## Summary: Intervention & Options

<b>Department /Agency:</b>	<b>Title:</b> Impact Assessment of Revised 'Buy Sustainable - Quick Wins' specifications for Paper and Paper Products	
<b>Stage:</b> Consultation	<b>Version:</b> 3.2	<b>Date:</b> 28 August 2009
<b>Related Publications:</b>		

Available to view or download at:

<http://www.>

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**What is the problem under consideration? Why is government intervention necessary?**

There are significant environmental impacts associated with the production, consumption and disposal of paper products which market forces alone do not address. Existing Government policies address a number of these impacts (e.g. Landfill Tax). However, some environmental impacts remain unaddressed and, in addition to this, significant market failures exist in public procurement. Differing incentives between procurers and budget holders and other barriers may prevent cost-effective decisions being made; and external benefits/spillovers from sustainable procurement will not be considered.

**What are the policy objectives and the intended effects?**

The objective of the policy is to update the 'Quick Wins' mandatory minimum and voluntary 'best practice' specifications and increase their stringency in an effort to reduce the environmental impacts associated with the products and services procured by central government departments and their executive agencies. It is intended also that the substantial purchasing power of these public bodies will stimulate the development of more sustainable products for use across the market, thereby contributing to wider Government aims of reducing carbon emissions and conserving natural resources.

**What policy options have been considered? Please justify any preferred option.**

Mandatory minimum standards on the procurement of paper and paper products are already in effect, to ensure widespread uptake of sustainable procurement. This IA considers the impacts of revising the mandatory minimum standards to reflect changing market conditions and also suggests including a voluntary 'best practice' standard to give procurers and the market an indication of the direction of future policy. This is compared to a 'do nothing' scenario in which the standards are not updated.

**When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?** Specifications will be reviewed every 1-3 years, depending on the rate of market and technological developments.

**Ministerial Sign-off** For SELECT STAGE Impact Assessments:

*I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.*

Signed by the responsible Minister:

..... Date:

## Summary: Analysis & Evidence

Policy Option: 1

Description: Revised 'Buy Sustainable - Quick Wins' specifications for Paper and Paper Products

<b>COSTS</b>	<b>ANNUAL COSTS</b>		Description and scale of <b>key monetised costs</b> by 'main affected groups' Evidence that same/lower cost alternatives available, so estimated negligible impact on procurement costs to central Government.
	<b>One-off</b> (Transition)	<b>Yrs</b>	
	£ -	3	
	<b>Average Annual Cost</b> (excluding one-off)		
	£ negligible		<b>Total Cost (PV)</b> £ negligible
Other <b>key non-monetised costs</b> by 'main affected groups'			

<b>BENEFITS</b>	<b>ANNUAL BENEFITS</b>		Description and scale of <b>key monetised benefits</b> by 'main affected groups' Reduction in CO2e due to greater use of recycled paper: £1.4m
	<b>One-off</b>	<b>Yrs</b>	
	£ -	3	
	<b>Average Annual Benefit</b> (excluding one-off)		
	£ 470,000		<b>Total Benefit (PV)</b> £ 1.4m
Other <b>key non-monetised benefits</b> by 'main affected groups' Small other environmental benefits (e.g. reduced chlorine use in paper production outside of UK); other external benefits (impact on UK paper market; impact on business & consumer behaviour)			

**Key Assumptions/Sensitivities/Risks** Assumptions on:

Volume and type of paper procured by Central Government & Executive Agencies; current levels of compliance; volume and location of CO2e savings; capacity of market to meet demand.

Price Base Year 2009	Time Period Years	<b>Net Benefit Range (NPV)</b> £ 1.4m	<b>NET BENEFIT (NPV Best estimate)</b> £ 1.4m
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What is the geographic coverage of the policy/option?	Nationwide			
On what date will the policy be implemented?	from 27 <sup>th</sup> Nov 2009			
Which organisation(s) will enforce the policy?	CESP/OGC			
What is the total annual cost of enforcement for these organisations?	£			
Does enforcement comply with Hampton principles?	Yes/No			
Will implementation go beyond minimum EU requirements?	Yes			
What is the value of the proposed offsetting measure per year?	£			
What is the value of changes in greenhouse gas emissions?	£ 1.4m			
Will the proposal have a significant impact on competition?	No			
Annual cost (£-£) per organisation (excluding one-off)	Micro 0	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	No	No	N/A	N/A

<b>Impact on Admin Burdens Baseline</b> (2005 Prices)		(Increase - Decrease)	
Increase of £	Decrease of £	<b>Net Impact</b>	£

Key: Annual costs and benefits: Constant Prices (Net) Present Value

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

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### 1. INTRODUCTION

This Impact Assessment will consider the environmental, financial, and other costs and benefits from adopting a revised set of specifications in relation to the paper and paper products procured within central Government departments and their executive agencies. These specifications have been developed from an evidence base which suggests that they are in line with market availability, but they are subject to informal public consultation and possible subsequent amendments.

The proposed revised specifications cover a range of paper products commonly procured across central government departments:

- copying and graphic paper, commonly used within printers and photocopiers in government offices
- paper for printed publications, a higher grade of paper, used in more official documents and publications
- tissue paper (kitchen and toilet tissue)

### 2. BACKGROUND

In 2007-08, central government departments and their executive agencies spent £54.7 billion on purchasing a range of non-capital goods and services. The environmental impacts of producing, using and disposing of these goods (i.e. across the product life cycle) are substantial, in terms, for example, of energy use and the dispersal of pollutants to air and water. In order to minimise such impacts, and use Government purchasing power to steer the market towards more

sustainable products, all central government departments and their executive agencies have, since 2003, had to integrate a series of environmental specifications into their procurement processes. In effect, only goods and services which meet such environmental standards should be supplied to Government Departments.

These standards are detailed within a toolkit known as '[Buy Sustainable - Quick Wins](http://www.defra.gov.uk/sustainable/government/what/priority/consumption-production/quickWins/index.htm)'. [See <http://www.defra.gov.uk/sustainable/government/what/priority/consumption-production/quickWins/index.htm>]

They consist of a set of **mandatory minimum** standards (for central government and their executive agencies) and **voluntary best practice** specifications for products commonly purchased across central government. The products selected are chosen for their environmental / financial impact, scope for environmental improvement, and political or example-setting function.

On a European level, a Communication on Green Public Procurement (**EU GPP**), published in July 2008, formed part of the EU's Sustainable Consumption and Production Action Plan. It seeks to encourage uptake of Green Public Procurement activities within public authorities across member states and, in a similar way to the UK's 'Quick Wins', it provides a toolkit for practitioners, with criteria that can be incorporated into tender documents. The toolkit contains minimum, 'core' environmental criteria across a range of priority product groups, in addition to more ambitious, 'comprehensive' criteria. Uptake is voluntary but a political target for each member state of 50% compliance with the 'core' criteria has been set for 2010. EU GPP is intended for application across the public sector, including in local and regional authorities, unlike the UK's 'Quick Wins' which are mandated for central government departments only.

Historically, the minimum, mandatory 'Quick Wins' standards have generally been set at market average level and have been revised periodically to reflect technological advances and subsequent market developments. However, this is gradually changing as specifications become more stringent in line with UK policy aspirations, and as standards are harmonised with initiatives in the EU that cover environmental impacts across the whole product life cycle. In order, therefore, to formulate a more robust and transparent process for revising minimum and 'best practice' environmental specifications through the 'Buy Sustainable – Quick Wins' initiative, Defra are now conducting **Impact Assessments** for proposed amendments to each product group. This will also assist Defra in responding to the recommendations included in the National Audit Office report of April 2009, 'Addressing the environmental impacts of government procurement'. (NAO [2009], Recommendation ii, page 7).

### 3. RATIONALE FOR INTERVENTION

Many of the negative externalities from producing and using goods and services are already addressed by Government policies (for example, by putting a price on carbon emissions through the EU ETS, or regulating electrical waste through the WEEE directive). These are applicable to goods and services procured by the Government as they are to the rest of the UK.

However, a number of other market failures and behavioural barriers can justify intervention specific to Government procurement, where it is cost-effective to do so.

There is a **principal-agent** failure in Government procurement, where the *agent* (the procurement official) has different information and incentives than the *principal* (the official responsible for the Department's finances). For example, the procurer may only be interested in meeting their procurement budget for the financial year, whilst the official responsible for the Department's finances would prefer procurement decisions that minimised the lifetime costs of the product or service, including annual expenses such as energy costs. Setting procurement

specifications based on cost-effective life-cycle analysis of goods and services can help resolve this failure. In addition, the procurement official is unlikely to have adequate incentives to consider the wider environmental benefits.

There may be **positive externalities** and **spillovers** from Government procurement of 'green' goods and services. For example, if the Government accounts for a large proportion of demand for a product or service, then it may be able to incentivise the market to improve in order for suppliers to capture this demand (e.g. innovation spillovers). There is also evidence to suggest that setting a 'good example' may encourage others (such as businesses and industry) to adopt stricter standards when procuring or purchasing goods.

Finally, there may also be an argument for intervention to counter behavioural **barriers**. Inertia, and lack of information and skills, could result in Government procurers not making the most cost-effective procurement decisions even when it is rational to do so.

#### **4. CURRENT SPECIFICATIONS FOR PAPER PROCUREMENT**

The current specifications for paper procurement within central government departments and their executive agencies, as detailed in the 'Buy Sustainable – Quick Wins' initiative, are:

##### 2008 MINIMUM Mandatory Specification(s)

1. **Copying paper** must have 100% recycled content
2. **Tissue paper** (kitchen and toilet tissue) must have 100% recycled content
3. **Paper for printed publications** must have:
  - a. 50% recycled content;
  - b. Of the non-recycled content (50% or less), any virgin fibre used must be purchased in accordance with UK timber procurement policy. Only timber and timber products originating either from independently verified legal and sustainable sources or from a licensed Forest Law Enforcement Governance and Trade (FLEGT) partner can be purchased

All Departments are expected to move towards 75% recycled content for paper for printed publications and achieve full compliance by October 2009, as signalled on the 'Buy Sustainable – Quick Wins' website. However, it is quite likely that this target will not be met, although collecting evidence to assess this is severely hampered by data limitations (see below).

The recycled content of copying / printing paper must only count recovered fibres in accordance with the NAPM definition of genuine recovered fibre.

*NB: From April 2015, only sustainably produced timber will be purchased.*

##### 2008 BEST PRACTICE Specification(s)

Same as the minimum specification.

When these criteria were originally developed, it was judged that the major environmental impacts of paper production and consumption related to the nature of the pulp used and the proportion of recycled content. Accordingly, it was not possible to develop a Best Practice specification that went beyond 100% recycled content for copying and graphic paper, and it was felt that a standard of 50% recycled content for paper for printed publications was sufficiently ambitious and reflective of market availability.

## 5. PAPER CONSUMPTION BY CENTRAL GOVERNMENT DEPARTMENTS

### (i) Current consumption

Data relating to the quantity and quality of copying and graphic paper procured by central departments has proved difficult to collate as paper product purchases are very diffuse. Individual departments have the freedom to make purchases themselves, frequently using the services of printers who act on behalf of Government organisations.

Internal estimates suggest that central Government departments and their executive agencies are responsible for 40% of total UK public sector procurement of paper. It is estimated that, in terms of volume, total public sector paper procurement amounts to around 500,000 tonnes per annum, meaning that central Government would account for 200,000 tonnes, in very approximate terms.

Anecdotal evidence, reported in a study commissioned from Entec, suggests that the public sector as a whole consumes between 250,000 and 600,000 tonnes of paper annually, which would account for between 5% and 13% of the total UK graphic paper consumption of 4.6 million tonnes. This is consistent with the estimations detailed above for central Government procurement.

For the purpose of this analysis, it will be assumed that **central Government procures 200,000 tonnes of paper per year**. Internal estimates suggest also that there is an equal split between volumes of copying paper and paper for printed publications, meaning **100,000 tonnes of each procured each year**.

### (ii) Future consumption

After rapid growth in the 1990s, the UK office paper market is now deemed to be static or even declining and, due to behavioural changes in the office, this trend is likely to continue regardless of economic conditions. Recent research indicates that there is now a distinct difference in working practices between office workers aged 30 and below, and those over this age. The former group does not generally feel the need to read from 'hard copies' of documents and are, instead, comfortable with accessing and storing information in electronic format.

However, the UK office papers market is still large and, in line with wider societal environmental concerns, there are clear trends towards growth in 'environmentally friendly' papers at the expense of uncertified virgin grades.

## 6. PROPOSED REVISED SPECIFICATIONS FOR PAPER PROCUREMENT

The Proposed Specifications are as follows, across each grade of paper covered by the specifications, namely 'copying and graphic paper', 'paper for printed publications' and 'tissue paper'.

### (i) Copying and Graphic Paper

#### Minimum mandatory specifications

*(Based on environmental and economic cost-benefit analysis across the product life-cycle and taking account of market capacity issues)*

- 100% recycled content: to include only genuine recovered fibre (i.e. no 'mill broke'), in accordance with the NAPM definition: [http://www.napm.org.uk/recycled\\_mark.htm](http://www.napm.org.uk/recycled_mark.htm). This is the same as the current specifications.
- The recycling process must be Elemental Chlorine Free (ECF), with AOX emissions from the production of each pulp used below 0.25kg/ADT (Air Dried Tonne), or Process Chlorine Free (PCF).  
*AOX (Adsorbable Organic Halogenated compounds) are hazardous chlorinated compounds which result from the bleaching of pulp with chlorine or chlorine-based chemicals. This standard will not apply, therefore, to products derived from pulp which is not bleached or where bleaching is performed with chlorine free substances.*

#### Best Practice specifications (voluntary)

In addition to meeting the minimum, mandatory specifications, the ecological criteria (\*) of the European Ecolabel for 'copying and graphic paper' must be met. Full criteria documents available at:

[http://ec.europa.eu/environment/ecolabel/ecolabelled\\_products/categories/copying\\_paper\\_en.htm](http://ec.europa.eu/environment/ecolabel/ecolabelled_products/categories/copying_paper_en.htm)

(\*) The applicable sections of the criteria document are:

- Emissions to water and air
- Energy use
- Hazardous chemical substances
- Waste management (as applied to paper production and not general management practices)

Whilst European Ecolabel certification provides one means of verifying compliance, any other appropriate means of proof, such as a technical dossier of the manufacturer (verified by an external auditor), or a test report from a recognised body, would be acceptable.

### (ii) Tissue Paper

#### Minimum mandatory specifications

- Tissue Paper (kitchen and toilet tissue) must have 100% recycled content, to include only genuine recovered fibre (i.e. no 'mill broke'), in accordance with NAPM definition:

[http://www.napm.org.uk/recycled\\_mark.htm](http://www.napm.org.uk/recycled_mark.htm). Again, this is the same as the current specifications.

- The recycling process must be Elemental Chlorine Free (ECF), with AOX emissions from the production of each pulp used below 0.25kg/ADT (Air Dried Tonne), or Process Chlorine Free (PCF).

AOX (*Adsorbable Organic Halogenated compounds*) are hazardous chlorinated compounds which result from the bleaching of pulp with chlorine or chlorine-based chemicals. This standard will not apply, therefore, to products derived from pulp which is not bleached or where bleaching is performed with chlorine free substances.

### Best Practice specifications (voluntary)

In addition to meeting the minimum, mandatory specifications, the ecological criteria (\*) of the European Ecolabel for 'tissue paper' must be met. Full criteria documents available at:

[http://ec.europa.eu/environment/ecolabel/ecolabelled\\_products/categories/tissue\\_paper\\_en.htm](http://ec.europa.eu/environment/ecolabel/ecolabelled_products/categories/tissue_paper_en.htm)

(\*) The applicable sections of the criteria document are:

- Emissions to water and air
- Energy use
- Hazardous chemical substances
- Waste management (as applied to paper production and not general management practices)

Whilst European Ecolabel certification provides one means of verifying compliance, any other appropriate means of proof, such as a technical dossier of the manufacturer (verified by an external auditor), or a test report from a recognised body, would be acceptable.

### **(iii) Paper for Professional Purposes / Printed Publications**

#### Minimum mandatory specifications

*(Based on environmental and economic impact analysis across the product life-cycle and taking account of market capacity issues)*

- Minimum 75% recycled content, to include only genuine recovered fibres (i.e. no 'mill broke'), in accordance with the NAPM definition: [http://www.napm.org.uk/recycled\\_mark.htm](http://www.napm.org.uk/recycled_mark.htm). This is an increase from the previous level of 50%.
- The recycling process must be Elemental Chlorine Free (ECF), with AOX emissions from the production of each pulp used below 0.25kg/ADT (Air Dried Tonne), or Process Chlorine Free (PCF).  
AOX (*Adsorbable Organic Halogenated compounds*) are hazardous chlorinated compounds which result from the bleaching of pulp with chlorine or chlorine-based chemicals. This standard will not apply, therefore, to products derived from pulp which is not bleached or where bleaching is performed with chlorine free substances.
- Of the non-recycled content (25% or less), the virgin fibre used must be sourced according to the UK Government's timber procurement policy. Only timber from independently verified legal and sustainable sources or from a licensed Forest Law Enforcement Governance and Trade (FLEGT) partner, or equivalent, can be purchased.

This is the same standard that was previously set for the 50% non-recycled content of this paper.

- In addition, all virgin fibre must be Elemental Chlorine Free (ECF), with AOX emissions from the production of each pulp used below 0.25kg/ADT (Air Dried Tonne), or Total Chlorine Free (TCF).

### Best Practice Specifications (voluntary)

As for best practice specifications for 'copying and graphic paper'.

The Commission is currently developing Ecolabel standards for 'printed paper'. When finalised, it is intended that they will form the basis of the Best Practice Specifications for 'Paper for Professional Purposes' within 'Quick Wins'.

## 7. RATIONALE BEHIND PROPOSED REVISIONS

### (i) Minimum, mandatory criteria

#### **Recycled content**

The evidence collected via a cost-benefit analysis (commission from Entec) suggests that paper produced from recycled pulp has a lower overall environmental impact than papers produced from virgin fibres, when impacts are considered across the product lifecycle. This is, however, a complicated judgement to make since the level of environmental impact is dependent on a range of factors, including the nature of the energy source used in the mill, the chemicals used in manufacture, the geographical distance from mill to wholesaler to end consumer, and the means of disposal at end of product life. In general, though, paper from recycled pulp uses less energy, less water, and its reuse diverts waste from landfill.

Accordingly, we propose to maintain the requirement for copying and graphic paper, and tissue paper, to come from 100% recycled pulp. This is largely in line with the EU's Green Public Procurement (GPP) criteria for Paper, although it should be noted that our interpretation of what constitutes recycled pulp differs.

We intend to continue to restrict the definition of recycled pulp to the NAPM (National Association of Paper Merchants) description of 'genuine recovered fibre' which does not include pre-consumer waste, known as 'mill broke'. GPP criteria allow the inclusion of both post-consumer and pre-consumer waste as recycled product but it is felt that this wider scope may limit the volume of material collected from consumers and diverted from landfill.

Furthermore, we will continue to not allow procurers to procure copying and graphic papers produced from legally and sustainably sourced virgin fibres, as the GPP criteria would allow. This is to reflect evidence detailing the respective environmental impacts of producing paper from virgin fibres and from recycled fibres.

For paper for printed publications, we propose **increasing the required recycled content from 50%, as it is now, to a minimum of 75%**. Again, the basis for doing so is that recycled pulp is associated with lesser environmental impacts over the product life cycle. Our intention to revise the standard in this way has been indicated on the 'Quick Wins' website since 2007 so practitioners in central government departments have been given opportunity to prepare and adapt their procurement practices accordingly. However, it is not clear to what extent procurers

are already meeting this proposed higher standard. As before, the remaining content (25% or less) may be derived from virgin paper fibres, provided the fibres used comply with the Government's Timber Procurement policy.

## Chlorine content

Also, in line with core GPP criteria, and Best Available Technique (BAT) under the IPPC Directive, and to reflect the hazardous properties of chlorinated compounds, we are proposing to specify that copying and graphic papers, tissue paper, and paper for printed publications, be either Elemental Chlorine Free (ECF), with low AOX emissions, or Process Chlorine Free (PCF). The maximum level of AOX emissions set is in line with that specified within the European Ecolabel criteria and, from analysis of paper profiles of some major manufacturers, appears to fall within industry standards.

Our initial cost-benefit analysis revealed that the majority of mills in Europe and the UK operate according to BAT in regard to chlorine content. Also, the impact of such a specification on manufacturers would be limited due to the fact that there is less emphasis on bleaching in recycled paper production (as recovered paper is already white).

Setting the requirement for Process Chlorine Free (PCF) recycled paper rather than Total Chlorine Free (TCF) means that manufacturers are not obliged to remove chlorine compounds added in previous production processes, which would likely be counter-productive in encouraging more environmentally friendly practices. For the virgin fibre element of paper for printed publications, the requirement for ECF, with low AOX emissions, or TCF reflects the fact that manufacturers have greater control over the substances present in the pulp.

### (ii) Best Practice criteria

The purpose of developing separate Best Practice criteria is to provide practitioners and suppliers with more foresight regarding the future direction of minimum criteria, as it is intended that, in future revisions, Best Practice criteria will be incorporated into minimum standards to reflect technological and market developments. Also, the development of Best Practice standards provide opportunity to those authorities able to go beyond minimum standards, and further reduce the environmental impact of their procurement procedures, to do so.

It is proposed that Best Practice criteria for all three grades of paper products (copying and graphic paper, paper for printed publications, and tissue paper) are introduced to reflect some of the wider environmental impacts of paper production and consumption. The proposed criteria are in line with the European Ecolabel criteria, which are intended for the top 10-20% of performers in the market, and with relevant EU GPP 'comprehensive' criteria.

Specifically, these impacts relate to:

- Emissions to air and water: Restrictions on the emissions of Nitrogen Dioxide (NO<sub>x</sub>), Sulphur (S), and on the level of Chemical Oxygen Demand (COD) within effluents; further standards related to AOX levels and carbon dioxide (CO<sub>2</sub>) from non-renewable resources.
- Energy use: Impacts related to the electricity used in the production process and in the fuel from transporting paper products to market
- Hazardous chemical substances: Limitations on the use of substances harmful to the environment and to health

- Waste management: Reduction of the impacts of solid waste through the implementation of waste management systems in all pulp and paper production sites.

## 8. IMPACT ON PROCUREMENT COSTS

### (i) Costs relating to compliance with Minimum, Mandatory Standards

The appraisal period for this analysis is three years (approximately 2010-2012, although revised specifications would come into force in late 2009). It is expected that the specification will be reviewed within three years, at the latest.

For simplicity in the analysis, it is assumed that there will be no real changes in the cost of paper procured over this period (although, in theory, it is possible that central Government may influence relative prices of different types of paper through its procurement activities).

#### (a) Costs associated with Recycled Content of Papers

##### Copying and graphic paper

The requirement for 100% recycled content is already in place and so there is **no increase in stringency in this standard**.

##### Tissue Paper

The requirement for 100% recycled content is already in place and so there is **no increase in stringency in this standard**.

While we do not have specific data relating to the availability of tissue paper with the required recycled content, it should be stressed that it is feasible to recycle tissue paper from low grades of paper as the appearance, in terms of brightness, opacity, etc., is not a major consideration.

##### Paper for Printed Publications

The proposed criteria raise the required level of recycled content of paper for printed publications from 50% to 75%. The economic costs associated with the more stringent requirements will largely depend on the price differential between paper with 50% recycled content and paper with 75% or greater recycled content, as well as on the current levels of supply, and volumes and paper type purchased.

Evidence suggests that at least some central government departments already procure paper for professional purposes with higher than required recycled content. Indeed, the 'Buy Sustainable – Quick Wins' website currently signals that Government departments should aim for 75% recycled content by October 2009.

As mentioned above, there is a limited amount of data relating to the quantity and environmental specifications of paper currently procured by central Government departments and their executive agencies. Therefore, it is difficult to establish to what extent this higher

requirement is already being met and, indeed, what the current level of compliance is across central Government and their executive agencies.

Therefore, this Impact Assessment will make two key assumptions:

- that the current 50% recycled content for paper for printed publications procurement criteria is being enforced and met; and
- departments have not moved to procuring 75% recycled content paper as suggested on the 'Buy Sustainable – Quick Wins' website. This means that the analysis here is likely to provide an **upper bound estimate of cost implications**, as some of the move to 75% recycled content paper may very well already be being met.

Evidence collected for this Impact Analysis on the cost implications of this move from 50% to 75% recycled content is highly contradictory. It appears likely that **the level of recycled content in the paper is not an important determinant of the price of the paper** – other possible influences include paper quality and branding. Given the uncertainties surrounding the issue of cost, it is hoped the consultation may shed more light on this issue.

This could also be an important factor in determining the communication of the policy – if central Government departments can actually save money by buying paper for publications with a higher recycled content, then this would be a strong incentive to meet (or exceed) the specifications.

More detail on the evidence on paper cost is provided in **Annex A**, but a short summary is presented below:

- **Buying Solutions (2009):** Found that 14,645 tonnes of printed paper was purchased under the Recycled Printing Paper Framework in 2008, of which around 12,500 was likely for printed publications. 'Coated 75%' paper cost around £865/tonne, compared to around £830/tonne for 'Coated 50%'.

Based on the assumption that 100,000 tonnes of 'Coated' paper is procured by central Government in any given year, this would imply an increase in cost from around £83m to £86.5m (a **cost of £3.5m/year**)

However, 'Coated 100%' paper is available for around £810/tonne, so instead, purchasing 100,000 tonnes of this paper would reduce costs from £83m to £81m (a **saving of £2m/year**).

- **WRAP (2004):** Found that the price difference when comparing recycled papers with different recycling contents was negligible.
- **Entec (2009):** Analysed paper brands that are suitable for professional purposes and feature both 50% and 65% recycled content. Found that, for the analysed paper brand, 75% content paper was 4% to 5% cheaper than the 50% content paper.

Given the uncertainties over any potential cost increase from the revised recycled content criteria, and the strong evidence suggesting that there are in fact cheaper alternatives to 50% recycled content paper available that meet the stricter criteria, our best estimate is that **the cost implications will be negligible**.

However, there may be concerns regarding the availability of larger amounts of higher recycled content paper (as discussed previously), and this is an issue that respondents to the consultation may be able to provide comment and further analysis on.

(b) Costs associated with restricting chlorine content

**No significant costs** associated with restricting chlorine content are anticipated as the requirements appear to be widely adopted across industry already.

**(ii) Costs relating to complying with Best Practice Criteria**

It is important to stress that there is no obligation on procurers to meet Best Practice criteria. Instead, it is a voluntary option for procurers able to exceed the minimum, mandatory standards, and is also used to signal to the market the direction in which future mandatory standards are likely to progress.

European Ecolabel standards are aimed at the top 10-20% of the market, although, in the commissioned Entec report, it was suggested that many of the ecological criteria are largely in line with current practice. The introduction of such Best Practice standards would likely result, therefore, in only minor costs for those suppliers which elect to comply voluntarily with the relevant criteria, but do not currently do so. There would be more substantial costs incurred, however, should a supplier seek full European Ecolabel certification.

More detail on the availability of paper that meets this stricter voluntary standard, and the possible environmental benefits from purchasing this paper, can be found in **Annex B**.

## **9. ENVIRONMENTAL BENEFITS**

As stated above, the environmental impacts associated with paper production vary according to the methods used in the production process, and there has been much debate regarding the benefit of encouraging the recycling of paper over producing paper from sustainably sourced virgin fibres.

There are, however, several areas in which increasing the proportion of recycled content in paper appears to present benefits in terms of reduced environmental impact.

(i) Climate change mitigation

It is not a simple task to calculate the likely CO<sub>2</sub>e savings from increasing the demand for paper with higher recycled content. There is large uncertainty (as already discussed) over the volume and type of paper that central Government is currently procuring.

Also, the evidence on CO<sub>2</sub>e savings from recycling paper suffers from large uncertainty over where the emissions savings occur, which is important in placing a value on them (see below for a more detailed explanation).

The following analysis should therefore be treated as indicative, and not a precise estimate of the likely CO<sub>2</sub>e impacts of revising the procurement specifications.

*(a) Additional paper recycled*

It is estimated that it takes 1.4 tonnes of old paper to make 1 tonne of new, recycled paper. (Green Press Initiative, 2007 - <http://www.greenpressinitiative.org/documents/recycledfiberfactsheet-EPN.pdf>)

To make 100,000 tonnes of paper (which is our assumption of central Government procurement of paper for printed publications) with 50% recycled content it is estimated\* that you would need 70,000 tonnes of old paper.

To make 100,000 tonnes of paper with 75% recycled content, it is estimated\* that you would need 105,000 tonnes of old paper.

*\*We believe that these figures are top end estimates, the actual figure depends on the process/facility being used.*

If we assume that all central Government procurement of paper for printed publications was at 50% recycled content, and instead it changed to 75% recycled content, then the extra demand for recovered paper per 100,000 tonnes would be **35,000 tonnes**.

However, data from Buying Solutions (on the Recycled Printing Paper Framework) suggests that only around one-third of paper procured in 2008 was at 50% or 55% recycled content, with remaining purchases at 75% or above.

Therefore, we will assume that the revised specifications would **increase the demand for recovered paper by 12,000 tonnes per year**.

Whilst this framework is open to the wider public sector, and not just central Government, it provides an indicative estimate of the possible current procurement practices across Government. If, in fact, the proportion of paper purchases below 75% recycled content is higher than one third, this assumption will provide us with an under-estimate of the CO<sub>2</sub>e savings from the measure. Therefore, it is a conservative assumption.

*(b) CO<sub>2</sub>e savings*

The UK's Waste Strategy (2007) (Part E of Appendix 1 to Annex A) estimates that recycling one tonne of paper saves 1.4 tonnes of CO<sub>2</sub>e. This can be broken down into 0.69 tonnes of methane avoided from landfill, and 0.71 tonnes saved elsewhere in the life-cycle.

Therefore, recycling an extra 12,000 tonnes of paper per year would save **16,800 tonnes of CO<sub>2</sub>e per year**.

*(c) Value of CO<sub>2</sub>e savings*

CO<sub>2</sub>e savings that occur in different areas of the economy, and in different geographic locations, are subject to different valuations. For example, CO<sub>2</sub> savings due to less methane emissions from landfill could be in the UK (and be valued at the UK's non-traded carbon price) or elsewhere (in which case they should be valued at the global shadow price of carbon).

This adds an extra level of uncertainty to this analysis, but we can make necessary assumptions to arrive at a monetary estimate of the value of the possible CO<sub>2</sub>e savings identified here.

For this analysis, it is assumed that the paper that is recycled would have instead gone to landfill outside of the UK, and that the savings from elsewhere in the paper life-cycle also occur outside of the UK. This is a tricky assumption, but is based on the fact that there is no longer any production of recycled paper in the UK.

CO<sub>2</sub>e emissions saved outside of the UK should be valued at the ‘global’ Shadow Price of Carbon. Therefore, the possible savings from the revised specifications are shown below:

<u>Year</u>	<u>CO<sub>2</sub>e saved (tonnes)</u>	<u>Global SPC (£ 2009)</u>	<u>CO<sub>2</sub>e savings (£, undiscounted)</u>	<u>CO<sub>2</sub>e savings (£, discounted)</u>
2010	16,800	28.72	482,517	466,200
2011	16,800	29.30	492,167	459,443
2012	16,800	29.88	502,010	452,785
			<b>TOTAL</b>	1,378,428

**Therefore, the Present Value (PV) of the CO<sub>2</sub>e savings from the revised specifications is £1.4m.**

(ii) Forestry

In general terms, the efficiency of recovered paper is far greater than that of felled trees when producing pulp: one tonne of pulp for office paper requires 4.4 tonnes of wood, while one tonne of recycled pulp requires only 1.4 tonnes of recovered paper.

Virgin pulp will always be needed in the papermaking process as paper can only be recycled five to seven times before the fibres become too short. However, while forests are increasingly managed in a sustainable way, there is a need to reduce wastage by using more recycled pulp in paper production.

(iii) Chemical use

In terms of the chemicals used in the manufacturing process, both virgin paper and recycled paper production processes use significant levels of chemicals, particularly caustic soda (NaOH) and various bleaches, but noticeably higher volumes are used in the manufacture of virgin papers. Recycled paper is not usually re-bleached, for instance, and, where it is, hydrogen peroxide is usually used. Sulphur based compounds are used in the virgin paper sulphate process, whereas additional soaps and fatty acids are used in the manufacture of recycled papers. According to WRAP, chemicals used in the manufacture of recycled papers have a lower, or at worst similar, environmental impact to those used in the manufacture of virgin papers.

(iv) Water consumption

Recycling paper uses less water than producing virgin paper; every tonne of 100% post consumer recycled paper produced saves approximately 3,000 litres of water

(v) Reduction in use of chlorine and chlorine derivatives

According to WWF, the bleaching of pulp with chlorine or chlorine-based chemicals results in the emission of hazardous chlorinated compounds – measured as AOX (Adsorbable Organic Halogenated Compounds) – into mill wastewater. These chemicals may include long-lasting, highly toxic and carcinogenic dioxins.

By stipulating that elemental chlorine shall not be used in paper products sold to central government bodies, the most environmentally damaging bleaches will be excluded from the products supplied. More detail on this can be found in **Annex C**.

## 10. IMPACT ON THE UK PAPER MARKET

### (i) Background to the UK Paper Market

It is estimated internally that the current total European output of de-inked pulp, suitable for the production of recycled paper, is 470,000 tonnes per annum. Within the UK, it is thought that 160,000 tonnes of paper with some proportion of recycled content is available.

As discussed in Section 5 (i), total purchases of office paper by wider UK public sector bodies is estimated (by Entec) to be between 250,000 and 600,000 tonnes per annum. Even accounting for the fact that 'Buy Sustainable – Quick Wins' standards apply only to central government departments, these figures suggest that either the market for recycled papers is near saturation in the UK or that there is perhaps a low rate of compliance with the minimum 'Quick Wins' criteria for paper products. It is hoped that consultation will help to provide clarity on this issue.

It does appear unrealistic, however, given current capacity, to push for wider public sector bodies to procure only recycled papers but maintaining the requirement for central Government bodies keeps demand high for such products and sends a signal to the market of the government's commitment to pursuing procurement policies that minimise environmental impact.

With the closure of two mills in the UK over the past year, there is now **no production of office paper in the UK**. There are, though, substantial numbers of merchants and retailers in the UK offering recycled paper options among their products. There are currently 22 listed member companies of the National Association of Paper Merchants (NAPM) and 39 listed members of the Paper Agents Association.

It is recognised that a growing proportion of recovered papers in the UK are being exported as paper manufacturing capacity is relocated to China and East Asia (countries with lower manufacturing costs but more limited forest resources). Currently, around 55% of recovered papers are exported, with China and the EU the main recipients.

It should be noted, however, that the proportion of recovered papers exported varies across different paper grades; thus, less than 20% of recovered high grade papers is exported. Indeed, a number of suppliers are looking at creating a 'closed-loop' system whereby the paper supplied

to commercial entities is collected at the end of life and fed back into the manufacturing process to create new papers.

## **(ii) Possible supply constraints**

The main risks associated with the adoption of the proposed standards appear to be related to increasing the required recycled content of paper for printed publications. Commissioned research has suggested that this would not have a major impact on price or market availability. The UK central Government is responsible for only a small proportion of paper purchases and, given that there is no production of paper in the UK, it can be assumed that increased demand for higher content recycled paper could be met by increased imports.

However, some industry observers contend that supply constraints may be an issue. Also, creating additional demand could place some pressure on existing supply chains and on the availability of sufficient volumes of high quality recycled pulp.

As previously stated, it is envisaged that the proposed revised standards would not substantially increase demand for recycled pulp. Informal stakeholder consultation, however, has highlighted some major concerns in relation to market capacity and it is hoped that a more informal public consultation, and circulation of this Impact Assessment, will attract more robust evidence on which these concerns can be substantiated.

## **(iii) Potential for Government to influence paper market**

Entec's study for Defra suggested that paper procurement constituted 2% of total public sector expenditure. Despite this modest share, according to industry representatives, central Government departments and the wider public sector is a notable client for the paper industry and public procurement initiatives are likely to have an impact on production practices.

The Government's commitment to procuring paper products with a specified recycled content can give suppliers confidence that there will be a market for products meeting certain specifications. There also appear to be opportunities to increase volumes of paper collected for recycling given that only an estimated 10% of publicly procured papers are recycled.

## **(iv) Competition assessment**

More stringent specifications, such as increasing recycled content for paper for professional purposes, would be expected to restrict choice (at least initially) as fewer suppliers will be able to meet the required standards.

- Copying and graphic paper

The only new requirement under the minimum, mandatory specifications for copying and graphic paper is that papers must be Elemental or Process Chlorine Free. This has been assessed to largely represent 'business as usual' so its impact is likely to be insignificant.

- Tissue paper

Similarly, the only substantive change to the tissue paper specifications is that they are required to be Elemental or Process Chlorine Free. This is thought to represent 'business as usual' particularly since features relating to appearance which chlorine bleaching may address, are not thought to be of key significance to procurers or consumers of this type of paper.

- Paper for Printed Publications

Under the proposals for revised 'Quick Wins' standards, the required proportion of recycled content within paper for printed publications would increase from 50% to 75%. Although, as stated above, there is envisaged to be little, if any, impact on the price paid to secure sufficient supplies of such papers, there may be a slight restriction in product choice, at least initially.

Of the 52 paper products suitable for professional use, identified in Entec's study, 43 had 75% or higher recycled content (at least 24 of which had recycled content derived entirely from post-consumer waste). The requirement for the virgin fibre element to be sourced according to the UK Government's timber procurement policy is a statutory obligation. Again, the specifications relating to chlorine content are considered to be widely adhered to by manufacturers already.

As described above, there is now no production of office paper in the UK. Any impacts on businesses in the UK, therefore, will be concentrated on UK-based paper merchants, which act as wholesalers and distributors of paper products. While a large proportion of these merchants appear to stock products within their range which meet proposed specifications, it is recognised that their ability to respond will depend on the wider availability of sufficiently high grade recycled paper and pulp. However, as the central Government is only a relatively minor procurer of paper, these impacts should be small.

#### **(v) Small firms assessment**

It has been established that the requirement for an increased recycled content in paper for printed publications is the one standard which is likely to go beyond current procurement practices. It could be argued that small firms will be disproportionately affected if they produce, distribute or deal with, in greater volumes than others, paper for printed publications with between 50% recycled content (as the standard is now) and 75% (the proposed level), and if there are net costs associated with sourcing and selling these products if the Quick Wins standards are revised.

A WRAP study of 2004 highlights that the 'downstream' supply chain for paper for printed publications exhibits different characteristics than the copying paper market, with potentially several different actors involved in the paper procurement process. It is not clear what proportion of paper for printed publications procured by central Government departments is sourced directly from paper merchants and distributors, and what proportion is purchased indirectly, through external printers and publishers, and other third parties.

The WRAP study suggests there are approximately 12,000 printing companies located across the UK of which the majority are SMEs, although Buying Solutions suggest this number has dropped to around 9,000. Assuming that central Government practitioners procure a substantial proportion of their paper for printed publications indirectly, through third party printers and publishers, it would appear that the revised Quick Wins specifications may affect small firms

disproportionately. Consultation should provide further evidence on the scale of the impacts as it is not known how significant central government bodies are as customers to such companies.

Analysis above of the relative prices of paper with varying recycled content suggests that there is no significant price impact from moving to the tighter specifications, but the prospect of a negative impact on small paper retail firms is a risk if prices for papers compliant with Quick Wins standards are forced upwards due to an increase in demand. However, small firms would always have the option of increasing the price of the affected products in these circumstances, and passing the cost on to consumers. If this was not an option, it may be feasible to compensate SMEs in other ways, by publicising Buying Solutions' 'Green Ticks' initiative, for instance, which would highlight them as a 'Quick Wins' compliant supplier to wider public sector bodies.

## 11. SUMMARY OF COSTS & BENEFITS

The following is a summary of the expected costs and benefits from the proposed revisions to the 'Buy Sustainable – Quick Wins' specifications for paper. These derive wholly from the tightening of the minimum mandatory procurement criteria for paper for printed publication.

### (i) Summary of monetised costs

It is estimated that there will be **negligible** cost impact from the revised specifications, as paper for printed publications that meets the new criteria does not appear to be significantly different to that which meets the current criteria.

### (ii) Summary of monetised benefits

An indicative analysis of estimated CO2e savings suggests that they will provide a Present Value of around **£1.4m**.

*NB: This estimate should be treated with some caution due to the uncertainties associated with its calculation.*

### (iii) Summary of non-monetised benefits

There are a number of expected non-monetised benefits from the revised specifications:

- Small reductions in the use of chlorine and chlorine derivatives in the production of paper (although the required specifications are believed to be largely 'business-as-usual' for the majority of paper producers, of which all are outside of the UK).
- Some external benefits to the UK paper market due to the Government's power as a buyer in the market; and on business and individual as a whole by Government leading by example.

## Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

**Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.**

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

## Annexes

### **ANNEX A**

#### **Evidence on cost implications of moving from 50% recycled content for paper for printed publications to a requirement of 75% recycled content**

Data on papers procured through **Buying Solutions'** Recycled Printing Paper Framework is disaggregated into coated and uncoated papers with varying levels of recycled content, as shown in the table below:

Paper by types and recycled content	Tonnes (2007)	Tonnes (2008)	Average price	Total spend in 2008
COATED 50	1,883	2,924	£831.32	£2,430,780
COATED 55	194	1,305	£814.51	£1,062,936
COATED 75	4,942	4,122	£864.76	£3,564,541
COATED 80	2,112	2,398	£890.05	£2,134,340
COATED 100	636	1,789	£807.69	£1,444,957
UNCOATED 50	256	350	£1,094.68	£383,138
UNCOATED 100	533	1,757	£900.38	£1,581,968
<b>TOTAL</b>	<b>10,556</b>	<b>14,645</b>		<b>£12,602,659</b>

*Source: Buying Solutions, March 2009*

It is assumed that uncoated paper is mostly used for day-to-day office needs whilst a heavier coated paper is more likely to be used for high quality reports and photo-finish quality printings. Consequently, coated paper with a recycled content of 50 and 55 will be affected by the proposed change in criteria.

In 2008, 4,229 tonnes of coated paper (with recycled content 50% and 55%) was procured at the total cost of £3.49m. Procuring instead coated paper with recycled content of 75% would cost £3.66m. Thus, under the terms of the Recycled Printing Paper Framework, the implication of increasing the required recycled content of paper for printed publications from 50% to 75% would be an increased expenditure of £163k, or 1.3%.

Further analysis indicates that demand for 75-80% recycled coated printing paper under the Framework Agreement declined from 7,186 tonnes between February 2008 and January 2009, to 6,348 tonnes over the corresponding period the previous year. However, whilst demand for 50-55% recycled paper did increase over this period, there was a greater proportional increase in the demand for 100% recycled paper, where demand rose from 845 tonnes (Feb 07 – Jan 08) to 1704 tonnes (Feb 08 – Jan 09).

This analysis is, however, based on limited information and may not be reflective of current market prices.

According to **WRAP**, the price difference is negligible when comparing recycled papers with different recycled content.

In order to test such a claim, the environmental consultants, **Entec**, undertook an analysis of paper brands suitable for professional purposes and featuring both 50% and 75% recycled content.

A heavier (>100gsm) woodfree coated paper, with multiple heavy coatings is typically used for high quality reports and photo-finish quality printing paper because of its inherent smooth feel, high brightness and low opacity. Analysis of the paper products offered by Buying Solutions' suppliers shows that REVIVE paper is one of the brands that offers paper suitable for professional purposes with both 50% and 75% recycled content.

Accordingly, a comparative analysis of REVIVE 50:50 Gloss and REVIVE 75 Gloss was undertaken in order to identify any price differential, with all other characteristics (size, grammage, etc.) corresponding as far as possible. The analysis suggested that REVIVE 75% Gloss paper is 4% to 5% cheaper than its 50% recycled equivalent.

While slight differences in opacity, brightness and whiteness levels can be observed between REVIVE 50:50 Gloss and REVIVE 75 Gloss, overall technical capability and possible applications are the same for the considered products. REVIVE 75% Gloss paper features improved whiteness and brightness levels that make it comparable to a virgin fibre product.

The results suggest that there are paper products on the market with high recycled content, suitable for professional purposes, and not necessarily more expensive than alternatives with lower recycled content.

## **ANNEX B**

### **Availability of paper that meets Best Practice voluntary criteria.**

The EU GPP comprehensive criteria require that recycled papers for normal office and professional use comply with the ecological criteria of the European Ecolabel, Blue Angel, or Nordic Swan. We propose to encourage procurers to refer to European Ecolabel criteria only, as it appears to be the most comprehensive and appropriate of the three labels. The Blue Angel, for instance, does not contain standards related to air and water pollutants and the Nordic Swan does not consider CO2 emissions associated with the electricity consumed in the paper production process.

Entec's research study suggests that almost half (14) of the paper suitable for normal office use and four paper products suitable for professional use already bear one or several of these labels. Two bear the European Ecolabel and are suitable for both normal office use and professional use. There is, therefore, existing capacity to supply both copying and graphic paper and paper for printed publications that meet the ecological criteria of the Ecolabel. Indeed, Entec assert that compliance with the EU GPP Comprehensive criteria, which include the ecological criteria of the European Ecolabel, would represent a 'Business as Usual' scenario for many paper producers and retailers.

It should be emphasised that, in order to meet Best Practice criteria, it is not necessary for products to have Ecolabel certification. Instead, suppliers must simply provide proof that their products meet the Ecological criteria of the European Ecolabel.

### **Environmental benefits from procurement of paper that meets Best Practice voluntary criteria**

The Entec study asserts that a wide range of copying papers and papers for printed publications already comply with the EU GPP Comprehensive criteria, which include fulfilment of the ecological criteria of the European level. A number of environmental benefits are anticipated if incremental demand would result in incremental production of the products complying with the more stringent requirements as opposed to the baseline. Regardless, inclusion of such ecological criteria as Best Practice specifications represents an extension of Quick Wins in relation to the range of environmental impacts covered and provides an indication to the market of the future direction of standards.

## **ANNEX C**

### **Chlorine and chlorine derivatives in paper production**

Only around 20% of global production of bleached chemical pulp is treated with elemental chlorine, in processes that release substantial amounts of AOX compounds, including dioxins. Recycled papers are often not treated with bleaches as the pulp has sufficient whiteness from previous processing.

Elemental Chlorine Free (ECF) products use chlorine dioxide rather than elemental chlorine, a process that reduces the formation of many of the more harmful chemicals. Process Chlorine Free (PCF) products, to which no chlorine based bleaches are added to the recovered fibres, may also be procured; they use more benign bleaching agents such as oxygen, ozone or hydrogen peroxide. For the virgin fibre element of Paper for Printed Publications, the fibres may be Totally Chlorine Free (TCF), indicating that no chlorine or chlorine derivatives have been used in their manufacture.

Evidence collected in the revision of Ecolabel criteria suggests that there is no environmental difference between modern ECF and TCF bleached chemical pulps when biological waste water systems are used and that no environmental impacts are found when pulp's AOX is less than 0.5kg/ADt. Thus, it cannot be shown unambiguously that TCF is substantially better for the environment than ECF; hence, the proposal to allow flexibility within 'Quick Wins' and allow the procurement of PCF, TCF, or ECF papers, provided that AOX levels are within prescribed limits.