

This is an impact assessment of a proposed revision to the Government Buying Standards for paper products.

An impact assessment is prepared by policy makers to help explain:

- why it was necessary to revise Government Buying Standards for a product;
- how different organisations and groups of people may be affected; and
- the expected costs and benefits of proposals.

The government aims to intervene only when necessary and since most policy objectives can be achieved through a range of options, the government's aim is to identify actions that best achieve its objectives while minimising costs and burdens.

Both formal and informal consultation has been undertaken in the preparation of the impact assessment which has given those affected an opportunity to identify potential unintended consequences.

## Summary: Intervention & Options

<b>Department /Agency:</b> Defra	<b>Title:</b> Impact Assessment of Proposal to Revise Quick Wins Specification for Paper Products	
<b>Stage:</b> Final	<b>Version:</b> 1.1	<b>Date:</b> 20 <sup>th</sup> January 2010
<b>Related Publications:</b> Consultation IA <a href="http://www.defra.gov.uk/sustainable/government/what/priority/consumption-production/quickWins/documents/090825-ia-paper.pdf">http://www.defra.gov.uk/sustainable/government/what/priority/consumption-production/quickWins/documents/090825-ia-paper.pdf</a>		

### 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 and can be further addressed through public procurement. For example, setting sustainable procurement criteria may help address difficulties in assessing the whole life cost of products bought about when there are differing incentives between procurers and budget holders as well as promote positive external environmental benefits and economic spillovers.

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

The objective of the policy is to revise 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 also intended that the substantial purchasing power of these public bodies can be used to 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 for the procurement of paper and paper products are already in effect, to ensure widespread uptake of sustainable procurement. This IA considers the impacts of a revision to the mandatory minimum standards to reflect changing market conditions and to align Buy Sustainable Quick Wins with the EU Green Public Procurement criteria. It 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 revised.

**When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?** It is intended that the proposed specification will be reviewed in 1-2 years, depending on the rate of market and technological developments. It should be noted that wider indicators for public sector procurement are being developed and may help review policy in the future.

**Ministerial Sign-off** For final proposal/implementation stage Impact Assessments:

***I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.***

Signed by the responsible Minister:

..... Date:

## Summary: Analysis & Evidence

<b>Policy Option:</b>	<b>Description:</b>
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<b>COSTS</b>	<b>ANNUAL COSTS</b>	Description and scale of <b>key monetised costs</b> by 'main affected groups' Evidence suggests that there may be an additional cost to central government procurers seeking full compliance, however, the introduction of an implementation note provides scope to seek lower cost alternatives in short term.			
	<b>One-off</b> (Transition) <span style="float: right;">Yrs</span>				
	£				
	<b>Average Annual Cost</b> (excluding one-off)			<b>Total Cost (PV)</b>	<b>£ £0 to £4m</b>
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 CO2 due to greater use of recycled paper: £500,000 to £1m			
	<b>One-off</b> <span style="float: right;">Yrs</span>				
	£				
	<b>Average Annual Benefit</b> (excluding one-off)			<b>Total Benefit (PV)</b>	<b>£ 0.5 to 1m</b>
Other <b>key non-monetised benefits</b> by 'main affected groups' 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) which may be potentially significant.					

**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 2	<b>Net Benefit Range (NPV)</b> <b>£ -0.5m to -1m (negative)</b>	<b>NET BENEFIT (NPV Best estimate)</b> <b>£</b>
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What is the geographic coverage of the policy/option?	Nationwide				
On what date will the policy be implemented?	from xxx (TBC)				
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?	£ 3.2m				
Will the proposal have a significant impact on competition?	Yes/No				
Annual cost (£-£) per organisation (excluding one-off)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Micro 0</td> <td style="width: 25%; text-align: center;">Small 0</td> <td style="width: 25%; text-align: center;">Medium 0</td> <td style="width: 25%; text-align: center;">Large 0</td> </tr> </table>	Micro 0	Small 0	Medium 0	Large 0
Micro 0	Small 0	Medium 0	Large 0		
Are any of these organisations exempt?	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">N/A</td> <td style="width: 25%; text-align: center;">N/A</td> </tr> </table>	No	No	N/A	N/A
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

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Evidence Base (for summary sh

## Evidence Base (for summary sheets)

[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 initially based on a review of evidence covering market capacity, informal consultation with the sector and stakeholders to develop criteria as well as wider period of public consultation on a consultation stage IA.

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; and
- tissue paper (such as kitchen and toilet tissue, as well as hand towels).

### 2. BACKGROUND

In 2007 central government spent £99 billion as intermediate consumption in the UK<sup>[1]</sup> and over 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'](#)<sup>[2]</sup>.

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 and 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. Generally, where the Quick Wins are considered to be more stringent (for example; regarding UK Timber procurement policy) we aim to influence the EU Commission to adopt our criteria as part of GPP. 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 undertaking **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)<sup>[3]</sup>. Initial proposals for a revision of the Quick Wins specifications for paper products has been consulted on (Consultation Stage Impact Assessment, October 2009) and findings used to refine the proposed revised specification in section 6.

### 3. RATIONALE FOR INTERVENTION

Many of the negative externalities that arise from the production and use of goods and services in the UK are addressed by Government policies, for example: requiring producers with significant emissions report them and considering the value of carbon emitted either move to abatement or trading through the EU ETS (thus 'internalising' costs); 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 with information. 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:

**Energy Star initiative**<sup>[4]</sup>. In 1992 the US Environmental Protection Agency (EPA) introduced Energy Star as a voluntary labelling program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions. Computers and monitors were the first labelled products. Whilst this relates to a type of eco-label in the US, this essentially recognises a product that meets a range of prescribed criteria. Market Transformation Occurring for Energy Star Labelled Products. Statistical data from annual Energy Star household surveys (over four years between 2002 and 2005) show movement toward sustained markets for Energy Star labelled products that are directly attributed to the Energy Star program.

**Canada – Federal Buildings initiative**<sup>[5]</sup> (which used third party financing and management firms to procure more energy and water efficient services and products) to lead to a reduction in greenhouse gas emissions from government buildings as well as reductions in water consumption. The programme was evaluated and also found that FBI was 'adopted or imitated by provincial or municipal governments with additional savings.

Finally, there may also be an argument for intervention to change behavioural **barriers** for the better. For example, inertia (a tendency to continue doing what has always been done) or, potentially, a reluctance to acquire information and new skills about products and product standards, could result in government procurers not making the most cost-effective procurement decisions even when it is rational to do so. An evaluation<sup>[5]</sup> of the effectiveness of different public procurement initiatives identified there was evidence to suggest that the programmes could have '*created strong dynamic incentives, not only for the invention and commercialisation of greener products, but also their diffusion in the broader market place.*' (p68). The same source also identifies potential soft effects such as; '*leadership and credibility, more effective or efficient public procurement, organisational culture and greater personal responsibility for the environment.*

#### **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<sup>[2]</sup>, are:

**(i) 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.

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.*

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

Same as the minimum specification.

When these criteria were originally developed, it was considered that the major environmental impacts of paper production and consumption related to the type and 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 reflective of market availability.

## **5. PAPER PROCUREMENT 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 (approximate based on analysis of procurement by public sector from OGC Buying Solutions recycled paper framework, 2007<sup>[6]</sup>). It is estimated<sup>[7]</sup> that, in terms of volume, total public sector paper procurement amounts to around 500,000 tonnes per annum (250,000 tonnes copier paper and 250,000 tonnes of paper for printed publications) of which it is estimated that only 50,000 tonnes of this is recycled (the remaining 450,000 tonnes from virgin fibre). This leads to the assumption that **central government** would account for approximately **200,000 tonnes of paper**.

Other anecdotal evidence, reported in a study commissioned from Entec<sup>[8]</sup>, 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, whilst is a wide range, is broadly consistent with the estimate for central government procurement.

An estimate<sup>[9]</sup> of government expenditure on different products was developed in 2005. This looked at details within the National Accounts and uses information on the 'intermediate consumption' of products taken from input-output tables (for fuller details of the methodology refer to the source). The work provided a more disaggregated figure by material type and between central and local government. Disaggregation at a department level was not possible. The top twenty-one products have been included for context and comparison of magnitude with the other estimates:

**Table 1. Central and local government procurement of products ordered by market value, 2003**

I-O code	Product	Market value (£m)	Of which:	
			Central Gov. (£m, %)	Local Gov. (£m, %)
88	Construction	22,252	14,330 (64%)	7,922 (36%)
117-118	Health and social work	21,290	8,173 (38%)	13,117 (62%)
109-114	Other business activities	16,450	9,426 (57%)	7,024 (43%)
43	Pharmaceuticals	8,927	8,860 (99%)	67 (1%)
76	Medical and precision instruments	7,542	7,402 (98%)	141 (2%)
69	Office machinery and computers	6,503	4,915 (76%)	1,588 (24%)
116	Education	5,914	3,672 (62%)	2,242 (38%)
78-80	Other transport equipment	5,712	5,708 (100%)	4 (0%)
119	Sewage and refuse services	4,529	1,828 (40%)	2,701 (60%)
98-99	Post and telecommunications	4,223	3,036 (72%)	1,187 (28%)
107	Computer services	4,214	1,788 (42%)	2,425 (58%)
<b>34</b>	<b>Printing and publishing</b>	<b>3,253</b>	<b>1,154 (35%)</b>	<b>2,099 (65%)</b>
103-105	Real estate activities	3,078	1,930 (63%)	1,148 (37%)
62-68	Machinery and equipment	2,949	2,250 (76%)	699 (24%)
121	Recreational services	2,467	368 (15%)	2,099 (85%)
94	Other land transport	2,442	1,073 (44%)	1,369 (56%)
100	Banking and finance	2,326	2,296 (99%)	30 (1%)
92	Hotels, catering, pubs etc	1,960	1,243 (63%)	717 (37%)
35	Coke ovens, refined petroleum & nuclear fuel	1,690	1,306 (77%)	384 (23%)
81-84	Other manufacturing and recycling	1,678	936 (56%)	742 (44%)
<b>32-33</b>	<b>Pulp and paper</b>	<b>1,664</b>	<b>1,070 (64%)</b>	<b>594 (36%)</b>

Source: Defra, 2005

The table indicates that for 'Pulp and Paper' the market value of paper procured by the public sector in 2003 was £1,664 million (of which 64% was by central government) and intermediate consumption of 'Printing and publishing' was £3,253million (of which 35% was by central government). Consumption of Printing and Publishing as well as Pulp and Paper by central government in 2003 was £1,224million.

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**<sup>[7]</sup>.

## (ii) Future consumption

After rapid growth in the 1990s, the **UK office paper market** is generally considered to be static or even declining and, due to behavioural changes in the office, this trend is likely to continue regardless of economic conditions (note that this is likely to be different to a global trend where demand from countries like China and India may increase with their economic

progress). Recent research indicates that there are some differences in working practices between office workers reflecting those that are used to reading hard copies of documents and those that may be comfortable with accessing and storing information in electronic format<sup>[10]</sup>. However, the UK office papers market is still significant and, in line with wider societal environmental concerns, there are clear trends towards growth in (both availability and demand) 'environmentally friendly' papers at the expense of uncertified virgin grades.

Generally, previous trends<sup>[11]</sup> in **government procurement**, as intermediate consumption of goods and services in the production process, has increased. Government procurement grew rapidly in cash terms between 1987 (from under £40 billion) and 1993 (to under £60 billion) and, following a period of more subdued growth in the mid 1990s, grew rapidly again between 1998 (around £70 billion) and 2004 (to £131.0 billion, accounting for 11.1 per cent of GDP). The Treasury Blue Book<sup>[12]</sup> indicates that general government expenditure in 2007 was £163,820million (as intermediate consumption). Central government expenditure was £99,024 million in 2007 (as intermediate consumption). It is likely that this continues at least in the short term.

## 6. PROPOSED REVISED SPECIFICATIONS FOR PAPER PROCUREMENT

The proposed minimum mandatory and Best Practice (voluntary) specifications considered in this Impact Assessment are set out for each grade of paper covered by the existing specifications, namely; 'copying and graphic paper', 'paper for printed publications' and 'tissue paper'.

For all the specifications, it will be highlighted that should departments believe that an upfront cost constraint prevents them from meeting the specification, they should refer to advice in the UK Sustainable Procurement Action Plan, 2006 which states "where Departments believe an upfront cost constraint prevents them from choosing the most sustainable option, they may raise this with the Treasury." Departments will be made aware that any deviation from the specifications may mean non-compliance with EU Green Public Procurement criteria.

### (i) Copying and graphic paper

#### Minimum mandatory specifications

- Copying and graphic paper 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).
- The **recycling process must be Elemental Chlorine Free (ECF)**, with Adsorbable Organic Halogenated compound (AOX)<sup>1</sup> emissions from the production of each pulp used below 0.25kg per Air Dried Tonne (ADT), or Process Chlorine Free (PCF).

#### Best Practice specifications (voluntary)

- In addition to meeting the minimum mandatory specification, the **ecological criteria of the European Ecolabel** for 'copying and graphic paper' – or an equivalent standard - must be met. 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. 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 ecological criteria document are: emissions to water and

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<sup>1</sup> AOXs are hazardous chlorinated compounds which result from the bleaching of pulp with chlorine or chlorine-based chemicals. Therefore, this standard will not apply to products derived from pulp which is not bleached or where bleaching is performed with chlorine free substances

air; energy use; hazardous chemical substances; and waste management (as applied to paper production and not general management practices).

## (ii) Paper for professional purposes / printed publications

### Minimum mandatory specifications

- Paper procured for Professional Purposes / Printed Publications **to be a 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). Of the non-recycled content (25% or less), any virgin fibre used must be purchased in accordance with UK timber procurement policy. 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. The recycling process must be Elemental Chlorine Free (ECF), with Adsorbable Organic Halogenated compound (AOX)<sup>2</sup> emissions from the production of each pulp used below 0.25kg per Air Dried Tonne (ADT), or Process Chlorine Free (PCF)

### ***Implementation note (departmental mandatory minimum annual outcome)***

As a minimum, departments will need to ensure that at **least** 50% of annual purchases (by weight) meet or exceed the mandatory minimum specification of 75% recycled content and that the remaining 50% of annual purchases (by weight) have a recycled content of at least 25%. All purchases must meet mandatory minimum specifications for Chlorine and AOX emissions.

When tendering, variant contracts may be used to invite submissions that meet the mandatory minimum specification (of 75% recycled content), but also invite and allow consideration of submissions for paper products between 25% and 100% recycled content. In such cases evaluation criteria may be set to favour submissions for higher levels of recycled content within the 50% to 100% range (e.g. a submission for paper with a 70% recycled content would score more highly [20 points] than a submission for paper with 55% [5 points] recycled content, where a point is awarded for each percentage point above 50%). Departments need to ensure however that the mandatory minimum annual outcome identified above is met.

### Best Practice Specifications (voluntary)

- As the Best Practice specifications for recycled 'copying and graphic paper'.

*Note that the European 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'.*

## (iii) Tissue paper

### Minimum mandatory specifications

- **Tissue paper** (for example kitchen and toilet tissue and hand towels) **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). *This is the same as the current quick win minimum mandatory specification.*
- The **recycling process must be Elemental Chlorine Free (ECF)**, with Adsorbable Organic Halogenated compound (AOX) emissions from the production of each pulp used below 0.25kg per Air Dried Tonne (ADT), or Process Chlorine Free (PCF). *AOXs are hazardous*

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<sup>2</sup> AOXs are hazardous chlorinated compounds which result from the bleaching of pulp with chlorine or chlorine-based chemicals. Therefore, this standard will not apply to products derived from pulp which is not bleached or where bleaching is performed with chlorine free substances

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### **Best Practice specifications (voluntary)**

- In addition to meeting the minimum mandatory specification, the **ecological criteria of the European Ecolabel** for ‘tissue paper’ – or an equivalent standard - must be met. 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. *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 ecological criteria document are: Emissions to water and air; Energy use; Hazardous chemical substances; and Waste management (as applied to paper production and not general management practices).*

## **7. RATIONALE TO PROPOSED REVISIONS**

### **(i) Minimum, mandatory criteria**

Revisions to the minimum, mandatory criteria are aimed to harmonise with standards set across Europe, support other Defra policies to divert waste from landfill and ensure that hazardous chemicals together with environmentally unsound practices are reduced. This revision also aims to provide a clear indication of the government’s support to the use of paper from recycled sources and markets for recycled goods but allows (for paper for professional purposes and printed publications) some flexibility in the short term to take account potential different costs of products where it can be shown that these costs are significant.

#### **Recycled and virgin fibre content**

Evidence collected in an initial study of the cost and benefits of a change to the Quick Wins criteria<sup>[8]</sup> suggested that paper produced from recycled pulp had a lower overall environmental impact than papers produced from virgin fibres, considering potential impact across the product lifecycle. This is a generalisation as the potential environmental impact over the lifecycle is dependent on a range of factors, such as: the nature of the energy source used in the mill; chemicals, feedstock and processes used in manufacture; modes of transportation from mill to wholesaler to end consumer; and the means of disposal at end of product life. In general, it is considered that paper from recycled pulp uses less energy, less water, and its reuse diverts waste from landfill.

A ‘material profile’ for paper has been prepared as part of the Inventory of Carbon and Energy, maintained by the University of Bath (see: <http://www.bath.ac.uk/mech-eng/sert/embodied/>). This provides details of the embodied energy and carbon for different products gathered from a range of different sources. As stated on the host website; ‘embodied energy may be taken as the total primary energy consumed during resource extraction, transportation, manufacturing and fabrication of a product. Typically embodied energy is confined within the boundaries of Cradle-to-Gate (factory gate) or Cradle-to-Site (site of use) to separate it from operational impacts.’

This gives a useful independent and indicative comparison between different types of paper products. The material profile notes that the database is ‘generally out dated for paper. Notable improvements have been made within this industry in this time period.’ The database takes the ‘best values’ and adjusts them to take account of the current situation. The following table sets out comparative values for a range of types of paper considered in this IA:

<u>Material</u>	<u>Average Embodied Energy (MJ/Kg)</u>	<u>Standard Deviation (MJ/Kg)</u>	<u>Number of records</u>
'Paper'	27.75	14.07	58
Paper, Cardboard	29.97	14.51	11
Other specification	26.31	16.13	4
Predominantly recycled	25.66	9.16	4
Unspecified	43.15	23.83	2
Virgin	35.50	35.50	1
Paper, General paper	27.22	14.08	47
Market average	11.83	5.90	2
Other specification	14.60	3.73	3
Predominantly recycled	16.82	12.93	4
Unspecified	27.94	9.90	14
Virgin	31.58	15.45	24
<u>'Best values' for selected materials (Cradle to Gate)</u>	<u>Average Embodied Energy (MJ/Kg)</u>	<u>Best Embodied Energy Range (MJ/Kg)</u>	<u>Average Embodied Carbon Kg CO2 / Kg</u>
Paper board (construction purposes)	24.80	10 to 39	1.32
Fine paper	28.20	12 to 42	1.50
Wall paper	36.40	+/- 30%	1.92

Source: University of Bath, 2008

The above highlights the relative difference in embodied energy between 'predominantly recycled' and 'virgin paper'. Note that these values exclude energy and carbon associated with transport which may be significant depending on the source.

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.

This proposal continues 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.

Consultation responses received in relation to the Consultation IA (October 2009) highlighted a need to recognise that cellulose fibre cannot be recycled indefinitely and there is, generally, a need to introduce a new fibres into the paper lifecycle, especially in the production of finer quality paper. Essentially, virgin fibre content is required in higher quality papers to achieve the quality and performance and a complete reduction in the amount of virgin fibre entering the product lifecycle would significantly limit the availability of usable fibres for the production of some of the better grades of recycled paper. This means that there needs to be a balance in the overall use of recycled and virgin fibres.

Unsustainable and irresponsible forest logging, such as new large scale monoculture plantations, are undesirable, not least because of the potential biodiversity and climate change impacts they have. However, virgin fibre that has originated from sustainable and responsibly produced sources are acceptable, as recognised in the UK timber procurement policy.

For these reasons, we propose that procurers will not be allowed to procure **tissue paper** or **copying and graphic papers** unless it is 100% recycled material. However, we recognise that for **paper for printed publications**, some paper from lower levels of recycled content may be more acceptable to departments that believe that the cost of purchasing to this specification inhibits compliance (although no more than half of the amount of paper purchased annually may

deviate from the specification). It is proposed that the required recycled content be increased from the current specification of 50% recycled content to a minimum of 75%. This revision also aims to provide a clear indication of the government's support to the use of paper from recycled sources but allows (for paper for professional purposes and printed publications) some flexibility in the short term to take account potential different costs of products.

Our intention to revise the standard in relation to recycled content has been indicated on the 'Quick Wins' website since 2007 so practitioners in central government departments have been given a reasonable opportunity to prepare and adapt their procurement practices accordingly.

### **Chlorine content**

In line with the core EU GPP criteria, Best Available Technique (BAT) under the IPPC Directive, and to reflect the hazardous properties of chlorinated compounds, it is proposed that specifications for 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.

Initial work to examine the potential costs and benefits of proposals<sup>[8]</sup> 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 is expected to be limited given less emphasis on bleaching in recycled paper production (as recovered paper is already white). This was confirmed by the consultation responses received on the Consultation IA (October 2009).

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; and



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

## 8. COSTS: IMPACT ON PROCUREMENT COSTS

Changing the specification of paper that can be procured by Central Government may result in a change in procurement costs if the product is more expensive. This section examines the potential scope for changes and then assesses the significance of potential impacts.

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

#### **Scope of potential changes in cost to procurers as result of proposed specifications**

Some work has been undertaken as part of this Impact Assessment to understand the relative price of different paper products. The approach to assess the impact of a change in specification is to firstly review the changes that are proposed in the revised criteria to identify changes, compared with the current situation, where a more expensive (or cheaper) product may be required. Some aspects can be scoped out:

- **Requirement for 100% recycled content in copying and graphic paper and tissue paper:** The requirement for 100% recycled content is already in place for these types of paper 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 noted that recycled tissue paper is commonly produced from low grades of paper as the appearance, in terms of brightness, opacity, etc., is not a significant consideration.
- **Costs associated with restricting chlorine content:** It is not anticipated that there will be any significant costs associated with restricting chlorine content as the requirements appear to be widely adopted across industry already.

#### **Costs associated with changes to the recycled content of paper for printed publications**

As previously described the proposal includes an increase in the recycled content required in 50% (or over) of the paper purchased with the introduction of an implementation note with guidance to those departments where 'an upfront cost constraint prevents them from meeting the specification'. The proposed specification has developed in this way in response to consultation responses which, in addition to meeting environmental objectives, aimed to minimise the overall impact on procurers.

Some work has been undertaken as part of this Impact Assessment to understand the relative price of different paper products procured for printed publications. More evidence on costs is provided in **Annex A**, but a short summary is presented below:

- **Buying Solutions (2009):** Noted that 14,645 tonnes of printing 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%'. More recent figures (November 2009) from Buying Solutions indicated that; virgin papers on the current framework are priced between £730 to £750 per tonne (an average of £740 per tonne) compared with an average price of 50% recycled at £852 per tonne.
- **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. This work found that, for the analysed paper brand, 75% content paper was 4% to 5% cheaper than the 50% content paper.



These prices should be taken as indicative and may not reflect the 'actual' price as it is possible that suppliers and manufacturers are able to cross subsidise more expensive products to maintain market competitiveness. Earlier research undertaken as part of the Consultation Impact Assessment suggested that the level of recycled content in the paper was not an important determinant of the price of the paper and noted that other possible influences such as paper quality and branding might also be important.

### **Assessment of effect of change on cost of paper for printed publications**

The significance of the effect on Central Government departments and their executive agencies will depend on the extent that they already comply with existing procurement specifications (evidence from the consultation responses indicated that 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. 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.

In the absence of robust data on procurement costs, the nature of the effect can be illustrated simply by examination of the difference in price per tonne of product however this in itself is not easy as the market is fluctuating significantly. The following table sets out the comparative difference in prices based on 'average' framework prices (2009, rounded):

<b>Printed paper product</b>	<b>'Average' price</b>	<b><u>Difference price compared with paper with 50% recycled content</u></b>	
	<b>(£ per tonne)</b>	<b>(£ per tonne)</b>	<b>(%)</b>
50% Recycled content	850	Same	Same
75% Recycled content	870	20	2%

The proposed criteria raise the required level of recycled content of paper for printed publications from 50% to 75% which may represent an increase in price of (taking from the above) 2%.

The implementation note allows procurers who believe that either cost or market availability may prevent them from purchasing all their printed paper products at 75% recycled content to use the specification as award criteria. Paper purchased under these conditions, and no more than a maximum of half the annual tonnage, should not as a minimum contain less than 25% recycled content. It is not expected that this would result in any increase in costs to procurers. Reasons and evidence for purchasing differently from the stated 75% specification must be made publicly available on request from any authorised body assessing compliance with this standard.

For those that comply with existing criteria, the financial costs associated with the more stringent requirements will largely depend on the price differential between paper with 25 - 75% 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.

The appraisal period for this analysis is one to two years (approximately 2010-2011). It is expected that the specification will be reviewed within two years. For simplicity in the analysis, it is assumed that there will be no real changes in the cost of paper procured over this period. Whilst it is possible that central government may influence relative prices of different types of paper through its procurement activities the cost to produce paper is often volatile and can be influenced by a number of factors such as; global demand for paper as well as other raw materials such as timber and recycled product, energy and transport prices.

The implementation note provides procurers with a mechanism to ensure that they are not financial disadvantaged by the new criteria and subsequent procurement is compliant with EU GPP. It is intended, after review, to remove the implementation note after two years. Therefore, it is assumed for the purposes of this assessment that the worst case cost is that all central government procurers move to 75% directly incurring a 2% additional rise in financial costs each year. Exact details of central government procurement of paper for printing purposes are unknown. The following estimates are used to generate a potential range of costs:

- Data from Buying Solutions (Annex A) from their recycled paper framework notes a total expenditure of £12.6m in 2008. Two percent of this value is £250,000. Note that this framework includes purchasing by wider public sector yet not representative of total purchasing of paper;
- Using average cost data of £850 tonne (2009 prices) and an estimate of 100,000 tonnes of paper purchased for printing and publishing purposes by central government gives a total value of £85m each year (2009 prices). Two percent of this is £1.7m; and
- Data on 'intermediate consumption of pulp and paper in 2003 by central government is 64% of £1,664m, which is £1,065m. Two percent of this value is £21m, however, this is expected to significantly over estimate the scale of the effect as it includes purchases of pulp and paper board.

Given the uncertainties regarding prices, we provide an indicative range for the potential financial cost over the period of interest to increase as a result of the revised recycled content criteria of between £0m (reflecting implementation note) to £4m. This range considers that the cost is applied over the 2 years period of interest and that at best departments will use the 75% as a genuine target. At worst, if the implementation note is applied by all procurers of half of the weight of paper for printing and publishing purposes will be 75% recycled content, the minimum proportion for the other half is 25% which, assuming the same volumes are purchased is the same as what current compliance should be (therefore no additional costs).

## **(ii) Costs relating to compliance 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<sup>[8]</sup>, 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. BENEFITS: 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 some uncertainty (as already highlighted in an earlier section) regarding the volume and type of paper that central government is currently procuring. In addition, the evidence on CO<sub>2</sub>e savings from the use of different grades of recycled paper is uncertain where the emissions savings occur (in an earlier section it was highlighted that embedded carbon associated with recycled paper is generally lower than virgin pulp, although there are likely to be exceptions that will be influenced by the specific location and nature of the manufacturing process and transport to ship paper from 'factory gate' to 'site') and is important in being able to quantify 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*

The overall objective is to signal to the market and procurers the intention to increase the amount of recycled paper procured. If it is assumed that all central Government procurement of paper for printed publications was improved by between 10 to 20% over the period of interest, then the extra demand for recovered paper per 100,000 tonnes would be **10,000 to 20,000 tonnes (5,000 to 10,000 tonnes pa)**. This may be a conservative estimate as although the Quick Wins criteria applies to central government, it is also open to the wider public sector to adopt, and it may stimulate greater demand for recycled goods. 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.

It has been estimated<sup>[13]</sup> that it takes 1.4 tonne of old paper to make 1 tonne of new, recycled paper. To make 10,000 or 20,000 tonnes of paper (which is our assumption of the potential change in central Government procurement of paper for printed publications) would require between 14,000 and 28,000 tonnes of old paper.

#### *(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 14,000 to 28,000 tonnes of paper per year would save between **19,600 to 39,200 tonnes of CO<sub>2</sub>e** over the period of interest (two years).

#### *(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).

There is clearly significant uncertainty regarding this aspect of the analysis, but we can make necessary assumptions to arrive at an indicative monetary estimate of the value of the possible CO<sub>2</sub>e savings, considering that the proposals increase the amount of recycled paper used by government 10% to 20%.

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 assumption is uncertain but is broadly based on the understanding that there is no longer any significant 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 indicative savings from the revised specifications are shown below:

<u>Year</u>	<u>CO<sub>2</sub>e saved (tonnes) Low</u>	<u>CO<sub>2</sub>e saved (tonnes) High</u>	<u>Global SPC (£2009)</u>	<u>CO<sub>2</sub>e savings (£ undiscounted) Low</u>	<u>CO<sub>2</sub>e savings (£ undiscounted) High</u>	<u>CO<sub>2</sub>e savings (£ discounted) Low</u>	<u>CO<sub>2</sub>e savings (£ discounted) High</u>
2010	9800	19,600	28	274,400	548,800	265,121	530,242
2011	9800	19,600	29	284,200	568,400	265,304	530,607
<b>Total</b>	<b>19,600</b>	<b>39,200</b>	-	<b>558,600</b>	<b>1,117,200</b>	<b>530,425</b>	<b>1,060,849</b>

Therefore, the indicative Net Present Value (PV) of the CO<sub>2</sub>e savings from the revised specifications is £530,000 to £1m over two years. This figure is indicative as it is based on a number of assumptions and given the various uncertainties.

## **(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.

Proposals do include an allowance (at least in the short term) for the use of paper from assured virgin fibre sources within the non-recycled portion of recycled paper which will ensure that potential environmental effects are minimised.

## **(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<sup>[16]</sup>, 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) 'Embedded' water**

Recycling paper uses less water in production than producing virgin paper. It is reported that every tonne of 100% post consumer recycled paper produced saves approximately 3,000 litres of water<sup>[14]</sup>. Broadly, this is a relatively small volume compared with the more general volume of water use across the UK. However, it should be noted that savings in water production will be experienced at the place of manufacture and may be outside of the UK (and this may be more significant in areas where water might be scarce).

## **(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, COMPETITION AND SMALL FIRMS ASSESSMENTS**

### **(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 understood that 160,000 tonnes of paper with some proportion of recycled content is typically available. As discussed in Section 5(i), total purchases of office paper by wider UK public sector bodies has been estimated to be between 250,000 and 600,000 tonnes per annum<sup>[6]</sup>.

### **(ii) Potential supply constraints**

The main risks associated with the adoption of the proposed standards appear (consultation responses on Consultation IA, October 2009) to be related to increasing the required recycled content of paper for printed publications (see Section 7). Whilst this demand is likely to be met, there is a concern that greater use of recycled paper may reduce the amount of virgin fibre in circulation. Essentially, virgin fibre content is required in higher quality papers to achieve the quality and performance and a complete reduction in the amount of virgin fibre entering the product lifecycle would significantly limit the availability of usable fibres for the production of some of the better grades of recycled paper. This means that there needs to be a balance in the overall use of recycled and virgin fibres. The proposed criteria include an allowance of the remaining content (25%) in recycled paper for professional purposes / printed publications to be from sustainable virgin fibre sources.

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

An estimate<sup>[7]</sup> of Government expenditure on different types of products was developed in 2005. This looked at details within the National Accounts and uses information on the 'intermediate consumption' of products taken from input-output tables (for fuller details of the methodology refer to the source). This provided information of the 'Market Share' public sector procurement represented: For Pulp and Paper the public sector represented 7.2% of the market share, and Printing and Publishing represented 8.7%. Considering the guidance within OfT's *Assessing the Impact of Public Sector Procurement on Competition*<sup>[15]</sup> (see Table 1.3 in source), these levels are below the threshold of Public sector expenditure as a proportion of domestic supply (i.e. less than 10%). Whilst the paper sector is characterised by a number of larger global manufacturers there are a number of wholesalers in the UK to ensure some competition (With the closure of two mills in the UK over the past year, there is 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). In any case, despite there being a number of significant procurement frameworks, public sector procurement is not wholly centralised (and unlikely to become so in

the short term). The OFT document has not highlighted the paper sector as being a priority concern regarding the impact of public sector procurement. This situation is unlikely to have changed since the publication of the OFT guide.

It does appear unrealistic in the current economic climate 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.

It has been noted that this may provide some suppliers with a signal and confidence to invest in capacity for recycled paper production and may result in re-investment in some UK facilities with knock-on employment benefits.

#### **(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 not significant.
- 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 significant 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<sup>[8]</sup>, 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 and not significant.

#### **(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<sup>[16]</sup> 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<sup>[16]</sup> 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 although any increase in the specification of paper and therefore price of paper required would likely be passed back to the purchaser. 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. RACE, DISABILITY AND GENDER EQUALITY SPECIFIC IMPACT TESTS**

There are not expected to be any impacts as a result of the revision of a paper procurement standard.

## **12. SUMMARY OF COSTS AND 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**

An indicative analysis of estimated cost to procurers suggests that they will represent a cost of around **£0 to £4m** over the period of interest.

Key assumptions made in calculating the benefits include: a) the volume and type of paper procured by Central Government & Executive Agencies; b) current levels of compliance; c) price of paper; and d) capacity of market to meet demand.

Note that this estimate represents a range given the associated uncertainties.

### **(ii) Summary of monetised benefits**

An indicative analysis of estimated CO<sub>2</sub>e savings suggests that they will provide a Present Value of around **£500,000 to £1m** over the period of interest.

Key assumptions made in calculating the benefits include: a) the volume and type of paper procured by Central Government & Executive Agencies; b) current levels of compliance; c) volume and location of CO<sub>2</sub>e savings; and d) capacity of market to meet demand.

Note that this estimate represents a range given the associated uncertainties.

### **(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).
- Potential short term reductions in procurement costs to reflect criteria that allows procurement of cheaper paper for professional production and printed publications from sustainably sourced virgin fibre.
- 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 to encourage the market in products from recycled.



## 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	Yes/No
Small Firms Impact Test	Yes	Yes/No
Legal Aid	Yes/No	Yes/No
Sustainable Development	Yes/No	Yes/No
Carbon Assessment	Yes	Yes/No
Other Environment	Yes/No	Yes/No
Health Impact Assessment	Yes/No	Yes/No
Race Equality	Yes	Yes/No
Disability Equality	Yes	Yes/No
Gender Equality	Yes	Yes/No
Human Rights	Yes/No	Yes/No
Rural Proofing	Yes/No	Yes/No

## References

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14. From: [http://www.foe.co.uk/living/articles/green\\_your\\_workplace.html](http://www.foe.co.uk/living/articles/green_your_workplace.html): 'Producing 1 tonne of recycled paper saves at least 30,000 litres of water, 3000 - 4000 KWh electricity and 95 % of air pollution than producing paper from virgin fibres'.
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## **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
TOTAL	10,556	14,645		£12,602,659

*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<sup>[6]</sup> 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<sup>[6]</sup> 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.