

Specifying recycled content in business
process services for your organisation

Business Print

wrap



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please pass it on to a colleague or recycle it

Scope and objectives

This guide sets out the potential for using recycled papers in business process services, such as invoicing, billing, customer statements and other forms used in business administration.

The guide is aimed at:

- Any individual who has responsibility for specifying or purchasing these services or products on behalf of their organisation
- Anyone trying to increase the procurement of recycled paper.

The guide provides practical information to help you to:

- Convince others of the importance of specifying recycled
- Know what performance attributes to expect when you are specifying recycled paper for business process services
- Select papers that suit your applications
- Define contractual requirements/specifications
- Get the best deal when you buy business process products
- Learn from good practice in other organisations.

NOTE: This guide deals specifically with business process forms and services. For advice on copying paper and publications, see WRAP’s guide to “Procuring office paper and publications with recycled content: The Big Picture”, available from: www.wrap.org.uk/procurement

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Introduction

A wide range of forms and customised outputs for business applications can now be printed using recycled papers. As a result, specifying the use of recycled papers in your business process products can:

- ✔ Provide a tangible demonstration of your organisation's policy commitments on sustainability and Corporate Social Responsibility
- ✔ Help to create end-market demand for the waste paper that you send for recycling, thus diverting it from landfill

while:

- ✔ Not necessarily costing more
- ✔ Maintaining the quality needed in your printed outputs, and
- ✔ Without affecting their performance in your business processes.

This guide focuses on what to specify and how to procure it – whether you buy the forms directly or outsource your requirements to a print management company. Some applications can use a high recycled content, while others may need a mixed recycled/virgin paper to meet technical and cost criteria.

The key procurement strategy is to state your policy objective and requirements for recycled content upfront in your contract specification. Also, be prepared to use your buying power and ask your supplier to investigate higher recycled options.



1. Business case – why specify recycled?



Meeting CSR objectives

One of the most compelling arguments in the business case for using recycled paper is the important contribution this can make towards demonstrating progress on Corporate Social Responsibility (CSR).

A clearly stated policy on CSR is becoming an essential requirement for all large companies and organisations. Many companies have identified paper consumption as an area within their operations where they can make a quantifiable contribution towards meeting their CSR objectives.

Typical of the statements made in CSR policy statements and reports is the following:

From **Lloyds TSB:**

“...where paper-based systems are still in use, Lloyds TSB also has a target to increase total recycled paper consumption by five per cent in the coming year (2004).”

Contributing to sustainable development

Using recycled paper contributes to sustainable development in several important ways:

- It diverts a valuable resource from landfill

Using recycled paper diverts waste paper from entering landfills, and consequently helps in meeting national targets for waste recycling. Landfills are a source of methane emissions, which are a potent contributor to global warming. What is equally important is that landfills are rapidly becoming full, and fewer new sites are available.

Paper accounts for just under 10%¹ of the total municipal, commercial and industrial waste stream going to landfill, and a significant volume of this is ‘waste paper’ generated from business process applications and office reprographics.

- It ensures a robust end-use market for recycled paper

Whilst many organisations perceive themselves as acting responsibly by sending their waste paper for recycling, recycling will only be viable if end-markets are created for the products made from recovered waste paper, closing the recycled paper loop.

Business example:

Co-operative Financial Services

In its first Sustainability Report since the formation of Co-operative Financial Services (CFS), the company quantifies its consumption of paper and printing in relation to its CSR objectives. These include the stated aim of using an increasing proportion of recycled and totally chlorine-free paper.

The bank started to monitor paper consumption across a broad range of areas in 1997. Now all printing activity for CFS is reported, including third-party commissions such as marketing and sales literature.

One of the major achievements cited by CFS is that the 2003 target to switch all bank cheque and paying-in books to paper containing 33% recycled content has been met.

In 2003, CFS used nearly 4400 tonnes of paper in total, some 30% of which was recycled paper. Approximately 530 tonnes of paper were used for business process products, of this roughly half was on recycled paper.

¹Source: Defra & NLK Associates; Defra estimates that total municipal, commercial and industrial waste is 117 million tonnes per year, of which 67 million tonnes goes to landfill. This includes an estimated 6.1 million tonnes of paper & board.

- It results in a lower overall life-cycle environmental impact

Work for the European Environment Agency has concluded that recycling of waste paper has a lower life-cycle environmental impact than the alternatives of landfill or incineration. In addition, paper recycling optimises the use of a valuable material and places less strain on global forest resources. Although these forests are increasingly managed in a sustainable way – and fibre from such forests will always be needed at the top-end of the paper grade hierarchy – there is a need to reduce wastage by using more recycled content.

Make a positive social and economic contribution

In sustainable development terms, buying or specifying recycled has a strategic importance. Not only does it promote resource efficiency and reduce the use of virgin natural resources, but it yields social benefits such as local economic activity and jobs – thus delivering economic, social and environmental benefits simultaneously.

Business example:

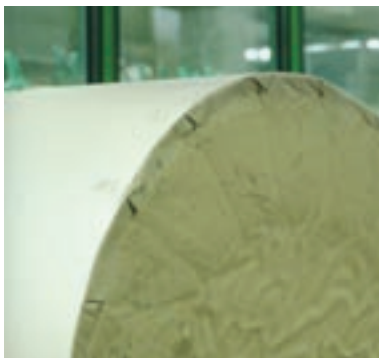
M-Real's New Thames mill

The New Thames mill in Kent has provided a market for thousands of tonnes of office papers recovered in London and the South East, has secured jobs in the mill, in recovery and collection operations, and has diverted many thousands of tonnes of paper from the landfill sites in the South East. In terms of innovation, it is probably the largest de-inking system integrated with office paper production anywhere in the world, and produces a product with quality to match the best in the world.

Business example:

9lives Paper

Recent increases in demand for recycled paper have stimulated further product development and investment. For example, PaperCo has recently introduced a range of papers and boards with intermediate levels of recovered fibre content (55% and 80%) – offering equal whiteness and competitive pricing when compared to virgin grades.





Finding the right application

In this guide we often refer to **business process services**; by this, we mean the ways in which companies or organisations communicate, store and process their data and information needs. There are a wide and complex range of business process services, but they broadly fall into two basic types – those that are *‘internal’*, i.e. concerned with internal organisation and business operations, and those that are *‘external’*, since they exchange information with other organisations and with individual consumers.

This is illustrated in **Figure 1**, which also highlights some of the key applications for business processes.

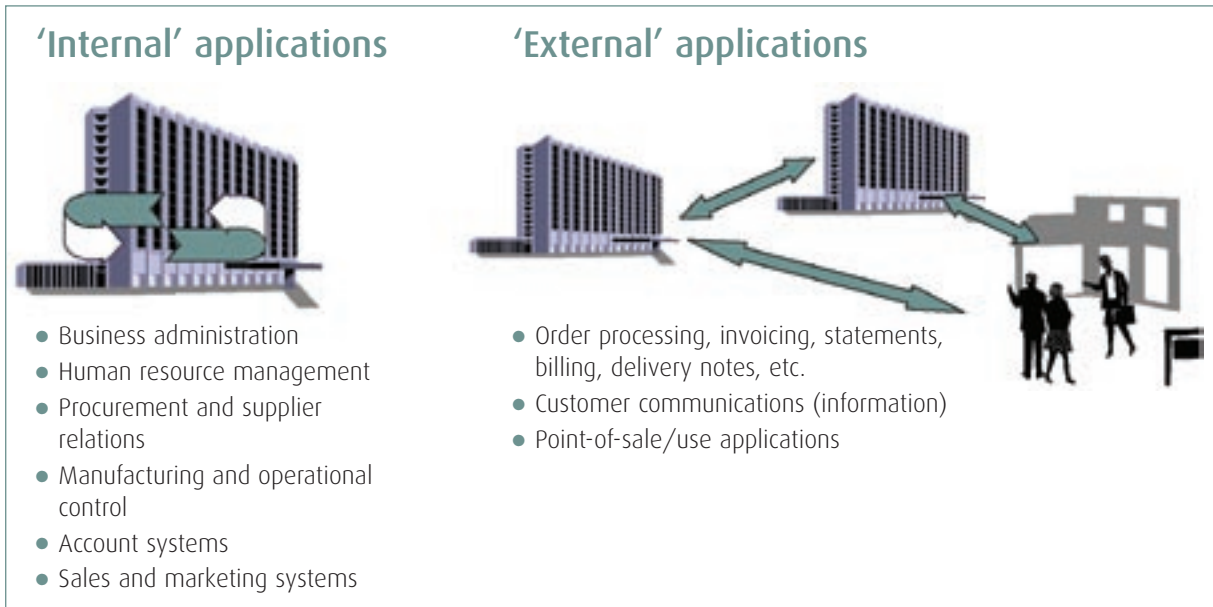


Figure 1: Business processes – the marketplace

Business process services utilise many different ‘products’, including paper-based business forms, information leaflets and electronic forms.

In this document, we are concerned with those business process products that are paper-based. Such products are listed in **Table 1**.



Table 1: Business process products

Type of product	Product detail	Applications
Business forms		
Standard listings	Single-part (plain paper) or multi-part (usually carbonless paper); plain or 'music-stave' printed and sprocket-punched	Computer stationery
Pre-printed forms	Single-part (plain paper) or multi-part (usually carbonless paper); pre-printed (before data is added), usually in colour and frequently involving complex design and additional features such as labels, tear-off slips, etc.	Computer stationery used for applications such as statements, invoices, purchase orders, operational systems, supplier records, customer records, inventory control, quotations, fulfilment & despatch notes, delivery notes
Specialised forms	Can be single-part (plain paper) or multi-part (usually carbonless paper) but typically require specialised production involving special inks, special fonts; frequently requires paper made to an approved specification	Cheques, payment forms for use in BACS ² systems, other data input systems
Unit sets, register sets	Single-part (plain paper) or multi-part (usually carbonless paper, but sometimes use one-time carbon); usually of a more simple design and supplied in pads or individual (unit) form sets	Used for applications such as invoices, purchase orders, operational systems, order pads, receipts and other point-of-sale applications
Other business process products		
Information documents	Typically several pages, printed in colour or with colour highlights	Provided with customer statements, billing notices, or for price lists etc.
Envelopes		
Stock	Made to standard sizes (e.g. C5, DL, etc.) and in standard formats (pocket, banker, windows, etc.)	In-house documents, some customer mailings
Custom	Made to customised sizes and patterns, often over-printed	Customer mailings mainly

²BACS is the acronym for the automated banking clearing systems

By way of explanation...

Computer stationery includes standard listing paper and pre-printed (continuous and cut sheet) forms. Standard listing paper (e.g. sprocket-punched) is the traditional workhorse of the forms sector, although many of the applications formerly produced using listings have now been transferred to high speed laser or non-impact printers that use plain, cut size papers.

There are still thousands of tonnes of computer stationery used today, even though electronic forms and web-based systems have reduced overall demand and switched usage towards local on-demand printing.

'Specialised forms' are distinct from other pre-printed forms because they have to be produced to exacting specifications and often require specialised inks or paper.

'Unit sets' (sometimes also referred to as 'register sets') are not usually used in computer systems but are manually completed. A typical and still common example is the order pad used in many restaurants, but unit sets are also supplied for many standard business process applications such as invoices, purchase order forms and the like. These types of sets can often be purchased 'off-the-shelf' from retail and wholesale stationery outlets, and tend to be used by smaller businesses and organisations.

Within the products classification, we have also included the information leaflets that accompany many forms (for example, utility bills, council tax demands, etc.). These leaflets are usually inserted along with other forms as part of the customer communication. Unlike promotional literature, information leaflets are regarded by the companies that use them as an essential part of the business process application, although they obviously also have a corporate PR and communication role.

Some other products such as till rolls are more specialised and often niche applications, and we have excluded them from consideration in this document.

At the moment, it is the public sector that is setting the pace in terms of using recycled papers for business process products, but many leading companies and organisations are also moving in this direction.

Business example:

In its current 'green return', **Defra** shows that over 93% of its total paper consumption is accounted for by recycled papers with >75% recycled content.

The **Inland Revenue**, another large user of forms, considers that a target to base at least 10% of its leaflets on recycled papers is realistic in the short term.

The **DVLA** produces approximately 2,500 different forms, some of which are printed internally and some externally. Recycled paper is used wherever possible for both internal and external print runs.

There are also examples of the use of recycled business process products in the private sector – for instance, **Lloyds TSB** used ~1,200 tonnes of recycled papers in 2003, some 6% of total paper used.

Finding the right business process applications for recycled papers

Despite the inroads made by electronic forms in the business processes sector, significant volumes of paper-based business forms remain in use. Most of these products can be made from paper containing recycled fibre.

As a guide to finding applications for recycled paper in your own organisation's business processes, **Figure 2** lists the main types of product and their uses.

Figure 2: Business process products and their applications

	RECYCLED PRODUCT AVAILABLE	INTERNAL USES					EXTERNAL USES		
		BUSINESS ADMINISTRATION	HUMAN RESOURCE MANAGEMENT	PROCUREMENT & SUPPLIER RELATIONS	MANUFACTURING & OPERATIONS	ACCOUNTING	SALES & MARKETING	ORDER PROCESSING	CUSTOMER COMMUNICATIONS
BUSINESS FORMS									
Computer stationery									
Standard single-part listings	☑	■	■	■	■	■	■	■	■
Standard multi-part listings	X	■	■	■	■	■	■	■	■
Pre printed single-part forms	☑								
Statements	☑			■		■		■	
Invoices	☑			■		■		■	
Purchase orders	☑			■		■		■	
Operational systems	☑			■	■				
Supplier records	☑			■					
Customer records	☑	■					■	■	
Inventory control	☑	■			■				
Price lists	☑						■		
Quotations	☑						■		
Fulfilment & despatch	☑						■		
Delivery notes	☑						■		
Pre printed multi-part forms	☎	■	■	■	■	■	■	■	■
Specialised forms									
eg. Cheques, banking systems, etc.	☎	■	■	■	■	■	■	■	■
Unit sets									
Order pads - single-part	☑	■	■	■	■	■	■	■	■
Other single-part forms	☑	■	■	■	■	■	■	■	■
Order pads - multi part OTC forms	☑								
Receipt books	☑								■
Other multi-part unit sets	☎	■	■	■	■	■	■	■	■
OTHER BUSINESS PROCESS PRODUCTS									
Information documents	☑	■	■	■	■	■	■	■	■
ENVELOPES									
Stock	☑	■	■	■	■	■	■	■	■
Custom	☑	■	■	■	■	■	■	■	■

- ☑ Indicates **recycled business products** are available and can be used
- X Indicates **recycled business products** are not available at the time of publication
- ☎ Indicates **recycled business products** may be available; speak to your supplier
- Indicates areas of application

Good examples of the use of recycled paper for business process products include:

- The cattle passport application form issued by the Department of Environment, Food and Rural Affairs (Defra)
- The forms used by Lloyds TSB to open a new customer account
- Forms that are used for internal business processes. For instance, a majority of the forms used internally by the Driver and Vehicle Licensing Agency (DVLA) are printed on recycled papers. The DVLA uses digital printers to print forms on demand in up to four colours, typically for smaller print runs (up to one million copies per year).

Most of the applications shown in **Figure 2** involve single-part forms, where the organisation does not require more than one copy (as compared to multi-part sets).

Finding the appropriate quality of recycled product

Once the products and applications have been identified where recycled papers can be used, the next task is to select the appropriate quality of product. This assessment needs to take into account:


- The print quality/appearance required

In this respect, much depends on whether the form or printed product is associated with the image and perception of the user company, for instance an invoice or statement which is sent to the company's customers. Where a business process service product needs to create the best possible quality image, possibly including colour printing, choosing a recycled paper with high brightness and a good printing surface is normally the preferred option.

- The functional/performance requirements of the application

For some applications, appearance is less important and so long as the business process product can meet the functional requirements of its application. For example, a management report used internally would be a good opportunity to use a product based on a lower brightness recycled paper. This might also offer some cost savings.

Today, recycled papers that can be used for business processes are available in a wide range of products, both as uncoated and coated grades. Most of the forms commonly used are based on uncoated paper grades, but some applications such as the information leaflets that accompany many bills and statements are produced on coated papers for higher print quality.

Figure 3 shows the range of recycled papers currently available to meet the range of quality requirements. Where there is a  symbol, this indicates that recycled papers are available and can be used. For instance, if you wish to specify a recycled paper that will meet the highest possible quality requirements, i.e. directly comparable to the best virgin fibre grades, it is possible to select from 100% recycled content, mainly recycled (between 50% and 80% recycled content), and part-recycled products containing up to 25% recycled fibre.

There are some applications for business process products where it is difficult to use recycled papers, mainly because of problems with availability of suitable products. These include:

- Multi-part business forms produced using carbonless papers; there is only a very limited range of carbonless papers based on recycled papers, but some of the leading suppliers of carbonless paper grades may be able to offer such products on specific request.
- Forms that have to meet CBS1 and CBS2 specifications³; so far, it is difficult to find 100% recycled papers that can meet these specifications, although some companies are using part-recycled papers for such applications.

³CBS1 and CBS2 are specifications for paper laid down by APACS, the organisation that supervises the automated banking clearing systems (BACS). Papers made to these specifications are guaranteed suitable for processing by the optical character recognition (OCR) and other equipment used in BACS and similar systems. The CBS1 and CBS2 specifications normally require virgin fibre grades to be used.

Figure 3: Guide to availability of recycled papers for business process products

Type of recycled paper grades available	Quality requirement of product			
	Speciality e.g. cheque papers, CBS2, OCR, etc	Functional e.g. listing papers, forms, envelopes, etc. used for internal communications	Medium e.g. forms requiring good but not the highest quality print, such as invoices, statements, etc	High e.g. forms where print quality is very important (demanding colour content) or processing is demanding
Fully recycled grades 100% recycled fibre content	N/A		C	C
Mainly recycled grades Typically with between 50% and 80% recycled content	N/A		C	C
Part-recycled grades Typically containing not more than 25% recycled content				C

- A range of suitable recycled paper products is already available
- C** Coated products also available
- Products may be available; discuss your requirements with your paper supplier
- N/A** No products currently available

In most cases, you will find at least two or three product/brand offerings from paper suppliers. **Figure 3** has been compiled with the help of leading suppliers of recycled papers, such as Robert Horne, Paper Co and Premier Paper.

More information on the papers available is provided in **Annex B: Market information**. Your own paper merchant or paper supplier, however, will be pleased to offer further and more detailed advice.

It is worth remembering that, even if branded products do not appear to be available for the application you have in mind – for instance a business process product that has to meet CBS1 or CBS2 specifications – it may still be possible to get your paper supplier to negotiate a special making with a mill, enabling you to use at least a part-recycled product.

Ultimately, of course, the grade that you choose will depend on commercial considerations such as price and availability, as well as the requirements of your company’s environmental policy. But **Figure 2** and **Figure 3** show that anyone who wants to use recycled products now has plenty of choice.

Certain perceptions may deter organisations from actually specifying these products. Typically such objections might include:

- There are problems with quality – products do not look good enough.
- Recycled papers will cause runnability problems on data processing, mailing and other forms-handling equipment.
- Recycled papers cost a lot more to use.

In the next few paragraphs, we examine whether these objections are justifiable and hopefully dispel some of the myths and prejudices that exist.

Quality and performance are not a problem

Improvements in the quality of the recycled paper grades now available mean that their quality and performance when used in business process products raises very few issues. Concerns that recycled papers will cause runnability problems when used in high-speed data output printing are not reflected in the practical experience of printers, envelope suppliers or users themselves, according to the discussions we have had. In the words of one of the largest UK forms printers, '[using recycled papers] has no impact on the cost of production'.

The experience of the DVLA (see example) highlights the importance of selecting the paper as carefully as possible in relation to the quality and performance requirements of the particular application for which recycled business process products are to be used. Recycled papers, as with other grades of paper, are available in a range of qualities, and fitting the grade to its end-use application is vital.

The top-of-the-range recycled papers made from 100% de-inked waste are completely comparable with virgin fibre grades when used to produce business forms. A good example is the application form for a 'cattle passport' used by Defra (see Case Study 1), which involves a total of around 20 tonnes a year, and which, according to the contractor who produces these forms, runs trouble-free on their presses.

It is also possible to produce business forms using recycled papers that have lower whiteness and contain some surface impurities. These types of recycled papers can be used when quality requirements are primarily functional rather than image oriented – for example, for listing papers and forms used for in-house administration such as expenses forms.

Naturally, care must be taken when using the lower grades to avoid dusting or handling problems on high-speed processing equipment, but there are many applications where any such effects can be tolerated without impairing the business process. In Sweden, where recycled papers are less widely used, recycled papers are typically used in 'lower grade' applications, where they serve the purpose for which they are intended and save money.

Business example:

Leeds City Council first started using recycled paper over ten years ago and has seen both quality and availability improve dramatically over the intervening period. It has found that recycled papers perform well and are comparable with virgin fibre.

The Council is typical of many users in that new papers are introduced by first running trials in the in-house reprographics unit and then adopted on a much wider basis if no problems are found.

Liz Thompson of **Co-operative Financial Services**, when asked about quality, said, "Experience with recycled papers has, in general, been good. When a change is made to a recycled product, then there is always a tendency to blame its recycled content for any technical problems and it can take some time for the change to be accepted, particularly by designers or companies who prefer to use bulk purchase papers across their customer base."

The **DVLA** had a somewhat similar situation – when they first switched to recycled paper they had some problems with dust generation, but after some analysis switched the paper to Evolve Business and have not had any problems with dust since. Some of the larger usage printed forms are delivered on reels. They are then personalised, guillotined and inserted into envelopes by machines at the DVLA.

The **Inland Revenue** has investigated paper quality; during recent tender evaluations, they contacted the leading companies supplying business process products to the UK market. All of them confirmed that printing recycled papers would not cause them any problems.

The following checklist may help you to consider where you can use recycled paper for business process products and what grades of recycled paper you should specify for these products.

CHECKLIST

Choosing suitable applications

- ✔ Review all business process applications in your own operation and determine where recycled papers might be used (see Figure 2).
- ✔ Look at the functionality of each of the selected applications – is it primarily for internal or external use, e.g. what impact does it have on your image with customers?
- ✔ Depending on the functionality required, determine the product requirements in terms of appearance, quality, etc.
- ✔ Review potential applications with ‘forms owners’ and business process application designers, including sub-contractors and printers.

Choosing a suitable recycled paper

- ✔ Based on the specification agreed for your business process products, select a suitable recycled paper grade (see Figure 3).
- ✔ Discuss your choice of grade with your paper supplier and your printer(s).
- ✔ Run trials with suppliers (printers or converters) before making your final choice of product/brand.

and finally...

- ✔ Monitor your progress – set up a system to check that your specification has been met by your supplier(s) and record your achievements against your CSR objectives.





Getting the economics right

The cost of using products based on recycled papers is often not clearly understood. Using such products is either viewed as a low cost but low quality alternative, or their use is perceived as likely to increase overall costs. In reality, neither view is necessarily correct.

Using recycled papers in business process products can be achieved without a cost penalty.

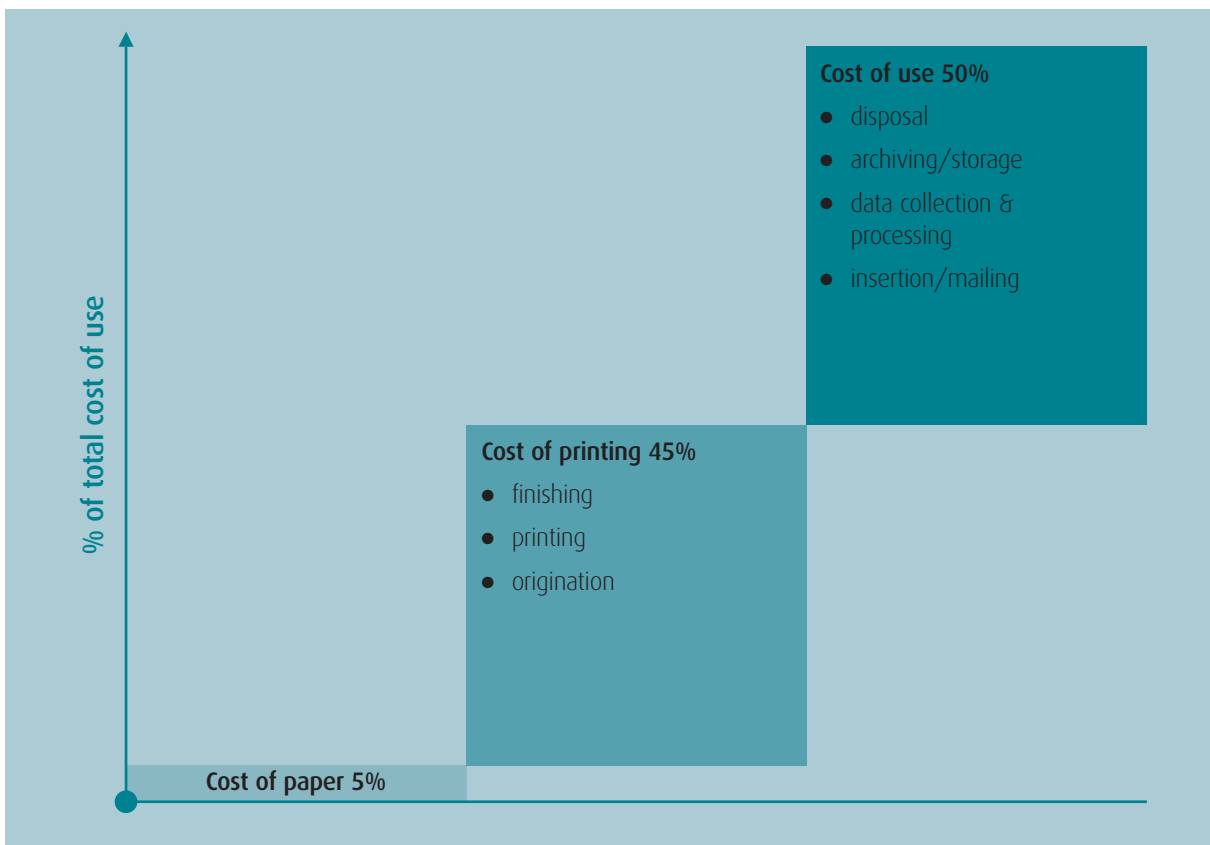
Price v. Cost

List prices quoted by suppliers of recycled papers can often be higher than those of comparable virgin fibre grades, typically by between 5% and 8%. However, this does not mean that the cost of using recycled papers in business process products need necessarily be higher. Indeed, some of the experienced users of recycled papers claim that using these products costs them no more and can sometimes result in cost savings on the overall print job.

Most business process products are relatively complex printed items; their production involves considerable design input and frequently requires sophisticated printing and finishing techniques such as numbering, perforation, bar-coding, over-printing, etc. As a result, the cost of the paper used in these products represents only a relatively low proportion of the final cost of production.

Once the product has been made, however, the cost of using it can frequently be considerable. In the example illustrated below (**Figure 4**), we have made the conservative assumption that the cost of using (i.e. distributing, data processing, etc.) the product is the same as its cost of production. In most applications, the cost of use would be considerably more than this.

Figure 4: The relative cost of paper (as a proportion of the cost of use)



In this simple example, a 5% premium on the price of the recycled paper would add just ½% to the cost of producing the business process product, and only ¼% to the total cost of use.

Even where high-volume applications are concerned (where the cost of paper assumes a much higher proportion of the total cost of producing the printed item), the impact of using recycled papers need not be very significant.

If we look at the example of a business form or other business process application requiring more than a million copies, it is likely that the cost of paper would account for around 50% of the total printed cost. In this situation, a 5% premium on the price of the recycled paper would add 2½% to the cost of producing the business process product, but only 1¼% to the total cost of use if we make the same assumption as before.

In practice, in both cases the net impact on cost of production of the business process product and total cost of use is likely to be even smaller.

Cost-effective use of recycled business process products can be achieved in a number of ways:

- By selecting the most appropriate paper grade for the job in hand

Not all applications for business process products require the brightest or whitest paper grades, or need to conform to the highest performance specifications. As noted earlier, a range of recycled papers exists that enable the business process user to select an appropriate cheaper grade for these less demanding jobs.

An alternative method of reducing the paper cost is to reduce the basis weight (mass per unit area) of the paper grade used. Since recycled paper grades can provide higher opacity than virgin fibre grades of the same basis weight, this may allow a lower basis weight to be specified in the recycled paper, reducing the cost. This technique has been employed successfully by Lloyds TSB.

- By negotiating with paper suppliers

Even though it may not be corporate policy to purchase paper directly (see later), many organizations have been able to negotiate framework supply contracts with paper suppliers that have resulted in paper prices close to or lower than virgin fibre grades. DfT/Defra presents an example of how this can be done by aggregating volume with other buyers.

- By negotiating with suppliers of business process products

One strategy for ensuring that the cost of using recycled papers is comparable to using virgin grades is the outcome-based strategy employed by the Inland Revenue. The IR clearly specifies in its tender invitation document, and subsequently in discussions with potential framework contractors, that the use of recycled papers should not result in higher costs than using virgin fibre grades.

In practice, the larger business process product suppliers and forms printers have considerable purchasing power, and may even be in a better position than the business process user to negotiate favourable prices with paper suppliers

Ultimately though, there may often be a business case for using recycled papers even if overall costs are increased somewhat in doing so, since the contribution to corporate reputation will compensate for a marginal price premium.





Business example:

DfT, Defra, ODPM and DTI

In their latest benchmarking exercise, the Defra, ODPM, DfT and DTI partnership was able to show that taken over the whole range of papers used, the average price paid for recycled papers gave an overall saving of 2.8% compared to the average price paid for a basket of similar quality virgin fibre grades.

CHECKLIST

Getting the best deal

-  Select the appropriate grade of recycled paper (see **Figure 3**).
-  Choose the optimum basis weight.
-  Consider purchasing directly from paper suppliers (either from paper merchants or possibly direct from the mill – see later).
-  Negotiate with paper suppliers and/or business process service suppliers (contractors and printers).



Sourcing the business process products

Business process products are normally sourced in one of two ways;

- As part of a business process management contract

Companies which have sub-contracted their business process management to a service provider such as Astron, Computershare, Williams Lea or Xerox, normally expect the sourcing and provision of business process products to be undertaken as part of the overall contract.

In some cases, the service provider also has their own printing capacity; alternatively they will sub-contract to a specialist printing company.

- Purchased directly from a business process products supplier

In the UK, there are at least 74 companies listed on the British Printing Federation web site (www.selectprinter.com) who offer to supply business forms. The leading companies in this sector, such as Communis, Etrinsic and Paragon, frequently offer a comprehensive print planning and forms management service. Indeed some of the larger companies might also be regarded as in the same category as business process service providers. Smaller business forms printers, however, will concentrate solely on production and supply of the forms or business process products.

Many printers who specialize in the production of business forms also have very sophisticated colour printing capacity, with the ability to print information leaflets and similar business process products. There are 20 to 30 UK suppliers of envelopes, including Antalis, John Dickinson, Chapman Envelopes, PaperCo and Spicers.

Given the nature of this marketplace, it is likely that you will already have well-established relationships with suppliers. However if you are looking to source new suppliers, you can find further information in Annex B: Market information.

In the course of preparing this document, we contacted ten of the UK's leading business forms suppliers and five leading envelope suppliers. All of the companies contacted said they were able to supply business process products based on recycled papers. This also bears out the experience of the Inland Revenue (see earlier) who found that potential suppliers were quite prepared to use recycled papers for business process products.

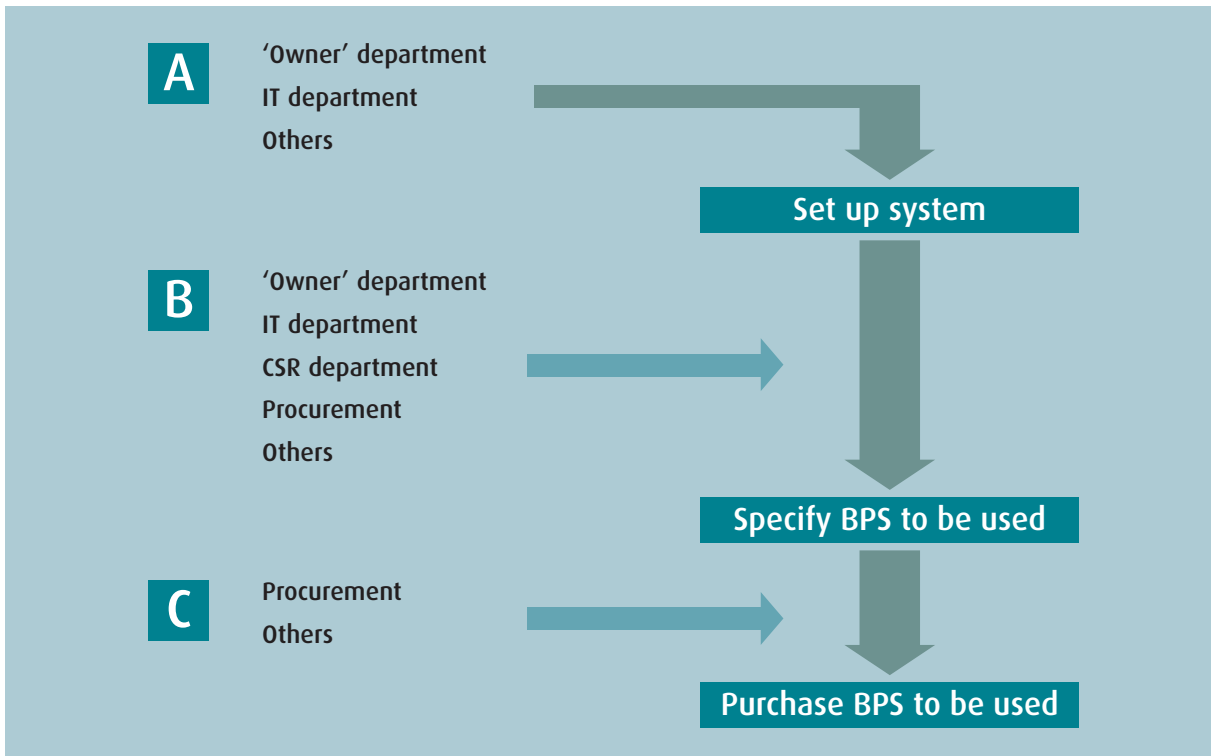


Championing the cause

Much of the success in organisations that have led the way in selecting recycled papers can be attributed to the existence of an 'environmental champion' – typically an executive in the organisation who has a personal objective to maximise the use of environmentally-friendly products, including recycled papers.

To appreciate how significant an impact 'environmental champions' can have, consider the complex and often fragmented decision-making process for business process products that typically occurs within large organisations (**Figure 5**):

Figure 5: The decision-making process for business process services



Within this extended process of decision-making, the use of any particular grade of paper can sometimes become relatively low profile – it is just the basic ‘commodity’ on which the form or other product is printed. This situation is exacerbated where companies outsource some or all of their business process management, and therefore may delegate responsibility for paper selection.

One of the key functions the environmental ‘champion’ can perform is to highlight the possibility of using recycled papers, and articulate the contribution to meeting corporate objectives for CSR and sustainability.

Experience shows that, if an organisation really wants to take the use of recycled paper seriously as part of its CSR policy and corporate strategy, it would benefit considerably from having an environmental champion in place, tasked with clear objectives and empowered to ensure that these targets are met.

Business example:

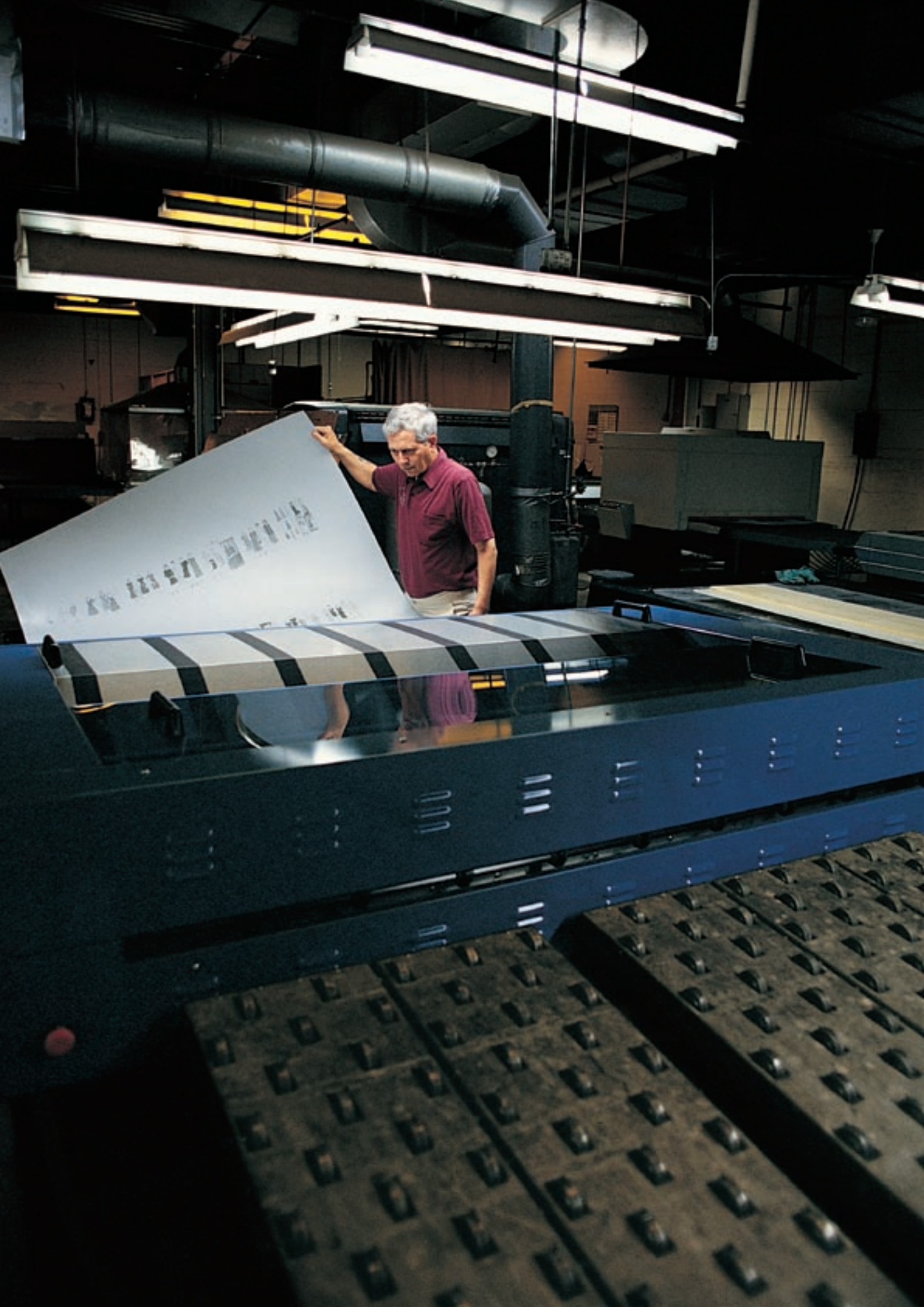
Lloyds TSB

Len Sturgess of Lloyds TSB has championed a number of strategies to use more recycled business process products, frequently without incurring any cost penalties. For instance, he has promoted the selection of grades with less than 100% recovered fibre content, so that there is no price premium to pay once the paper has been converted to its final format.

He has also advocated a reduction in basis weight – for example, recycled paper at 100 g/m² instead of virgin paper at 115 g/m² gives a cost saving but does not impair the performance of the printed form.

To facilitate change, the Supplier Management team has increased the communication between the ‘form owner’ and the design department, as well as bringing their own expertise and knowledge of paper grades into play as part of the overall design process. Objections from those resistant to changing ‘traditional’ formats have been overcome by demonstrating the improved overall cost-effectiveness of the business process application.





2. Procuring business process products – good practice and user experience

Whether the intention is to procure products directly from a specialist supplier or as part of an outsourcing contract with a provider of business process services, there are some useful principles that can be adopted by an end-client wishing to use recycled papers.

The wide range of grades of recycled paper already available from suppliers means that most business process products can be specified with up to 100% recycled content. However, some companies may feel that using hybrid papers (part recycled, part virgin fibre) offers a cost-effective low-risk strategy that still makes a significant and quantifiable contribution to corporate objectives.

Whatever strategy the company decides to adopt, and whatever procurement route is taken, the experience of seasoned users of recycled papers suggests that it is good practice to define the product policy and set a clear requirement for recycled content at the earliest possible time during the procurement process.

There are two possible ways in which the product policy can be defined:

- Detailed product specification

In this instance, the paper grade to be used is specified in detail and the specification would cover minimum % recycled fibre content, together with basis weight and possibly product/brand⁴.

- Outcome-based specification

An outcome-based specification focuses on the functionality and image requirements that the products have to meet. This might define an overall threshold for recycled content (to be met by each paper, or an average outcome across all papers used), plus other criteria (such as whiteness) related to the functionality of the finished product. With this method of specifying, the detailed job specification is left much more in the hands of the supplier.

In some cases, just a simple statement of intent that products should be printed on recycled papers might elicit adequate proposals from competing bidders.

Since the performance requirements of business process products are often quite demanding, our advice would be to discuss these specifications in advance with potential suppliers or service providers.

Most large organisations have a department that is responsible for design and layout of forms and other printed matter. This responsibility typically also covers the choice of printing substrate. Where this is the case, it is clearly important that the design department is involved at all stages in the specification process and is signed up to corporate policy regarding the use of recycled papers.

Quite clearly, the better informed the procurer is from the outset, the stronger is the position to handle any objections raised by printers or designers, either in terms of availability of recycled papers for certain applications or on any technical grounds. Most of the leading suppliers are quite willing and able to use recycled papers, but establishing an early dialogue undoubtedly helps to make a change in product more trouble-free.

Business example:

Bristol Wessex Billing Services Ltd

An example of how consultation between all interested parties works in practice is provided by Bristol Wessex Billing Services Ltd, where print requirements for business process products are discussed by the company with the design departments of both its parent companies at the start of each annual purchasing cycle.

⁴In the public sector, the procurement rules are likely to rule out specifying individual brands.

Direct purchasing of recycled business process products

Procurement departments in large companies and organisations will already have well-established procedures. However, by way of an additional checklist, consider the following stages in the procurement process, adopted by leading users of products with recycled content:

- Clear statement of the corporate objectives relating to the use of recycled paper for business process products
- Identification of those companies who have the potential to supply the required products (see Annex B for example)
- Consideration of the costs and benefits of purchasing paper directly, for subsequent issue to the products supplier
- Preparation of a tender invitation/specification covering each product required, clearly detailing the recycled content requirement, performance specifications for the product, and the service levels required – such as delivery scheduling, stockholding and call-off requirements, complaint procedures and other technical service support
- A tendering procedure to request and evaluate tenders from potential suppliers identified above
- Final selection of a short list of approved suppliers.

It is also essential to define clear procedures and lines of communication governing the placing of orders for individual jobs. This may seem self-evident, but business process services can be highly complex and involve many departments and ‘forms users’ within an organisation. Where responsibilities are clear and procedures well-observed, it is much easier to meet corporate objectives, both for cost control purposes and in relation to more specific targets, such as the amount of recycled paper used.

Finally, a well-designed and executed system is needed for monitoring supplier performance.

Paper – to buy or not to buy?

Large-volume end-clients for business process products may consider purchasing their paper directly from the paper supplier – typically the paper merchant, but possibly direct from a mill where volumes are sufficiently large.

The main argument in favour of direct purchasing of paper is economic – paper may be purchased at lower prices by taking advantage of negotiated discounts. Direct purchasing can also be used to ensure continuity and quality of supply.

On the other hand, the end-client then assumes responsibility for performance of the paper during printing and conversion, which means the added hassle of having to become involved with complaints and other technical problems, as well as dealing with any problems of delivery, availability, etc.

It must be said that few of the companies and organizations we have contacted during the preparation of this guide have chosen to go down the route of purchasing paper themselves, preferring to leave this to their approved business process product suppliers or framework contractors. An alternative to direct purchasing, however, is the approach adopted by Defra and DfT⁵ which have set up a framework supply contract with paper merchants.

⁵According to Defra, availability of stock was a great driver to setting up the consortium. Government requirements are mostly last minute and often involve large quantities. The merchants had little call for recycled paper therefore held only a small stock. The idea of the tender was to show the trade a serious intent to use the paper and encourage larger stock holding as a result.

Specifying recycled business process products as part of a management contract

In some ways, specifying the use of recycled papers in an outsourcing contract for business process services can be more straightforward than specifying and procuring business process products on an 'as-needed' basis.

Dealing with a single contractor simplifies communication, but equally it demands careful planning to ensure that corporate objectives for recycled paper are achieved. A clearly stated policy is a fundamental requirement and needs to be in place from the beginning of the tendering process. Once the management contract has been awarded, experience suggests it is harder to change product specifications.

Either a detailed product specification or an outcome-based approach can be used in the tender invitation. Generally, though, the main reason for an organisation to outsource its business process services is because these are complex and involve a wide range of products. In this case, detailed product specification may not only be difficult, but potential contractors may feel that it reduces their own scope to offer the best possible solutions to their clients.

For this reason, an outcome-based approach may be more effective. Briefly, its advantages are as follows:

- You can still set targets regarding the use of recycled paper that are in line with your corporate objectives – for example with statements such as:
...wherever possible, business process products must be based on recycled papers
...all recycled papers used must (on average, or individually) contain a minimum of xx% of recycled fibre.
- You do not restrict the flexibility of the supplier to determine the most appropriate product solutions for your business processes.
- You can still retain some say over product decisions, for example by stipulating involvement in product trials and product development.
- You can establish cost/price parameters in relation to your sustainability objectives – for instance by insisting that the selected recycled papers must not result in higher costs.
- You can monitor progress against your objectives by setting performance targets for the contractor with periodic (often quarterly) reviews.

As is the case with direct purchasing of business process products, an informed knowledge of product options will be of considerable value in all negotiations with potential suppliers and during the lifetime of the contract. Once again, the value of having an 'environmental champion' should not be under-estimated.

Business example:

Government contract for recycled papers

DfT, Defra, ODPM and DTI have aggregated their buying power to set up a framework contract for recycled printing papers. The ensuing contract with four paper suppliers/merchants has enabled the consortium members to ensure stock availability and to get the recycled paper grades they need and in the quantities required.

Bulk volume discounts have been negotiated – such that at the latest price comparison exercise (carried out three times each year), the Departments were able to show that the average price was some 15% or so less than for similar recycled papers.

The consortium does not actually purchase paper, but each job contract specifies which of the framework paper suppliers must be used by the selected printer. The Departments then monitor all print contracts to check that paper is being purchased by their printers under the terms of the supply agreement, and have found that this approach works well.



Annex A

Case studies

In this Annex, we illustrate the practical experiences of companies and organisations that are already using recycled business process products. We would like to acknowledge the help and enthusiasm of the individuals who contributed.

Case study 1: Department for Environment, Food and Rural Affairs

Summary:

The Department for Environment, Food and Rural Affairs (Defra) is a front-runner in the use of recycled papers in business process products in the UK. Its experience provides a number of pointers as to how recycled papers can be adopted cost-effectively and on a high-volume basis:

- Strong determination to achieve demanding targets
- Careful research in identifying sources of supply
- Innovation in the approach to purchasing and the willingness to seek support from like-minded organisations
- Fair but hard-nosed bargaining with suppliers
- Precise specification of print requirements
- Careful monitoring of supplier performance

Defra is the Government Department that has responsibility for the essentials of life – food, air, land, water, animals and plants. Its remit is the pursuit of sustainable development.

Defra, like other departments, is required by the Government to use recycled papers for all of its paper and print needs wherever possible. Currently, over 93% of its paper consumption is accounted for by papers with >75% recycled content.

Recycled papers used extensively

In 2003, Defra used around 750 tonnes of paper for its various forms and business process products.

The organisation uses only a relatively small amount of listings paper and other types of continuous stationery. Most of Defra's 'internal forms' are now electronic, in line with Defra's aim to reduce the volume of paper used while increasing administrative efficiency.

However Defra does produce a wide variety of forms for 'external use' with the agricultural industry, companies, other organisations and members of the public. Typically the 'forms owner department' decides what information and functionality is required of the form, and then Defra's forms design and management unit creates the design format. The finished form, usually a single-part colour-printed document, is then purchased by the procurement team from one of a range of contracted printing companies. The type of paper to be used is always specified by Defra when tendering forms.

Departmental policy also requires that any print item where a grade other than recycled paper is specified must be authorised at senior level before it can go ahead. Very few instances of this have occurred. Even were this situation to occur, the Department would try to use a grade that contained at least some recycled fibre.

The vast majority of Defra's print requirements are handled by the Corporate Services Branch.

Cost-effective sourcing

The fact that Defra can achieve such high levels of recycled paper utilisation is the result of a process that started more than five years ago. When the commitment to using recycled papers was first made, Defra found that sourcing was sometimes problematic and prices frequently made applications less than cost-effective. To overcome these problems, Defra joined forces with two other Central Government departments, the DTI and the then DETR (now DfT and ODPM) to set up a joint purchasing consortium. The ensuing contract with four paper suppliers/merchants has meant that since then, the consortium members have found themselves in a much better position to ensure stock availability and to get exactly the recycled paper grades they need and in the quantities required.

By aggregating demand, the consortium was able to negotiate bulk volume discounts – so much so that in their latest benchmarking exercise, the DfT, Defra, ODPM and DTI partnership was able to show that, taken over the whole range of papers used, the average price paid for recycled papers gave an overall saving of 2.8% compared to the average price paid for a basket of similar quality virgin fibre grades.

Recycled papers perform well in Cattle Passports

Defra has seen no deterioration in the quality of the business process products it uses as a result of switching to recycled papers, and has not had to change the way the forms are used either.

A typical example of a demanding business process application where forms are produced on recycled papers is the issuing of cattle passports. Each year, Defra uses close to 100 tonnes of Evolve recycled paper for the various print items needed for monitoring cattle in the passport scheme.



The system involves three separate print items:

- The pre-printed application form: some 30 tonnes of paper are converted into the application forms used by the farming industry each year. The forms are printed web offset reel-to-reel by the contracted printer and then shipped to a data agency for personalising with individual data. When a farmer applies for a cattle ear-tag number, personalised data are overprinted and the form dispatched to the applicant for completion.
- The completed form is then sent by the farmer to the cattle movement department in Workington and a passport (a book containing movement and registration slips, etc.) is issued to the farmer. Most of the passport is also printed on recycled papers, although some security pages have yet to be converted to recycled paper since no suitable grades are currently available.
- Finally, legislation requires that three times each year, livestock owners receive a statement from the cattle movement department providing details of all the cattle that are listed to that particular owner. Again this operation, which amounts to around 4 million A4 sheets per year, uses 100% recycled paper.

The cattle passport scheme requires quite complex print design, and the processing of the printed items also needs to run trouble-free. In this complex system, Defra has found that forms based on recycled paper meet all the requirements asked of them.

Specification and monitoring

The policy of always using recycled papers in business process products is enforced through the purchase specification system used by Defra. Printers are sent a quotation request for each job which sets out the print requirement (e.g. size/format, pagination, proofing needs, finishing, etc.). It also specifies the paper grade to be used and from which paper merchant that grade is to be sourced.

The print supplier is expected to indicate what the paper cost will be. Defra then cross-checks to see that the paper price quoted matches the price agreed with its contracted paper suppliers. The paper price is also checked once the job is finally invoiced by monitoring monthly returns from both printers and paper suppliers.

Case study 2: Driver and Vehicle Licensing Agency

Summary:

The Driver and Vehicle Licensing Agency (DVLA) illustrates the use of recycled paper for in-house production of business process products. It provides an example of an organisation that has balanced the economics of using recycled papers against the environmental benefits. Key features include:

- Investment in sophisticated in-house printing capability which means that only the largest print jobs are sourced externally
- Almost 100% of internal printing now uses recycled paper
- No problems have been found using recycled paper for general business process applications.

The DVLA has its head office in Swansea and has forty regional offices, employing in total around 7,000 people.

Significant use of recycled paper for business process products

The DVLA started to use recycled paper for business processes around four years ago. In total, it uses around 2,400 tonnes of paper each year for business process products, of which around 49% is recycled paper.

All paper used internally – including copier paper and a majority of internally produced forms – is recycled paper, but the high-volume use is for external forms. The DVLA produces around 2500 different forms, some of which are printed internally and some externally. Digital printers are used to print forms in-house on demand in up to four colours. These printers are typically used for the smaller print runs (up to one million copies per year).

Some of the larger usage printed forms are delivered on reels. They are then personalised, guillotined and inserted into envelopes by machines at the DVLA. The choice of paper for the external print runs is dictated to a large extent by the function of the form. New forms are designed by an internal team and whenever possible printed internally on a standard paper.

The DVLA used one hundred and twenty different designs of envelope, all of which are produced from 100% recycled paper. But it is currently undergoing a review to standardise both the forms and envelope requirements in order to rationalise and reduce the numbers being used.

Environmental benefits underpin the business case for using recycled paper

The Department for Transport has a well-defined environmental policy, and the DVLA works within the framework of this policy whilst maintaining its own environmental policy as part of its ISO 14002 accreditation. This policy sets a guideline of using recycled paper wherever possible.

At the moment, the DVLA typically pays a price premium for recycled paper of 5% to 10% compared to the cost of virgin fibre paper. The DVLA has assessed this to be an acceptable premium given the environmental benefits.

No problems in sourcing or using recycled business process products

The DVLA has found no problems with the availability of recycled products. All their major printers were able to offer recycled paper for forms. In general, recycled papers have performed well – when the DVLA first introduced recycled paper they had some problems with dust generation, but after some analysis switched to an alternative brand (Evolve Business) and have not had any problems with dust since.

Recently, the main application where recycled papers have not been used is the vehicle licensing renewal document. This is because the application involved an optical character recognition system and no approved recycled paper grades were available. Even so, the guidance notes accompanying the form have been printed on recycled paper – a job involving approximately thirty-eight million copies per annum.

Within the last few months, however, the vehicle licensing system has changed to using forms that are bar-coded and read by a bar code reader at the Post Office. The DVLA is now evaluating the potential to switch this form to recycled paper.

Currently the DVLA purchases business process products from four approved suppliers. It is normal for the printer to supply the paper to the DVLA specification unless the paper is a special product such as security paper, which is purchased directly from the paper mill by the DVLA.



Case study 3: Lloyds TSB

Summary:

Lloyds TSB has demonstrated how policy objectives can be achieved cost-effectively by:

- Rigorous analysis of the way in which each form is used – a process undertaken with the involvement of both the ‘form owners’ and the form designers
- Re-design of applications to improve the economics while also using recycled papers, for example by reducing basis weights of the papers used
- Adopting a flexible approach to specifying paper grades, by being prepared to accept hybrid papers rather than push for the maximum recycled content
- Being open to new procurement methods, for example purchasing directly from a mill or setting up a purchasing consortium with other companies in the sector.

The Lloyds TSB Group has over 17 million customers and 79,000 staff; it is one of the largest clearing banks in the UK. The Group includes the Cheltenham & Gloucester Building Society, Scottish Widows and Abbey Life Insurance. In 2003, the Group used ~21,000 tonnes of paper; consumption of recycled papers amounted to 1,200 tonnes, some 6% of total paper used.

Lloyds TSB has a central Supplier Management operation located at its Bristol office that deals with the Group’s requirements for stationery and operational print. Mr. Len Sturgess is departmental manager for operational print. Each year he spends about £5 million on business process products, forms, envelopes etc., and deals with between 2,500 and 3,000 forms.

A wide range of business process products

About two-thirds of business process requirements handled by the Supplier Management department are outsourced to a print management company. This includes both communications with customers and products used internally within the Group.

A further 25% of business process products are produced ‘on-demand’ by a network of contractors specialising in document printing, for instance operating Xerox DocuTech, iGen3 or DocuColor presses.

Some low-usage forms are produced by the Group’s own internal reprographic departments using electronic form masters.

Plain listings paper is used in relatively small volumes, and is often used for overnight ‘data dumps’ to the branches.

A small proportion of business process applications are now held electronically and used online. They are completed directly on the desktop computer and the data all stored electronically. The company is trying to move more of its forms into this online category.

Continual improvement

The company places considerable emphasis on its environmental policy and this is reflected in the activities of the Supplier Management department. Broadly, the guiding principle for the department is to “reduce consumption first, print on-demand wherever possible and optimise the use of recycled papers wherever possible and economic”. Therefore all business process products are continually reviewed to ensure that they suit the applications and are produced in the most cost-effective way, in line with the company’s goal of maximising shareholder returns.

The review process examines the design and functionality of the forms at their point of use, in conjunction with the 'form owner'. The Supplier Management team has catalysed closer communication between the 'form owner' and the design department, as well as bringing their own expertise and knowledge of paper grades into play as part of the overall design process.

Choosing the 'right' paper

The Supplier Management team uses different specifications for different business process applications.

For much of the outsourced print mentioned earlier, quality requirements are high. For example, documents require Pantone colours, special finishing, perforations, etc. and as a result demands on the printing substrate are high. For most of these applications, a recycled paper containing 10% recycled fibre is specified since this has been found best able to meet all quality requirements.

On the other hand, for those forms used internally and produced in-house, quality requirements are usually not so demanding. For such applications, a grade that contains 80% recovered fibre is usually specified. The company had looked to use a paper with 100% recycled content, but found that this was not economic. The current grade sits well with the overall environmental policy and can be justified on a cost basis as well.

The company is also currently reviewing its use of envelopes. It already uses some products based on recycled papers but the Supplier Management department is considering how the use of recycled products can be increased.

More often than not, Lloyds TSB manages to use recycled business process products without incurring any cost penalties. This has been achieved in several ways. For instance, as Len Sturgess explains: "selecting a grade with less than 100% recovered fibre content means that there is no price premium to pay once the paper has been converted to its final format".

Alternatively, using a somewhat lower basis weight – for example 100 g/m² instead of 115 g/m² – gives a cost saving but does not impair or affect the performance of the printed form, particularly since many recycled papers have better opacity than virgin fibre grades.

No problems with recycled business process products

The Supplier Management department outsources much of its print purchasing, and has not experienced any problems in obtaining recycled business process products when it specifies them. The department does keep itself fully briefed, however, on the availability of recycled papers that might be suitable as base stock for its various printed applications, and this knowledge has certainly proved valuable in its dealings with its principal contractor.

Lloyds TSB has found that the grade that they use most (containing 10% recycled fibre) runs without any problems – both during printing and at the subsequent point of use.

Innovative purchasing practices

The Supplier Management department is constantly considering ways in which procurement can be made more cost-effective and still meet environmental objectives. Although the majority of business process products are purchased via the print management contractor, the Supplier Management team are considering other options, for example purchasing paper directly from the mill and then supplying it to the forms printers. This would give them the advantage of purchasing in large volumes as well as helping to ensure a uniform quality in the end products.

Lloyds TSB has also contemplated co-operation with other financial institutions to create some sort of purchasing consortium for paper supplies, resulting in the opportunity to purchase larger volumes of recycled content paper at advantageous prices. So far, this is still very much a development project.

Case study 4: Co-operative Financial Services

Summary:

Co-operative Financial Services (CFS) illustrates how a company with a strong environmental policy and a determination to use recycled products wherever possible can achieve its objectives without incurring a significant cost penalty. CFS is achieving this by:

- Having a committed 'environmental champion'
- Ensuring close liaison between those purchasing business process products and the Sustainable Development team
- Adopting a flexible approach to specifying the recycled papers used in their business process products.

Co-operative Financial Services was formed in 2002 to bring the Co-operative Bank and Co-operative Insurance Society (CIS) under common leadership. The combined group has over seven million customers, £333 billion in assets and employs around 14,000 staff.

In its Sustainability Report, CFS says that in 2003, the total weight of paper purchased was ~4,400 tonnes, and 30% of this total was recycled paper. Recycled paper is defined here as containing a minimum recycled content of 50%, while 21% of the total paper used contained 100% recycled fibre.

Liz Thompson is an Environment Adviser for the CFS Sustainable Development team, with specific responsibility for paper and printing.

Commitment and monitoring

Around 12% of CFS's total consumption of paper, i.e. approximately 530 tonnes per annum, is used for business process products. Of this, roughly half is recycled paper.

CFS is an organisation with a strong environmental profile. Since 1998, when the use of recycled content paper amounted to 20% of total paper used at The Co-operative Bank, there has been a strong drive to increase its use.

The Sustainable Development team and the Procurement & Supplier Management department have spearheaded this drive. The guidance throughout CFS is to use recycled paper wherever possible. This has led to recycled paper being used for letterheads, statements (on 75% recycled, 25% virgin content paper), computer listing paper, copier paper etc.

The decision on what paper to use is made at a departmental level on a job-by-job basis; however, the Sustainable Development team is available to provide advice and guidance to all departments across the organisation. This gives a further opportunity for the team to promote the 'buy recycled' policy. In addition, the team audits the quantity consumed.

Sourcing recycled papers

On the question of sourcing suitable recycled papers and business process products, Liz Thompson says: "There have been no problems sourcing recycled grades for all normal uses. The lead time for delivery to the printers used to be a problem, but this is no longer the case."

No particular suppliers are favoured by CFS, but a list of approved brands has been compiled by the Sustainable Development team and this is available to all specifiers of forms and business process products.

Occasionally, CFS has encountered problems in attempting to use recycled papers for business process products. The approach of the Sustainable Development team has been to work with business process users, forms designers and suppliers to find ways to overcome these problems.

An example concerns the introduction of recycled papers for cheque and paying-in books. These books have to meet the CBS1 and CBS2 standard specifications laid down by APACS, the body that regulates banking and financial services, and CFS found initially that only virgin fibre grades were approved for such applications. However, after discussions with APACS, CFS has secured approval to use a paper grade containing a minimum of 33% recycled fibre. This change meant that CFS was able to meet one of its Sustainable Development targets for 2003.

Maintaining cost-effectiveness

CFS has encountered a small price premium for recycled paper, usually 5% to 8% over the price of an equivalent virgin fibre grade. However, this price premium can often be reduced by 'lightweighting' (reducing the overall basis weight of the print job) or through using economies of scale (using recycled paper across many applications). However, CFS also points out that when the total cost of the print job and the overall cost of the business process is considered, the price premium for recycled papers amounts to a relatively insignificant percentage.

The Sustainable Development team at CFS has built close links with the company's Procurement & Supplier Management department, and finds this is helpful both in encouraging suppliers to use recycled products and in ensuring the best commercial deals.

Case study 5: Bristol Wessex Billing Services Ltd

Summary:

The experience of Bristol Wessex Billing Services Ltd (BWBSL) with its billing form leaflet shows that recycled papers can meet demanding print quality requirements and cause no production problems.

BWBSL is joint venture company owned by the Wessex Water and Bristol Water companies. It was created in 2001 specifically to undertake the joint billing and account management of the customers common to the two water companies.

BWBSL produces some 3 million mail packets each year and has a print and paper budget amounting to around £1.5 million. Each year, BWBSL produces an annual bill on behalf of the two water companies, together with reminders and a half-yearly statement. Each of the bills includes a leaflet describing the background to the bill together with other information that the two companies wish to present to their customers. While not a business form, the leaflet is definitely a part of the business process service; it enables the parent companies to meet certain legal obligations in respect of their billing operations as well as facilitating payment of the bills. All of these leaflets are printed on coated recycled paper.

In all, BWBSL uses not far short of 50 tonnes of paper each year, of which some 60% is the coated recycled papers used to produce the billing leaflets.

Designing business process products

The design and specification of BWBSL output requires discussion with both the parent companies. Each year, the team from BWBSL meets with the design teams from the two water companies and each application is reviewed to ensure all the functionality and image objectives are fully met.

John Coppack, General Manager says: 'we have to accommodate rather different objectives. BWBSL focuses particularly on the design of the form to ensure that it meets its prime objectives, namely that it encourages customers to pay their bills as quickly as possible and also makes it as easy as possible for them to do so. On the other hand, the water companies have a range of information that they need to communicate to their customers and are keen to convey the right impression of their corporate activities.'

BWBSL sub-contracts all of its bill preparation and external print requirements to specialist companies, principally Computershare who are responsible for the production and mailing of bills. BWBSL also takes account of the processing requirements of its sub-contractors, for instance the need for leaflets to be inserted with the bills at high speed ready for mailing.

Recycled paper used where possible

BWBSL's two parent companies take their environmental responsibilities seriously and they have made a positive decision to use recycled papers. Currently BWBSL's main use of recycled papers is in the production of the A5 leaflets that accompany each bill that the company sends to customers. Around one million of these leaflets are produced each year using Revive Matt, coated recycled paper that contains 75% recycled fibre. The leaflet is printed offset in process colour. Although BWBSL offer suggestions as to which paper grades could be used, ultimately it is the parent companies which decide which grade/brand will be selected.

Case study 6: Inland Revenue

Summary:

The Inland Revenue (IR) has the potential to use substantially more recycled paper in its business leaflets and forms. However, it already provides examples of good practice in the area of supplier management and procurement.

With a 'customer base' of 20 million taxpayers, the Inland Revenue is a major user of paper and business process products. The Inland Revenue split its use of paper into three categories: desktop (office reprographics); printed forms and leaflets printed internally; and printed forms and leaflets printed externally.

The volume of paper consumed in forms and other business process products is just over 10,000 tonnes per annum. However, use of recycled paper only amounts to 1% at the moment. This situation is currently under review, and a target to base at least 10% of leaflet production on recycled papers is regarded as realistic in the short term.

All of the envelopes used by the IR are based on recycled paper; they have moved away from the 'standard brown' envelope, however, because they have found that white envelopes tend to produce a better response from customers.

Dealing with stakeholder concerns

When the IR began to consider extending the use of recycled papers to some of their larger volume business process products, some queries were raised by members of the IR Business team. The quality of print on tax forms is of paramount importance to the IR, and many sent out by the IR require the use of a number of colours. Colour makes it easier to complete the forms, and forms frequently include up to eight colours. The Business team in the IR had reservations that the use of recycled paper might pose difficulties with that number of colours, notably in the area of bleed-through.

Concerns were also expressed about the performance of recycled papers when run through over-printing and other finishing equipment, for instance on insertion machines in very large numbers per hour. Runnability on these machines, particularly the avoidance of any downtime, is vital and the IR is rightly cautious about introducing new paper types.

However, during the latest tendering process, the use of colour on recycled paper was covered in discussion with potential suppliers, along with other aspects, including runnability on presses and subsequent after-processing. All of the companies contacted during these discussions said that printing on recycled papers would not cause them any of the problems mentioned, and would not necessarily incur additional cost.

The IR has experienced no significant problems in its current limited use of recycled papers to produce information leaflets. Ultimately, the manager of the Sustainable Development team Russell Perry sees no practical reasons why a significant proportion of the IR's leaflet requirements could not be produced on recycled papers.

Specification of recycled papers

At the time of the invitation to tender, potential suppliers are advised of the quality and standards that are to be used and contractors are asked to confirm they are able to meet these requirements.

The specifying procedures start at the time the printing requirement is put out to tender and the specifications, quality and consistency are checked and reviewed when each job is subsequently produced. All printed material is subjected to trial procedures by the IR's business teams, and each print supplier is expected to supply a specimen batch for evaluation on the IR's processing equipment.



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Annex B

Market Information

Availability of recycled papers for business process products

The following list of recycled paper products suitable for use in business process products is derived from discussions with users, forms printers and paper suppliers. The products are listed in alphabetical order.

Table 2: Recycled paper products

Uncoated Papers		Coated Papers	
	Recycled fibre content		Recycled fibre content
FULLY		FULLY	
Alsaprint	100%	Cyclus Print	100%
Arriba! recycled	100%	E2000	100%
Conservation	100%	Envirostar	100%
Cariolaro	100%	Eural Pro	100%
Corona Offset	100%	Recyconomic Coated	100%
Cyclus Offset	100%	Recymago	100%
Evolve Business	100%	Revive Lite	100%
Evolve Office	100%	Salaplexx	100%
Metaphor	100%	Setus Bio	100%
Premier	100%	Sylvan Matt	100%
Ramberprint	100%	Voiron Matt/Silk	100%
Repeat Offset	100%		
Silverlist	100%	MAINLY	
Steinbeis Vision	100%	Biogloss	50%
Take2	100%	Callisto Bio/Standard	70%
		Consort Renew-Satin	50%
MAINLY		Eco Format/Rolle	70%
Cameron	65%	Emerald FSC	50%
Context FSC	75%	Eural Plus	60%
Croxley Heritage	75%	Eural Premium	60%
IQ unique	50%	Evolution	80%
L-Print	not known	Greencoat plus Gloss/Velvet	80%
Revive Uncoated	80%	Mega Gloss/Matt	50%
		RePrint	50%
PART		Revive Matt/Gloss/Silk	75%
Retreeve	20%	Setus Matt	70%
		Sylvan Art Gloss/Silk	50%
		Symbol Freelifelife E/E	50%
		9lives 55	55%
		9lives 80	80%
		PART	
		Pheno	20%
		Revive Special Silk (FSC Certified)	30%
		Skye Coated Silk	20%

The National Association of Paper Merchants is the trade association for paper merchants, www.napm.org.uk/

Leading paper merchants able to supply recycled papers include (in alphabetical order):

- Antalis
- Howard Smith Paper
- James McNaughton Group
- Paperback Ltd
- PaperCo
- Premier Paper
- Robert Horne Group.

More information on companies able to supply recycled papers can be obtained from:

- The Waste & Resources Action Programme (WRAP) website, www.wrap.org.uk and the WRAP Recycled Paper Advocacy Team
- The Confederation of Paper Industries (the trade association for the paper industry), www.paper.org.uk

Suppliers of business process products

Business process and print management companies

These include (in alphabetical order):

- Adare Carwin
- Astron
- Communisis
- Computershare
- Williams Lea

A number of companies specialise in print management i.e. providing a package that involves helping to assess, manage and procure a client's print requirements. The companies listed above are known to be specialising in provision of business process services as well as other print requirements.

Business forms printers and suppliers

General information relating to the printing industry can be obtained from the British Printing Industry Federation (BPIF) at www.britishprint.com If you click on the Select Printer.com icon, you will find a comprehensive list of printers able to supply business forms and other business process products.

Leading suppliers

(in alphabetical order) include:

A1 Paper Stationery Ltd
Abbot (Kings Langley) Limited
Adare Group
Besley & Copp
Communis plc
Computer Press (Oxford) Ltd
Danel Cope-Chat
Darley Limited
Datagraphic (UK) Limited
Etrinsic plc
Fast Forms
Forms UK plc
Harlow Printing Limited
Jaguar Business Forms
Lonsdale Print Solutions Ltd
MBF Business Forms Ltd
Multisets Limited
Paper Co
Paragon Group UK Ltd
Reedform Limited
Smith & Ouzman
Snows Business Forms
Stralfors plc
The Cray Press
Ward Knowles Ltd
Wirral Continuous
Wm. Pollard

Envelope suppliers

(in alphabetical order) include:

Antalis
Arjo Wiggins
Bong
Chapman Envelopes
Eagle Envelopes
Great Northern Envelope Company
Heritage Envelopes
John Dickinson
Madison Envelopes
Mail Solutions Envelopes
Mekvale Envelopes
Paper Co
Spicers

Other supplier databases include the Print & Promotional Database: www.printdatabase.co.uk



Annex C

Environmental claims, labels and marks

A plethora of technical terms, labels and standards are often used to describe or characterise the environmental impact of paper. This Annex will help you to understand the relevance of these to your purchasing decision, including what they tell you (or don't tell you) about the environmental impact of the paper you are buying.

If you would like to find out more information about technical paper terms, a glossary covering many of these issues is provided in Annex D.

Recycled paper and recovered fibre

Recovered fibre arises from two main sources:

- Post-consumer waste is the paper recovered from our homes and offices. (It does not include printer returns or mill broke). Post-consumer materials are finished products that have served their useful lives and would otherwise end up in a landfill or incinerator.
- Pre-consumer waste includes: converting scrap (essentially scrap from all processes occurring once the paper has left the mill, e.g. printing, cutting and box making); newsstand returns and printers' overruns; obsolete inventory from mills, printers, and other sources; and also any damaged stock. Some of this waste requires de-inking. In the UK, a high proportion of all the pre-consumer waste available is collected for recycling.

Mill broke is scrap generated in a mill prior to the completion of the papermaking process and usually used in-house. It is therefore not regarded as "genuine waste". It has been used by paper makers for many years.

Recycled papers are available with recovered fibre content ranging from 100% down to 20% or so. From an environmental perspective, the goal is to get both pre- and post-consumer materials out of the waste stream. As the demand for recycled content increases, the percentage of post-consumer input will increase.



Environmental claims, labels and marks

The following Table summarises the information available on different environmental claims and labels in relation to paper. Further detail on each of the claims and labels is provided below.

Type	Name	Application	Quantitative recycled content target?
Eco-label	EU Eco-label	Copying and graphic paper	No
	German Blue Angel	Graphic paper up to 170 g/m ² and copying paper	Yes – 100% waste paper content (pre- and post-consumer)
	Nordic Swan	Paper products and printed matter	No
Environmental Product Declaration (EPD)	Paper Profile	All paper	No, but may be indicated in the EPD
	Environmental Profile Data Sheet for pulp and paper	All paper	No, but may be indicated in the EPD
Recycling Mark or Symbol	Mobius Loop	All paper	Only one out of two versions of the mark indicates percentage of recycled content
	NAPM (National Association of Paper Merchants)	All paper	75% of “genuine waste” (pre- and post-consumer)
	Green Seal Criteria Coated Printing Paper	Coated printing paper	10% post-consumer material
	EUGROPA Recycled Mark	Not used any more	
Forest Certification Scheme	FSC (Forest Stewardship Council)	Wood component in paper	Under development. Paper with FSC logo may or may not contain recycled fibre.
	PEFC (Programme for the Endorsement of Forest Certification schemes)	Wood component in paper	Not relevant
Environmental Management System (EMS)	ISO14001 / EMAS	Paper manufacturers production process	Not relevant

Eco Labels

Third party eco-labels such as the EU Eco-label, Nordic Swan (Scandinavia) and German Blue Angel are voluntary, independent labels that aim to identify the top 10–25% of products in terms of overall environmental performance across the life-cycle of the product. To do this, they set pass/fail criteria per product group covering key environmental impacts. Eco-labels can be given to a wide range of products, not just paper, whilst some even apply to different types of paper. For paper, the criteria for recycled content vary as follows:



Fibre type not mandated – may be virgin or recycled. At least 10% of virgin wood fibres should come from certified sustainably managed forests.

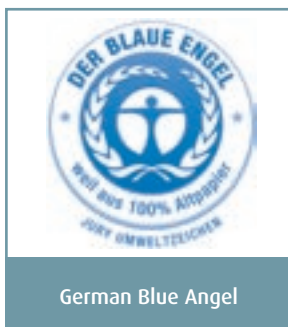
Graphics paper in this context is defined as sheets or reels of unprinted paper that are used for printing, copying, writing or drawing.

For general information on the European Eco-label for copying and graphic paper:

www.europa.eu.int/comm/environment/ecolabel/product/pg_copyingpaper_en.htm

For the e-catalogue of eco-labelled products:

www.eco-label.com



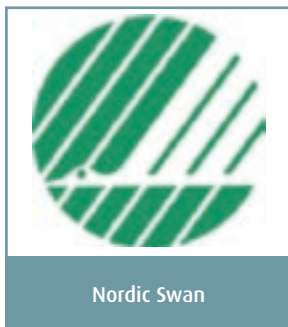
Administered by the German Federal Environmental Agency and RAL German Institute for Quality Assurance and certification since 1978.

Applies to graphic work paper up to 170gsm and duplicating paper.

For recycled paper to qualify for the mark, it must be made of 100% “waste paper” (tolerance 5%), and contain at least 65% low-grade or medium-grade scrap and waste papers. The waste paper definition under the label is slightly different than the definition of post-consumer waste. Waste paper is defined as papers and boards obtained as a result of use or processing. Paper mill broke is not considered as waste paper, except for the broke obtained as a result of the manufacture of paper from 100% waste paper material – related to the amount of fibre used.

RAL will be publishing new criteria in February 2005. The previously published criteria will be valid until December 2005.

www.blauer-engel.de/englisch/navigation/body_blauer_engel.htm



This label was introduced by the Nordic Council of Ministers in 1989. Nordic Swan covers a variety of products, as well as other paper products and printed matter.

It does not necessarily imply that the product contains any recycled fibre.

The criteria are based on the environmental effects of the manufacturing process rather than the selection of raw material.

www.svanen.nu/Eng/about/

NOTE:

1. Only the Blue Angel eco-label refers directly to recycled content.
2. All of these labels have a limited presence on the UK market.
3. Other papers, including some with high recycled content, may meet eco-label criteria but have not applied for a label itself.

Environmental declarations

Paper Profile

Paper Profile is a voluntary environmental product declaration, i.e. it provides standardised categories for companies to provide environmental information across the product's life-cycle, which therefore enables customers to compare products. The categories cover environmental management systems, raw materials, emissions to water and air, solid waste, electricity consumption and product composition. Independent verification of the data is optional but is highly recommended on an annual basis. If undertaken, details of the verifying body will be included in the declaration. It is primarily suited to business procurers (commercial or public sector).

www.paperprofile.com/

Environmental Profile Data Sheet for Pulp and Paper

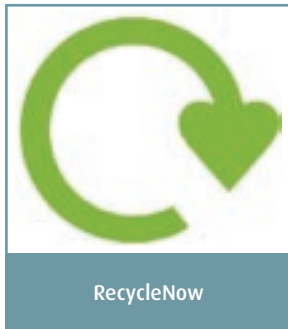
The EPDS is a standardised reporting form, which offers measurement data and explanatory comments relating to a list of environmental attributes that cover the life-cycle of pulp and paper products. It provides pulp and paper producers with a credible and cost-effective way of measuring and reporting on the environmental performance of individual products and the mills that produce them.

www.terrachoice.ca/epds.htm

NOTE:

A company that uses a paper declaration will not necessarily be producing papers with recycled fibre content.

Recycling marks/symbols



This new recycling icon is part of the RecycleNow campaign organised by WRAP (the Waste & Resources Action Programme) on behalf of the Government to encourage people to recycle more materials more often.

The icon will become the nationally recognised symbol for recycling in England and, over time, will appear on recycling boxes, bottle banks, collection lorries and recyclable materials.

www.recyclenow.com



The Mobius Loop is an internationally recognised recycling symbol with each arrow representing an aspect of a successful recycling programme: collection, remanufacturing/reprocessing into a new product, and finally purchase by the consumer. The symbol is only to be used on goods that are 'recyclable' or include 'recycled content', in which case the percentage of recycled content should be stated together with the symbol.

Most people will be familiar with the Mobius loop but may be unaware exactly what it means:

Top left: Where the symbol appears without a number, it indicates that the product is 'recyclable' and therefore, does not necessarily mean that there is any recycled content.

Bottom left: Where the symbol appears with a number, it indicates that the product contains xx% recycled content – in this case 90% recycled content.



The NAPM (National Association of Paper Merchants) recycled mark is awarded to those papers that contain a minimum of 75% "genuine waste". "Genuine waste" is defined as:

- Convertors' waste: paper which has left the mill and is waste from a cutting or slitting operation undertaken to meet a specific commercial order.
- Printers' waste: printed or unprinted waste collected from a printing operation, which may be either 'trimmings' (guillotine waste), 'overs', 'rejects' or any other similar waste received direct from a printer.
- Domestic/household/office (i.e. post-consumer) waste: waste collected from any of these places, and which may be printed or unprinted.

Any combination of the above can go towards the 75% genuine waste fibre minimum. Under no circumstances can mill broke contribute to genuine waste.

www.napm.org.uk

NOTE:
Not all recycled papers on the UK market have the NAPM mark.



The Green Dot® or Der Grüne Punkt® is a registered trademark indicating that a financial contribution has been paid to an authorised packaging scheme. The Green Dot® is not a recycling symbol, although it is often misinterpreted as such. It should not be used to denote general recyclability or recycled content. The Mobius loop is the correct symbol to use for claims in this context. The UK is not a participant in the scheme.

The Green Dot is a symbol for producer responsibility: it indicates that participating companies are fulfilling their responsibility for their products, i.e. packaging, according to European & National packaging law. Further information about Green Dot schemes can be found on www.pro-europe.info PRO EUROPE is a European umbrella organisation of all Green Dot schemes.

NOTE:

Whilst in some instances the Green Dot symbol may appear on paper packaging, the symbol actually refers to the packaging and not the paper inside, which may not necessarily be recycled.



This is a mark developed in the US, and is rarely seen in the UK. It specifies that the fibre in a coated printing paper shall contain a minimum of 10% post-consumer material. A 10% threshold is that normally applied for a paper to qualify as “recycled” in the US.

www.greenseal.org

EUGROPA Recycled Mark

According to EUGROPA, the EUGROPA Recycled Mark is not in use any more but reference to the Mark can still be found in some guides and is occasionally referenced by suppliers. EUGROPA is a European wide organisation representing the interests of national trade associations in fifteen countries – Austria, Belgium, Denmark, Finland, France, Germany, Holland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, Switzerland and the UK.

Forest certification schemes

Third-party forest certification schemes are essentially communication tools that enable forest owners and forest product companies to provide assurance to traders and consumers that the products they are purchasing have been grown in well-managed forests. The schemes set detailed criteria for the source forest, covering issues such as biodiversity, consultation with local stakeholders, legal rights to log the forest, rights of forest-dependent peoples and so on. They also set ‘chain of custody’ (CoC) requirements, which involve an audit process to track the raw material from source forest to final product.

The two most prominent existing schemes are the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification schemes (PEFC) international initiatives. Some national schemes exist, such as the Canadian Standards Association Sustainable Forest Management System, the Finnish Forest Certification Scheme and the American Forest and Paper Association Sustainable Forestry Initiative (SFI).



The global benchmark for responsible forest management, the FSC logo identifies products which contain wood from well-managed forests, certified in accordance with the rules of the Forest Stewardship Council. For paper, the FSC trademark can be displayed on products containing a mix of uncertified and certified virgin fibre so long as the total virgin fibre contains minimum 30% FSC-certified. An FSC-certified paper currently does not specifically indicate that it contains recycled fibre.

For paper products containing a mix of recycled or other 'neutral' and certified materials, the FSC trademark can be applied so long as the minimum amount of FSC pulp is 17.5% of the weight or volume of the whole product. This allows up to 82.5% post-consumer fibre to be included in a paper carrying the FSC trademark

In addition to forest certification, the FSC system includes a certified chain of custody (CoC) that tracks the timber through every stage in the supply chain from the forest to the final user. As one of several new standards launched in September 2004, the FSC-STD 40-004 introduced two new categories – "controlled wood" and "post-consumer reclaimed wood" which covers the control of non-FSC accredited components, including verified post-consumer waste fibre. Products with up to 100% verified post-consumer waste fibre are able to gain FSC Recycled accreditation. Further information is available from www.fsc-uk.org



The PEFC Council is an independent, non-profit, non-governmental organisation, founded in 1999, which promotes sustainably managed forests through independent third party certification. The PEFC provides an assurance mechanism to purchasers of wood and paper products that they are promoting the sustainable management of forests. PEFC was previously known as the Pan-European Forest Certification Scheme.

www.pefc.org/internet/html/

Environmental management systems

ISO 14001 and EMAS

Paper manufacturers are increasingly providing information to their customers about their Environmental Management Systems (EMS), typically certified under the ISO 14001 standard and/or the EMAS scheme. Such systems are increasingly being adopted by Western pulp mills and paper producers.

There are crucial differences between EMS and eco-labels; the former confirms that the company has a structured system in place for identifying and managing its environmental impacts, thus focusing on process not performance, whereas the latter sets prescriptive performance criteria. As a result, the two should not be seen as interchangeable or equivalent when assessing suppliers.

NOTE:

A company which has ISO14001 or EMAS certification for the mill at which the paper is made will not necessarily be producing papers with recycled fibre content.



Annex D

Glossary of terms

Business processes and products

Business processes: refer to the methods (paper-based and electronic) used to communicate, store and process data and information within a company or organisation or between companies, organisations and consumers.

Business process services: refer to the systems and services used to deliver business processes, e.g. in the context of outsourcing.

Business process management: covers the management of business process services. Business process services can be provided by an in-company department or by an external contractor.

Business process products: are paper-based business forms, information leaflets and envelopes that are used by businesses or organisations as part of their business process services; office, copier or reprographic papers are not included in this definition.

Technical paper descriptors

Basis weight: sometimes called the grammage or substance, this is the weight (mass) per unit area. In Europe this is normally expressed as grams per square metre, or gsm, or g/m². In the USA, it is sometimes expressed as the mass (in lbs) of a ream (usually 500 sheets, but sometimes 480) of a given sheet size.

DIP: de-inked pulp i.e. pulp made from recovered paper that has had the original ink removed.

Dusting: loosely refers to the surface strength of a coating or paper, and its resistance to particles being removed from the surface during printing. It is also known as picking. Tests have been developed to determine the resistance of paper surfaces to picking or dusting, an important property in printing.

Fibre: Wood is composed of two components – cellulose and lignin. Fibres are narrow hollow tubes made of cellulose, and their length, thickness and wall thickness vary according to wood species and climate. Soft woods provide fibres with a greater length and diameter than hardwoods and so confer greater strength than hardwoods to paper. However, hardwood pulps produce paper that is smoother, so in general a blend of fibres is used with the mix being varied to confer the exact properties required in a specific paper. Fibres can also be derived from annual plants such as straw, bagasse, cotton, flax, etc.

Gsm: see basis weight.

Opacity: is a measure of the degree of transmission of light through the paper – low transmission means high opacity. Usually high opacity is desirable in printing papers, to minimise the transmission of images from one side of the paper to the other.

Pulp: Pulp (includes virgin, DIP and their sources such as rags etc) is a generic term referring to the product following processing of the raw material (usually wood) used to produce an intermediate between wood and paper. In integrated mills, pulp is almost immediately made into paper, but in other mills a heavy board is made, dried and cut into sheets, with a number of sheets being baled. This is usually traded or sold in the market and is the generally accepted “pulp”.

Recovered fibre: fibre collected from paper that has already been used but is suitable for re-pulping to produce recycled papers. Recovered fibre can arise from many sources, for example waste produced during printing or converting, or 'waste paper' collected from offices etc. In the case of the latter, the fibre is referred to as post-consumer.

Runnability: the term used to describe the performance of a printing paper during the printing or converting process. Runnability is a generic term that covers how well the paper handles (absence of breaks, downtime, etc.)

Stiffness: refers to the resistance to bending of paper, in either the machine direction (MD) or the cross-machine direction (CD). It is an important property, and affects how well paper feeds through various types of printing process. It is proportional to the thickness of the paper.

Weight: weight is an abbreviation of basis weight.

Whiteness: is a measure of the reflectance of light of several wavelengths under closely defined conditions, from white or near white papers. A numerical value is derived from a comparison of the reflectance of a specimen under test with a standard. Several instruments are in common use, and as they may use light of slightly different wavelengths, or geometry, they give different results, so whiteness values should only be compared when it is clear which test method or instrument has been used.

Coatings

Silk: a coating that provides a lustrous finish, between that of a gloss and a matt coating.

Matt: a coating that has a smooth uniform surface, but without gloss – not a highly polished or shiny appearance.

Gloss: this coating gives the impression of a highly polished surface, though this can vary when the angle of view or illumination is changed. There are several methods used to measure gloss, usually at a fixed viewing angle.



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