Cutting your losses

A further guide to waste minimisation for business

Environment

the department for Enterprise
The Rt. Hon. Michael Heseltine, MP, President of the Board of Trade.

In my previous role as Secretary of State for the Environment, one of my responsibilities was the encouragement of pollution prevention through the use of legislation such as the Environmental Protection Act 1990. Now that I have moved to the Department of Trade and Industry I am pleased to be able to continue this task by promoting best practice and supporting the development of new technologies.

The message I want to get across to industry is that increasing environmental controls should be seen as an opportunity rather than a threat. Companies are going to have to reduce the amount of waste they discharge into the environment and the best way of doing this is to stop the waste being produced in the first place. Prevention is better than cure.

Waste is frequently the by-product of inefficiency in the system. Stopping or reducing waste contributes to improved efficiency. Minimising waste should maximise profits.

This is not just a pipe dream. Many UK companies are already discovering that positive waste minimisation policies reduce waste and saves them money. This booklet presents many case studies to illustrate the point and describes many of the advantages to be gained by adopting waste minimisation.
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Waste minimisation is the reduction of waste at source. It is based on the belief that it is better to prevent waste being produced in the first place than to treat it afterwards. Prevention is better and usually cheaper than cure!

Waste minimisation can be achieved by a variety of means, from major redesign of products and processes to minor changes in working practices. It can involve techniques such as:

- use of alternative raw materials;
- solvent recovery;
- recycling of by-products;
- modifications to plant;
- alternative use of waste products.
As environmental pressures have escalated, so have the benefits of waste minimisation. Ever higher standards and tighter restrictions mean that traditional waste disposal routes are subject to an increasingly more stringent regime of controls—e.g., the Duty of Care and EC Directives on Landfill and Hazardous Waste Incineration. These inevitably mean higher waste disposal costs.

The reasons your company should minimise waste are:

- Increasingly stringent legislation, e.g., Integrated Pollution Control (IPC),
- Rising disposal costs,
- Possible fines and clean-up costs,
- It makes commercial sense by reducing production costs and opening up new market opportunities,
- Consumer demand for "greener" products and a more responsible attitude towards the environment from industry,
- Environmental performance: your record will be of increasing importance to investors, bankers and insurers and environmental issues are likely to be of growing interest to your workforce,
- Environmental information is increasingly in demand (IPC already facilitates public registers and by the end of 1992 an EC Directive will permit even greater access),
- Public access to environmental information is increasingly in demand (IPC already facilitates public registers and by the end of 1992 an EC Directive will permit even greater access).

Waste minimisation not only helps you meet your environmental targets; it can also save you money.
Your competitors in Europe and around the world are looking at ways to cut their costs by reducing waste. Major companies such as IBM and ICI have made waste minimisation a central and permanent feature of their business strategies. Here in the UK, companies of all sizes are becoming increasingly aware that to stay competitive they must take a fresh look at ways to minimise waste.

**Can you afford to be left behind?**

A sustained waste minimisation programme in your company could pay substantial dividends. It could:

**Reduce**

- production costs;
- on-site waste monitoring and treatment costs;
- handling, transport and off-site disposal costs;
- raw material costs;
- energy and water costs;
- long term environmental liability and insurance costs;
- the risk of spills and accidents.

... and improve

- overall operating efficiency;
- income through the sale of re-usable waste;
- the safety of employees;
- the company's image in the eyes of the shareholders, employees and the community.

UK Companies have not only proved that waste minimisation *does* work in the UK, but that there are substantial benefits. The examples given in this booklet demonstrate that UK companies, whatever their size, can successfully adopt waste minimisation techniques on their own sites. If they can - you can.
There is no standard formula for reducing waste - each process is different. The diagrams on pages 32 and 33 represent a "typical" manufacturing process, showing some of the ways in which waste is generated and highlight proven waste reduction techniques.

Their aim is to demonstrate that you can improve overall efficiency just by avoiding leaks and spills, by better materials handling, by closing internal material loops (recycling acid streams, cleaning baths, catalysts and so on) as well as by redesigning processes and products.

A key tool in the development of a waste minimisation strategy for your own company will be a systematic audit of your waste generating and handling activities. It will help you:

- identify the waste generated and examine where, how and why it is being created;
- identify costs and allocate them to those departments which generate waste;
- set waste reduction targets which are realistic and are compatible with the company's other targets;
- identify opportunities for waste prevention, for materials re-use or recycling and seek markets for the waste produced;
- make the workforce more aware of the need to reduce the waste generated by the company;
- develop more efficient monitoring systems.

A waste minimisation audit will help you to identify the various options for minimising waste; options which can then be evaluated to assess the technical and economic impact on your company. There are a number of detailed guides available on how to carry out such a programme. Details are listed on page 24.

When carrying out the audit it may also make sense to seek expert help - an outsider can look objectively at your process. The DTI may be able to help with this - see pages:

25..... Help for Business
5....... Waste minimisation clubs
You may wish to carry out your waste reduction programme on your own, or you may feel that it would be beneficial to work with other companies in a joint programme. That way you share the experiences and share the costs. You learn more but pay less!

If you are interested in collaborating with other companies in this way and would like to form a waste minimisation club, then please get in touch with DTI. Part of the costs of setting up and running a club may be eligible for support.

Clubs may be based on a particular sector of industry where commonality of processes and products mean experience and ideas can be readily shared. They can also be based around a particular geographical region, involving quite diverse industries, and offering unique opportunities for technology transfer without the fear of losing a competitive edge!

If you want advice on how to set up and run such a club, the DTI can help.

For further details contact DTI's Environment Unit

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Companies that have found waste minimisation works for them

The following pages highlight the different approaches to waste minimisation taken by a number of companies in different sectors of industry. The companies range in size from one with nineteen employees to one with over three thousand and the lessons to be learnt are equally applicable to small businesses as well as large.

For instance the value of a waste audit is typified by Huntsman Chemicals, a company with less than a hundred employees, which was able to identify all waste discharge points. At the other end of the scale, the Ciba Geigy subsidiary, Clayton Aniline in Manchester (750 employees), set out to build a “cleaner technology” plant which is also the world leader in its field and the envy of Japanese visitors.

Between these two are a range of examples of companies working at incremental improvements in different sectors of their operations. Companies such as Arjo Wiggins and GE Plastics have continuous programmes to implement change and all the examples quoted illustrate the importance of attention to detail.

If you are starting the waste minimisation process, an initial audit will help quantify the problem and allow you to set priorities as PPG Birmingham and Sterling Coated Materials have done.

All the companies illustrated have a strong commitment to best practice and are seeing both higher profits and lower waste emissions.

The DTI is grateful to all the companies concerned, including those listed on page 23 whose stories we have not told on this occasion and our thanks also go to waste minimisation consultants Orr & Boss for their work in compiling the case studies.
The benefits of a waste audit

HUNTSMAN CHEMICAL COMPANY LIMITED
(70 employees)

This Manchester based company manufactures crystal and high impact polystyrene plastic resin for food packaging, toys and other products. In 1990 as part of the Corporation CORE (Conserve Resources) waste minimisation programme, it undertook a complete audit of all waste and produced a minimisation plan.

It identified all discharge points and the nature of each, then carried out improvements to maintenance and operating methods and invested in pipework to enable water to be recycled. The major investment was £180,000 in the replacement of the vacuum system on the chemical plant to better recycle excess hydrocarbons.

By January 1992 the total volume of water discharged was reduced from 200,000 to 30,000 tonnes per annum and the organic content from 104 to zero. Liquid and solid waste has been reduced by 70%.

Further projects are in hand or planned as part of the CORE programme of waste reduction.

Disposal costs were reduced by £80,000 and water and other material value wasted by £100,000. The payback was around 13 months.
Continuous mass balance monitoring

BUCKLAND PAPER MILL,(ARJO WIGGINS)
DOVER

(250 employees)

Buckland Mill makes high quality stationery grade paper with the distinctive Conqueror watermark. Thirty five per cent of its production is exported.

Aware of the need to improve competitiveness, the company focused on waste minimisation some ten years ago and improved the accuracy of mass balance, drain losses and water consumption records. It then worked on reducing water consumption and drain losses.

Over the last ten years all necessary process changes and modifications that have been made in the plant have had the additional requirement of reducing drain losses and water consumption wherever possible.

Specific water consumption has been reduced by 77%, equivalent to a current day saving of £400,000 p.a. in reduced effluent charge.

Savings have been made by replacing and rationalising water lines, recycling cooling water, installing new backwater tanks, changing the chemistry to improve retention and improving process controls and operational procedures.

As the project is one of continuous improvement, the company does not consider it complete, and hopes to improve further over the next ten years.

Savings of £550,000 p.a. have been achieved from reducing drain losses.
THE CLAYTON ANILINE COMPANY (CIBA GEIGY)
(750 employees)
Well known for its pharmaceuticals and agrochemicals businesses, Ciba Geigy is also the world's largest dyestuffs manufacturer. Ciba Geigy has evolved a strong environmental policy and has demonstrated this by investment in new plant which enables significant improvements in waste minimisation. Such an investment at its key production facility, The Clayton Aniline Company in Manchester, has now created the world's most advanced "Pergascript" manufacturing plant.

Pergascript are the colour precursors which produce the print image in carbonless paper systems.

The £20m investment has improved yields by an average of 8% and reduced chemical waste (Total Organic Carbon) discharges into the environment by over 80%. Plant capacity has been increased and the number of manual material handling operations required reduced by 90% (equivalent to 10,000 tonnes per annum) due to integration of process steps, creating a much cleaner and efficient work place. 20% of the investment related to pure energy efficiency and environmental control features.

Accompanying this is a commitment to train the workforce into maximising their contribution to the environmental and safety programmes. Focused teamwork by chemists and chemical engineers led to significant breakthroughs in process technology. Examples are complete elimination of chlorinated solvents, more efficient use and conversion of chemical starting materials and a combined filter/drying operation which not only considerably reduced material handling, but also assisted reduction in total effluent volumes by over 90%.

External requirements and an internal waste audit have stimulated a number of other innovative process changes. Detailed studies have led to a 95% reduction of the chromium level in effluent generated from Azo-dyestuffs.

One final interesting feature of Clayton's operation has been the extension of the company's Manufacturing Resources Planning system to plan and manage the waste discharges and to focus effort on the most significant environmental impacts.
HOLDEN HYDROMAN
(300 employees)

Holden Hydroman of Tewkesbury is one of Europe’s leading moulders of specialist plastic components for the automotive industry.

In 1990 it decided to invest in more modern spray booths for painted components to increase capacity, improve working conditions and reduce waste.

The key innovations were the use of High Volume Low Pressure (HVLP) spray guns and a completely redesigned semi-automatic skimming system to eliminate the unpleasant cleaning task.

Paint tank sizes were more carefully matched to order size, which, with greater reliability, resulted in reduced wastage of the short shelf life two component paint used.

The new spray guns and sludge handling facility cost around £20,000 and resulted in a reduction of paint consumption of around 40%, higher quality components and better working conditions.

Paint waste has been reduced by £20,000 p.a. and disposal cost by £4,000. The payback was less than 10 months.
GE PLASTICS

(200 employees)

GE Plastics' plant at Grangemouth produces ABS (Acrylonitrile Butadiene Styrene). The final purification process involves the extraction of volatiles using a vacuum pump. The pump uses water as a ring sealant to eliminate leakage to the atmosphere. The water also acts as a coolant.

After its work in the pump, the water contains organics to which consent limits apply. The volume (7000 tonnes p.a.) and consent limits were such that GE had little alternative but to investigate ways of reducing the volume consumed.

A recent £480,000 investment involved the design of a reprocessing system for the water. The attached chart illustrates the concept. The net loss to the system is now 90m³ p.a., a reduction of 98%. The remaining waste is incinerated.

The plant has been in operation for 6 months. Were it practical, the cost of incineration would be over £1m p.a. including transportation. The use of pumps of this type is increasing generally and GE plans to extend the system to cover other sections of the plant.

Water effluent has been eliminated.
The initial projects led to annual savings of over £100,000 with no initial capital.
Tighter control of waste emission on the large scale

NESTLÉ ROWNTREE

Nestlé is the UK's largest exporter of chocolate and sugar confectionery, with domestic and overseas sales worth nearly £660 million and a UK market share of 22%.

The York Factory employs 3,000 people manufacturing 100,000 tonnes of confectionery per annum including Kit Kat, Smarties and Polo Mints. The main sources of effluent are sugar and flour washed out during cleaning processes. The level of activity on the 142 acre site is such that it generates as much effluent as a medium sized town.

In 1990, a project was started to provide better control information on the effluent as a first step to reducing the volumes and concentrations produced. Proportional flume sampling was introduced at a capital cost of £120,000.

The information was then used in presentations to departmental work teams to help them focus efforts on reducing the effluent costs by a further 20%. The progress to date has reached 15% reduction and further initiatives are constantly being implemented.

The whole project has been so successful that the company has created an “Energy and Waste Management” post to carry on the work and to look for new opportunities for improvement.

Within a year flume sampling was already producing savings of £72,000 p.a. on reduced disposal costs due to more accurate sampling.
On a smaller scale optimise production planning by monitoring waste systems

HARRISON AND SONS LIMITED - HIGH WYCOMBE

(650 employees)

Harrison and Sons limited is one of the world’s foremost security printing companies and is owned by the Lonrho Group. Amongst a number of pre-printing operations is a coating facility to apply coating and adhesive to the base paper.

Increasing production volumes were causing problems meeting consent levels for coating waste disposal into the local rivers. To eliminate the possibility of pollution, Harrisons sealed the drains. This meant the operators had to barrel the waste during the changeover and cleaning cycle. This was disruptive to production, unpleasant for the operators and still left a disposal problem for the 500 or so drums of waste per year.

As part of a company wide waste minimisation programme, consultants designed a micro computer planning system which allowed managers and supervisors to calculate accurately the number of batches of coating mix needed for each run. The mix formulations were modified to optimise the number of smaller mixes to be made at the end of the batch.

The new systems reduced coating waste from around 20% loss per batch to 5% or 150 tonnes p.a.

For a low outlay, waste has been minimised until the whole of the coating facility can be redesigned and a computerised, automated dispensing system introduced.

Other benefits include a better working environment, simplified production planning and higher machine utilisation.

Annual savings initially were £25,000 p.a. in materials plus £5,000 in disposal costs for an initial investment of less than £5,000.
Process improvements lead to better quality control

PPG BIRMINGHAM
(400 employees)

PPG produces a range of paints for the industrial markets including vehicle original equipment and repair paints with a value of over £40 million per annum. Any product contaminated waste produced is classified as special waste due to the solvents and pigments used in production.

In common with all paint companies it is faced with rapidly rising waste treatment costs and increasing environmental requirements.

During the years 1989 to 1991 it undertook a series of studies into improved methods of cleaning, making product changeovers, reducing rejects and controlling sample sizes. The only major investment item was the installation of new tote tank cleaning equipment for both waste reduction and product quality reasons.

Monthly departmental waste monitoring has been introduced and this has enabled the company to track its progress.

The total quantity of waste produced has decreased from 1,650 tonnes in 1988 to 950 tonnes in 1991. However the unit cost of waste treatment has risen to such an extent that this improvement has only allowed it to break even.

Solvent treatment costs reduced by £30,000 p.a. and the value of the paint making materials saved is in the order of £40,000 p.a.
Increasing workforce awareness to implement waste audit findings

ICI PAINTS
(613 employees)

The Stowmarket factory produces over 80,000 tonnes per year of domestic and industrial paint and resin. At the beginning of 1990 a waste audit identified the need for a comprehensive system to measure the quantity and cost of waste produced in each department.

The next steps included a programme of training to increase awareness and the setting up of action groups to tackle waste reduction projects.

In the large batch plant, wash water waste was running at around 3,000 tonnes per year at a disposal cost of £100,000 and a further £100,000 in material value.

The main improvements were changes in washing practices which reduced volumes and enabled some washings to be reused while maintaining quality. The changes involved little capital expenditure.

This has progressively reduced waste from 3,000 tonnes in 1989 to 1,400 tonnes in 1991.

Considerable modernisation of filtration methods is taking place. After the construction of a new microfiltration system, the cost of waste paint materials will have been reduced by 95% relative to 1989.

Reduction has saved £50,000 on waste disposal costs and a further £50,000 p.a. on raw materials.
SMITHS CRISPS
(700 employees)

Smiths Crisps (part of Pepsico) is a household name with a wide snack food product range made at a number of sites throughout the UK. Waste arises during the mixing, extrusion, cutting, cooking, and packing/despatch stages. The wastes are non-hazardous and are either sold to animal feed manufacturers or landfilled.

Yield improvement and waste reduction is the responsibility of the manufacturing management team, and waste levels had been improving gradually each year. On one product line at the Lincoln factory a special project using external consultants was started to achieve a rapid step change improvement. Measuring the waste was a particular problem due to large changes in the physical form and moisture content of the product between manufacturing stages.

Over a six month period, the results of this project have been to reduce the waste from 12% to 4.5% - equivalent to 250 tonnes per annum. Working practice was changed and modifications made to key process equipment. Product quality and consistency has also improved.

The project did not disrupt normal production, and involved relatively little capital expenditure. The remaining 4.5% waste on this process is also being investigated as the company is now firmly working “Towards Zero Waste”!
A waste minimisation programme leads to improvements in material utilisation

STERLING COATED MATERIALS LIMITED
(100 employees)
Sterling Coated Materials in Hollingworth manufactures silicone coated release paper for labelling and other industrial and graphics applications. The process involves the precision application of coatings followed by finishing operations.

After achieving BS5750 accreditation, the next stage in Sterling's improvement strategy involved a consultancy assisted TQM and Waste Minimisation programme. The 12 month programme of management development and implementation (with some government funding through the Business Growth Training (BGT) scheme via Manchester Training and Enterprise Council) has yielded improvements in quality and materials utilisation worth in excess of £250,000 per annum (an ROI in excess of 250%) with a consequent increase in gross margins.

The waste minimisation aspects of the project included changes to set-up procedures, handling methods to avoid damage, test arrangements and the planning of orders to optimise paper roll utilisation. Project teams have now been set up to build on the achievements so far as part of Sterling's continuous improvement philosophy.

The reduction in the volume of landfilled waste amounts to 250 tonnes per annum. 1992 will see further similar reductions being achieved.

Improvements in quality and materials utilisation worth in excess of £250,000 p.a. (an ROI in excess of 250%).
A new process resulted in zero discharges

WEST MIDDLESEX PLATING
(19 employees)

This company in Uxbridge processes 15,000 batches of plated components per year and has a turnover of £600,000. Its product is electroplating and anodising of components produced by engineering companies and cadmium plating is an important part of its output.

The 1990 Environmental Protection Act foresees a reduction in cadmium discharges to zero and in the light of this and a pending move to a new site, West Middlesex Plating joined an engineering company in developing a new process with zero discharges. This enables the rinse water to be constantly recycled and the cadmium residue to be electrolytically removed and re-used. As part of technology for recycling monitoring systems were installed which accurately measure cadmium loss.

Discharges have been totally eliminated from the previous 16,000 grams per year. This has resulted in associated water charges being reduced by £35,000 per year. Other benefits include improved rinsing from the better water quality and reduced waste in other departments by applying waste elimination philosophy to the whole of the new plant.
The re-usable delivery system that also benefits the customer

The foil department at Rogerstone makes narrow, but large diameter coils of heavy gauge aluminium foil for automotive use.

In 1990, the cost reduction group in the foil department raised the question "why not a completely recyclable delivery system?" This development clearly required close liaison with the customer and with the cooperation of the Ford Motor Company it tried out ideas for recyclable storage and transportation racks.

Alcan had to produce a rack which ensured quality was maintained and was easy to handle at all stages in the process. In the end it was necessary to make them capable of being split at the car plant.

Alcan spent £60,000 on sufficient racking for transportation and storage but save on manufacturing costs of temporary packaging.

The customer no longer has to pay to dispose of 2,000 t.p.a of scrap wood, steel banding and plastic film to landfill.

BRITISH ALCAN ROGERSTONE
(900 employees)

The re-usable delivery system that also benefits the customer
Finding a market for by-products

UCAR CARBON LIMITED

Ucar Carbon Limited employs over 300 people in Wadsley Bridge, Sheffield, to produce large graphite electrodes and other products mainly for the metals industry (e.g. electric arc steelmaking). It is part of an American group and has the capability to process 20,000 tonnes per annum of graphite. Turnover in excess of £20m represents a market leading 50% share in the UK.

Raw materials used directly are petroleum coke, pitch and other additives. Large quantities of metallurgical coke are used as a packing and supporting medium in the manufacturing process. Graphitisation and baking (which involve high temperatures) are followed by machining to produce the final product.

The company has a policy to minimise all material waste, as part of its Material Conservation Programme. Recent projects relate to the graphite and coke dusts, fines and chippings. These materials are not hazardous, but disposal can be messy and landfill is becoming costly. By considering them as potential by-products (involving analysis and segregation), and identifying suitable markets, the plan was to turn a potentially costly problem into an income generator. The reduction in waste volumes from seven by-products is shown left.

The latest £60,000 project will involve material handling equipment and silo storage. The new blended by-product will be a form of fuel which will generate a net income, conserve natural resources, and reduce the waste by 2,500 t.p.a.

Reduction in waste disposal - tonnes

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>7,817</td>
</tr>
<tr>
<td>1989</td>
<td>6,398</td>
</tr>
<tr>
<td>1990</td>
<td>4,968</td>
</tr>
<tr>
<td>1991</td>
<td>4,872</td>
</tr>
</tbody>
</table>

- a reduction of 3,000 t.p.a.
Reprocessing waste into a saleable product

Reprocessing saves landfill disposal costs of £8,000 p.a. and the material reclaimed has a value of £40,000 p.a., so payback for new plant would be twenty weeks.

ADVANCE TAPES LIMITED
(250 employees)

Advance Tapes Limited of Leicester produces customised adhesive tapes for industrial and DIY use with a Group turnover of around £20 million per annum. Material cost is a major proportion of product cost.

The board have a waste minimisation policy with an objective of zero waste and therefore investigated the feasibility of recycling edge trim PVC produced at the Pinfold Road factory.

Extrusion and granulation trials produced material suitable for reworking in various applications, one of which is moulded PVC shoe soles.

The PVC granules have been produced using existing equipment, but dedicated new plant is being considered at a cost of £20,000.
Further examples of companies practising waste minimisation

A H Marks & Co Limited, Bradford
British Polythene Industries PLC (Alida Packaging) Derbyshire
Bonar and Flotex Limited, Ripley
Bowater Containers, Hinckley
Bayer UK, Bromsgrove
Contract Chemicals Limited, Merseyside
Kooltherm Ltd, Glossop
Mebon Limited, Sutton in Ashfield
Northern Cullet, Bradford
Pilkington Glass - Watson Street Plant, St Helens
PPG Industries (UK) Ltd Fiber Glass Division, Wigan
Royal Ordnance, Blackburn
Stanley Smith & Co Plastics Limited, London
Vencil Resil Ltd, Humberside.
FUNDING

“Better World Better Business”: Grant Support for Environmental Research and Demonstration. Published by DTI, 1991
Available from DTI offices or DTI Enquiry Point telephone 0800 585 794.

“EC Funding for Environment Related R&D”: A guide to EC Programmes and support. Published by DTI, 1991. Available from 071-215 1613

LEGISLATION

Available from DoE, Room A127, Romney House, 43 Marsham Street, London SW1P 3PY. Tel: 071-276 8391.

“Integrated Pollution Control - A Practical Guide”
Available from DoE, Room B241, Romney House, 43 Marsham Street, London SW1P 3PY. Tel: 071-276 8747.

Available from HMSO £5.

GENERAL

Published by DTI, 1991. Available by calling 0443 821 877

WASTE MINIMISATION GUIDES

CBI “Reducing the Burden of Waste - Guidelines for Business”
Write to CBI Environmental Management Unit, Centre Point, 103 Oxford Street, London WC1A 1DV.

IChemE “The Waste Minimisation Guide”
Available from Derryn Farrar (IChemE) Tel: 0788 578214.

There are also a number of waste minimisation guides issued by government agencies of other countries, such as the Waste Minimisation Opportunity Assessment Manual, available from the United States Environmental Protection Agency (EPA 625/7-88/003)
Help for business

Do you want specific information on techniques to reduce waste?

Yes

No

SORRY - WE CANNOT HELP YOU.
ENVIRONMENTAL HELPLINE
The DTI’s enquiry point offers advice to business on environmental conferences and seminars, technical matters, existing legal requirements and proposed new standards. It draws on the experience of DTI’s research agencies and other government departments. A charge is only incurred if your enquiry takes longer than four hours to deal with.

Ring 0800 585794. Your call is free.

ENTERPRISE INITIATIVE
Consultancy help under DTI’s Enterprise Initiative gives most small and medium sized firms access to assisted consultancy in key management areas. These include business planning, design, financial and management information systems, manufacturing and services systems, marketing and quality. It can be used to obtain expert advice on a range of environmental issues related to product design and manufacture, including waste minimisation.

For more information ring 0800 585 794 or contact your local DTI office, the Scottish Office or the Welsh Office direct (see pages 27-30).

DEMOS: DTI’s Environmental Management Options Scheme
The main aim of DEMOS is to promote the widespread adoption of technologies and “best practice” techniques with broad potential for environmental benefits. Funding of up to 50% of eligible costs is available for projects that either prove the practicability of new techniques or illustrate best practice based on proven techniques.

For more information ring Ian Gibbons on 071-215 1065.

EUROENVIRON
This is a programme within the EUREKA framework and funded by the DTI. It aims to address European environmental problems through collaborative R&D projects involving participants from more than one western European member country. The DTI will help applicants to find partners and will provide up to 50% of funding of project costs.

For more information ring Richard Waskett on 071-215 1062.

ETIS: Environmental Technology Innovation Scheme
ETIS is run jointly by DTI and DoE. The main aims of ETIS are to encourage innovation, improve environmental standards and help users or suppliers of environmental technology to become more competitive. ETIS is principally aimed at collaborative projects, up to 50% of the cost of which may be funded. Single company projects, if they fall within an ETIS priority area and have the potential to set higher regulatory standards, may receive up to 25% funding.

For more information ring Chris Regan on 071-215 1051.

SMART: Small Firms Merit Award for Research and Technology
SMART is an annual competition open to individuals or businesses with fewer than 50 employees. It offers grants up to £45,000 in Stage 1 and £60,000 in Stage 2 for innovative technological projects with commercial potential.

Further details are available from DTI Regional Offices, the Scottish and Welsh Offices and the Department of Economic Development, Northern Ireland (see pages 27-30).

SPUR: Support for Products Under Research
SPUR is a near market R&D Scheme for single companies with up to 500 employees. It gives support for projects that demonstrate a significant technological advance for the industrial sector concerned. It applies to process as well as product development. SPUR is a general scheme, but environmental technology projects may be supported.

For more information contact your local DTI office, the Scottish Office or the Welsh Office direct (see pages 27-30)
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London SW1V 1PT
Consultancy Initiatives
071-627 7800
Other enquiries
071-215 0572
DTI SOUTH-EAST
(READING)
Berkshire, Buckinghamshire, Hampshire, Oxfordshire and Isle of Wight.
40 Caversham Road
Reading RG1 7EB
All enquiries
Reading 0734-395600

DTI SOUTH-EAST
(REIGATE)
Kent, Surrey and Sussex.
Douglas House
40 London Road
Reigate RH2 9QP
All enquiries
Reigate 0737-226900

DTI SOUTH-WEST
Avon, Cornwall, (including Isles of Scilly), Devon, Dorset, Gloucester, Somerset and Wiltshire.
The Pithay
Bristol BS1 2PB
Consultancy Initiatives
Bristol 0272-308400
Other enquiries
Bristol 0272-272666

SCOTLAND
Consultancy Help
Enterprise Services Scotland Ltd
Apex 1
99 Haymarket Terrace
Edinburgh EH12 5HD
031-313 6200.

Other Initiatives
Scottish Office Industry Department
Alhambra House
95 Waterloo Street
Glasgow G2 6AT
041-248 4774
(24 hour answering service)
WALES
Consultancy Help
Enterprise Initiative Section
Welsh Development Agency
Business Development Centre
Treforest Industrial Estate
nr Pontypridd
Mid Glamorgan CF37 5UR
Consultancy Initiatives
Treforest 0443-841200

Other enquiries
Cardiff 0222-823185

Mid Wales
Dial 100 and ask for
Freefone New Wales
Business Advisory Service
Mid Wales Development
Ladywell House
Newtown
Mid Wales SY16 1JB

NORTHERN IRELAND
Department of Economic Development
Northern Ireland
Belfast 0232 763244

Industrial Development
Board for Northern Ireland
Belfast 0232-233233
Schemes of assistance available to
firms in Northern Ireland are
different from those available
under the Enterprise Initiative in
Great Britain. Firms based in
Northern Ireland should contact
the Industrial Development
Board for further details.
With thanks to
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