



行政院所屬各機關因公出國人員出國報告書

(出國類別： 考察)

考察英國資源再利用、廢照明光處理
及都市垃圾處理出國報告

服務機關：行政院環境保護署

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壹、 前言

台灣四面環海，土地面積有限，地小人稠，廢棄物的處理為不容忽視的公共議題之一；而英國亦為一海島型國家，土地資源有限，多年以來為廢棄物處理建置了相關法規、制度，並開發了許多先進的處理技術。而我國目前推動之「垃圾全分類零廢棄行動計畫」中，新增公告資源回收項目，持續評估考量新增公告具有資源回收再利用價值及對環境污染危害性大之物品項目，降低垃圾量，增加資源回收率為本署重要廢棄物管理政策之一；而為達此一政策目標，資源回收為達到此一政策目的工具之一，其餘如垃圾強制分類、垃圾不落地、垃圾費隨袋徵收均為垃圾零廢棄的執行手段；而英國完善的法規制度、管理模式可作為我國推動「垃圾全分類零廢棄行動計畫」政策之參考。

我國於早期農業社會時期已有拾荒者收集廢紙、廢容器後販賣予古物商再交由紙廠及塑膠廠再利用，為資源回收工作之濫觴。而在社會生活水準提高，民

眾環境保護意識提昇，且世界潮流各種產品綠色設計的觀念漸受重視，各種日新月異產品也被要求應予回收處置，以達廢棄物零成長的目標。本署在執行廢棄物處理及資源回收工作上，除了整體制度的不斷革新外，更希望透過國外實地考察的方式，參採世界先進國家的制度、法規、管理方式及相關處理技術等經驗，對於都市垃圾前置分類處理，垃圾減量工作提供可借鏡參採之處。此次參訪除提供本署預計新增公告回收項目進行檢討與實地了解外，並對有害事業廢棄物處理及回收提供一套有效的管理模式。同時透過於英國倫敦市區的實地考察、參訪及研究，了解該國整體都市垃圾資源回收制度及管理辦法之進行，以作為施政參考

貳、成員名單

行政院環保署廢棄物管理處處長陳雄文

行政院環保署基管會環境技術師鄭啟璞

行政院環保署基管會助理環境技術師盛茂仁

參、行程及內容

- 一、 九十二年十二月七日上午九時十五分搭乘長榮 BR 67 班機於泰國曼谷轉機，於倫敦時間十二月七日下午七時十分到達倫敦希斯洛機場。
- 二、 十二月八日參訪 Cleanaway Rainham Landfill 的運作，上午先參觀都市垃圾進掩埋場前處置資源回收廠及出貨設施，下午則參觀其堆肥處理廠及其廢棄物掩埋場。
- 三、 十二月九日上午參訪 Cleanaway WEEE facility Bushey，針對電子電器及日光燈資源回收做法及處理的了解，下午參訪 Cambridge Hazardous Waste Management Center，針對其有害事業廢棄物資源回收部分做法及運作交換意見。
- 四、 十二月十日原訂由倫敦飛往曼徹斯特，因倫敦大霧導致多數班機取消，本次參訪原定班機英航 BA 1398 亦取消航程，後續班次均取消，因此滯留倫敦。

- 五、 十二月十一日原定由曼徹斯特出發參觀 High Temperature incinerator Ellesmere Port 及與曼徹斯特當地官方代表會晤交換意見，因行程修正，停留倫敦，直接與倫敦 Cleanaway 公司聯繫，針對廢棄物處置及相關土壤污染防治策略及個案資料交換意見，並參訪倫敦市區域資源回收分類做法。
- 六、 十二月十二日原定參觀 MRT 公司於曼徹斯特廢照明光源處理廠，然後搭乘英航 BA 1389 班機返回倫敦，如前述飛機班次取消，改停留倫敦並做資料整理。
- 七、 十二月十三日由倫敦出發返回台灣，經泰國曼谷，台北時間十二月十四日抵達桃園中正機場。

肆、心得摘要

本次考察主要以英國現行資源回收處理系統為主要考察對象，針對歐盟環境政策指示，英國配合歐盟永續發展第五項環境行動計畫（Fifth Environmental Action Programme）有關永續發展目標，特別由一般

廢棄物處理模式，進而對包裝物品的資源回收，統合全面性廢棄物管理，在發展出對於特殊有害物質回收處理管理，包含廢電子電器及廢日光燈系的處置。藉由英國可寧衛公司在英國發展的歷程及其處理廠運作的考察，以確切瞭解英國相關資源回收政策管理發展模式，另參考瑞典 MRT 公司在英國技術輸出模式，以了解英國相關照明光源處理及管理方式。

一、英國可寧衛 (Cleanaway) 公司

可寧衛之母公司「布萊堡工業集團」為一跨國公司，創始於 1875 年，它是一個以澳洲為總部同時在澳大利亞及英國公開發行股票之上市公司，布萊堡工業集團旗下事業營運範圍遍及廢棄物管理 (Cleanaway)、工業服務(BIS)、棧板租賃(CHEP) 以及資料檔案之貯存管理(Recall)等，是著名的多角化經營公司，提供各方面之物料管理及工業服務予工商業界、政府單位及一般大眾。其中廢棄物管理事業即以可寧衛 (Cleanaway) 為名。

英國可寧衛公司承繼其澳洲母公司廢棄物管理模式，一般廢棄物處理開始與官方合作，於廢棄

物掩埋場管理，進而進行資源回收工作，設置掩埋前置處理廠，然後提出全面廢棄物管理概念，從而發展生態服務概念，包括了綠色肥料，廢電子電器產品處置，廢機動車輛處置及廢日光燈等處置管理，其服務範圍包含配合市府廢棄物處理的四個掩埋場，及物料回收廠，以及有害廢棄物處理高溫焚化爐（相關資料見附錄一）。

本次參觀地點包括在設置在 Rainham 的廢棄物掩埋場前置都市廢棄物資源回收處理廠，以及配合生態服務（Eco service）的堆肥處理廠；電子電器處置廠位於 Bushy，同時也包含了日光燈處置廠，劍橋（Cambridge）的有害廢棄物管理中心為本次參觀重點。當然倫敦市的垃圾分類、資源回收系統也為我們實地參觀了解的樣本。

（一）Rainham Landfill 前置都市廢棄物資源回收處理廠

Rainham 早期主要規劃為一般廢棄物處理廠，搭配倫敦都市廢棄物處置所建立之掩埋場（如附

圖一、二)，由於資源回收及其全方位廢棄物管理觀念要求，引進前置都市廢棄物資源回收處理廠（如附圖三、四），其作業系統由進廠分類開始，主要類別仍以紙類（card & paper）為大宗（如附圖五），因為在英國的都市廢棄物可回收物質分類，紙類就佔了 35%，其次是瓶瓶罐罐的塑膠類，玻璃類及金屬類未蒐集至該處置廠，玻璃類進入玻璃廠再製或原型再利用，金屬類為冶鍊再生。

其處理方式為半自動化分類，需要部分人工篩選（如附圖六），處理模式與國內現階段台北市位於福德坑及高雄市位於大發工業區分類廠，委辦民間業者進行分類模式雷同，惟倫敦市因應區域分配，非單一廠家接受政府委託處置，還由其他家公司如 Biffa、Camden 等代為處理回收物質。其處理流程為兩三道複式的分類篩選設備，以及打包（如附圖七、八）。

（二） Rainham 堆肥處理廠

相對於都市廢棄物資源回收處理廠，在一般

廢棄物中，有許多為 Green Waste，屬於庭院廢棄物，如雜草樹枝一類物質，這是英國一般廢棄物的內容與台灣不同的地方，庭院廢棄物（Garden Waste）和廚餘占都市廢棄物中可回收物質比率為 36%。

為因應此廢棄物型態，可寧衛公司除了設置前置都市廢棄物資源回收處理廠外，並於該處設置一肥料處理廠，所用料源以 Green Waste 為主，輔以廚餘及其他有機廢料，甚至部分為工業用木製廢品（如附圖九、十），在料源成分單純固定及作業系統化下，其產品已經達到商業化，市場銷售情況良好（如附圖十一），而為推廣其有機肥料及回收作業，甚而建置之示範作業區（如附圖十二），所有步道及圍籬均使用再生物製作，肥料亦使用其廠內生產廢料製造生產，達到零廢棄效果。

（三） 廢電子電器物品處理廠（WEEE facility Bushey）

Bushey 的處理廠包括了廢電子電器的處理及廢

日光燈管的處理，可寧衛公司的服務項目內，所謂的生態服務 (Eco Service)，及包含了日光燈管 (Fluorescent Tubes)、電子電器設備 (IT Equipment) 等的處置。

廢電子電器處置廠實際上應為分類管理廠，而非處理廠。其位於郊區住宅區附近，因為簡易分類，以物流管理為主，其所收受廢電子電器類以資訊物品為主，包括印表機、硬碟、主機、監視器等一類物品 (如附圖十四)，其他如主機板類亦在其回收範圍 (如附圖十六)，廢家電物品並未在其回收範圍內，應是循舊貨市場導再利用或輸出至鄰近國家處理。目前國內廢資訊類公告應回收項目有筆記型電腦、主機板、硬式磁碟機、電源供應器及列表機等。其主要工作在管理模式，運作模式亦雷同國內資源回收廠，只是其規模及制度較大，在配合英國政府統合規範下，運送及蒐集過程以一般廢棄物登記制作業，未入焚化爐則無有害事業廢棄物認定問題，收集分類後送專業單位再進行進一步的回收再利用，無處理後衍生

廢棄物後續處理問題。

廢日光燈處理廠部分，其所使用設備為濕式混合粉碎分選設備（如附圖十七），粉碎完後分選如鋁蓋及金屬等部分均可分離（如附圖十八），鈉管玻璃部分的純度達 95%，可再回料供給日光燈製造廠（如附圖十九），廠內依環境法規規定進行監測，所使用偵測儀器為美製手提式簡易移動汞偵測儀（如附圖二十），與國內現階段直管日光燈處理廠使用設備相同，惟國內目前僅處理直管日光燈管，而處理方式為破真空後以火焰切割廢燈管金屬部分及鉛玻璃，再將螢光粉吹除收集的做法不同，如國內擬進行日光燈全面回收，現階段設備不敷使用，針對其他類型，彎管、圓管等類日光燈管，可參考英國目前之粉碎濕式回收處理再利用方式。

（四） 劍橋有害廢棄物管理中心（Cambridge Hazardous Waste Management Center）

在發展全方位廢棄物管理觀念下，對於有害事

業廢棄物的管控，英國採處理許可制，對於管制物品，以物品編號聯單管控，處理單位可以繳交規費購買聯單號碼，即可逕行與相關單位接洽，並對產出廢棄物再利用處置或處理，政府依聯單號碼追蹤控管廢棄物流向。

可寧衛公司發展相關業務，設立廢棄物管理中心（如附圖二十一），該中心對進廠廢棄物進行分類、測試（如附圖二十三、二十四），並進行處置，目前以油品及化學藥劑類較多，以促使各類有害廢棄物能夠再利用，至於無法處置再利用，則進行焚化或其他方式處理。

二、MRT system 公司

（一）MRT 公司自 1979 年，在瑞典開始發展對含有水銀產品的處理技術研發，發展出較先進的汞蒸餾設備，對於水銀再生技術，歷經了二十年的商業運用，隨著照明工業發展技術的變化，其先後對於日光燈管的處理技術有著新的發展，包括粉碎、分離技術，以及結合後面蒸餾分離的吸附技術，從早期的直接粉碎，再到後期直管中端

切割設備等等，都是其長年專注研究發展出來的。

(二) 台灣至 2004 年為止，有三家日光燈處理廠購買 MRT 公司的直管日光燈切高處理設備，配合其後端水銀回收設備的建置，2003 年處理直管日光燈 130 餘萬支，達 7,892 公噸，而本次預定參觀之英國曼徹斯特日光燈管處理廠，亦是採用 MRT 公司的 EMC5000 設備，雖然此次因班機取消，無法達到參觀目的，但相關資訊及資料仍進行蒐集並分析（如附錄二）

三、英國資源回收制度

資源回收工作多由垃圾分類處理開始，繼而進行相關物品處置，歐洲國家多以包裝材管理為先，繼之以廢機動車輛處置，廢電子電器管控為思考，英國也不例外。

(一) 法規沿革

1972 年以前，英國於廢棄物處置並無特別法規予以規範，僅有 1936 之「公共衛生法（The Public Health Act）」，1972 年「有害廢棄物貯存法

(Deposit of Poisonous Waste Act) 」，1974 年「污染控制法 (The Control of Pollution Act, COPA) 」公告實施後，英國才有正式規範廢棄物運作之相關法規。

資源回收方面法規是以1990 年之「環境保護法 (The Environmental Protection Act, EPA) 」為主體，其中沿用「污染控制法 (COPA) 」一部分條款 (包括許可證制度) 至今，另外設置廢棄物法規主管機關 (Waste Regulation Authorities, WRAs)、廢棄物處置主管機關 (Waste Disposal Authorities, WDAs) 以及廢棄物收集主管機關 (Waste Collection Authorities, WCAs) 三機關管控。

目前英國現行回收制度法源依據除歐盟之包裝指導準則 (EC Directive on Packaging) 外，尚有英國於1995 年公布之「環境法」與1997 年依據環境法訂定公布之「生產者責任義務法 (Producer Responsibility Obligation Regulation) 」。

(二) 政府管控

英國政府曾於1993年7月提出「生產者責任 (Producer Responsibility Initiatives)」邀集包裝與其他廢棄物相關業者，討論由業者負起回收責任之可行性。當時除包裝廢棄物為強制性回收外，其餘廢棄物項目仍屬於自願性回收。但自2000年9月18日起，廢汽機車亦必須實施「生產者責任」，並訂定2006年回收再利用之比例為85%。而廢電器用品與廢電池則是現階段將實施「生產者責任」之項目。依據歐盟WEEE指令要求，零售商必須免費提供廢家電的回收服務。英國零售業聯盟(BRC)認為，自行設立零售商遵法計畫可能較具成本效益。依據其規劃，在1000萬英鎊的零售商基金中，500萬英鎊將補助地方政府提升回收WEEE的能力。

配合業者責任管控，尚有訂定業者承諾監控制度(附錄三)，業者的登記，回收處理責任承諾，都由國家廢棄物登記單位(National Waste Registration Unit)登錄並定期不定期追蹤成效，但原則是凡被公告應登記業者均需依規定申報登

錄。

而在地方政府方面，以愛爾蘭當地為例，該市家庭垃圾的回收率已達51%，亦很重視都市垃圾問題，市府方面除設置免付費電話服務專線外，仍不定期突擊檢查深夜的外帶餐飲店附近亂丟垃圾情況之污染點。

政府除回收組織鼓吹外，也有計畫的推動相關回收市場提昇，如Waste and Resources Action Programme專案計畫（附錄四），是為全國性資源回收計畫，配合責任業者承諾監控機制，是為促進其英國國內資源回收工作的管控。

（三）回收系統

為使上述共同回收體系可有效之運作，英國政府認為應有一主要之回收組織規劃全國性之回收計畫，並設置再生處理廠，使包裝廢棄物可達到妥善處置之目標，同時「生產者責任義務修正法」亦鼓勵包裝業之相關廠商加入共同回收組織。而共同回收組織則以VALPAK 為最大、最具規模，旗下之廠商約佔全英國之60%。除了VALPAK 共同回

收組織外，尚有其餘共同回收組織，而各回收組織最少必須有2家廠商加入。1997年時，由於法令之規定，因此大部分之廠商均加入共同回收組織，1998年時登記之廠商數共計3857家。VALPAK為其中最大之組織。而「包裝回收通知」(PRN's: Packaging Waste Recovery Notes)機制，對於資源回收再利用的系統業者，成效顯然與預期有相當大的落差，原因是英國現行法令，並未明令要求所有的再生處理業者，必須供予廢棄物供應商PRN，這造成非系統業者得以投機的方式規避回收的支出，相對的利潤就可以增加。

相對於官方及民間業者的共同努力，也有半官方組織的專案進行資源回收的鼓吹，如倫敦地方區域的London Remade Programmer專案（附錄五），其由地方政府推動，結合政府力量及各相關處理業者，作為推動地方資源回收工作的導引。

因此包裝業者為因應「生產者責任」，乃組成「生產者責任團體（Producer Responsibility Group, PRG）」，並同時提出相關之執行重點。而對於「生

產者責任」回收制度之執行方式，多數業者贊同以「共同責任」之方式，確立各層次包裝業者之責任分擔比例。所謂「共同責任」意指各層次包裝業者均需負起回收包裝廢棄物之責任與義務。依廢棄物與資源行動計畫(WRAP)研究結果顯示，過去兩年來英國國內廢塑膠瓶回收率增加50%。在去年底廢塑膠瓶回收量達到每年2.43萬噸，其中75%來自於家戶與街頭的收集，25%則是退瓶計畫，預估2006年時的回收量可望超過3萬噸。另外，全國62%的地方單位現已提供塑膠瓶收集設施，並較2002年增加24%。

伍、結論與建議

本次行程以都市廢棄物處理，含有害家庭廢棄物及有害事業廢棄物的回收處理管控及有效分類及處置方法為參訪重點，在 Rainham 參訪都市垃圾收集分類回收處理廠複合型作業，都市垃圾於簡單前置分類後進入回收廠，經磁選、比重及人工分類後，大量原生廢棄物質得

分送至各再生工廠再製成新產品，而分類部分以紙類、塑膠類為大宗，另廚餘與其他大量園藝綠色廢棄物則再製為肥料，相關設施與廢棄物掩埋場運作結合，是為其特色。

對於有害事業廢棄物部分的回收再利用部分工作，此行於劍橋（Cambridge）有害廢棄物管制中心，對於其處理及管制模式也有所心得，整體而言，應是其前置規劃的妥適，對於法制作業的完備，使其管制模式明確有效，鑑於此，特別針對其管制模式也進一步的探討。

一、英國現行資源回收制度檢討

英國於廢棄物之管理策略上以廢棄物減量為第一優先順位，其次為再利用、資源回收以及最終處置。各材質之回收率均有顯著之提升，分別為鋁製品之 53%，金屬類 40% 以及紙類 37%。

「生產人責任義務法」對於包裝廢棄物回收率之目標設定為 50% 至 65%，回收方式包括物質回收、能源回收及循環再利用。其中物質回收再利用之比例必須為 25% 至 65%，循環再利用之比例不得低於 15%。而且每五年必須進行過去實行成效之

檢討與設定未來五年回收率之目標。而 1999 年所實施之「生產者責任義務法」與當初公告時已有許多之改變，特別是分別訂定回收與循環再利用之目標，於 2000 年進行修正後，「生產者責任義務修正法」所訂定之逐年回收與循環再利用之目標，均較「生產者責任義務法」所訂定之目標為高，如回收率由 1999 年之 52% 提高至 2000 年之 56%；循環再利用率由 1999 年之 16% 提升至 18%。

其管理模式由業者提報登錄，政府除管控外，也針對市場需求，利用官方及民間相關資源來設定計畫，以提昇英國境內資源回收市場的競爭，著眼點不僅是英國境內的資源回收、廢棄物減量，同時也有將歐洲境內其他各國的廢棄物處置及資源回收市場考量於其中，因此政府方面直接投入資源回收工作部分的角色除了監督管控以外，也有提昇輔導發展的角色。

二、差異比較

相較於英國在資源回收的執行，我國的執行方法，相關比較說明如下表

(一) 系統法規差異

	我國	英國
法規	廢棄物清理法 資源回收再利用法	歐盟包裝指導準則 (EC Directive on Packaging) 1995年公佈「環境法」 生產者責任義務法 (Producer Responsibility Obligation Regulation)
責任主體	業者繳費政府補貼 回收處理業執行回收清除工作	生產者責任義務法規範強制 業者回收責任
管理模式	公告回收項目，向製造輸入業者徵收回收清除處理費（法理上為特別公課），補貼回收處理業者	以共同責任方式，確立分層次包裝業者責任義務分擔
執行機關	由行政院環保署資源回收基管會統籌各類回收再利用工作	業者組成回收組織規劃統籌聯合，可自行成立或聯合，至少有兩家廠商加入
執行成果	2003年之整體回收率達 17.90 %	2000年回收率達 56%，循環再利用率達 18%

(二) 處理技術差異

我國目前廢電子電器處理廠共計有 7 家 8 個處理廠，其處理方式為半自動化將回收後之廢電子電器物品拆解後處理，流程十分重視有害廢棄物之處理，先行分離處理有害廢棄物及難處理部分，以便於進行後續粉碎、分離工作。例如：含有冷媒之廢電冰箱與廢冷氣機之拆解原理為，自壓縮機中吸取氟氯碳化物及廢礦油，並將壓縮機先行拆除，再經密閉環境下進行中間破碎及粉碎處理，最後將其成份中含鐵、銅、鋁金屬、聚苯乙烯、塑膠材料及 PUR 隔熱材等可回收物質回收，2003 年稽核認證回收處理量為 1,283,213 台。我國已有整廠處理規模，而英國仍為分割、分段之拆解處理。

我國目前廢照明光源處理僅有日光燈直管部分，共計有 4 家處理廠，採乾式處理，3 家引進 MRT 公司設備，1 家為與工研院技術合作自行研發，其處理流程為以火焰切割廢日光燈鋁蓋及鉛玻璃，以活性碳收集汞蒸氣，以袋式集塵器收集含汞之螢光粉，並將含汞之螢光粉蒸餾後回收汞，2003 年稽核認證

回收處理量為 7,891,706 公斤。英國目前採濕式粉碎處理，處理項目包括彎管、圓管等類日光燈管，處理後有含重金屬之廢水需作進一步處理。

我國目前推動廚餘回收，將家戶廚餘分為「養豬廚餘」、「堆肥廚餘」可作為飼料及植物肥料。而英國因人民飲食習慣與我國不同，含油及含水之食物較少，大都是庭院廢棄物（Green Waste）製作堆肥，作為植物肥料。

我國目前台北市、高雄市資源回收物由清潔隊回收後委由廠商先行分類處理，有廢塑膠容器、廢玻璃容器、廢乾電池、廢機動車輛、廢輪胎、廢鉛蓄電池、廢電子電器、廢資訊物品、廢日光燈直管等種類繁多，分類後再送至處理廠再利用。而英國目前於資源回收設置前處理廠僅回收紙類及庭園廢棄物，種類較少，其庭園廢棄物作堆肥再利用已商業化，市場反應良好。

三、參考應用部分

英國廢棄物處理及資源回收制度及管理方式，有以

下幾點值得我國參考借鏡

(一) 法規制度完備

英國在界定責任分工部分，在法規上有非常明確的定義，除了因歐盟的規範非常明確外，其本身法規制度健全也是因素，對於應進行回收的主體，應管制的的主體，應執行控管的主體，都有非常明確的界定。因此在管控上不會有政府機關被質疑所謂執行不力的說法，應負起責任者主體已經非常明確。

英國政府本身於回收物進處理廠前進行稽核，並將申報義務與認證相結合，與我國目前於資源回收四合一制度中委由第三公正稽核認證團體進行之稽核認證制度不同。

英國地方政府負責收集、清運工作，中央統籌辦理廢棄物處置工作。我國廢棄物清理法於九十年一月修正後，各地方環保局為廢棄物處理執行機關，中央統籌辦理廢棄物處置工作法規設計與英國類似。

我國目前現階段法規部分定義在管理，但政府

仍負有實際執行義務，因此不僅責任業者的監控成為政府機關應負責任，回收處理業部分的監控亦同，乃至於資源回收成效成為政府的責任，而業者以為繳交回收清除處理費就已盡了責任，所以應加重責任業者應負之義務。

對於回收系統已行之有年，二次料有其市場價格，為節省社會成本，尊重市場機制，廢包裝用保麗龍之回收係由本署透過與民間責任業者簽訂行政契約方式給予其自行辦理回收清除處理及再利用工作，使責任業者真正負起回收清除處理責任。

（二）非強制性加入共同回收組織

英國生產人包裝廢棄物回收責任為一方面鼓勵業者參加共同回收組織，另一方面同時允許業者自由選擇由「個別途徑」進行回收處理之雙軌制。該國在包裝廢棄物規則研擬過程中，曾考慮強制所有管制業者加入全國性（獨占性）共同回收組織方式，然未被採納。

而我國在採行資源回收四合一制度成立資源回收管理基金後，民間自發性的共同回收組織功能已被取代，公告應回收廢棄物均由責任業者繳交回收清除處理費後補貼回收處理業者從事回收處理及再利用工作。

（三）回收義務目標內容明確

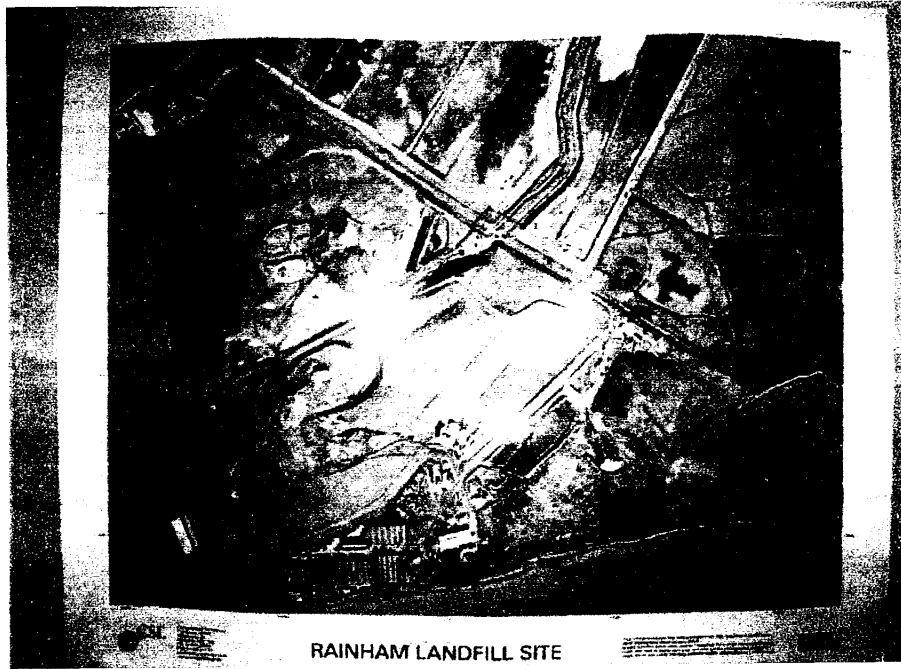
英國廢包裝廢棄物處理規則已定義清楚給予包裝及相關業者明確的責任，含製造、加工、包裝、批發零售、進口，以回收包裝廢棄物的責任，並明確規劃各個業者回收義務與再循環義務計算公式，電子電器產品及機動車輛部分亦是循同一模式進行長期規劃作為，因此業者非常明確瞭解自身應負起責任，並主動執行回收處理工作，無論是聯合或是各自努力。

而政府方面就依循其權責分工，廢棄物處置機關與廢棄物收集機關分立，再加上生產者登記管理單位，相關資料在申報審核及自動管理上確實非常明確，另一方面政府以輔導模式鼓勵其

與國外競爭的情形，亦顯現其將資源回收工作視為產業循環的一種機制，政府所扮演的角色較不易被扭曲。

而我國於廢棄物清理法中亦規定販賣公告應回收物業者應設置資源回收設施，並執行回收工作；課予責任業者除繳交回收清除處理費之責任外，另應於公告應回收物上標示回收標誌。

陸、附圖



附圖 1



附圖 2



附圖 3



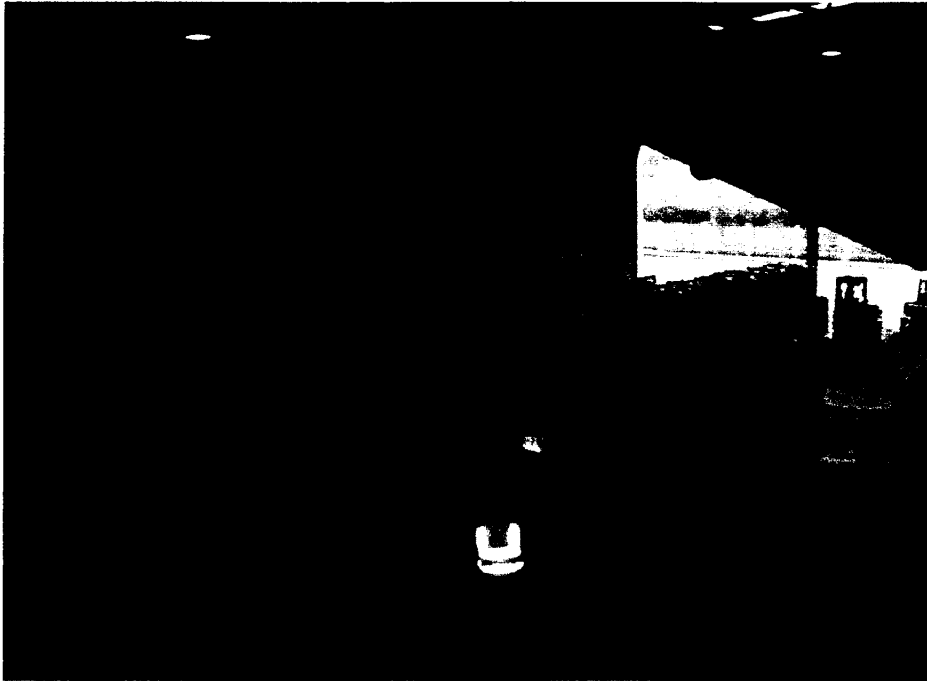
附圖 4



附圖 5



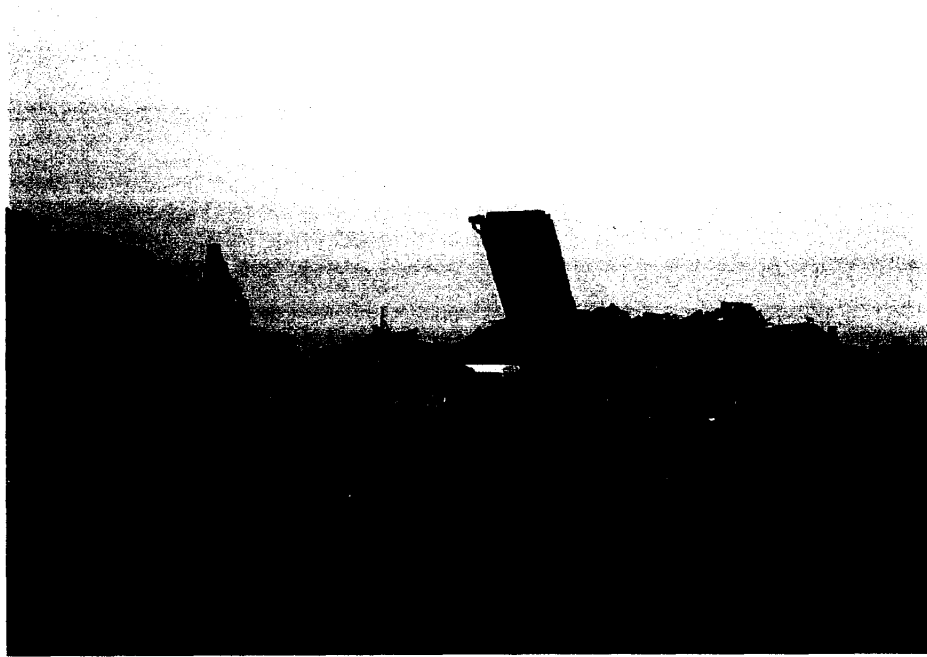
附圖 6



附圖 7



附圖 8



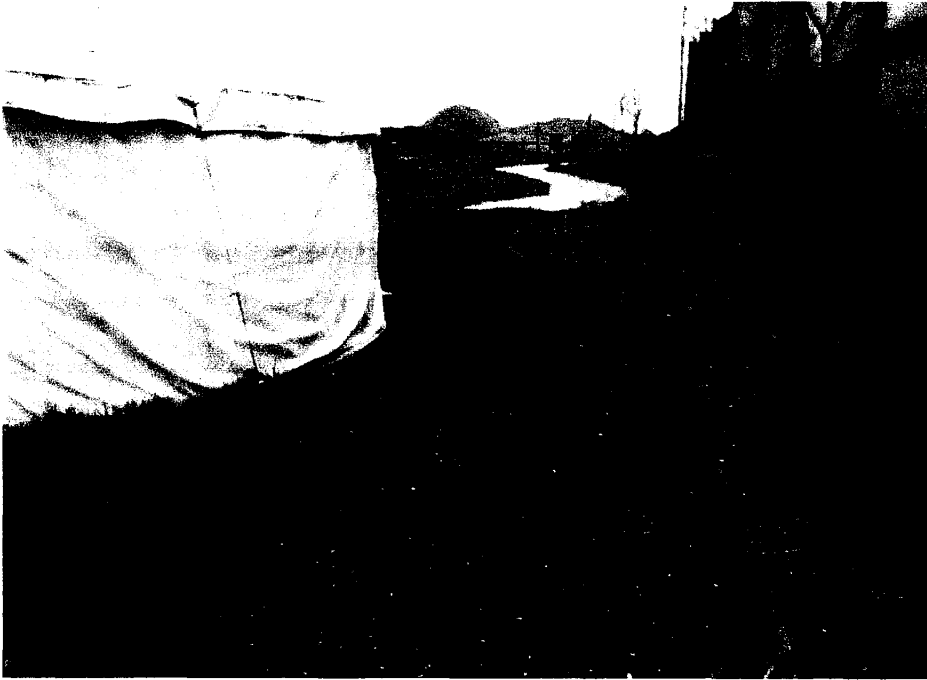
附圖 9



附圖 10



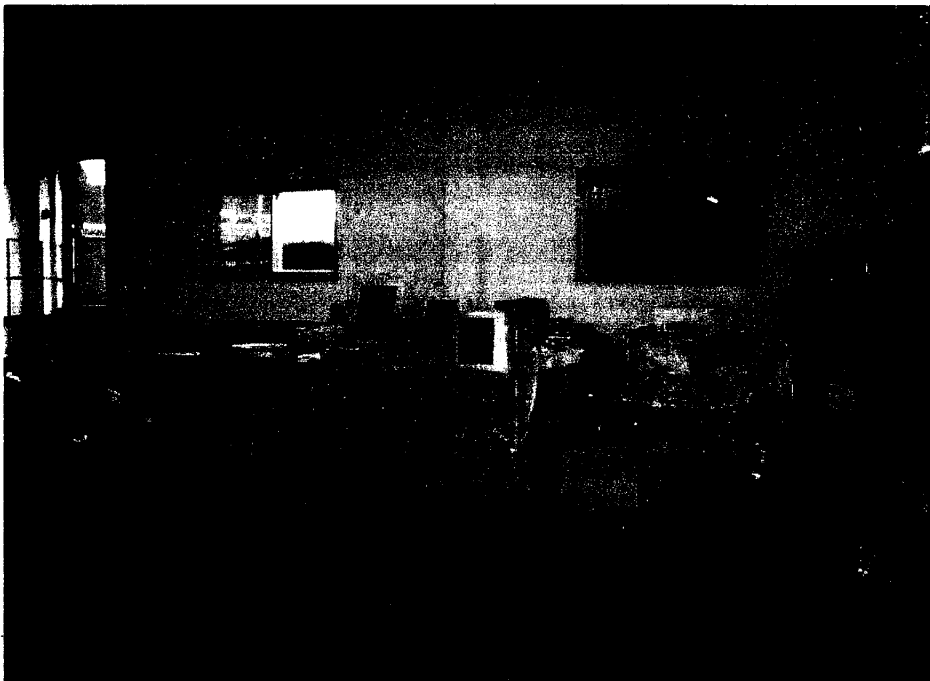
附圖 11



附圖 12



附圖 13



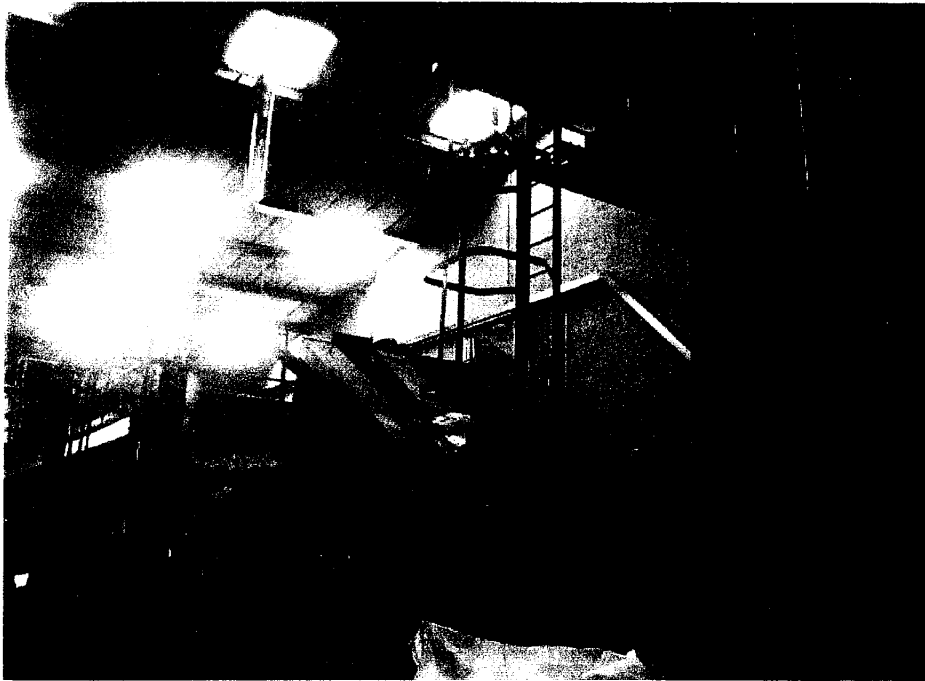
附圖 14



附圖 15



附圖 16



附圖 17



附圖 18



附圖 19



附圖 20



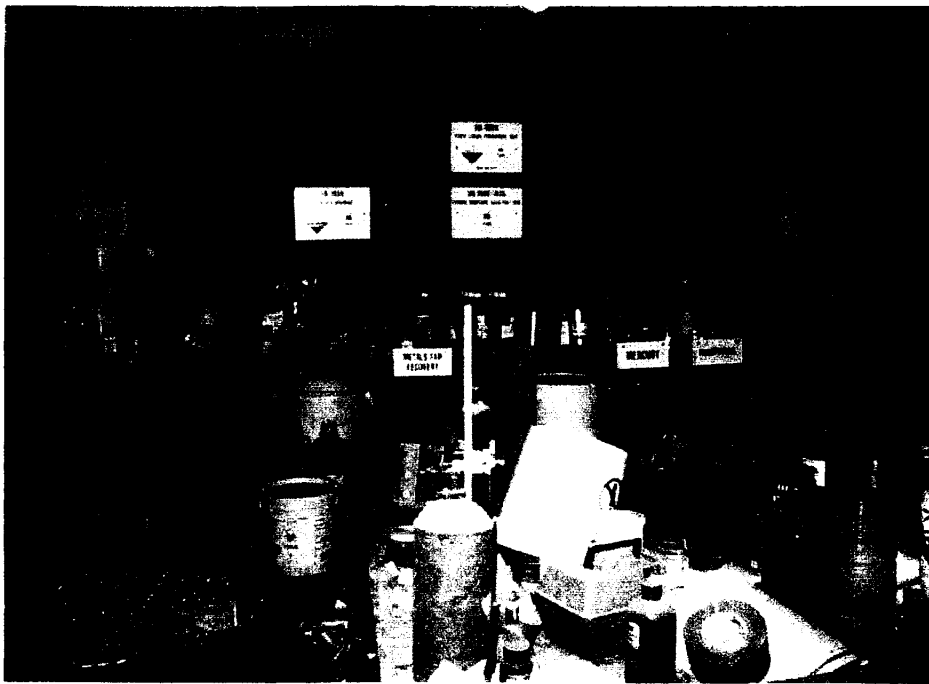
附圖 21



附圖 22



附圖 23



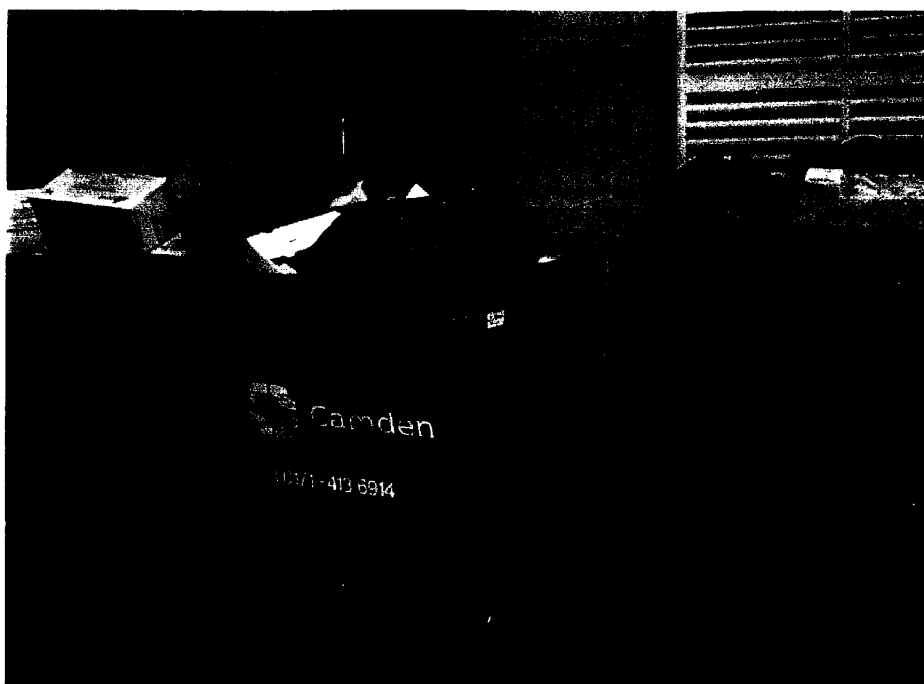
附圖 24



附圖 25



附圖 26



附圖 27



附圖 28



附圖 29




附圖 30

柒、附錄

**CLEANAWAY LIMITED
SPECIAL PROJECTS**

CAPABILITY OVERVIEW




Who are Cleanaway?

Cleanaway are owned by **Brambles**, an international industrial company, with a value of £2.6 billion.


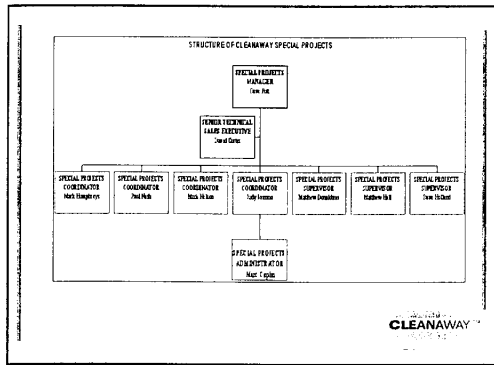

Brambles

- International operations
- Shipping
- Road transport
- Rail tanker operations
- Waste Management
- Pallet Pooling



Cleanaway Europe



- 12,000 employees
- Over 200 locations
 - 9 landfill sites
 - 6 composting facilities
 - 12 confidential waste plants
 - 41 material recovery facilities
 - 14 transfer stations
 - 5 chemical treatment plants
 - 5 reprocessing plants
 - 1 high temperature incinerator

Special Projects


Special Projects

- Extensive experience under the CDM (Construction Design and Management) regulations including full 'contractor management'
- Central focus on safety with the production of written method statements for all operations
- Environmental Decommissioning and Removal
- Specialist Packaging and Reprocessing
- Consultancy and Advice
- Environmental Land Clearance
- Contaminated Land Remediation


Special Projects

- CDM0 Design responsibilities including:
 - > Method Statements
 - > Risk Assessment
 - > COSHH
- Legal responsibilities and support from the Environment Department
- Environmental approval for all project activities
- Nominated Project Manager drawing on past experience and expertise within Special Projects
- Site Management available for day to day management of contract



Health and Safety

- Health and Safety is a primary starting point of all projects
- Health and Safety operational procedures include the environment and plant extensively
- Cost effectiveness including the provision of alternative price proposals
- Creation of a detailed bill of waste transfers and associated documentation
- Provision of a detailed project completion



CLEANAWAY™
Waste Management Solutions

Extensive Project Management Experience

Specialised Cleaning Operations	Other Operations
<ul style="list-style-type: none"> Task Cleaning Confined Space Entry De-Studging and High Pressure Jetting Tank Cold Chilling Dismantling Operations Particularly in Refinement Supply of Cleanroom required Demolition Operations Maximise Resource Recycling of Material Vessel Implosion and Gas Free Certification 	<ul style="list-style-type: none"> Pipe Work & Refractory Lagging Removal Laboratory Facilities including agreed Quality Control Procedures (Typically Steam Testing)

CLEANAWAY™
Waste Management Solutions

Comprehensive Task and Job Specific Risk Assessments

Prepared for all Special Projects operations



- Reviewing all potential hazards in the activity
- Consider potential risks to Cleanaway personnel, sub contractor, client and general public
- Outcome and Probability quantified
- Decision if risk is acceptable

CLEANAWAY™
Waste Management Solutions

Sample Contents of Method Statement

DRAFT METHOD STATEMENT

- Scope of Works
- Preliminaries
- Waste Description
- Operations
- Legislative Requirements
- Equipment

CLEANAWAY™
Waste Management Solutions

Special Projects

- Specialisation provided for each requirement
- Management of projects by a dedicated Project Manager responsible for contract from initial start up to completion
- Support of national facilities and waste management solutions of Cleanaway Limited
- Significant long term partnerships with suppliers, contractors and disposal sites throughout the UK
- Safety, Legislative Compliance and Cost Effectiveness as the key principles on which all methodology and procedures are based

CLEANAWAY™
Waste Management Solutions

CLEANAWAY™

Cleanaway Limited

Corporate Profile

Cleanaway Asia

Cleanaway Australia

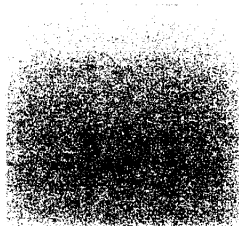
Cleanaway Germany

Cleanaway UK

Shareholder

News

Contact Us



Cleanaway's services in the UK encompass the entire waste management spectrum, advice on best practice to handling and disposal of hazardous wastes. It operates one of the largest collection services for industrial, commercial and trade waste in the UK through a specialist fleet of 1,100 vehicles. The disposal operations receive in excess of three million tonnes of domestic, commercial and industrial dry waste and handle more than 300,000 tonnes of liquid chemical waste annually.

Cleanaway employs over 8,000 people and operates the UK's most technologically advanced materials recovery facility, four landfill sites, a nationwide network of service depots and a high temperature hazardous waste incinerator – one of only three in the UK – with an annual capacity of more than 70,000 tonnes.

Cleanaway's customer base of more than 75,000 includes all types of waste producers, from single retail outlets to multi-site operations and large-scale industrial plants. Through its Serviceteam municipal business, Cleanaway has contracts with more than 80 UK local authorities mainly in the South of England, to which it provides a broad range of services covering the collection of domestic waste, recycling and street cleansing, grounds maintenance and a range of ancillary services.

The company's dedicated approach to research often enables it to be ahead of developments in the increasingly stringent European Union and national legislation. This supports our ability to build our reputation as a safe, reliable, high technology based company, aware of environmental concerns and of the issues confronting our customers.

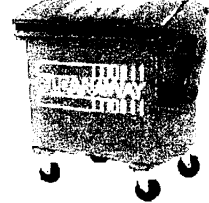
[Link to Cleanaway.co.uk](http://www.cleanaway.co.uk)



Choose a Cleanaway Service

Choose a Cleanaway Service

Cleanaway Limited is a major European waste management organisation and has been a UK industry leader for over 25 years with a proven reputation for safety, reliability and integrity.



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	General Waste	Recycling	Total Waste Management	EcoService	Technical
	<ul style="list-style-type: none"> • Paper • Cardboard • Plastics • Wood • Plasterboard • Metal • Textiles • Food • Green Waste • Domestic • Also see Recycling Total Waste Management <p>Click here for a quote</p>	<ul style="list-style-type: none"> • Paper • Cardboard • Green Waste • Metal Can Separation • Plastics • Construction & Development • Wood • Glass • Also see EcoService Total Waste Management <p>Click here for a quote</p>	<ul style="list-style-type: none"> • On-Site Services • Waste Minimisation • Recycling Facilities Management • Integrated Service Package <p>Click here for a quote</p>	<ul style="list-style-type: none"> • Fluorescent Tubes • General Lighting Wastes • Automotive Wastes • IT Equipment • Contaminated Containers • Rechargeable Batteries • Also see Total Waste Management <p>Click here for a quote</p>	<ul style="list-style-type: none"> • Solvents • Aqueous Wastes • Pharmace • Controlled • Organic/In Chemicals • Paint/Dyes • Agrochemi • Hazardous • Industrial C • Also see Total Waste Management <p>Click here for a quote</p>



Municipal

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Cleanaway has been working in partnership with local authorities for the last twenty years. Our first contract won by Cleanaway, prior to the Compulsory Competitive Tendering process, that of Mendip Council and the company has provided unbroken service to Mendip ever since.

Cleanaway recognises the importance of providing effective and innovative municipal services and has recently acquired Serviceteam. The combined resources of this acquisition makes us one of the UK's largest providers to Local Authorities, offering a range of environmental services through 150 different contracts, including waste collection and disposal, street cleansing, building maintenance, estate management and security.



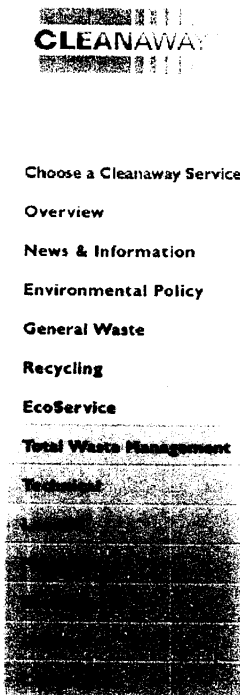
We also provide a variety of support services, including material recovery and composting which enables us to work in partnership with LAs to help them implement the Government National Waste Strategy with its statutory recycling targets. For example, each year we process 8000 tonnes of mixed recyclable waste from Lambeth.

Through the variety of contracts we currently hold with over 100 local authorities and which we have obtained through offering Best Value, we provide services to almost 1,700,000 UK homes with over one third of them receiving a recycling collection service. To date, we have developed, piloted and implemented recycling collection schemes for a number of our municipal contracts, the largest of which is the "It's in The Bag" scheme for The London Borough of Havering. This scheme, which collects both domestic waste and recyclables at the same time and in the same unmodified vehicle is currently available to over 25,000 homes, with a roll out programme to cover all 97,000 properties in the borough.



Providing a quality service is important to Cleanaway and our East Cambridgeshire and Hertfordshire contracts both hold the Government's Chartermark in recognition of the quality waste collection and recycling services provided to the local community. The high standards of the East Cambs contract has also helped the City of Ely to reach the Finals of the Cleanest City Awards against a record number of entrants.

The municipal services required by today's local authorities are complex and varied so essential we work together not just with the local authority, but with the public we both serve. Our experience in municipal partnerships, which gives us a unique understanding of local authority and community requirements, together with our infrastructure of services and resources, ensures that we are ideally placed to deliver integrated service solutions to LAs.



Landfill

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Introduction

Cleanaway is one of the UK's leading landfill operators with four regionally important disposing of around three million tonnes of controlled waste each year. Three of the sites located in the south east, the other is located in the Midlands. These sites play an important role in the provision of integrated waste management in the U.K and are an essential part of the UK and European hierarchy for dealing with waste. Highly engineered, professionally managed sites will continue to be part of the solution for disposing of waste produced by public, commerce and industry. By utilising former quarries or derelict land for landfill otherwise inaccessible areas can be returned to communities for their benefit.

Waste Types

Cleanaway is licensed to dispose of a range of Special Wastes which arise from various industrial processes. Waste which is 'difficult' to handle, is also accepted for disposal providing it meets strict acceptance criteria. Typical of this 'difficult' category are dusty or light waste material. Examples include grinding residues or paint powders. Other examples of difficult loads include filter cake, sludge or foundry sand.

Engineering

Cleanaway sites incorporate the latest engineering techniques with rigorous planning and quality design ensuring adherence to all legislative requirements. Landfill operation begins after careful preparation. *Cleanaway's* team of hydro-geologists and other specialists carry out extensive ongoing monitoring of all sites ensuring that they operate to the highest environmental standards. Once completed, a period of aftercare begins, where professional technical monitoring continues to ensure environmental standards are maintained.

This professional approach is demonstrated at the Sandy Lane site in the Midlands, which has been used by regulators as an example of 'cutting edge' engineering for the future of the waste landfill industry. All of *Cleanaway's* landfill operations are ISO9002 accredited, with an ISO14001 programme underway at the Rainham site in Essex.

Power Generation

Cleanaway's expert technical team has monitored existing and closed landfill sites gathering useful information on the development of landfill gas utilisation for power generation projects. *Cleanaway's* Rainham site currently produces 8 mega-watts of power, with an increase in output planned for 2002. The company's landfill at Pitsea in Essex is undergoing installation of a power generation plant which will have an output of 2 mega-watts initially along with an expansion programme for the future. A similar project is being implemented at the Ockeridge site in Essex.

River Transportation

Cleanaway's site at Rainham in Essex is one of only two in the country that receives waste by river borne transportation, and this waste handling and transportation method has undergone continuous improvement programmes throughout the years to reflect best practice of the day. *Cleanaway's* fleet of barges carries waste from central London based transfer stations in sealed containers to the purpose-built transfer station at Rainham where they are transferred by across-river vehicles to the landfill for disposal. Today, *Cleanaway* receives 250,000 tonnes of waste annually via the River Thames and the utilisation of this natural highway prevents some 200 road miles in and around the congested Capital each year.

Landfill Tax Credits Scheme

Following the introduction of the Landfill Tax Credit Scheme in 1996, *Cleanaway* was instrumental in setting up four independent environmental bodies to administer landfill tax credits generated through the company's four landfill sites. To date, the company has distributed over £10 million to these four trusts and allocated a remaining £5.25 million to a number of other environmental bodies. These funds have supported a wide range of projects under several categories. These include the conservation, protection and improvement of the environment; the provision of facilities for social welfare, leisure and recreation and the promotion of public environmental education. For more information visit the News

CLEANAWAY

Recycling

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Reprocessors

Reprocessors

Reprocessors

In a consumer society, expanding waste levels are an ongoing side effect of economic growth. But it is increasingly vital that recycling or recovery of these waste materials becomes a way of life, as developing legislation and ethical standards encourage us to protect and enhance our environment and the community.

Cleanaway's expertise has enabled us to develop a dedicated service for recyclable materials. From green waste to fluorescent tubes; from tin cans to mobile phones, *Cleanaway* is able to provide a variety of services to help our customers to recycle, recover or reprocess.

Bulk Recycling

Cleanaway is already the largest waste paper collector, sorter and trader in Europe. Our operation consists of three processing plants which undertake both national and regional contracts on behalf of industrial, commercial and municipal customers.

We are able to tailor our service to the customer's specific requirements, and have the capability to recycle a variety of items - such as paper, cardboard, plastics, glass and cans - from a range of companies including banks, supermarkets, factories and brewers.

We provide collection, segregation of waste streams, full on-site support and appropriate advice on waste minimisation, giving *you* the opportunity to maximise the benefits of our expertise in this rapidly growing market.

The challenge to all involved in the industry is to ensure that we deliver the highest possible level of recycling, and that we constantly seek new markets and business opportunities. *Cleanaway* works together with reprocessors and other bodies to ensure the viability of markets for the recycled products.

Cleanaway is a firm supporter of innovative recycling projects, and was one of the first companies to register for the Sustainable initiative. We are constantly working with Government bodies and environmental organisations, developing recycling processes and seeking for new alternatives that will reduce the amount of waste that ultimately goes to landfill.



Total Waste Management

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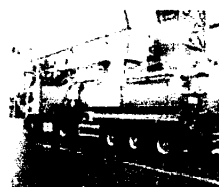
Contact Us

Cleanaway's dedicated Total Waste Management business provides bespoke on-site solutions to clients for many of the non-core activities on their operations. Our team of expert waste consultants works in partnership with clients to find the most financially and environmentally effective methods of handling their waste. In addition to this the TWM team tailors the package further with proposals for a range of other non-core activity services required by the client.



To date, 39 organisations are currently benefiting from the Cleanaway TWM solution packages, with contracts being serviced at over 50 sites throughout the UK. The operation goes beyond the practical delivery of services; integral to every aspect of service delivery is the commitment to ensuring legislative compliance. TWM plans, conducts and operates all on-site services ensuring that they meet or exceed regulatory controls and codes of practice.

In today's business climate where efficient utilisation of resources is crucial, TWM helps management achieve this through a number of measures. Firstly, by a thorough review of the client's operations, we can offer advice on waste minimisation combined with a comprehensive recycling scheme to reduce the quantity of material that goes for final disposal. This two-pronged approach to resource management can also result in cost savings for clients.



Further benefits of the TWM service include a permanent Cleanaway presence offering an immediate point of contact and flexible single invoicing, saving the client valuable time and money.

At Cleanaway we know that the agreement and acceptance of a TWM package by a client is only the start of the relationship. As operations change, we change alongside ensuring the bespoke package remains that way. This is achieved through on-going dialogue, maintaining a clear understanding of the client's needs, enabling us to implement smoothly and successfully innovative amendments to the service as and when required.

Information page which gives details on the independent trusts and projects supported by *Cleanaway*.

Land Remediation

The company also has a project team specialising in remediation of contaminated sites. Throughout 2000 and the early part of 2001 *Cleanaway* undertook such projects and with the Government's policy of utilising 'brown field' sites for future development growth in this area is set to continue.

Recycling

As the need for progressive handling of waste materials has grown, *Cleanaway's* traditional landfill site operations have adapted to provide integrated waste management solutions. *Cleanaway* is expanding its operational infrastructure to provide a range of recycling and reprocessing facilities providing valuable materials for the secondary resources market. Recent developments have included windrow composting, metal can separation, municipal solid waste bulk mixed recyclables separation, commercial paper and plastic processing, and a wood shredding operation. Collectively these facilities handle approximately 200,000 tonnes of materials each year and will continue to provide a valuable resource to facilitate the increase in recycling activities in the domestic, commercial and industrial sectors.

Construction and Demolition

The average contents of a builder's skip provide plenty of opportunities for reuse and recycling. Our dedicated construction and demolition materials recycling facility maximises the reuse of soils and hardcore, whilst also providing additional other valuable resources such as wood and metals for reprocessing.



EcoService

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Introduction

Cleanaway's EcoService business provides alternative waste management solutions for a range of difficult waste arisings, principally where legislation has recently changed or is not as yet enacted. The need to increase the recycling of waste materials is another factor in the development of these innovative service offerings.



EcoService offers a scheduled nationwide collection and disposal/recycling service with dedicated containers for each waste, and offers compliance with the Duty of Care and Special Waste Regulations.

Automotive Waste

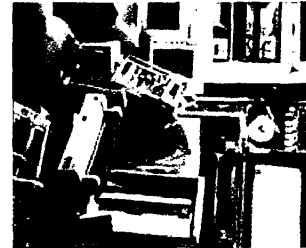
This provides a fully inclusive waste management service for the automotive sector e.g. Oil filters, Lead Acid Batteries, Antifreeze, Parts Washers etc. If required, we can offer a site survey to determine the best storage and collection options.

Interceptor clearance

Interceptor clearance is designed for oil/water/debris mixtures collected in interceptor system. This is a regular scheduled service offering full compliance with the relevant regulations provides documented evidence of disposal.

Electronic Waste

The electronic waste operation offers a secure Waste Electronic Equipment recycling service. Our expertise extends to cover secure data destruction prior to refurbishment for reuse, or component/materials recovery where reuse is not a practical option. This service is ideally suited to personal computers, CRT/LCD monitors, Network Servers, Mainframe/Data Storage Units, Exchange/Telecoms, faxes and printers.



Battery Recycling Service

This service provides secure Battery storage and collection for all types of battery e.g. Ni Cadmium, Nickel Metal Hydride, Mercury Oxide etc. This service diverts Mercury, Cadmium and other toxic metals from landfill and recovers valuable resources.

Septic Tank/Cess Pit clearance

This EcoService operation offers septic tank and cess pit clearance on a regular schedule to ensure there is no risk of overflowing.

Fluorescent Tube Recycling

Fluorescent tube recycling offers a cost effective alternative to landfill for all types of Gas Discharge Lamps, maximising the possibility for recycling and minimising the Health and Safety risks from mercury vapours and broken glass. EcoService can supply dedicated containers for secure on-site storage.



Packaged Chemical Wastes

The packaged chemical wastes storage and collection service is suitable for a wide variety of waste in drums e.g. Soluble Oils, Inks, Solvents etc. All relevant documentation is provided as proof of safe and secure disposal. Empty replacement drums supplied on exchange if required.

CLEANAWA

Welcome

CLEANAWA Waste Strategy 2000

Sets statutory targets for recycling and composting of household waste

- By 2005 25% recycling: 40% recovery
- By 2010 30% recycling: 45% recovery
- By 2015 33% recycling: 67% recovery

CLEANAWA Waste Strategy 2000

Will require for MSW in England and Wales:

- 90-125 new MRF facilities by 2005
- Capex of £270-370 million
- 40-50 new composting facilities by 2005
- Capex £105-127 million

CLEANAWA Other Drivers of Change

- The EC Landfill Directive
- Landfill tax
- Producer Responsibility
- WEEE directive
- ELV

CLEANAWA The EC Landfill Directive

- Has targets for reduction of biodegradable MSW going to landfill
- All wastes going to landfill to be pre-treated from July 2006
- No co-disposal at landfill sites

CLEANAWA Landfill Tax

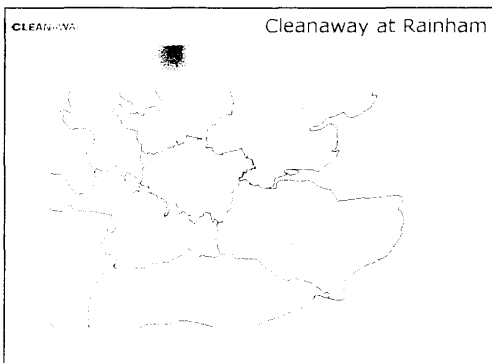
- Currently £14 per tonne wef 1 April 2003
- £15 per tonne in 2004
- Expected to move to an escalator of £3/tonne each year from 2005/06

CLEAN WA Rainham MRF

<p>London Borough of Havering</p> <ul style="list-style-type: none"> ∞ Cost effective Collection Service ∞ Convenient and accessible for residents ∞ Pre sort equipment provided 	<p>London Borough of Greenwich</p> <ul style="list-style-type: none"> ∞ 23 year Partnership contract ∞ Provision of a up to 65,000t/pa ∞ Design throughput 24tph ∞ Investment of £8 million
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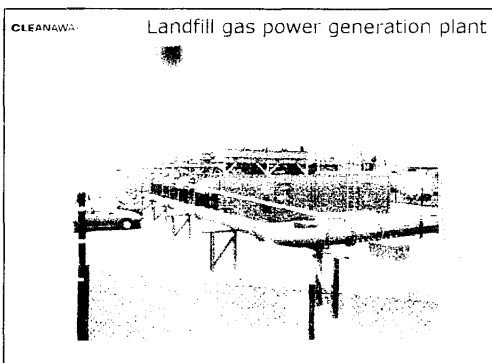
CLEAN WA Partnerships

<p>Medway Council</p> <ul style="list-style-type: none"> ∞ Integrated contract - Refuse Collection, Street Cleansing, Recycling, Disposal, 3 CA sites and a Transfer Station for up to 150,000 t/pa ∞ 7 year contract - started 29 September 2002 ∞ Linked to achievement of recycling targets - 36% in year 1 ∞ Partnership Board 	<p>Thurrock Council</p> <ul style="list-style-type: none"> ∞ Integrated contract - Refuse Collection, Street Cleansing, Recycling, Disposal and 1 CA site ∞ 5 year contract - started 31 March 2003
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CLEAN WA Cleanaway at Rainham

- ∞ Integrated waste management facility
- ∞ Major landfill site
- ∞ River transfer station
- ∞ Road transfer station
- ∞ Power generation plant
- ∞ Composting
- ∞ Materials Recycling Facility



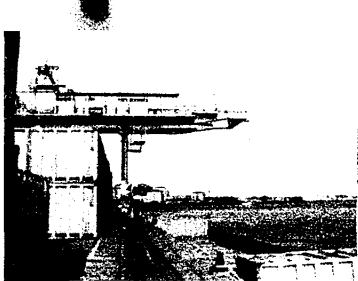
CLEAN WA Recycling at Rainham

- ∞ Domestic MRF
- ∞ C&D/Heavy End MRF
- ∞ Windrow Composting
- ∞ In Vessel composting
- ∞ Wood shredding
- ∞ IBA processing


CLEANAWA Recycling and Transfer Stations

- Eight locations including six Transfer Stations, seven Household Waste & Recycling Centres & one MRF
- Five municipal, three Cleanaway
- Throughput 75,000tpa to 350,000tpa


CLEANAWA River Transfer Station




CLEANAWA Road Transfer Station



CLEANAWA Material Recycling Facilities



CLEANAWA Rainham MRF



CLEANAWA Rainham MRF

- Building size 95m x 37m
- 8m internal clearance
- Total investment to date £3.9M
 - Building £2.0M
 - Equipment £1.5
 - Other costs £0.4M
- Commissioned 9th November, 2001
- Official opening 8th May 2002

CLEANAWA Rainham MRF

- ⌘ Design throughput 10tph
- ⌘ Target throughput 50,000 tpa
- ⌘ Mixed dry recyclables
- ⌘ Paper, cardboard, cans, plastic bottles, plastic film,
- ⌘ 50 staff, two shifts

CLEANAWA Rainham MRF

- ⌘ Design philosophy
- ⌘ Economies of scale
- ⌘ Automatic sorting
- ⌘ Joint working/Partnerships

CLEANAWA Destination Trial

Results	
Cardboard	8.4%
Paper	63.0%
Steel cans	6.0%
Alu cans	0.8%
Plastic film	2.0%
Nat HDPE	2.0%
Col bottles	0.2%
Air knife	6.4%
Waste	8.9%
Total	100.0%

CLEANAWA Rainham MRF

Health and Safety	Employment and Welfare
<ul style="list-style-type: none"> ⌘ Target 80 %, achieved 86% in Safety Audit ⌘ No slips, trips or falls since commissioning 	<ul style="list-style-type: none"> ⌘ Cabins with air conditioning, noise insulation, padded floors, accessible equipment ⌘ Representative workforce ⌘ Recruitment and training

CLEANAWA Education & promotion

- ⌘ Ana Grosvenor, Recycling Coordinator
- ⌘ Residents groups
- ⌘ Schools of all abilities
- ⌘ Environmental groups
- ⌘ Councils
- ⌘ Customers
- ⌘ Special interest groups
- ⌘ Brambles investors

CLEANAWAY


Composting and Biowaste Treatment

Presented by
Lindsey Sutcliffe
Composting Manager

CLEANAWAY


Introduction

- Composting Process
- Current Activities
- Drivers for Composting/Bio waste treatment
- Cleanaway Compost Strategy




CLEANAWAY

Compost Manufacturing Process



CLEANAWAY

Organic Waste Inputs



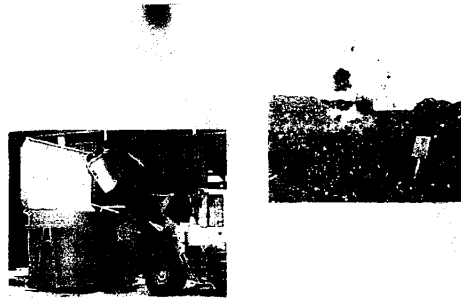
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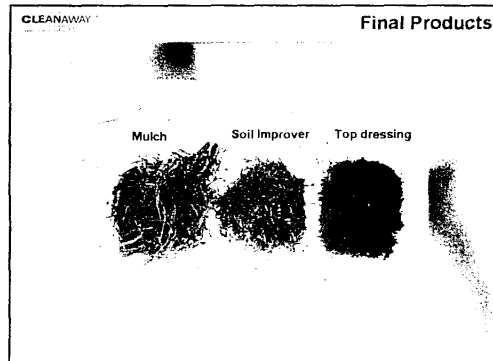
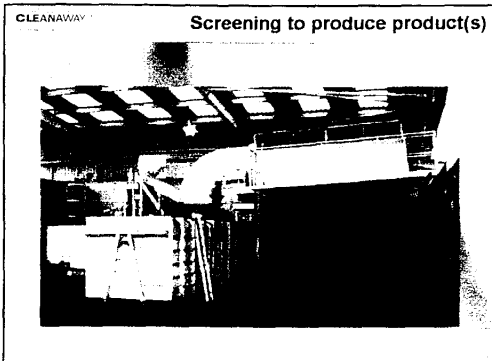
Decontamination, Shredding and Mixing



CLEANAWAY

Windrowing and In-vessel processing





CLEANAWAY

Current Activities

<p>Green Waste Inputs</p> <ul style="list-style-type: none"> Kent C.C. Essex C.C. WRWA London Waste (NLWA) LB of Bexley LB of Enfield 	<p>Other Organic Inputs</p> <ul style="list-style-type: none"> BPB paper sludge Supermarket fruit/veg waste LB of Bexley mixed green & kitchen waste
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Organic Inputs

2003 year to date
80,000 tonnes into Rainham & Pitsea

CLEANAWAY

Green Waste Outputs

Compost to FreeLand Horticultural for retail sale via Apex agreement

Oversized organic material for restoration of landfill site

CLEANAWAY

Organic Outputs

Green Waste Outputs

2003 year to date
14,000 tonnes sales

CLEANAWAY Drivers for Composting/Bio waste Treatment

- Waste Strategy 2000
- Landfill Directive
- Animal By-Products Regulations (ABPR)
- EU Bio-Waste Directive

CLEANAWAY Waste Strategy 2000

Household waste recycling and composting targets

Targets

- 2005 = 25% of total (8M tpa)
- 2010 = 30% of total (11M tpa)
- 2015 = 33% of total (14M tpa)

CLEANAWAY Landfill Directive

EC Landfill Directive, reduce biodegradable waste to landfill

Targets

- 2010 = 25% of total (12M tpa)
- 2013 = 50% of total (18M tpa)
- 2020 = 65% of total (26M tpa)

CLEANAWAY EU Bio-Waste Directive

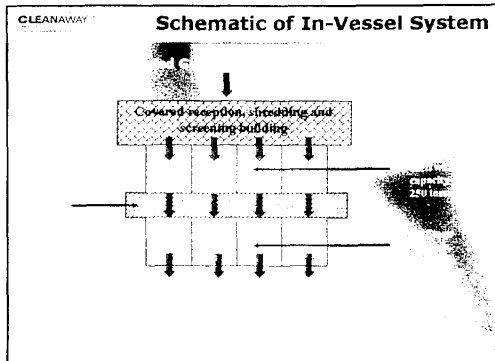
- Only in Draft form
- Proposes to encourage the recycling of food waste to agricultural land to improve the nutrient content of soil
- May require LA's to separately collect food waste for this purpose
- Material to be treated in-line with ABPR

CLEANAWAY Animal By-Products Regulations 1

- Enables catering waste (includes kitchen waste from households) to be composted and used on land if strict criteria met
- Stringent conditions attached to processing of waste (2 stage in-vessel, 2 days @ 60°C minimum, HACCP procedures followed)



CLEANAWAY Animal By-Products Regulations 2

- Contract with LB of Bexley to build minimum 40,000 tpa facility at Rainham
- Dual regulation by Environment Agency (EA) and State Veterinary Service (SVS)
- Enforcement by Environment Agency and Local Authorities



CLEANAWAY

Bio waste research at Rainham

- London Remade LONDON REMADE
- LB of Bexley kerbside collection project
- GORE System 
- Sirocco Systems 

CLEANAWAY


Barriers to Market Acceptance

Perception of "waste" derived products

Largely untested in horticultural and landscaping industries

CLEANAWAY

Market acceptance of "Waste" derived products

PAS 100 British Standard 

Apex agreement between 3 major players (Cleanaway, SITA, Onyx) breakthrough, allowing sale to key chains

Research into products ongoing at Rainham

CLEANAWAY

Cleanaway Compost Strategy

Rainham facility

- Build on existing LA contracts from CA sites
- Target Commercial and Industrial organic waste producers
- Extend existing kerbside collection contracts of organic waste
- In-vessel facility planned for 2004

CLEANAWAY

Wood Recycling Business

- Wood facility accepts clean packaging material
- Material is chipped to specific particle size
- Sold to various markets for recycling/reuse
- Chipboard Manufacturing is largest outlet

CLEANAWAY TM

The Future of Organic Recycling

Year on year growth of 33% 01/02 to 02/03 at Rainham

Barriers to market being broken down by Apex and PAS 100 standards

Legislation is going our way!!

CLEANAWAY TM

Thank you for listening

Any Questions?

Eco-Organics

Waste & Resource Management in London

New Organic Garden Compost and Eco-Organics Demonstration Garden

Mulch, wood chips, soil improving composts, turf dressings and top soils are among the products made from composted green wastes collected at your local recycling centre and brought to the Eco-Organics site, Rainham, London Borough of Havering for processing.

Cleanaway Limited are one of the UK's leading waste management companies, with two composting facilities established in the South East at Pitsea and Rainham. Cleanaway's Eco-Organics site, supported by London Remade, composts over 40,000 tonnes per annum of organic waste. The site is a focal point for educational projects, hosting hundreds of visitors, running site tours, providing technical assistance, organising training events and co-ordinating a number of leading edge research projects.

Come and visit the site, open days are held on the last Wednesday of every month. To book or for further information please contact Steve Murphy on tel: 01708 632 210 or email: steve.murphy@cleanaway.com www.londonremade.com/london_remade/organics.asp

Cleanaway would like to acknowledge the following organisations for their contributions to the projects described in this newsletter:

Andy Meech Landscapes Ltd, Apex, BTCV, Cedar Tree Services, Cleanaway Landscapes, EB Nationwide, Enventure Ltd, Enviros, Freeland Horticulture, Imperial College, London Borough of Bexley, London Development Agency, London Remade, Remade Essex, Remade Kent & Medway and Soil and Land Consultants.

Cleanaway's new organic garden compost and demonstration garden were officially launched on the 25th July by local MP for Hornchurch, Mr John Cryer.

The 50-litre compost bags are currently available from Cleanaway managed transfer stations and civic amenity sites and a growing number of independent retail outlets.

David Nicholson, Cleanaway's Compost Development Manager, said 'This is a new step for Cleanaway, which until now has sold its compost in bulk to a few selected customers or through Apex, the national supplier of bagged composts to retail outlets including B&Q and Wyevale Garden Centres.'

Sales have far outstripped expectation and a second print run of 10,000 bags is already underway.

The new demonstration garden forms a showcase for a host of recycled products including recycled glass; plastic fencing; flooring

and benches; granulated rubber tyre flooring; cockle shell paths; a sustainable wood round house and composted mulches, soils and turf dressings. Already a successful venue, the garden has been host to over 2000 visitors in 8 months including politicians, local authority representatives, school groups, university students and a wide range of business and community representatives, including international visitors.

Over 400 trees have been planted in the garden with the assistance of local conservation volunteers (BTCV). In addition to being an attractive 'green' oasis in the midst of a working industrial area, the garden is an important education and training venue for recycling in London, demonstrating the suitability and availability of recycled products as alternatives to products made from virgin materials.

As we all know seeing is believing!



Steve Huxley Managing Director Cleanaway Ltd, John Cryer MP and Victoria Woods Eco-Organics Project manager, plant a tree in Cleanaway's new demonstration garden. To purchase or stock Cleanaway compost bags please contact: Steve Murphy on tel: 01708 632 210 or email: compost@cleanaway.com



Over 300 people trained in composting

The London Remade Eco-Organics Project has trained over 300 people in composting since November 2002.

Over 100 people gained recognised qualifications through attending courses accredited by The Chartered Institute of Waste Management (CIWM), including An Introduction to composting, Practical and Operation Lessons, and In-vessel composting and the Animal By-Products Regulation.

The courses, developed by Enviros and run in partnership with ReMade Kent and Medway, provide participants with a practical understanding of composting science, different types of composting processes and how to set up and operate an efficient composting facility.

The accredited courses have been fully subscribed with participants from a broad range of organisations and disciplines including:

the Environment Agency, local authorities, landscapers, waste collection operatives, farmers, community groups, students, equipment manufacturers and compost site managers and operatives.

In addition six free technical seminars have attracted over 200 participants. Developed by Soil and Land Consultants Ltd, the technical seminars focus on the benefits of using green compost in landscaping.

Following a very positive response additional courses and technical seminars will be arranged in the Autumn 2003 and Spring 2004. All courses include a comprehensive training manual, lunch and refreshments.

For more information and to reserve a place please contact

Steve Murphy on tel: 01708 632 210 or email: steve.murphy@cleanaway.com



Processing of Londons' green waste into useful compost products.

London Remade brings together the business community, London boroughs, Regional Government, the waste management industry and the not for profit sector, with a view to revolutionising the way London manages its resources.

Committed to making a contribution towards a step change in waste management practices, London Remade is implementing a £20 Million Programme, a key element of which, is the development of the Mayor's Green Procurement code to stimulate the demand for recycled products and materials. The programme also aims to establish showcase facilities for reprocessing organic materials, construction and demolition waste, glass and paper and improve the efficiency of collection and sorting of materials through a supply infrastructure project.

For further information on The Mayors Green Procurement Code please visit:

www.londonremade.com

www.capitalwastefacts.com

or e-mail: info@londonremade.com

**LONDON
DEVELOPMENT
AGENCY**

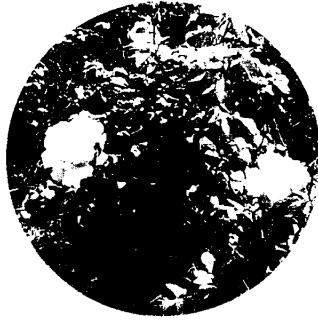


Course participants tour Cleanaway's composting facility, research projects and in-vessel technologies.

Leading Edge Research

Cleanaway are working in partnership with Imperial College on two leading edge research projects. The first 'Methane Abatement' project aims to assess the potential of utilising composts to control methane emissions from landfill sites. The second 'Bioremediation of Soils' project aims to investigate the feasibility of utilising the composting process as an on-site combined volume reduction and biocleansing technology to reduce the amounts of wastes landfilled and reduce the chemical hazards associated with them.

Further information is available from the Imperial College web site: www.wye.ic.ac.uk/sme/projects/swt/composting.html



Use composted mulch in landscaping to;

- Save money
- Reduce soil erosion
- Conserve water
- Improve competitive tendering through satisfying high environmental expectations of London Boroughs and residents at reduced costs
- Condition the soil naturally
- Reduce weed growth and the use of herbicides
- Use recycled green waste from the London area as sustainable and good business practice.

Cleanaway Landscapes use sustainable resource in Lambeth

Cleanaway Landscapes use mulch made from composted green waste. Mulching is a requirement of the Lambeth grounds maintenance contracts and Boroughs are starting to specify the use of recycled products.

Cleanaway employ over 130 grounds staff to maintain beautiful historic parks and public gardens on behalf of The London Borough of Lambeth. "Tendering for grounds maintenance is very competitive," says David Williams, Operations Manager of Cleanaway Landscapes. "we are finding that using recycled mulches can give us an edge over other tenders because our clients and the community expect us to be environmentally friendly".

Ian Bhoorasingh, the contracts monitoring officer for Lambeth agrees and went on to say "The mulch produces much better roses because it's a natural fertiliser and it looks much better than bare soil as the darker colour really displays the roses at their best".

Donald Campbell, the Contract Supervisor for Cleanaway Landscapes said "Mulching ends up saving us time and money because the mulch retains moisture in the plant beds reducing the cost of

watering. The mulch also suppresses weeds meaning that we don't need to spray strong herbicides. Using less chemicals is healthier for the soils, safer, cheaper and the community reps prefer it".

The grounds staff are planning to add mulch every year: "Mulch is ideal for the clay soils in London because it keeps the soil more open and well draining and easier to work with" said Mr Campbell. "It's not blown away by the wind but stays on the beds protecting the soil. The smaller particles are carried down into the soil by insects and rain and act as a natural soil conditioner, which is great for the plants".

London Borough of Lambeth are signed up to the London Remade Mayor's Green Procurement Code, demonstrating their commitment to specifying and purchasing products made from recycled materials.

For further information please contact:

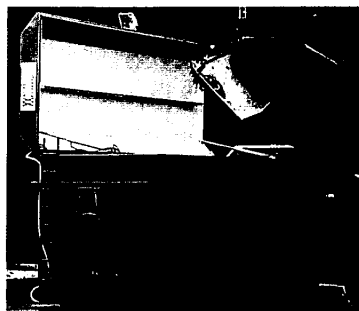
**David Williams,
Operations Manager,
Cleanaway Landscapes Lambeth,
Tel: 020 7926 7425.**

Composting approved as a processing method for catering wastes

After much delay and several consultations The Animal By-Products Regulation 2003 (EC 1774/2002) finally came into force on 1st May 2003 permitting the composting of catering wastes in line with national rules. The Statutory Instrument (SI 2003/1482) implementing the Regulation in the UK came into effect on 1st July 2003. Further information is available from the DEFRA (Department of Environment Food and Rural Affairs) web site www.defra.gov.uk/animalh/by-prods/default.htm.

The requirements for the safe composting of catering wastes include the processing of the material in an enclosed system approved by both DEFRA and the UK State Veterinary service.

A 'Kerbside collection and composting' project, run over a two year period, in



Sirocco in-vessel composting unit

partnership with the London Borough of Bexley, is now completed. The project aimed to determine optimum size and frequency of collection for a range of containers and compost the kerbside collected mixed green and kitchen waste in suitably enclosed and computer controlled in-vessel composting systems. An executive summary and final

project report is available from the London Remade Web site www.londonremade.com

The success of the project has resulted in an award from the London Recycling Fund of £300,000 to support Bexley in the development of a state of the art in-vessel composting facility to be built by Cleanaway at Rainham. This will handle up to 50,000 tonnes per annum of organic waste, allowing the Bexley kerbside collection service to expand borough wide and offer London a much needed outlet for catering waste composting.

In addition to composting household organic waste Cleanaway is working with the retail sector to develop solutions to process their 'former foodstuff' wastes, diverting more material from landfill and helping the UK meet its recycling and composting targets.



Award winning compost

APEX, supported by Cleanaway, was awarded The Composting Association's Composts Marketing Award 2002 and is currently nominated for the LARAC Awards 2003.

'The demand is high for good quality compost' said Victoria Woods, Eco-Organics Project Manager.

'To meet the demand Cleanaway are working together with Sita, Onyx and

Freeland Horticulture to produce consistently high quality compost products that meet the APEX specification for green compost.'

'The fact that three of the largest waste

management companies in the UK are working together on this initiative is remarkable in itself and as the

customer base is set to increase in 2004, so consumer confidence in compost continues to increase and gardeners nation-wide just can't seem to get enough of it.'

For further information

contact APEX c/o Freeland

Horticulture, Rosedale Nursery, College Road, Hextable, Kent, BR8 7LT. Tel: 01322 619 161.

Or visit the APEX web site

www.apexcompost.co.uk

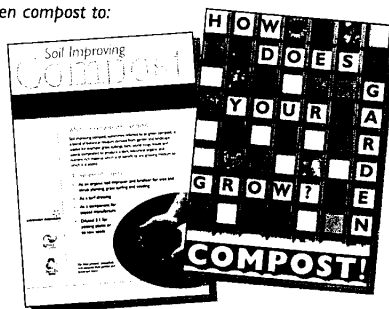


An award winning company - also currently nominated for the LARAC Awards 2003.

Benefits of using 'green' compost

'Green' compost is compost made from composted garden trimmings or 'green waste'. Using 'green' compost has many benefits including:

- A 100% recycled product – made from garden trimmings collected at civic amenity sites and public parks and gardens
- An organic product made to a recognised standard, use compost certified by APEX, HDRA, The Soil Association or The Composting Association/PAS100
- Diversion of green waste from landfill, preventing greenhouse gas emissions and helping the UK meet its waste diversion obligations under the EU Landfill Directive.
- Condition soils, use Cleanaway organic garden compost to:
 - Improve the structure, add nutrients and retain moisture in sandy soils
 - Add organic matter to heavy clay soils, improving drainage and making them lighter and easier to work
 - Encourage earthworms and other beneficial creatures whose activities release essential plant nutrients, improving plant health and resistance to disease
 - Reduce the need for watering and weeding
 - Prevent soil erosion



A range of free fact sheets and information leaflets available from the project and the London Remade web site.

APEX;

- Manufacture and produce green compost to a consistently high standard
- Help meet UK recycling targets
- Assist the horticultural industry to meet peat reduction targets by working with peat producers to develop compost-based replacement growing media

Out & About'

Cleanaway compost products used at events throughout the UK

BBC Gardeners World

Centre for Alternative Technology in their demonstration garden at BBC Gardeners World, NEC, Birmingham.



Hampton Court Flower Show

Remade Kernow in their recycled garden, at Hampton Court Flower Show, London.



Saltex Exhibition

Cleanaway Landscapes promote compost at IOG Saltex exhibition 2003, Windsor.



Planet Havering

Children's activities developed in partnership with Capel Manor College, Planet Havering, London Borough of Havering.



A Brambles Company

To arrange a site visit or for further information on the Eco-Organics site and any of the projects mentioned above please contact:

Victoria Woods, Eco-Organics Project Manager, Cleanaway Limited, Rainham Landfill Site, Coldharbour Lane, London Borough of Havering, RM13 9DA.

Tel: (01708) 632204 Fax: (01708) 558224 Email: vickywoods@cleanaway.com

www.londonremade.com



LONDON REMADE

CLEANAWAY

Bughey WERF

CLEANAWAY

What Is The WEEE Directive?

Aims to prevent land filling of WEEE
Sets targets for collection, recovery and recycling of WEEE
Identifies "Producers" as having to pay for most of these costs
Defines a role for Distributors
Exempts Finance Companies from Producer Responsibility

CLEANAWAY

Time Scales - Critical Dates

Published in the Official Journal on 13th February 2003 = Entry Into Force

Implementation by Member States 18 months from EIF = 13th August 2004
Targets met by 31st December 2006
Producers pay from 13th August 2005
All products must have identifying date mark from 13th August 2005

CLEANAWAY

What is Producer Responsibility?

"Producer" means anyone who manufactures and sells equipment under his own brand or imports it on a professional basis into a Member State. *(Includes Internet sales)*

"Distributor" means anyone who provides a product on a commercial basis to the party who is going to use that product.

CLEANAWAY

Implications for Distributors

Provide take back facility for return of equivalent product free of charge
Will be classed as Producers for "Own Brand" items
May be required to provide information at point of sale (Art. 10.4)
Possible requirement for site licence

CLEANAWAY

Implications For Producers

From August 2005
Pay for cost of recycling
Shared cost on **historic and orphan** products
Provide information on products (to Users and Recyclers)
Mark all products with date and crossed "
Set up recycling systems that "use best available techniques"
Report on compliance

From December 2006
Ensure the recycling targets are met

CLEANAWAY: Who Will Have To Pay?

Producers **likely to have to take back** similar equipment when supplying new and pay for cost of recycling

Last user **likely to have to pay** for collection & recycling if not buying new

CLEANAWAY: Landfill Directive and EWC

Special Waste
Now only important for transport

Hazardous Waste
As Specified by EWC

EWC
Will be adopted for all waste categorisation

Landfill Directive
First legislation to use EWC

CLEANAWAY: Effects of EWC & LFD Now

What has changed,
Items that need hazardous landfill are;

- CRTs (Monitors, TVs)
- Lamps containing Mercury or Sodium
- Laptops (contain batteries)
- Base Units (contain batteries)

It is not acceptable to put a few in here and there

CLEANAWAY: The WEEE Recycling Industry Now

Shredder operators
Currently 28 operating shredder plants
Dominated by EMR and Sims Group

Specialist fridge recycling plants

Specialist WEEE recyclers and refurbishers (mainly IT)

Charity Sector - mainly refurbishment
Cookers, washing machines, fridges, IT equipment

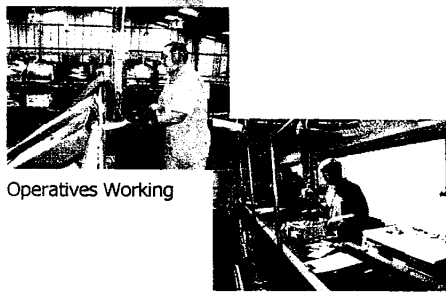
CLEANAWAY: Cleanaway Bushey

Where do we fit in?
Specialist ICT Recycler
Lamp Recycler

What are our services

- ICT
 - Secure Data Destruction
 - Recycling of Scrap Equipment
 - Sale of Refurbishable Equipment
- Lamps
- Fridges
- Any other items listed in WEEE Directive

CLEANAWAY: Stripping



Operatives Working

CLEANAWAY

Contact Details

Iain Wolsey

Location: Bushey WERF

Tel: 01923 246731

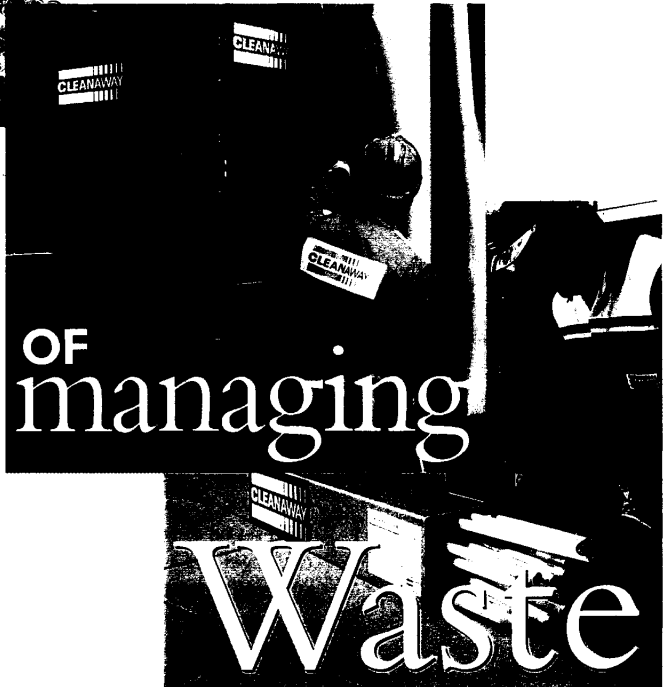
Mob: 07793 841325

E-mail: iainwolsey@cleanaway.com

13



the **SCIENCE**
OF
managing



EcoService
Fluorescent Tube Recycling





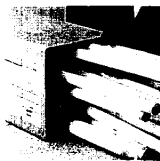
Eco Service



the Science



f managing



Waste

EcoService Fluorescent Tube Recycling

In the absence of alternative disposal techniques, fluorescent lamp tubes have traditionally been disposed to landfill, despite the problems of handling fragile glass and the presence of mercury bearing powders within the tubes. About 60 million tubes per year are consigned to landfill, representing some 3 tonnes per year of mercury deposits.

Because of the hazards associated with fluorescent tubes, some landfills will no longer accept them at all, whilst others are placing an increasing range of restrictions on how tubes are accepted. These restrictions, together with landfill tax, UK and EU legislation, will all contribute to increasing costs for disposal.

Tube Collection

EcoService offers a tailored solution to your fluorescent tube collection needs, whether it's a one-off small volume consignment, regular scheduled collection or stock pile clearance. We provide a range of specially designed containers for secure on-site storage of your lamps. Once full, the storage container is collected and an empty one left in exchange.

Tube Processing

By using the best available recycling technology, Cleanaway can offer a more environmentally responsible option. EcoService currently employs a state-of-the-art recycling process which will safely crush fluorescent lamps. A sophisticated sorting system then



The Complete Fluorescent Tube Management Service

Cleanaway's EcoService business has been set up to respond to these challenges and can now offer a cost-effective alternative to landfill that maximises the possibilities for recycling and minimises the Health & Safety risks.

With its nationwide fluorescent tube collection and recycling service, EcoService sets a new standard in waste tube management. The service is fully compliant with current legislation and is sufficiently flexible to respond to changes in legislation or technology.

separates clean glass cullet, aluminium end caps, ferrous metal components and mercury-bearing fluorescent powders. A secondary process treats fluorescent powders enabling the recovery of raw materials. Cleanaway is constantly seeking alternatives that will offer an even greater degree of recycling and produce an even higher quality of recycled product.

A Complete Benefits Package

The EcoService fluorescent tube management system:

- Removes mercury and other tube wastes from landfill
- Recovers a material resource which would otherwise be lost
- Improves housekeeping
- Minimises environmental, health & safety liabilities
- Meets all Duty of Care requirements
- Assists ISO 14001 accreditation

A recycling certificate can be provided on request.

EcoService 0800 783 8892

Cleanaway Limited
Technical Waste
Bridges Road
Ellesmere Port
Cheshire CH65 4EQ
Telephone 0151 348 5200
Fax 0151 348 5210



A GKN-Brambles Enterprise

Your waste, Our science





Secure Recycling



the Science



of managing



Waste

The Issues

Confidential data security, the protection of licensed software and residual asset value recovery. These are some of the key issues that increasingly need to be addressed when disposing of redundant electronic equipment.

At *Cleanaway* we recognise that this function, if not closely controlled, can expose companies to considerable risk, cost and management time.

In order to provide a high quality, sustainable recycling service, and in accordance with a tradition of innovative risk management, *Cleanaway* have developed a secure recovery service through our *EcoService* business, operating throughout the UK.

A Complete Management Service

With our nationwide collection and recycling service, and dedicated processing facilities, *EcoService* is setting new standards in the management of redundant electronic equipment.

From the moment you contact us our team of professionals can manage the process through to completion, ensuring that your equipment is disposed of in a secure and cost effective manner.

Our expertise extends to cover secure data destruction prior to refurbishment for re-use, or component and materials recovery where this is not a practical option.

We employ the best available technologies to ensure that the highest levels of security are maintained, with maximum value being realised from redundant equipment.

Scope of the Service

We are able to recycle Personal Computers, CRT/LCD Monitors, Network Servers, Mainframe/Data Storage Units, Telecoms Equipment, Faxes and Printers.

Other electronic equipment can be processed if required.



Collection and Recycling

We will arrange collection of your equipment from anywhere in the UK. Containers can be supplied and we can even provide a packing service.

Once the equipment has been collected it will be taken to one of our processing plants where an assessment will be undertaken.

For functional items that are suitable for refurbishment and resale, data security is maintained by using specifically designed eradication software that totally obliterates any previous data, including licensed software. These items are then assigned a value and a detailed report produced.

For equipment not suited to refurbishment a report is produced indicating the total weight of equipment received, and the weights of the component materials generated from the dismantling process. Thus with this mass balance statement a full audit trail is guaranteed.

The Benefits

- Full Audit trail
- Nationwide Coverage
- Guaranteed Data Security
- Maximum Value Realised
- Best Environmental Practice
- Assists ISO 14001 accreditation
- Cost Effective
- *Cleanaway* integrity and service
- Saves valuable management time

Cleanaway Limited

Bridges Road
Ellesmere Port
Cheshire CH65 4EQ

Tel: 0151 348 5100

Fax: 0151 348 5202

E-mail: ecoservice@cleanaway.com

www.cleanaway.com



A Brambles Company

Your waste, Our science

CLEANAWAY™ is a trademark of Brambles Australia Limited



the SCIENCE of managing Waste

EcoService

Secure Recycling of Redundant Electronic Equipment



A Brambles Company

MRT SYSTEM

can provide the solution



Christer Sundberg,
President



Hans-Eric Månsson,
Chairman

SINCE 1979, MRT System in Sweden has been developing technologies for handling products containing mercury.

Our outstanding experience, with professionals from the lighting industry, is based on the development and manufacture of recycling systems. It also includes several years in the field of management and operation of recycling services for fluorescent lamps and other diverse mercurial waste products.

Our extensive and indeed unique experience has led to the development of a product range that meets the most stringent requirements of the producers of mercury-containing products, as well as of the various waste management and recycling companies.

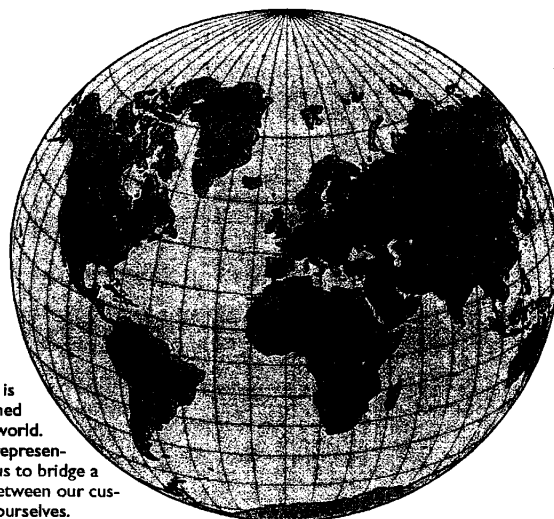
IN THE LIGHT of these facts, MRT is today recognised among major lamp manufacturers and waste management companies as being the world leader in this field.

The company is well established world wide and is the major supplier of mercury recycling systems.

TAKE ADVANTAGE of our extensive experience and comprehensive technical know-how, in order to create a prosperous ongoing business for the future. Together we can share the responsibility for a better environment!

"We decided that this was the way to go - using a system that has already been on the market and which we knew worked. So that is really what lead us to MRT System in Sweden."

MR. REYNALD J. BIENVENUE,
OSRAM/SYLVANIA, USA



MRT System is well established all over the world. Our skilled representatives help us to bridge a closer link between our customers and ourselves.

HIGH TECHNOLOGY

that meets the strictest requirements



OUR TECHNOLOGY is designed for processing a wide range of mercury bearing products such as fluorescent tubes, CFL's, HID's and halogen lamps, various mercury containing batteries, discarded electrical components such as switches, rectifiers, manometers, thermometers, etc.

Other applications for our distillers are: medical and dental waste, sludge and filters, powders, catalysts, military waste and a variety of mercury contaminated metals and production waste from various industries.

OUR ENGINEERS place great emphasis on development work in order to fully satisfy the increasingly high demands made by relevant authorities on the use

of products and systems for the treatment of environmentally harmful waste.

The process control and the software in our systems is based on innumerable measurements of various parameters in process air and residual values in the treated material.

This has resulted in an extremely accurate process, with negligible emissions of mercury into the atmosphere and residue values that lie far below the strictest limits prescribed in any country or by any recycler of recovered materials.

WHATEVER SYSTEM you may choose, independent consultants, authorities and our customers have confirmed that the MRT systems are the Best Demonstrated Available Technology.

"We believe in the MRT technology, that's why we use it.

People have tried to copy it, unsuccessfully. There are others that manufacture equipment, but clearly MRT is the leader in producing the best equipment, high technology."

STEPHEN ANASTOS,
GLOBAL RECYCLING
TECHNOLOGIES, USA



Air-blowing of the phosphor powder from glass tubes in our ECM 5000.

COMPLETE AND SAFE SYSTEMS

for your individual needs

"The equipment is sophisticated, yet simple and safe to operate and maintain."

KARSTEN LARSEN,
ADVANCED RECYCLING AUSTRALASIA

THE MOST UNIQUE feature of our company is that we can offer a *complete* solution for solving the mercury waste problem.

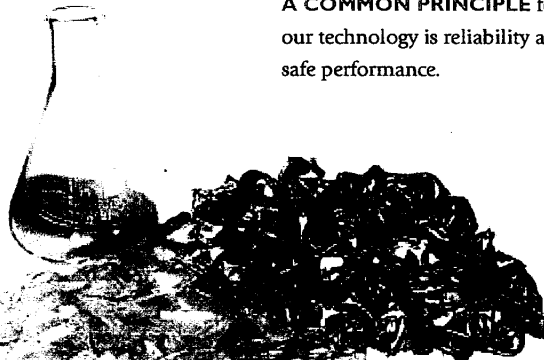
Our recycling technology can be divided into two areas, namely the separation stage of the various materials and the recovery of the mercury.

For the first stage, we can provide two different technologies: Either *the End Cut Technology* or *the Crush and Separation Technology*, both in combination with the second stage, *the Distillation*.

In both of these areas, we have several unique technical solutions to offer, with varying capacities and special features. All are specially designed to meet your individual needs and requirements.

A COMMON PRINCIPLE for our technology is reliability and safe performance.

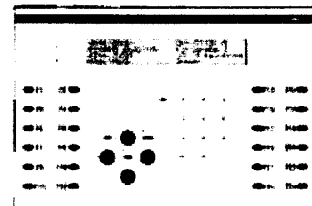
By using our complete systems, hazardous discarded products are transformed into clean, marketable by-products.



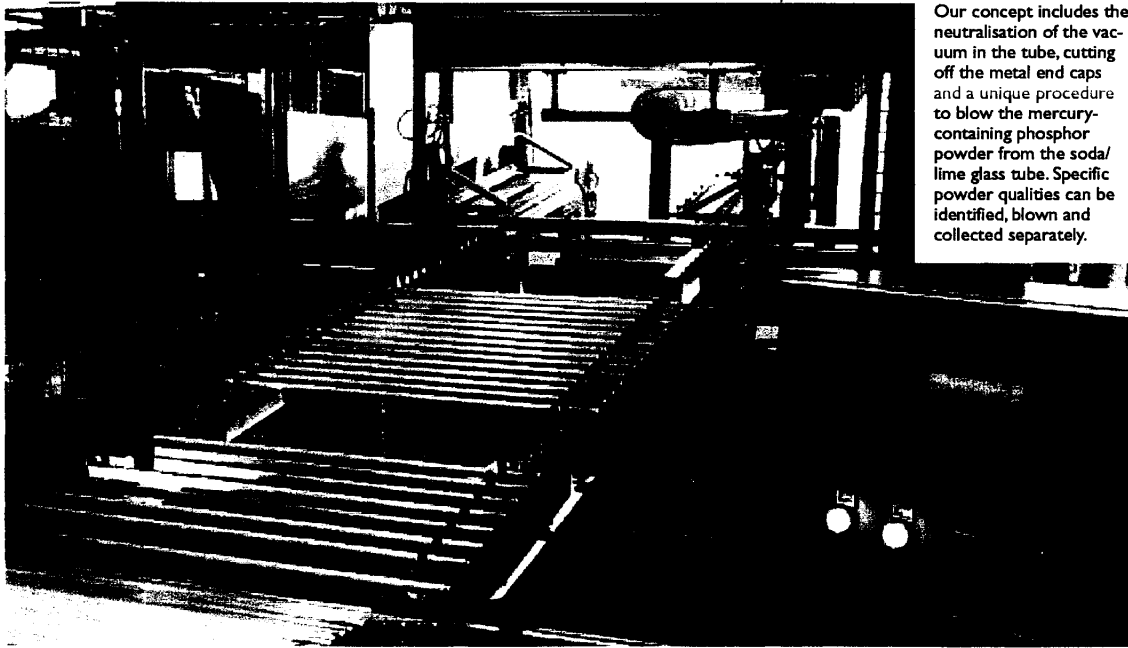
Due to the fact that most of the wastes are in a hazardous condition, we pay special attention to the operators safety.

All our systems operate at sub-pressures, thereby preventing the generation of dust and the emission of mercury in the vicinity of the operator and out into the atmosphere.

We have built in as many automatic functions and controls as possible in order to prevent the risk of human error. This makes the machines extremely safe and easy to operate.



We meet all the strictest safety and machinery standards set in any country, such as the EEC Directive on Machinery and the OSHA guidelines among others. All the essential components in our systems are carefully tested and Design Review Certificates are issued by Swedish Plant Inspection Ltd on vital distiller components.



Our concept includes the neutralisation of the vacuum in the tube, cutting off the metal end caps and a unique procedure to blow the mercury-containing phosphor powder from the soda/lime glass tube. Specific powder qualities can be identified, blown and collected separately.

THE END CUT TECHNOLOGY

- a tried and trusted technique

ALREADY 20 YEARS AGO, we started to develop our first End Cut Machines for the "de-manufacture" of fluorescent tubes.

The lamp industry became the leading buyers of this concept, achieving an exceptionally clean soda lime glass for reuse out of their production rejects.

TODAY, MRT's product range consists of several versions of End Cut Machines, to suit all sort of capacity requirements.

Our latest innovation in End Cut and Air Push System approach meets all the toughest demands from the lamp manu-

facturers in terms of purity of by-products.

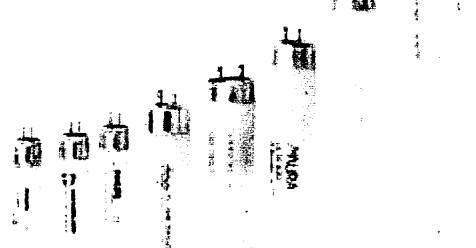
MRT's ECM technology for separating various qualities of phosphor powders, glass and metals, is regarded as being the best on the market.

The proof of this is that many major recyclers and leading lamp producers have already purchased our latest success, ECM 5000.

For further information, see individual product leaflets.

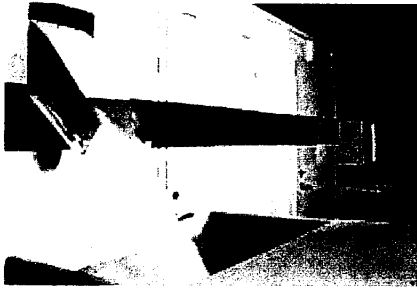
"One reason for choosing the ECM 5000 was that we wanted to have the best reference towards the lamp producers. Subsequently, many people in the lamp industry expressed gratitude for choosing the MRT technology."

JAN HOIBERG,
ELEKTRO MILJØ A/S,
DENMARK



THE CRUSH AND SEPARATION TECHNOLOGY

- flexible and efficient



The patented "state of the art" Compact Crush and Separation Plant.

THE CRUSH AND SEPARATION TECHNOLOGY includes a variety of attractive options for the recycling of all types of fluorescent lights. We can provide several dry separation techniques, thereby achieving very clean operation conditions, which are characteristic of MRT's patented separation methods. Your guarantee for unsurpassed performance.

FOR PROCESSING HIGH QUANTITIES of discarded fluorescent lamps we recommend you install the big Sieving plant. A system that is judged among our customers to be very flexible, reliable and cost-effective, when processing huge volumes of tubes. The proven capacity is more than 4000 tubes per hour.

"I can say that the equipment works in an absolutely reliable way. We operate equipment in three shift operation without any problem."

MR. ZENON MECI, PHILIPS LIGHTING, POLAND

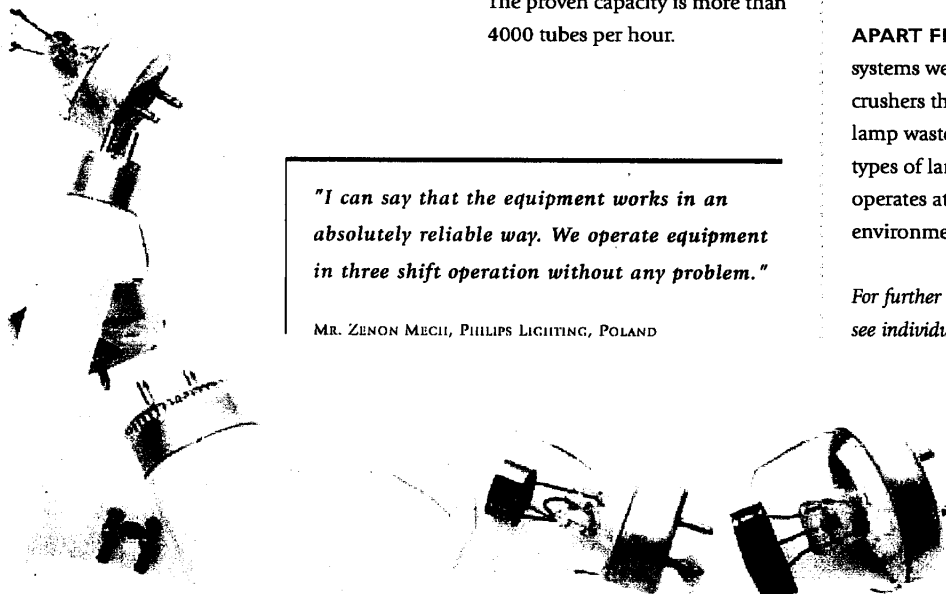
FOR HALF THE CAPACITY REQUIREMENT, MRT has developed the unique Compact Crush and Separation Plant. A space saving concept which creates operation conditions that meet even the toughest environmental standards. The plant is easy to install, relocate or even to use as a mobile unit.

This patented "state of the art" concept is based on both existing and new technologies, yielding exceptionally clean by-products.

AUXILIARY DEVICES are available for the separation plants, such as additional discharge conveyors for the by-products or bin-turning systems for lamp crushing.

APART FROM the separation systems we can provide various crushers that safely reduce the lamp waste volume from all types of lamps. The MRT crushers operate at subpressures in an environmentally sound manner.

For further information, see individual product leaflets.



NATURE'S CALL

for hightech solutions



This feathered beauty is positioned at the top of the food chain. He is also at the bottom. It depends on how you look at it.

"Government approval to install and operate the equipment was not a problem due to the MRT reputation and proven track record in other parts of the world."

KARSTEN LARSEN,
ADVANCED RECYCLING AUSTRALASIA

ALL OVER THE WORLD

mercury discharges are continuing to contaminate forests and waters, resulting in severe damage to our eco system.

DUE TO ITS UNIQUE properties, mercury is an essential component in a great number of products, such as energy-saving fluorescent lamps, highly reliable mercury zinc batteries and even in life-saving medical products.

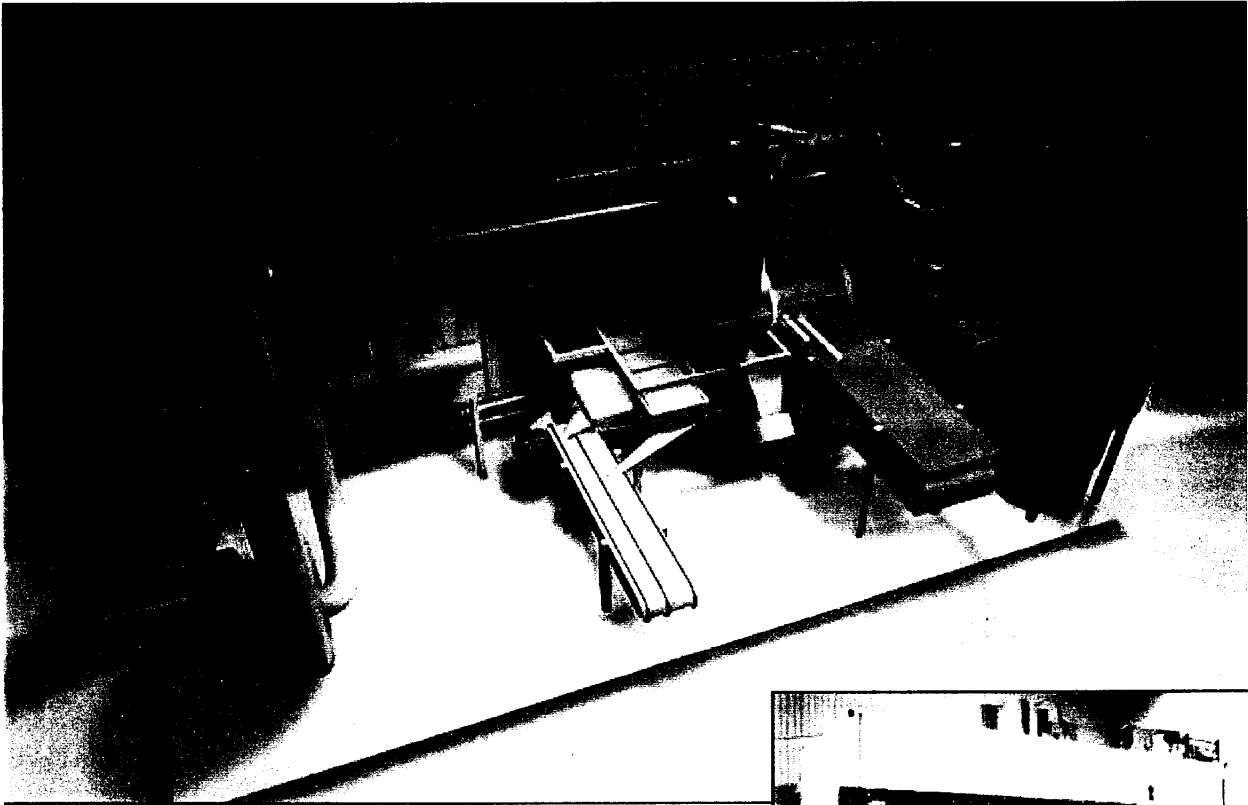
There is as yet no substitute for mercury in many electrical components. Therefore mercury will be with us for many years to come!

AS A RESULT OF stricter regulations governing the handling of mercurial waste, landfill and incineration are no longer viable options.

In order to minimise existing mercury volumes in our environment, the recycling option – recovering the mercury – is generally considered to be the best, being the most environmentally sound solution to the problem. The argument for this is further strengthened by the fact that well proven and hightech solutions are already in existence.

NOW IT ONLY REMAINS for all of us to shoulder our responsibilities...



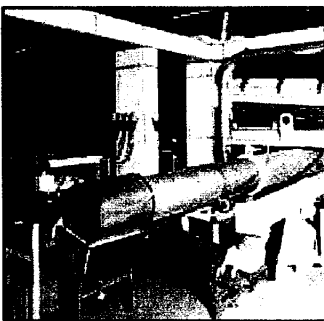
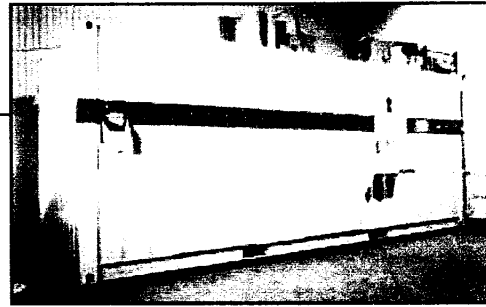


This is what the inside of a patented Compact Crush and Separation Plant looks like:

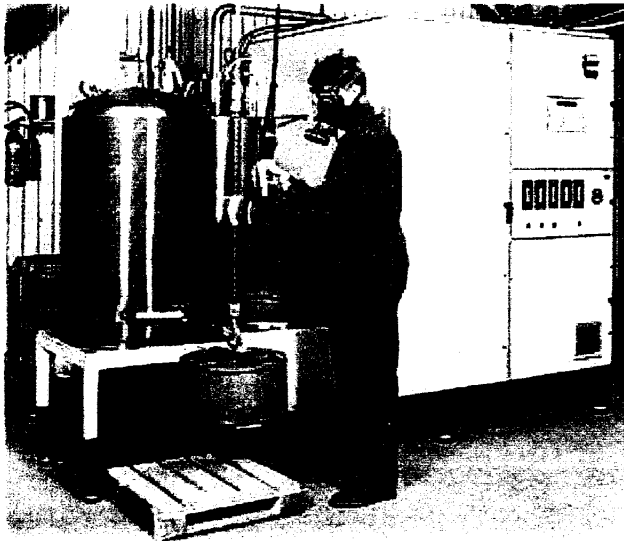
The entire process is incorporated in a container in which the air is brought to sub-pressure, thereby preventing mercury from being released into the environment as exhaust air is constantly discharged through the internal carbon filters.

The plant is fully automatic and easy to operate. Its versatility allows the processing of various types and sizes of fluorescent lamps, separating the lamps into soda lime glass, aluminium end caps, lead glass / ferro metal components and phosphor powder.

The phosphor powder is separated in different steps from the by-products, which is one of the reasons behind the excellent purity. This is done by using a sophisticated patented air transportation system. The mercury bearing powder is collected in distiller barrels beneath the cyclone and the self-cleansing dust filters.



The big and effective **Sieving Plant** is run by only one employee, resulting in very good operating economies. The **Bin Turning System** is flexible, safe and a totally dust free operation. The system can be custom designed for various sizes of bins or drums.

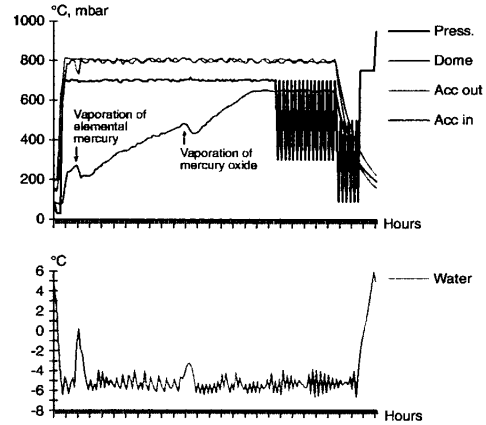


The MRT Standard distiller, which is the best-selling mercury distiller in the world. It is also available in a superior version, an extremely efficient machine for processing waste with high mercury concentration.

A graph of a batch of discharged mercuric oxide batteries treated in our Superior distiller. It gives an indication of the accuracy of the process control.

The curve related to the dome temperature shows at what temperature the elemental mercury and the mercury oxide/amalgams vaporize.

The graph below shows that the process is in a complete balance in terms of the vaporization of the components and the cooling efficiency.

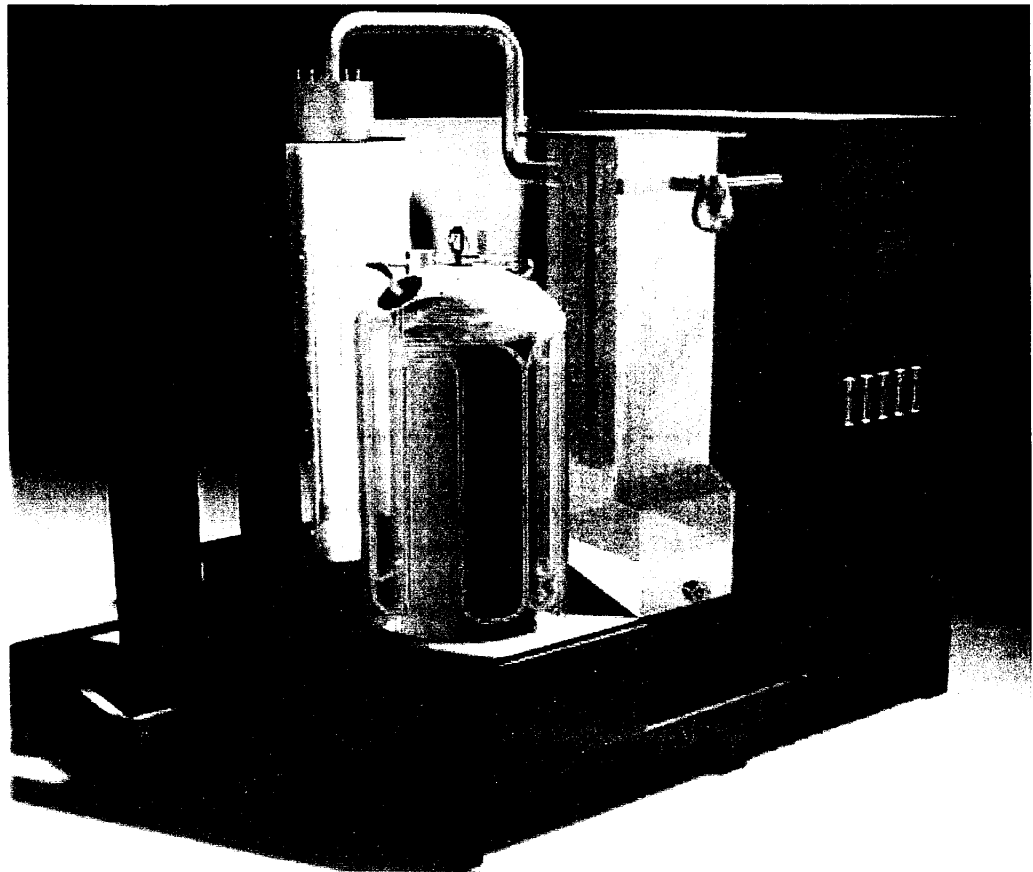


This is how the patented distillers work:

A batch of waste containing mercury is placed in the vacuum chamber. When the appropriate program is selected, the waste material is treated through a fully automatic and accurate process.

Heat is applied, causing the mercury to vaporize. The organic particles carried by the gases are oxidized in the combustion chamber. The gases then enter the highly efficient cooling traps, where the mercury condenses into free floating liquid mercury. Normally both the degree of recovery and the purity of the mercury reaches 99.99 percent or more when treating waste products with high mercury concentrations.

One of our customers recover approximately hundred kilograms of mercury per day from spent mercury zinc batteries.



THE MRT DISTILLERS

- an extremely accurate process

THE MERCURY RECOVERY TECHNOLOGY from MRT is based on our outstanding experience with distillation technology. The patented distillers are a Swedish invention and have been in use for almost 25 years.

The efficient treatment of the mercurial waste and its process control functions are a result of continuously advancing software development. This is based on a large number of tests with various materials and important feedback from our customers.

THE PROCESS IS fully automatic, which makes it extremely safe and removes the risk of human error. Functional para-

meters such as pressure, temperature and process time are adjusted to conform to the waste currently being treated. This enables optimum efficiency.

THE DEGREE OF mercury recovery makes it the most highly regarded on the market and the emission from the distillers is hardly measurable.

THE PRODUCT RANGE includes the Standard, Superior and Special distillers. The choice depends on the type of waste being treated.

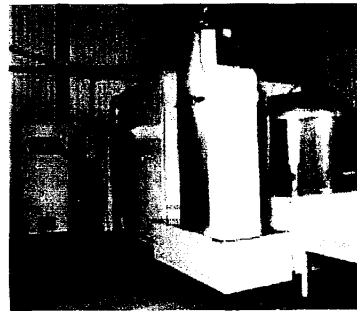
The MRT Special distillers can be modularized and custom designed to include several domes, thereby meeting the highest demands for economical capacity, efficiency and performance.

For certain applications, MRT can also provide distillers with continuous flow processes.

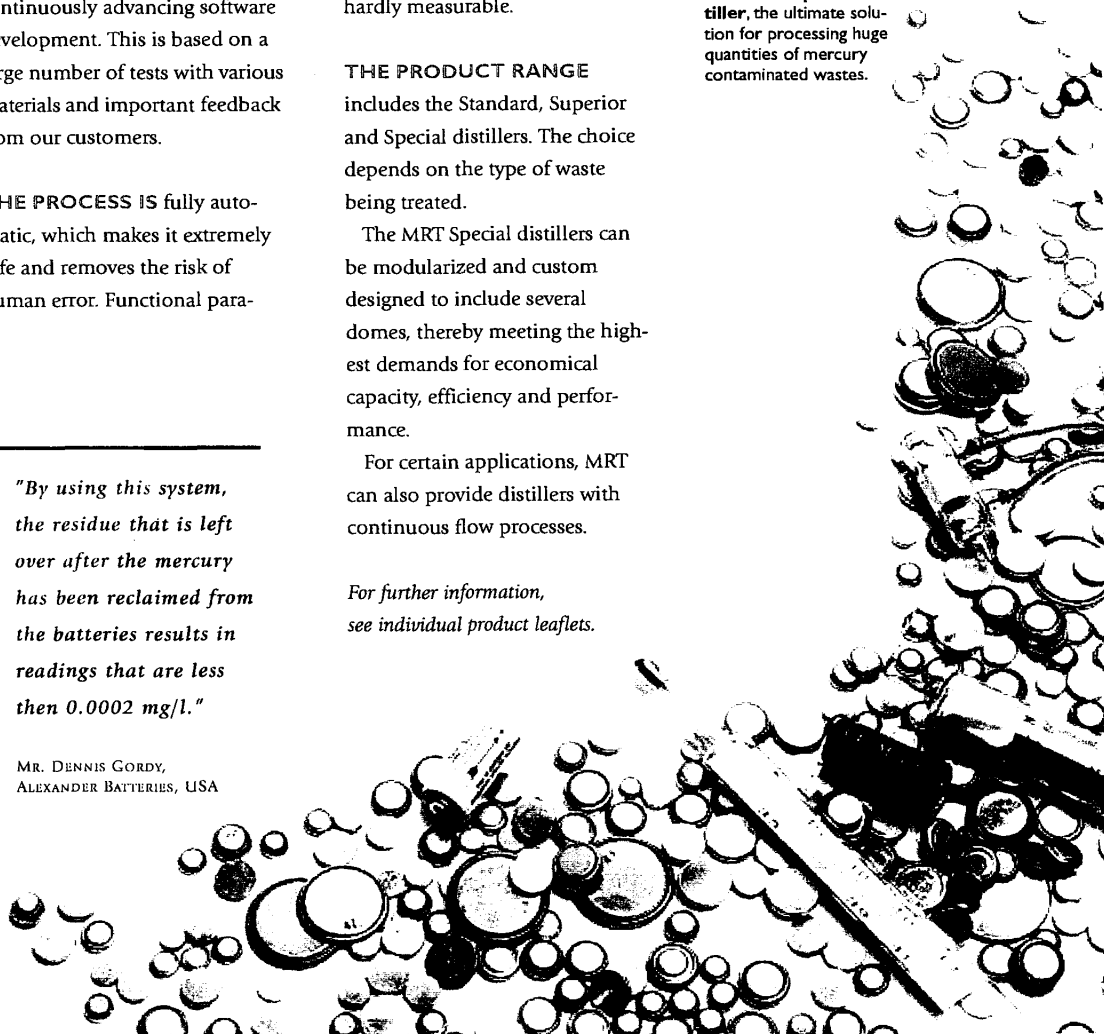
*For further information,
see individual product leaflets.*

*"By using this system,
the residue that is left
over after the mercury
has been reclaimed from
the batteries results in
readings that are less
than 0.0002 mg/l."*

MR. DENNIS GORDY,
ALEXANDER BATTERIES, USA



The MRT Special distiller, the ultimate solution for processing huge quantities of mercury contaminated wastes.



YOUR BEST INTEREST

is also ours



"We have installed MRT plants in all our production facilities in Europe and we are very satisfied with the performance."

DR. VIV GODDARD,
GE LIGHTING EUROPE

NOW WE HAVE introduced you to our company and our technology.

You can be sure that we are dedicated to providing you with the best technology and the most suitable and economical system that will perfectly satisfy your requirements for both performance and reliability.

Furthermore, we are committed to providing a high quality service and support to our customers.

IT IS IN OUR INTEREST to help you with the permit application for the operation, the training of your staff and supervision of the installation.

Many of our customers have signed a service agreement with MRT, which will ensure that the system works within specified

parameters. This minimises your own exposure to liability. Such agreements also prevent unforeseen downtime and will keep operation and maintenance costs to a minimum.



It is not by accident that MRT has sold a great number of plants all over the world.

OUR PHILOSOPHY is to form excellent long term business relationships with all our customers. We would like you to become one of them.

A good business relationship is a matter of trust.





ENVIRONMENT
AGENCY

**The Producer Responsibility Obligations
(Packaging Waste) Regulations 1997 (as amended)**

**Compliance Monitoring
Strategy for 2003**

Produced by: **Chris Grove**
For: **Mike Fletcher - Waste Process Technical Manager**
Date: **29 April 2003**

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1.0 Introduction

1.1 The Agency Duty to Publicise a Monitoring Strategy

The Producer Responsibility Obligations (Packaging Waste) Regulations 1997 (the Regulations) were amended in December 1999, among the amendments was a requirement for the Environment Agency to publish a compliance monitoring strategy each year, commencing in 2000.

Following discussions with the then Department of the Environment, Transport and the Regions (now the Department of Environment, Food and Rural Affairs, DEFRA) the Agency reached an agreement on the publication date for the annual strategy of April each year. This date enables account to be taken of the number of producers who register by the deadline date of 7 April each year.

1.2 The Agency Duty to Monitor Compliance

Regulation 25 places a duty on the Environment Agency to monitor compliance with the legislation in England and Wales. The Agency targets three distinct groups for compliance monitoring, which are:

- registered producers;
- compliance scheme operators; and
- companies which the Agency considers may be obligated producers but are not registered with an agency nor members of a compliance scheme.

1.3 The Purpose of Compliance Monitoring

In undertaking its duty to monitor compliance with the Regulations the Agency checks four key requirements, these are:

- that persons who are obligated producers are registered
- all relevant packaging is included in the data return
- all relevant activities are included in the data return
- calculated obligations are correct

Compliance monitoring fulfils two principle objectives. Firstly to ensure that all producers meet their responsibility which in turn helps to minimise any possible business advantages that may be gained from non-compliance. Secondly, compliance monitoring ensures that the regulatory system placed on industry delivers the required volumes of UK packaging waste for recovery and recycling such that the UK is able to demonstrate compliance with the EC Directive targets. Through its monitoring work the Agency is able to verify and validate data on packaging. This data is collated and then provided to DEFRA to enable them to review and report on the UK position.

2.0 COMPLIANCE MONITORING NUMERICAL TARGET

During 2003, the Environment Agency will seek to monitor a minimum of 1800 registrants and companies that the Agency considers may be obligated producers.

(This figure excludes the Agency monitoring activities associated with the accreditation of reprocessors and exporters but includes some of the monitoring undertaken during the fact finding exercise looking into the wood reprocessing sector described in section 5 below. Activities exclusively related to formal enforcement such as interviews under caution, etc are also excluded from this figure).

In general terms the Agency, for business planning purposes, relates the level of resource it assigns to producer responsibility compliance monitoring to the number of registrants plus a nominal number of obligated producers who have failed to register, the so called free riders. Resource allocation at the present operational service level equates to monitoring 33% of the registered producers and free riders each year.

The 33% target forms the underlying basis for deriving the annual national monitoring target number. However resource deployment within this framework does not actually equate to a three year rolling programme for monitoring of registered producers and free riders. In practice the frequency of monitoring is variable as available resources are allocated according to differing perceived risks and priorities. This will therefore affect the actual monitoring frequency for any individual registrant.

Within its strategy the Agency does not, for obvious reasons, detail specific producers who will be monitored. It is therefore important for producers to ensure their data is accurate and records are maintained on the assumption that they will be monitored by the Agency. Even when an individual producer is not monitored during the course of a year it is likely that when they are, in a subsequent year, that the records relating to preceding years will be assessed. On the basis that the regulations require producers to maintain records for at least 4 years, the Agency when undertaking its compliance monitoring activities will normally monitor packaging data for the current year and up to three years prior to the current year.

3.0 COMPLIANCE MONITORING - METHODOLOGY

3.1 Registered Producers

Registrants include those producers that register directly with the Agency and those that register via membership of a compliance scheme. Compliance monitoring of registrants is broadly undertaken in three ways:

- Logic checking of registration data
- Site visits
- Checking supporting information

The Agency National Waste Registration Unit (NWRU) is responsible for processing registration application forms and updating the Agency database. On receipt of an application, the form is reviewed for completeness and then logic checked to ensure that the data tables are completed in a coherent manner. Finally the obligation is checked to ensure it correlates with that calculated by the producer.

Any errors or concerns arising from the assessment of the registration forms and data provided are highlighted and the applicant is requested to revise the application by providing the required information or rectifying any errors in the data tables. Once a satisfactory application is received, the registrant details are entered onto the Agency database and they are registered as a producer.

Following registration the next stage of compliance monitoring will generally be undertaken by field staff located in the Agency Area offices. Staff will ordinarily monitor registered producers through an on-site visit. In some circumstances monitoring will also be undertaken through desk based audits. For example if a registered producer has previously been requested to re-submit data the desk based audit may focus on this aspect and may not require a site visit or the audit may focus on exports, for which supporting evidence will be audited.

Where a visit is to be undertaken, this will be preceded by preparatory work, which will include a review of current and previous registration data forms, any previous requests for re-submissions and any advisory guidance given in previous communications.

As a result of compliance monitoring of a registrant one of three outcomes will normally be determined:

- Satisfactory, based on the aspects monitored, the registrant is compliant, at the time of monitoring;
- Data form has to be re-submitted;
- Further investigation required, which may lead to enforcement action.

3.2 Compliance Scheme Operators

The NWRU is responsible for processing applications for registration from compliance schemes and any errors or concerns in relation to the information submitted is raised with the applicant during the processing of the application, in a similar way to queries relating to Agency registered producers. Once registered, the Unit maintains the details of the scheme, including the aggregated data and details of the members of each scheme. The monitoring of the operation of a scheme is carried out by the NWRU, whilst monitoring of the members of the scheme is carried out by Area based staff.

3.3 Free Riders

The Agency initiates a number of actions to identify companies who may have producer responsibility obligations and have as yet not registered. The range of activities employed in identifying free riders includes local intelligence and the use of business directories and where available trade body membership listings.

Once a listing of possible free riders is established they are initially monitored via correspondence using responses to a set of standard questions to assist in determining if they are an obligated producer. In some cases, this may lead to a site visit.

If it is established that the company is an obligated producer who has not previously registered and should have done so, the Agency will normally provide advice and guidance as to how the producer can comply with its current obligations. With regards to possible offences already committed the Agency will normally initiate investigation into any suspected offences.

4.0 COMPLIANCE MONITORING - TARGET SECTORS

4.1 Registered Producers (EA Direct & via Schemes)

The Agency will select producers to be monitored according to a variety of factors that are perceived to give rise to higher risks of data inaccuracy. In addition to these risk factors the Agency has identified a number of areas/sectors that are considered to be a priority for monitoring. Thus a producer who falls within a risk area and is considered a high priority will be high on the target list for monitoring in 2003.

The risk factors that will be used in 2003, are:

- First time registrant
- New scheme member
- Producer not visited in last 2 years
- Producer who has queries highlighted against data submitted
- Producer who had to re-submit data last year
- Producer who submitted a poor Certificate of Compliance
- Producer who was sent a warning letter last year

The priority areas/sectors which will be included this year, are:

- Producers with a large tonnage¹
- Producers with increased selling obligation as result of the Beer Bottle Judicial Review Decision²,

¹ The Agency for the purposes of the strategy regard large as over 1000 tonne overall recovery obligation.

² The Judicial Review taken by Valpak in 2002 was to clarify who was the seller of beer bottles. The court determined that, for the purpose of the Packaging Regulations, pubs and clubs are to be regarded as the sellers of beer bottles and not the brewers.

4.2 Compliance Scheme Operators

The Agency principally monitors scheme operators through considering their operational plans against the regulatory requirements, analysing data returns and comparing them with data obtained from the monitoring of individual scheme members. Scheme data is also analysed for trends which might suggest that obligations are not being declared or met in full. Scheme monitoring visits are carried out in order to assess compliance with the conditions of registration.

Schemes are responsible for meeting the consumer information obligations in respect of members whose main activity is that of seller. The Agency monitors the programmes put in place to meet these obligations.

There are currently 17 Registered Compliance Schemes based in England and Wales and one application for registration that is still pending. The number of producers registering via compliance schemes as at April 7 2003 is nearly 200 more than at the same time in 2002. During the remainder of the year it is expected that the number of producers who register via compliance schemes will increase. One key reason for this stems from the work directed towards identifying free riders.

The Agency will closely monitor data submissions from schemes. Specific aspects to be examined will be the make up of members and the trends in packaging handled. Significant variations from previous years data submissions will be explored to establish the underlying reasons. In addition scheme members are monitored directly, usually via site visits, by the Agency.

Periodically, the Agency may request additional information from a scheme and will aim to monitor each operator during the course of the year.

4.3 Free Riders

The identification of free riders remains an Agency priority for 2003 with a number of issues determining the choice of businesses to be monitored for compliance.

One target area for free rider work in 2003 overlaps with the work on monitoring registered producers in relation to those who will now have additional selling obligation as a result of the judicial review referred to in section 4.1. The Agency will be ensuring that producers who have registered as a result of this change have accurately accounted for the additional selling obligation and that any free riding as a result of the change is minimised.

Companies that have not renewed their registration for 2003 will also be monitored to establish the reasons for failing to re-register, this will ensure they are not free riding.

The Agency also acts on reports and information received from trade bodies and registered producers giving details of companies believed to be avoiding their obligations.

5.0 ACCREDITED REPROCESSORS & EXPORTERS

At the outset of the implementation of the Regulations the Agency established a voluntary scheme of accreditation for reprocessors of packaging waste. This scheme has subsequently been extended to include persons who export packaging waste for reprocessing overseas. Reprocessors and exporters, once accredited are able to issue evidence of recovery and recycling of packaging waste in the form of Packaging Recovery Notes (PRNs) and Packaging Export Recovery Notes (PERNs).

The Agency has undertaken to administer the voluntary system, which includes the monitoring of compliance, by reprocessors and exporters, with the terms of accreditation. Monitoring is undertaken to ensure that the packaging waste reprocessed is UK packaging waste and to verify the volumes of packaging waste reprocessed against which PRN/PERNs have been issued.

Accreditation is granted on an annual basis with existing reprocessors and exporters being encouraged to make their applications in October each year to ensure the continuation of their accredited status from one year to the next. Each application, whether as a continuation of an existing accreditation or for a new one, will involve a site visit to assess the reprocessing operation and/or document management systems. Amongst other things this site visit will ensure that the applicant:

- has an adequate understanding of the Packaging Regulations (in particular, the ability to identify packaging waste from other materials);
- is reprocessing (either in the UK or overseas) UK packaging waste;
- has in place an auditable system of record keeping; and
- is able to provide quarterly returns on the tonnage of packaging waste received/exported.

In addition to the application visit the Agency also undertakes mid-year visits to monitor compliance. On average one mid year visit per reprocessor/exporter is undertaken, though various factors will influence this such as sector issues and the history of compliance.

Accreditation attracts no fee so the Agency utilises a proportion of the producer registration fee to cover its costs. The rationale for this is based on the producer responsibility concept; thus the registrants currently finance the accreditation scheme, which in turn provides them with the evidence they require to demonstrate that they have met their obligations.

The Agency will suspend or remove accreditation whenever it suspects that the terms on which accreditation was granted are not being adhered to. Should fraud or other significant malpractice be identified, accreditation will be removed and the matter may be referred to the Police for further investigation.

In 2003 the Agency in conjunction with the Department of Environment, Food and Rural Affairs, the Scottish Executive, the Welsh Assembly Government, the Northern Ireland administration, the Scottish Environment Protection Agency and the Environment and Heritage Service in Northern Ireland, will be participating in a fact finding exercise looking into the wood packaging reprocessing sector. The exercise will involve a study of packaging flows within the sector from waste production through to reprocessing and reuse. It will seek to identify any weaknesses in the current arrangements by examining the robustness of existing recording and monitoring systems as well as audit trails adopted by wood packaging waste reprocessors to manage the allocation and issue of PRNs. The exercise will be undertaken by a team that includes Agency staff, an auditor, staff from the other agencies and, on some visits, a representative of DEFRA or the appropriate devolved administration.

Findings from the exercise will be used to report to the Minister who commissioned the work following allegations of inappropriate issuing of PRNs.

6.0 PROVISION OF ADVICE AND GUIDANCE

The Agency will continue to provide advice and guidance to both existing producers and those businesses that are reviewing what, if any, obligations they have. Such advice and guidance will be provided in response to specific queries.

The Agency does not have the resources to brief individual businesses on all aspects of the regulations and individual responsibilities. Businesses will need to familiarise themselves with the general principals and requirements of the regulations. This may necessitate them seeking additional support from, for example, trade bodies and associations, other business support organisations or consultants.

The Agency continues to support various fora in which advice and guidance is provided to producers. The nature of such events has changed since the inception of the Regulations with the focus now being very much on data calculations.

The Agency also continues to respond to requests to contribute to events organised by partner bodies, business support organisations and trade associations. Such events are viewed as being a valuable means of disseminating information, guidance and advice to industry generally.

7.0 FUNDING

7.1 Income

The Agency compliance monitoring activities outlined above are funded from:

- The annual registration fees (currently 50) paid by producers registered with the Agency; and
- The fees payable to the Agency by compliance schemes based in England or Wales (currently 60 per member).

Following the registration deadline of 7 April 2003, 586 producers have registered directly with the Agency and 4323³ have registered via compliance schemes, this provides an income to the Agency of £546,200.

This level of income presents a shortfall of around £50,000 in comparison to the Agency's projected expenditure on producer responsibility in 2003.

7.2 Funded Activity

It is important to note that the registration fees paid to the Agency cover a wide range of activities apart from the compliance monitoring associated with registrants, compliance schemes, unregistered companies believed to have obligations and accredited reprocessors and exporters. The fees also cover, for example, the registration of new schemes; the registration of individual producers (particularly the administrative tasks - data entry, processing payments, etc); issuing guidance, running seminars and handling queries; and management of recovery and recycling data for the UK. The fee income will also contribute to overhead costs incurred as a result of the operational processes associated with the administration of the regulatory regime.

The registration fees do not cover the cost of taking formal enforcement action (interviews under caution, preparing case files, undertaking prosecutions, etc).

7.3 PRN/PERN Revenue

The cost of PRN/PERNs is not controlled in any way by the Agency and market forces, primarily govern any charges levied by reprocessors/exporters for the procurement of PRN/PERNs. It is important to note that the Agency does not receive any revenue, either directly or indirectly from any charges made for PRN/PERNs.

Any revenue raised through the distribution of PRN/PERNs is retained by accredited reprocessors/exporters. They are required to provide information to the Agency, annually, on how the revenue has been used to fulfil one or more of three objectives; increased collection of UK packaging waste, increased capacity for reprocessing and/or expansion of end markets for reprocessed packaging waste.

8.0 ENFORCEMENT

The Environment Agency continues to enforce the Packaging Regulations with regard to its published Enforcement and Prosecution Policy and associated guidelines. Year on year since 1999 there has been an increase in enforcement actions against producers who have failed to comply with the regulations. The enforcement powers available include warning letters, issuing formal cautions or taking prosecutions and in the case of compliance schemes, de-registration of the scheme.

³ Schemes do accept producers after the registration deadline date; thus this figure may increase during the year. NB producers who join schemes after the deadline date are not immune from enforcement action for failure to be registered by the due date.



Introduction

Companies who are obligated under the packaging waste regulations must

- register with the Environment Agency, Scottish Environment Protection Agency or an approved compliance scheme
- recover a specified amount of waste
- prove that they have met their annual obligations to recover and/or recycle packaging waste.

Recovery is

- recycling
- energy recovery
- composting.

Recycling is reprocessing waste materials, by a production process, into new materials or products.

The Regulations

About 9.3 million tonnes of packaging waste is produced in the UK every year, much of which ends up in landfill sites.

The legislation to address this which implements the EC Directive on Packaging & Packaging Waste (94/62/EC) is the Producer Responsibility Obligations (Packaging Waste) Regulations 1997 (as amended). The aims of the Regulations are to ensure that producers

- reduce the amount of packaging waste produced
- re-use packaging wherever possible
- increase the amount of packaging recovered and recycled
- achieve a more sustainable approach to dealing with packaging waste
- reduce the amount of packaging waste going into landfill
- implement the recovery and recycling targets in the EC Directive.

Industry was closely involved in developing the Regulations and took the view that the burden should not just fall on one particular business sector. As a result, all businesses above a certain size that handle packaging share responsibility along the packaging chain – from manufacturer to seller (retailer).

Do the Regulations apply to you?

The Regulations apply to you if your business

- performs one or more of the activities listed below, or has them performed on your behalf *and*
- owns the packaging in question on which these activities are carried out *and*

- supplies to another business in the chain or to the final user *and*
- exceeded a UK turnover of £2 million in the previous year and handled more than 50 tonnes of packaging materials and/or packaging – referred to as the threshold tests.

Turnover is based on the last financial year for which audited accounts are available before 7 April 2003.

The amount of packaging handled is based on the previous calendar year (1 January to 31 December 2002).

A group of companies must consider its total packaging handled and its total turnover (the aggregate for all subsidiaries) when considering the threshold tests.

Activity	description
Raw material manufacture	Production of raw materials for packaging manufacture
Packaging conversion	Conversion of raw materials into packaging
Packing/filling	Putting goods in packaging or packaging around goods
Selling	Supply to the final user of the packaging
Importing	Importers pick up all previous activities conducted outside the UK ('rolled up' obligation).

If your business is subject to the Regulations, then you are legally obligated to recover and recycle specific tonnages of packaging waste. These obligations are based on

- how much packaging you handled the previous calendar year (1 January to 31 December 2002)
- the activities you carried out on that packaging
- the national recovery and recycling targets.

About your activity obligations

Your recovery and recycling obligations are based on the amount of packaging and packaging materials handled and the activity performed on it. It is important that you identify (pick up) the percentage obligation on all the activities you perform.

Remember that your recycling obligation must be material specific. However, this will be part of your recovery target. Do not add the two together. You must fulfil **both** the recovery and recycling obligations.

There is no material-specific recycling obligation for wood or 'other' packaging materials. The obligation is for recovery only and can be made up of any other material.

The obligation is for the current (relevant) year and is based on the data entered in Tables 1–3b on page 4 of form WMP3.

Calculating your activity obligations

There are five activities with the following obligations:

Raw material manufacturer – amount you have handled x 6% of the UK target

Converter of packaging – amount you have handled x 9% of the UK target

Packer/filler of packaging – amount you have handled x 37% of the UK target

Seller of packaging – amount you have handled x 48% of the UK target

Importer – amount you have handled x 'rolled up' activity obligation x UK target.

UK targets for 2003

Recovery target = 59%.

Recycling target = 19%

In calculating the packaging handled you should include

- tonnage of packaging that you supply on
- imported packaging and any packaging around imported goods

Do not include

- materials you export
- any packaging that has been used before
- process waste.

About your recovery and recycling obligation

Calculating your obligations

<i>Recovery</i>	<i>Recycling, by material</i>
Packaging handled x activity obligation x UK recovery target	Packaging handled, by material, x activity obligation x UK recycling target

Your recycling obligations form part of your overall recovery obligation.

Businesses must satisfy 50 per cent of their total recovery obligation with evidence of recycling. For example, if you have an obligation of 100 tonnes, 50 tonnes of this must be recycled and evidence submitted in the form of recycling PRNs.

What you need to do next

You can

- register your business directly with us
- join an existing compliance scheme
- start your own compliance scheme.

Registering your business with us

You need to complete form WMP3.

If your registered or head office is in England or Wales you should register with the Environment Agency.

If it is in Scotland, you need to register with the Scottish Environment Protection Agency (SEPA).

You must

- complete form WMP3 *businesses that have a turnover of more than £5 million need to submit a compliance plan with their application or by 30 June 2003 for any business that was registered directly with us in 2002*
- pay a registration fee of £950 when you send in your application for registration (by 7 April 2003)
- during the registration year recover the tonnages of packaging waste as detailed in your completed WMP3
- supply a Certificate of Compliance by 31 January 2004, see 'Certificates of Compliance' on page 3.

Compliance plan

Your application may be rejected or your registration cancelled if you fail to supply an adequate plan.

Plans must give

- the type of evidence you will collect to meet your obligation, for example packaging waste recovery notes (PRNs) or packaging waste exporter recovery notes (PERNs) – *there is more about this in 'Copies of PRNs/PERNs' on page 3*
- how often you intend to collect this evidence, for example monthly, quarterly
- confirmation of any contract with reprocessors/exporters
- full details of any reprocessor/exporter not accredited by us who you intend to use including names, addresses and estimates of tonnages.

If you intend to meet all or part of your obligation by using packaging waste of which you are the end user, please provide

- names and addresses of reprocessors/exporters you intend to use and
- the type of material and tonnage.

We will refer to the compliance plan when assessing your Certificate of Compliance.

Seller obligation (consumer information obligations)

If your main activity is as a seller, you must give your customers information about

- the return, collection and recovery systems available to them
- their role in contributing to reuse, recovery and recycling of packaging and packaging waste
- the meaning of symbols and icons on packaging
- how to get copies of the *National Waste Strategy* – see 'Sources of information' on page 5.

We will ask you to prove how you plan to fulfil these requirements to inform customers.

Providing evidence of recovery and recycling

The packaging waste must have been generated in the UK and genuine recovery and recycling must have taken place.

Remember that you do not have to recover and recycle your own packaging waste that you handled or supplied.

You can choose how to meet these recovery and recycling obligations. For example, entering into a partnership with a local authority or a contract with a merchant. You may already have packaging waste for recycling or recovery you can use to produce evidence, for example PRNs.

To make it easier for businesses to collect the necessary evidence of their recovery and recycling obligations, a voluntary accreditation of packaging waste reprocessors and exporters scheme has been developed.

Once a reprocessor or exporter has been accredited they can issue the following documents as evidence of recovery or recycling

- PRNs – packaging waste recovery notes, for UK packaging waste reprocessed within the UK
- PERNs – packaging waste exporter recovery notes, for UK packaging waste reprocessed outside the UK.

Weighbridge tickets cannot be accepted as evidence from accredited reprocessors.

Businesses that deliver packaging waste to accredited reprocessing sites should negotiate with the reprocessor for the supply of the PRN/PERN. Alternatively you can get PRNs/PERNs from any accredited reprocessor/exporter.

Other kinds of evidence of recovery or recycling

We can only accept alternative evidence from non-accredited reprocessors/exporters. This must include a full audit trail of the UK-sourced packaging waste reprocessed. Contact us for further information about this.

Certificates of Compliance

Businesses registered with us must send us a Certificate of Compliance, stating whether or not they have met the obligations for the previous year. This is needed by 31 January 2004. It should be signed by

- a director of the company or
- a partner or sole trader

as appropriate.

If you are using evidence other than PRNs/PERNs, the certificate must tell us

- how many tonnes of packaging waste you have delivered to a reprocessor, to the nearest tonne
- how many tonnes of each packaging material, to the nearest tonne
- the name of the reprocessor
- the date the evidence was issued.

You must also supply a copy of Section 5 of form WMP3 declaring your 2002 packaging data. In the event of any subsequent re-submission, you must supply new data tables from Section 5 of the form.

If you are using PRNs or PERNs as evidence, you must provide the following information.

Recovery

- the PRN number
- tonnage
- name of the reprocessor

Recycling, by material

- name of the packaging material
- the PRN/PERN number
- tonnage
- name of the reprocessor

Keep a copy of your Certificate of Compliance in a safe place.

Further guidance on Certificates of Compliance is available from the producer responsibility teams/units listed on page 5.

If your evidence is not a PRN/PERN from an accredited reprocessor you must be able to demonstrate a full audit trail for the UK sourced packaging waste reprocessed. Further information on alternative evidence can be obtained from the us.

Copies of PRNs/PERNs

We need to see copies of the PRNs or PERNs you are using as evidence.

Please do not send us the original PRNs/PERNs.

The Regulations state that you must keep the original evidence of compliance for a four-year period and make it available to us if necessary.

Joining an existing compliance scheme

Apply directly to the scheme. You do not need to fill in WMP3.

A compliance scheme takes on your legal obligations for you, in particular your recycling and recovery obligations. However, you are still responsible for providing the scheme with your accurate data.

If you choose to join a compliance scheme you must do so by 7 April 2003 at the latest. A list of current schemes can be found on page 6.

It is an offence if you do not register your business with the Agency/SEPA or one of the compliance schemes by 7 April 2003.

Starting your own compliance scheme

Apply directly to us. You do not need to fill in form WPM3.

Trade associations, waste management and reclamation companies, and others with access to packaging waste materials could decide to set up a compliance scheme for their members or customers on a national or regional basis.

Any proposed compliance scheme must produce a detailed operational plan to prove

- how the recycling and recovery obligations of its members will be discharged
- that it has adequate financial and technical resources to discharge its members' obligations.

Schemes need approval from

- the Secretary of State for the Environment
- the Environment Agency or SEPA.

For further information about setting up your own scheme contact the

- Environment Agency's National Waste Registration Unit
- Scottish Environment Protection Agency (SEPA), Producer Responsibility Unit.

See page 5 for details.

Monitoring and enforcement

The Agencies will provide advice and answer specific queries on the Regulations.

We will, however, take a hard line with businesses that we consider have avoided their obligations, for example by

- not registering or joining a scheme by the due date
- providing inaccurate data.

You may be prosecuted if you do not comply.

To contact us call

- Environment Agency – 0845 933 3111
- SEPA – 01786 457 700.

Keeping us informed

In signing your declaration, you are undertaking to inform the Agency within 28 days of any change in

- circumstances relating to registration
- the information which you have submitted with your application

and to

- provide a certificate of compliance by 31 January 2004 and
- cancel your registration if you become a member of a registered compliance scheme or cease to be a producer in the year.

Reducing packaging

Reducing the amount of packaging produced in the first place and/or increasing the amount of re-usable packaging may lessen the financial impact of the Regulations on businesses by, for example, making production cost savings.

We can advise you about waste minimisation schemes running in your area. Advice is also available from Envirowise see 'Sources of information'.

Sources of information

Publications

The Packaging Waste Regulations users guide (amended edition), DEFRA (available soon).

Department for Environment, Food and Rural Affairs, DEFRA
Free Literature, PO Box 236, Wetherby LS23 7NB. Phone
0870 1226 236, fax 0870 1226 237.

Available soon on the DEFRA website
<http://www.defra.gov.uk>

The Producer Responsibility Obligations (Packaging Waste) Regulations 1997, SI No. 648 (as amended), HMSO, ISBN 0-11-064106-X, £6.10.

The Producer Responsibility Obligations (Packaging Waste) (Amendment) Regulations 1999, SI No. 1361, HMSO, ISBN 0-11-082641-8, £1.00.

The Producer Responsibility Obligations (Packaging Waste) (Amendment) (No. 2) Regulations 1999, SI No. 3447, HMSO, ISBN 0-11-085722-4, £2.00.

The Producer Responsibility Obligations (Packaging Waste) (Amendment) (England and Wales) Regulations 2000, SI No. 3375, HMSO, ISBN 0-11-019009-2, £6.00.

The Producer Responsibility Obligations (Packaging Waste) Amendment (Scotland) Regulations 2000, Scottish SI No. 451, HMSO, ISBN 0-11-059552-1, £1.75.

The Producer Responsibility Obligations (Packaging Waste) Amendment (Scotland) Regulations 2002, Scottish SI No. 147, HMSO, ISBN 0-11-061309-0, £1.75.

The Producer Responsibility Obligations (Packaging Waste) (Amendment) (England) Regulations 2002, SI No. 732, HMSO, ISBN 0-11-039764-9, £1.50.

Available from The Stationery Office, Publications Centre,
Orders Department, PO Box 29, Norwich NR3 1PD.

Phone 0870 600 5522, fax 0870 600 5533
<http://www.the-stationery-office.co.uk>

also available at <http://www.hmso.gov.uk>

National Waste Strategy Department for Environment, Food
and Rural Affairs, address above.

National Waste Strategy Scotland, 1999, SEPA, available on
<http://www.sepa.org.uk>

Information

Envirowise

Freephone Helpline 0800 585 794

Offers advice on a range of environmental issues, including
packaging. For more complex enquiries, an environmental
specialist can contact you and offer up to 2 hours free advice.
If you are a smaller business, with fewer than 250 employees
on site, free environmental counselling visits can be made at
the discretion of the Helpline manager.

The Industry Council for Packaging and the Environment (Incpen)

Suite 108, Sussex House
6 The Forbury
Reading
Berkshire RG1 3EJ

Phone 0118 925 3466
Fax 0118 925 3467

<http://www.incpen.org>

Incpen promotes the benefits of packaging and represents
the interests of over 60 major companies from all parts of the
packaging chain. It gives general guidance concerning
packaging and the environment.

The Scottish Environment Protection Agency (SEPA)

Producer Responsibility Unit
Erskine Court
The Castle Business Park
Stirling FK9 4TR

Phone 01786 457 700
Fax 01786 446 885

<http://www.sepa.org.uk>

The Northern Ireland Environment and Heritage Service

The Producer Responsibility Unit
Environment and Heritage Service
Commonwealth House
35 Castle Street
Belfast BT1 1GU

Phone 028 9054 6481
Fax 028 9054 6480

Environment Agency (England & Wales)

National Waste Registration Unit – Producer Responsibility
10 Albert Embankment
London SE1 7SP

Phone 020 8305 4036
Fax 020 8305 4027

<http://www.environment-agency.gov.uk>

Delivers a service to its customers, with the emphasis on
authority and accountability at the most local level possible.
It aims to be cost-effective and efficient and to offer the best
service and value for money.

Head office is responsible for overall policy and relationships
with national bodies including Government.

Rio House
Waterside Drive
Aztec West, Almondsbury
Bristol BS12 4UD

Phone 01454 624400
Fax 01454 624409

Current compliance schemes in operation

Mr Clive Hoyland
BETAPACK
103 Tenter Lane
Warmsworth
Doncaster
South Yorkshire DN4 7JE
Phone 01302 857448
Fax 01302 857448

Ms Helen Burfield
BIFFPACK
Biffa Waste Services Limited
Coronation Road
Cressex
High Wycombe
Buckinghamshire HP12 3TZ
Phone 01494 556565
Fax 01494 484836

Mr Mike Scollick
CLEANAPACK
c/o Cleanaway Ltd
Station Road
Ecclesfield
Sheffield S35 9YR
Phone 0114 246 6813
Fax 0114 246 6657

Mr Andrew Francis
COMPLYPAK
63 Elphinstone Road
Hastings
East Sussex TN34 2EG
Phone 01424 432320
Fax 01424 202983

Ms Kamila Horak
DIFPAK
Pishiobury House
Pishiobury Drive
Sawbridgeworth
Hertfordshire CM21 0AF
Phone 01279 721921
Fax 01279 600 561

Mr Scott Brady
ECOPAK
9 East Haddon Road
Dundee DD4 7LD
Phone 01382 401007
Fax 01382 461029

Ms Helen Burfield
IMPACT
Biffa Waste Services Limited
Coronation Road
Cressex
High Wycombe
Buckinghamshire HP12 3TZ
Phone 01494 427271
Fax 01494 484836

Sian Bunn
INTEGRA
PO Box 17
Darlington DL1 2WX
Phone 0790 554 0538

Mr Martin Bonser
ONYXPAK
Thameside Drive
Castle Bromwich
Birmingham B35 7AG
Phone 0121 749 6583
Fax 0121 749 5324

Mr David Pryke
PAPER COLLECT
Hamilton House
Gogmore Lane
Chertsey
Surrey KT16 9AP
Phone 01932 569797
Fax 01932 569749

Mr Geoff Butterworth
PAPERPAK Ltd
Boston House
Grove Technology Park
Wantage
Oxfordshire OX12 9FF
Phone 01235 760011
Fax 01235 770200

Mr Graham Wiles
PENNINE-PACK Ltd
Green Business Network
5 Town Hall Street
Sowerby Bridge
West Yorkshire HX6 2QD
Phone 01422 316661
Fax 01422 316662

Mr David Duggan
RECYCLE-PAK Ltd
Unit 12 Clydesdale Place
Moss Side Employment Area
Leyland
Preston PR26 7QS
Tel 01772 331100
Fax 01772 452777

Miss Vikki Law
SWS Ltd
Thomlinson Road
Longhill Industrial Estate
Hartlepool TS25 1NS
Phone 01429 276961
Fax 01429 864320

Mr Mark Saunders
TaG PACK
Trees are Green Limited
15 Dormer Place
Leamington Spa
Warwickshire CV32 5AA
Phone 01926 452040
Fax 01926 452440

Mr Richard Todd
TODDPAK
F D Todd & Sons Limited
Excelsior Mill
Thirsk
North Yorkshire YO7 1QF
Phone 01845 523131
Fax 01845 523997

Mr Michael Williamson
VALPAK Ltd
Stratford Business Park
Banbury Road
Stratford-upon-Avon CV37 7GW
Phone 084506 825725
Fax 084506 825329

Ms Kamila Horak
WASTEPAK
Pishiobury House
Pishiobury Drive
Sawbridgeworth
Hertfordshire CM21 0AF
Phone 01279 721721
Fax 01279 725754

Mr James Donaldson
WESPAK
Waste Exchange Services Limited
59 Boathouse Lane
Stockton-on-Tees
Cleveland TS18 3AW
Phone 01642 606055
Fax 01642 868115

Details correct at time of going to press.

CONTACTS:

THE ENVIRONMENT AGENCY HEAD OFFICE

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD.
Tel: 01454 624 400 Fax: 01454 624 409

www.environment-agency.gov.uk
www.environment-agency.wales.gov.uk

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN

Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
Tel: 01733 371 811
Fax: 01733 231 840

SOUTHERN

Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

MIDLANDS

Sapphire East
550 Streetsbrook Road
Solinull B91 1QT
Tel: 0121 711 2324
Fax: 0121 711 5824

SOUTH WEST

Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 01392 444 000
Fax: 01392 444 238

NORTH EAST

Rivers House
21 Park Square South
Leeds LS1 2QG
Tel: 0113 244 0191
Fax: 0113 246 1889

THAMES

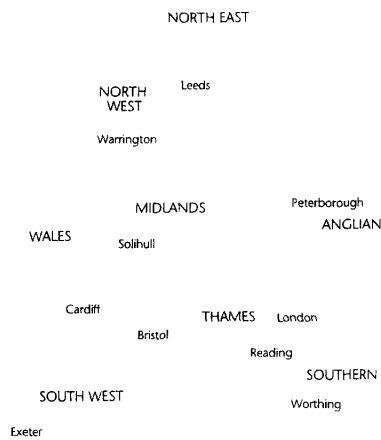
Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

NORTH WEST

PO Box 12
Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

WALES

Cambria House
29 Newport Road
Cardiff CF24 0TP
Tel: 029 2077 0088
Fax: 029 2079 8555



ENVIRONMENT AGENCY
GENERAL ENQUIRY LINE

0845 9 333 111

ENVIRONMENT AGENCY
FLOODLINE

0845 988 1188

ENVIRONMENT AGENCY
EMERGENCY HOTLINE

0800 80 70 60



Fact Sheet - 004
**The Export of Packaging Waste with Respect to the
Producer Responsibility Obligations (Packaging Waste)
Regulations 1997 (as amended)**

This Fact Sheet has been produced for information purposes only, it is not a comprehensive or definitive guide to the law or to Environment Agency policy in this area. Any enquiries should be directed to your local Environment Agency Area office on 0845 933 3111.

The purpose of this fact sheet is to outline the legislative requirements affecting international shipments of waste for recovery by companies that wish to meet their obligation under the *Producer Responsibility Obligations (Packaging Waste) Regulations 1997 (The Producer Responsibility Regulations)*¹ by exporting UK packaging waste from England or Wales for recycling / recovery in foreign states. The fact sheet outlines what is required under the Producer Responsibility Regulations when UK packaging waste is exported and how the requirements of *Council Regulation (EEC) No. 259/93* may be met.

The Requirements of the Producer Responsibility Regulations

- The Producer Responsibility Regulations set out the British regulatory framework for the recovery and recycling of UK packaging wastes. These regulations implement the European *Council Directive 94/62/EC* (http://www.europa.eu.int/eur-lex/en/lif/dat/1994/en_394L0062.html [31/05/01]) on packaging and packaging wastes.
- The regulations obligate companies which own and supply packaging, and perform an activity within the packaging chain and have a turnover of more than £2 million per year and handle more than 50 tonnes of packaging within the packaging chain per year.
- An obligated company or compliance scheme can meet their obligation by obtaining Packaging Recovery Notes (PRNs) from reprocessors accredited by the Environment Agency or the Scottish Environment Protection Agency (SEPA). PRNs are issued by accredited reprocessors for the following UK packaging waste materials: paper, aluminium, steel, plastics, glass, wood and other UK packaging wastes. PRNs have a value (per tonne) that fluctuates with the effect of market forces.

¹ <http://www.legislation.hmso.gov.uk/si/si1997/1970648.htm> [31/05/01]
& (as amended) <http://www.legislation.hmso.gov.uk/si/si1999/19991361.htm> [31/05/01]
& (as amended) <http://www.legislation.hmso.gov.uk/si/si1999/19993447.htm> [31/05/01]
& (as amended) <http://www.legislation.hmso.gov.uk/si/si2000/20003375.htm> [31/05/01]

- Additionally the Agencies have developed a system to account for UK packaging waste material reprocessed abroad. Accredited exporters can issue Packaging Waste Export Recovery Notes (PERNs). PERNs work in the same way as PRNs, each packaging material attracting a fee per tonne. Accredited exporters must comply with the Agencies' conditions for exporting UK packaging waste. The accredited exporter must provide a complete audit trail for exports that ensures genuine recovery occurs in the state of import.
- Businesses that operate in England and Wales that wish to become an accredited exporter can obtain further advice from their local Environment Agency Area office by telephoning 0845 933 3111.
- **Accredited exporters must also comply with the requirements of *Council Regulation (EEC) No. 259/93 and other EU Regulations governing exports of waste from the European Union (set out below)*.**

Legislative Controls on Waste Exports

- *Council Regulation (EEC) No. 259/93 ("the Waste Shipments Regulation")* (http://www.europa.eu.int/eur-lex/en/lif/dat/1993/en_393R0259.html [31/05/01]) sets out the controls that apply to waste movements within, into and out of the European Union.
- The procedural requirements outlined in the Waste Shipments Regulation differ depending on the nature of the waste. Wastes are categorised subject to their hazardous properties. The least hazardous wastes are found in Annex II ("the green list") of the Waste Shipments Regulation. Packaging waste generally falls into this category. Contamination with hazardous material may lead to a non-hazardous waste being classified as Annex III ("the amber list") or Annex IV ("the red list") waste, depending on the nature of the contamination.
- The export of green list wastes to OECD² countries is allowed with commercial controls. In addition, "Duty of Care" requirements apply within the UK and the requirements of Article 11 of the Waste Shipments Regulation apply to shipments between EU member states.
- Article 16(1) of the Waste Shipments Regulation has been amended by *Council Regulation 120/97*. The revised Article 16(1) prohibits the export of hazardous waste for recovery to non-OECD countries. Annex V to the Regulation identifies those wastes covered by the export ban.
- In accordance with Article 17 of the Waste Shipments Regulation, the European Commission has contacted all non-OECD countries requesting that they indicate the controls that they wish to be applied to exports of green list wastes from the EU. The responses have been incorporated into the regulations below.
- *Council Regulation 1420/1999* (Official Journal of the European Communities, L166, p.6, 1.7.99) lists those countries requesting a ban on the export of some or all green list wastes and those countries who did not respond to the Commission. The export of green list wastes to countries that did not respond to the Commission is subject to the controls specified in Article 15 of the Waste Shipments Regulation.
- *Commission Regulation 1547/1999* (Official Journal of the European Communities, L185 p.1, 17.7.99) lists those countries which have specified controls to be applied to exports of green list wastes and details those controls.

The European regulations are updated regularly. Details of the specific requirements of different countries please refer to the following website:

(<http://www.europa.eu.int/comm/trade/miti/envir/waste.htm> [31/05/01]).

² OECD - Organisation for Economic Co-operation and Development (also known as Basel Convention Annex VII Countries)

For further general information on the export of green list waste, please see TFS National Service Factsheet 002.

For further information or advice on international waste shipments, please contact your local Environment Agency Area office on 0845 933 3111 or the TFS National Service on 0161 973 2237.

For further information or advice on Packaging Waste Registration, please contact your local Environment Agency Area office.

Useful WEB Sites:

www.environment-agency.gov.uk	website for the Environment Agency
www.oecd.org	website for the OECD
www.europa.eu.int	website for the European Union
www.unep.ch/basel	website for the Basel Convention



Accreditation as a reprocessor of packaging waste

Waste management

Producer Responsibility Obligations (Packaging Waste) Regulations 1997
(as amended)

For Agency use only

Date stamp

Reference number

Region/area passed to

Contact name

Date

Application valid or invalid

Date returned

Approval

Please read through these notes and the form before you fill it in. If you do not complete the form in full, there may be a delay in processing your application.

When you need to fill in this form

This form is in two parts, **Part A** and **Part B**. Everyone must fill in both parts. If you want accreditation for more than one process, you must fill in a separate **Part B** for each process. *You can use photocopies of Part B, but make sure you take the copies you need before you start to write on the form.*

Part A covers

- the applicant
- the proposed packaging waste reprocessing site, and
- environmental permits you currently hold for the site.

Part B asks about the kind of recovery operation which you carry out on the site. It deals with

- where the waste comes from
- the amount of waste you are able to process each year
- the equipment you use
- your plans for developing your business.

Use one copy of Part B for each recovery operation on site.

There is no charge for accreditation. The accreditation applies only to the applicant and the site referred to in this form – it cannot be transferred to another person or site.

About this application

Why you are filling in this application?

Please tick one of the descriptions.

- I am applying for the first time
- I am renewing an existing accreditation

Name of reprocessor

Part A

1 Contact details

1.1 Please supply relevant contact details for this application.

This can be someone acting as an 'agent' for the applicant.

Name

Title	First
Surname	
Position	
Address	
Postcode	
Phone	
Fax	
Mobile	
Email	

2 The applicant

2.1 Please tell us the status of the applicant

- Individual or partnership
 Corporate body

2.2 Please give us the applicant's details

Name

Title	First
Surname	
Status	
Position	
Company if applicable	
Address	
Postcode	
Phone	
Fax	
Mobile	
Email	

First time applicants – please go to question 3.1

Renewal applicants – please go to question 3.2

3 The site

Location of the site

3.1 Please send us a site plan showing the area of land to which this application relates.

Full address of the site

Postcode

Ordnance Survey national grid reference *Please give the reference for the site entrance if there is more than one grid reference*

--	--	--	--	--	--	--	--	--	--

Ownership or occupancy of the site

3.2 What interest does the applicant have in the site?

- Freeholder (in Scotland, feuholder)
 Leaseholder
 Other *please specify below*

--

Planning status of the site

Renewal applicants

3.3 Has your planning status changed since your last application?

- No go to '4 Environmental permits'
Yes go to question 3.4

First time applicants

3.4 Do you have the necessary planning permission for your operations at this site?

- No If planning permission is not required please provide evidence.
Yes Please enclose a copy. (Or a copy of your application if you have applied for planning permission)

Reprocessing of packaging waste accreditations

4.7 Do you, the company or any of its directors have any other accreditations, including exporter accreditation?

No

Yes *please give accreditation numbers*

5 Management systems

5.1 Do you operate any quality or environmental management schemes?

Please give any information that you think will help your application, for example in-house systems, EMAS, ISO14001 or ISO9000.

--

5.2 Are you an obligated company (as defined in Producer Responsibility Obligations (Packaging Waste) Regulations 1997 (as amended)?

No

Yes *please give details*

Registration number

--

Compliance scheme

--

Part B

If you want accreditation for more than one process on the site, you need to fill in a separate Part B for each process. Please take as many copies of Part B as you need before you start to fill it in.

The figures you use should relate to the last calendar year.

6 The process

6.1 What is the recovery/recycling process operation code for the process covered by this form?

Recycling/reclamation

- R2 – organic substances which are not used as solvents
- paper/board
 - wood
 - plastics
- R3 – metals and metal compounds
- steel
 - aluminium recycling
- R4 – inorganic materials *glass recycling*

Energy recovery

- R9 – mainly as a fuel or other energy generation

Organic recycling

- R10 – spreading on land for agricultural or ecological improvement *includes composting and other biological transformation processes, except waste excluded under Article 2(1)(b)(iii) of the Waste Directive.*

7 Materials

Inputs

7.1 Please give details of the materials you used for this process in the last calendar year

Give an estimate if the process has been operational for less than a year.

The following are

- estimated figures the recorded figures

Material inputs	Tonnes/calendar year
Packaging waste <i>UK-sourced</i>	
Packaging waste <i>non-UK</i>	
Mixed waste <i>UK-sourced</i>	
Non-packaging waste	
Raw materials <i>please specify</i>	
Total inputs	

Please give descriptions on separate sheets if you need to.

7.2 What percentage of any mixed waste tonnage is packaging?

per cent

Outputs

7.3 Please give details of the material outputs from the process for the last calendar year

Give an estimate if the process has been operational for less than a year.

The following are

- estimated figures the recorded figures

Material outputs

Tonnes or kW

Material not processed on site

Contaminants *for example plastic contraries in paper reprocessing*

Product *please describe (energy is also a product)*

Other *please specify*

Total outputs

Please give descriptions on separate sheets if you need to.

8 Your site and plant

8.1 Are you renewing an accreditation?

No

Yes *go to '9 Future business plans'*

Process overview

8.2 Please give the following details

- an operational plan
- a systems diagram or flow chart of the process
- a description of main items of equipment used for processing waste into products or energy
- a plan of the storage and main working areas
- plans of main areas.

Plant use

8.3 Please give the following details

Total capacity per year

tonnes

Maximum output per year *Please give units used if different to tonnes.*

tonnes/other units:

Recording deliveries and outputs

8.4 Please give details of your documentation systems

A description of the systems used to

- record the receipt of waste to your site
- weigh packaging waste
- record the movement of materials, waste, outputs and product from your site
- classify packaging waste and grades
- assess how the amounts of packaging waste are reprocessed, including sampling details if appropriate
- establish reprocessing logs.

9 Future business plans

9.1 Please provide copies of 3-year business plans

In particular, we want to know how you intend to

- develop the collection of packaging waste
- encourage the development of end-markets for materials
- increase recycling
- sell your packaging waste recovery notes (PRNs).

The plan should also tell us about

- revenues generated from PRNs in the previous 2 years
- any existing contracts.

10 Checklist

First time applications – Please enclose

- Site plan *question 3.1*
- Supporting documentation for planning status *question 3.4*
- Process overview documents *question 8.2*
- Description of documentation systems *question 8.4*
- 3 year business plans *question 9.1*
- Other attachments.

How many copies of Part B are you submitting in total?

How many continuation sheets are attached to this form in total?

Renewal applications – Please enclose

- 3 year business plans *question 9.1*
- Supporting documentation for any planning status changes *question 3.4*
- Other attachments.

How many copies of Part B are you submitting in total?

How many continuation sheets are attached to this form in total?

11 Data protection notice

The information provided will be processed by the Environment Agency and SEPA to deal with your application, to monitor compliance with the licence/permit/registration conditions, to process renewals, and for maintaining the relevant public register(s).

We may also process and/or disclose it in connection with the following:

- offering/providing you with our literature/services relating to environmental matters.
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities, emergency services, DEFRA on environmental issues)
- carrying out statistical analysis, research and development on environmental issues
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving our service.

We may pass it on to our agents/representatives to do these things on our behalf.

You should ensure that any persons named on this form are informed of the contents of this data protection notice.

12 Declaration

I declare that the information in this application is true to the best of my knowledge and belief.

I understand that accreditation may be refused if I give false or incomplete information.

Signature

Name *please use block capitals*

Position

Date

13 What happens next

- Remember to keep copies of the form(s) and all the documents you send with it.
- Please send the completed form(s) to us at the appropriate address. If you do not complete this application in full, there may be a delay in processing the form.

If your site is in England or Wales

Send your application to
National Waste Registration Unit
The Environment Agency
10–11 Albert Embankment
London SE1 7SP
Phone 0208 305 4023
Fax 0208 305 4027

If your site is in Scotland

Send your application to
The Producer Responsibility Unit
The Scottish Environment Protection Agency (SEPA)
The Castle Business Park
Stirling FK9 4TR
Phone 01786 457700
Fax 01786 446885

Reprocessors wanting to continue their accreditation in the following year must apply by 15 October.

Agency Guidance for Accredited Exporters



The Agencies recognise exports of UK packaging waste for foreign reprocessing as providing acceptable evidence of compliance. To facilitate and monitor such exports, the Agency has developed a system known as Agency Accredited Exporter. This replaces, from 4 January 1999, the existing arrangements for accreditation of overseas reprocessors and other prearranged agreements with Trade Associations or others for the export of UK packaging waste.

The objective of Accredited Exporter Status is: -

- i) to enable producers to confirm with greater confidence that UK packaging waste that has been exported, follows an approved audit trail and is recovered or recycled by foreign reprocessors.
- ii) to provide a means of establishing a consistent approach to the provision of documentary evidence for recovery and recycling of UK packaging waste.
- iii) to provide the Agencies with the means of auditing exports of packaging waste for overseas reprocessing.

Accredited Exporter Status is voluntary and whilst it will enable the Agencies to monitor exports of packaging waste and ease the administrative burden on the provider of evidence. It does not preclude the provision of alternative evidence as set out in the "orange book", the Producer Responsibility Obligations Guidance on evidence of compliance and voluntary accreditation of reprocessors published in July 1997 (Agencies' Guidance).

To obtain Agency Accredited Exporter Status prospective exporters will be required to submit an application to the Environment Agency if the principal place of business where the main operations takes place is in England and Wales and to the Scottish Environment Protection Agency (SEPA) if in Scotland. Approved exporters will agree to the conditions set out below.

Only the last owner of the packaging waste, in the UK can be eligible for accreditation. Non-accredited exporters can also supply valid evidence of recovery, provided that the exporter fulfils the requirements set out in the Agencies' Guidance.

Export Checklist to obtain Accredited Exporter Status

In every case the prospective exporter submits an application form and supporting documentation to the Agencies. Agency Accredited Exporter Status is **non-transferable and subject to conditions**.

In order to be approved the exporter must comply fully with the following: -

- 1.0 **Application form** – Submit an application in writing to the National Waste Registration Unit (NWRU) in England and Wales or SEPA, Producer Responsibility Unit (PRU) in Scotland. Decision as to appropriate Agency will be the location/address of the intended exporter.
- 2.0 **Grade of material** – The exporter must provide the relevant Agency with details on the grade of material specification for each foreign reprocessor he intends to supply.
 - 2.1. The specification will include: -
 - i) document the level to which contaminants are present, e.g. labels etc.
 - ii) a clause that no material falls into the category of special waste.

Material exported must conform to the requirements of the exporting country, including full conformity to the requirements of the Trans-frontier Shipment of Waste Regulations (TFS), the requirements of UK Customs and Excise, registered waste broker/carrier, Duty of Care and other regulatory requirements.

- 2.2. Intended purpose – The exporter must certify to the relevant Agency that he is satisfied that all parties involved in the export of packaging waste are aware of the intended destination of the packaging waste, that is, whether it is intended for recovery or recycling as defined in the Regulations. He must also confirm that the reprocessing facilities to be used are undertaking reprocessing activities to whatever national standards required, and that contaminants are to a level that is acceptable to the receiving countries.
 - 2.3. UK packaging waste – the material must be 100% UK-sourced packaging waste as defined in the Regulations. The Agencies have developed protocols which relate to mixed waste.
 - 2.4. Sources – the original locations and sources of the packaging waste and all intermediate transfer and processing sites in the UK must be supplied to the relevant Agency to ensure an audit trail for the waste within the UK. This will also enable the relevant Agency to carry out inspections of sample loads to ensure that they meet the description provided in the specification.
 - 2.5. Flow diagram – Submit a flow diagram detailing the source, transfer, export, import and reprocessing, including intermediate carriers and holding locations.
- 3.0 **Weight of material** – weight of material is checked at the producer and sorter or baler stage, as appropriate but will always be checked at point which the material is loaded for export transport (essential requirement for reporting to the Agencies).
- 4.0 **Load rejection** – The approved exporter will be required to notify the relevant Agency of any rejection of load from foreign reprocessors and the reason for rejection.
- 5.0 **Shipping documentation** – Provision of information to demonstrate that the material despatched has arrived at its destination port and subsequently at the reprocessor. For each importing country the exporter to provide the relevant Agency with a summary of the procedures set down for the import of packaging waste.

Information required for each trailer and container load -

Shipping to overseas reprocessors: -

Bill of lading
Import licence number
Shipping company
Port of shipment
Name of ship
Destination country
Destination port
Date of departure
Date of arrival

Movement by road and other means: -

Import licence
Transport company
Destination country
Date of departure
Date of arrival
Transfer location (if load is intended to be deposited and later moved with other material for subsequent transfer or shipping)

- 6.0 **Importing country** – The exporter must be aware of and provide a summary of legislative controls and requirements for each importing country he intends to use, e.g. customs and environmental controls. The exporter must equally be aware of any changes to these controls and inform the relevant Agency of these changes. Exporters must ensure that they fully comply with the legislation on Transfrontier Shipment of waste. It is the responsibility of the exporter to ensure that all regulations are complied with. If you are in any doubt, full details can be obtained from the Agency on telephone 0161 973 2237.
- 7.0 **Reprocessor** – Material shipped only to named and approved reprocessors (**N.B. in the event of any change of a reprocessor's name or status, the Agency must be notified straight away**). Reprocessors must be accredited within their country (where that country has a system of accreditation) and will have been subject to an initial inspection by the exporter, third party or internationally recognised system, DKR system (operated in Germany) or recognised international auditing organisation. **The approved exporter will be required to meet all reasonable expenses of the relevant Agency to confirm or verify the audit trail including inspection of foreign reprocessors if necessary.**
- The exporter will be required to ensure that the reprocessor meets the requirements of the Agencies' Guidance document.
- The exporter must have: -
- i) a system for checking that the material despatched has been delivered to the reprocessor. Details to be placed in the export log (sample attached).
 - ii) a system to ensure that the material delivered to the reprocessor has been reprocessed.
- 8.0 **Export log** – an export log is to be submitted on a quarterly basis to the relevant Agency. Each trailer or container load sent to overseas reprocessors to be notified to the relevant Agency as it happens.
- The export log will be similar to the reprocessor log and will contain the following details and copies of all documents: -
- i) supplier(s) of packaging waste or agent
 - ii) material details, quantity etc...
 - iii) exportation documents
 - iv) import documents, i.e. destination of material
 - v) confirmation of receipt by reprocessor and that the material was reprocessed.
- 9.0 **Monitoring exports** – The approved exporting company will be required to report on all non-conformities to the appropriate Agency within 72 hours of these being reported to the company. **This will include identifying problems on shipment, governmental and reprocessor control.**
- 10.0 **Control mechanism** – The Agency will remove approval if the exporter does not comply with the above requirements. Approval of the export system is given on an individual basis and is non-transferable. **The Agency may undertake periodic inspections of storage premises for UK packaging waste prior to export to examine the packaging waste.**
- 11.0 **Evidence** – The Agency will supply Packaging Waste Export Recovery Notes (PERNs) to exporters once they have been accredited and have ordered and paid for the PERN book. The Agencies will provide and administer the PERNs in parallel with existing/modified PRN system.

- 12.0 **Markets for PERNs** - Exporters will also be required to submit an Annual Revenue Return, detailing where PERN revenue has, or will be, spent. **Exporters are also reminded that there is a possibility of undertaking export of packaging waste through the generation of evidence of compliance in accordance with Agencies' Guidance.**
- 13.0 **Environmental Licences** – the Agency reserves the right to refuse, suspend or revoke accreditation where the exporter is the holder of an environmental licence (or permit) and is in breach of the conditions of the licence (or permit).



**ENVIRONMENT
AGENCY**



**THE PRODUCER RESPONSIBILITY OBLIGATIONS
(PACKAGING WASTE) REGULATIONS 1997**

**THE AGENCIES'
INTERPRETATION
OF 'PACKAGING'**

2nd EDITION

July 1999

INTRODUCTION

The EC Directive on Packaging and Packaging Waste, upon which the UK Regulations are based, only gives general guidance as to what is and is not to be regarded as packaging.

It is essential that a standard interpretation of the definition of packaging exists within the UK so that the Agencies have a consistent basis for assessing obligations under the Regulations. The Agencies, in developing principles which apply the definition of packaging, must have regard to the common sense understanding of what is and is not packaging, the objective of sustainability and to the expressed purpose of the EC Directive which is to, reduce the overall volume of packaging waste

Included in this booklet is a summary of items where agreement on packaging status has been reached by Member States.

These notes set down **the Agencies views** on how obligated producers (and Compliance Schemes) should assess the items of packaging and packaging materials for which they are responsible when compiling records and calculating recovery and recycling obligations.

This booklet replaces the first edition issued by the Environment Agency and the Scottish Environment Protection Agency (SEPA) in July 1997, reflecting both the constructive proposals from a number of packaging chain interests and the Agencies practical experience of interpreting and enforcing the Regulations. It should be noted that it does not cover exemptions from the legislation, nor matters such as evidence, or calculation of obligations (which will depend on criteria such as ownership and the nature of supply).

Particular thanks are due to all those companies, trade associations and Compliance Schemes which responded to the consultation draft in April 1999.

THE EUROPEAN DIMENSION

There is a committee (The Article 21 Committee) which assists the European Commission in dealing with any difficulties encountered in applying the provisions of the Packaging Directive. All Member States are represented on the Committee, the UK by the Department of Trade and Industry.

One particularly helpful decision in early 1999 was to publish a list of items, the status of which is agreed by the Committee. The list (which is subject to change) is intended to promote common understanding. Some illustrative examples from the document are set out below.

The following are packaging

- ◆ Cake tins
- ◆ Sweet boxes
- ◆ Boxes for watchmaker products
- ◆ Toy boxes for consumable toys
- ◆ Cigarette cartons
- ◆ Charcoal sacks
- ◆ Dosage delivery caps
- ◆ Paint tins
- ◆ Film overwrap around a CD case
- ◆ Match boxes
- ◆ Paper or plastic carrier bags *designed/ aimed for being filled at point of sale*
- ◆ Mascara brush *which forms part of the container closure*
- ◆ Sticky labels *attached to another packaging item*
- ◆ Accessory packaging *hung directly on or attached to the product*

The following are not packaging

- ◆ Toy boxes for durable toys
- ◆ Flower pots *intended to stay with the plant throughout its life*
- ◆ Ink cartridges
- ◆ Tool boxes
- ◆ First aid boxes
- ◆ Boxes for contact lenses
- ◆ Tea bags
- ◆ Sausage skins
- ◆ Stirrers
- ◆ Blood bags
- ◆ Urine bags

It is important to note that the above lists have no statutory force in the UK. Whether or not the above items are obligated packaging in the UK will depend upon whether they satisfy the other criteria for packaging given in the Regulations (e.g. ownership, nature of supply, etc).

INTERPRETATION TESTS

NOTES ON STEPS A TO F IN THE FLOW CHART

Step A Identify the Sales Unit

The foundation of the interpretation tests is the sales unit (which comprises the product and its packaging); the purpose of Step A is to identify it. For example, the silver spoon, preserves, jars, caps, labels, plastic sleeve, and price label all comprise the sales unit of a presentation pack of preserves with serving spoon.

Step B Remove the Product

The product (or products if grouped) is that which is to be used or consumed after purchase. In the example given in Step A, this would be the preserves and the spoon.

Some items are regarded by the Agencies as products in their own right (although the boxes, bags, etc they come in are packaging); examples include tea bags, pencils, fire extinguishers, 35mm film cassettes and toner cartridges.

Step C Durable Packaging for Durable Products

It is considered that only durable products which cannot be used up (or consumed) may require durable packaging for long-term storage. An item which provides such long-term storage for a durable product is not regarded as obligated packaging by the Agencies.

The Article 21 Committee consider that a durable item is to be understood in a flexible way as an item that a majority of consumers use for longer than five years, and is intended for repeated use and not for disposal after the first use.

Preserves are consumable so no part of the sales unit for them can be for long-term storage. In contrast, power tools are durable products, so it is reasonable to consider their carrying cases as providing long-term storage. This also applies to durable carrying cases or moulded containers designed to last the lifetime of durable items such as spectacles, laptop computers, electric razors, cutlery, and cameras.

Step D - The 'Function Test'

Regulation 2 states that packaging means, "all products made of any materials of any nature to be used for the **containment, protection, handling, delivery and presentation** of goods, from raw materials to processed goods". The Agencies consider that a given item of packaging need not perform **all** of these functions, the performance of one such function is sufficient.

In the absence of any definitions of these specific functions in the Regulations, the Agencies consider that the ordinary dictionary meanings are appropriate, adapted as necessary to make sense in the context of the Regulations and the purpose of the Packaging Directive.

- a) "Containment" is the act or process of restraining or enclosing e.g. drums and cans;
- b) "Protection" means the defence from harm, e.g. bubble wrap;
- c) "Handling" means facilitating movement, e.g. carpet cores;
- d) "Delivery" is the conveyance of the product(s) to the final user or consumer; and
- e) "Presentation" means to exhibit or display the product(s), which may include attracting attention to them e.g. a label, or a brightly coloured box containing an Easter egg.

Step E - The 'Purposes Test'

Regulation 2 goes on to set out a second test. For an item of a sales unit to be packaging, it must **also** be:

"(a) sales packaging or primary packaging, that is to say packaging conceived so as to constitute a sales unit to the final user or consumer at the point of purchase;

(b) grouped packaging or secondary packaging, that is to say packaging conceived so as to constitute at the point of purchase a grouping of a certain number of sales units whether the latter is sold as such to the final user or consumer or whether it serves only as a means to replenish the shelves at the point of sale; it can be removed from the product without affecting its characteristics;

(c) transport packaging or tertiary packaging, that is to say packaging conceived so as to facilitate handling and transport of a number of sales units or grouped packs in order to prevent physical handling and transport damage; for the purposes of these Regulations transport packaging does not include road, rail, ship and air containers¹".

One important word found in the descriptions of primary secondary and tertiary packaging is "conceived". For an item to be primary, secondary or tertiary packaging it does not have to have been conceived as such at the manufacturer stage in the packaging chain, but at any stage. Once it passes both tests, it is deemed to have been packaging throughout the chain. This highlights the need for information to be passed between activities in the packaging chain.

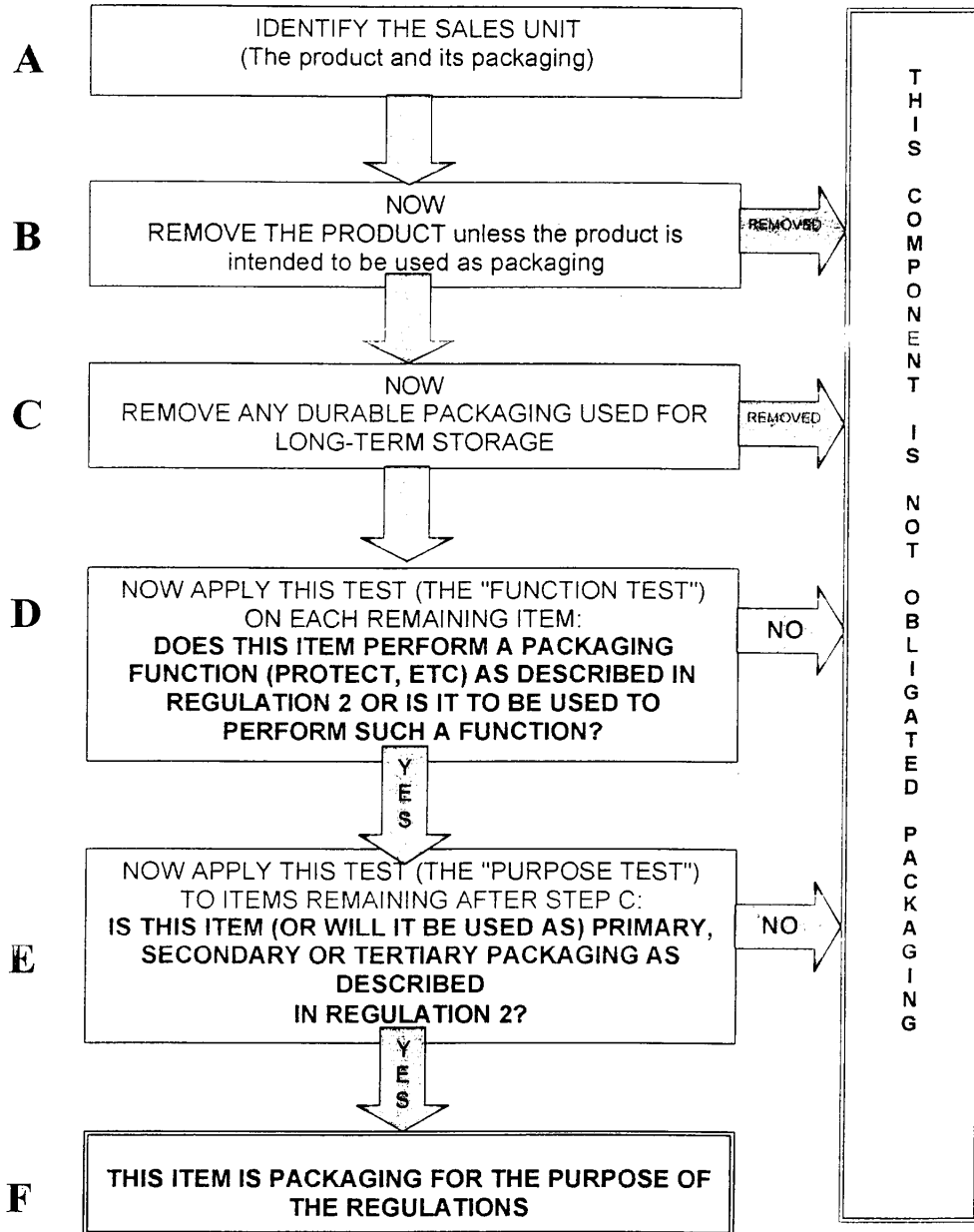
Step F

All items which have reached this point in the flow diagram are considered to be packaging for the purposes of the Regulations.

¹ Note: such containers are described in an Agencies' Explanatory Note.

INTERPRETATION FLOW CHART

(To be used in conjunction with the explanatory text in this booklet)



Further Information

Legislation

- The European Parliament & Council Directive on Packaging & Packaging Waste (94/62/EC)
- The Environment Act 1995
- The Producer Responsibility Obligations (Packaging Waste) Regulations 1997; (as amended)

Government Publications

- The Packaging Waste Regulations 1997 Ready Reckoner. Department of the Environment, 1997
- The Packaging Waste Regulations 1997 User Guide. Department of the Environment, 1997

Agency Publications

- The Packaging Waste Regulations - Guidance on Evidence of Compliance and Voluntary Accreditation of Reprocessors. (Booklet); Second Edition , 1999.

Explanatory Notes (ENs)

Explanatory Notes (ENs) are internal documents used to assist Agency officers in the interpretation and enforcement of the legislation. In the interests of transparency they are published on the Agencies internet web-sites.

Environment Agency:- www.environment-agency.gov.uk

SEPA:- www.sepa.org.uk

Queries

General packaging queries should be directed to your local Agency office.

Standard Rear Cover

Agency contacts



**ENVIRONMENT
AGENCY**



Accreditation as a reprocessor of packaging waste

Waste management

Producer Responsibility Obligations (Packaging Waste) Regulations 1997
(as amended)

For Agency use only

Date stamp

Reference number

Region/area passed to

Contact name

Date

Application valid or invalid

Date returned

Approval

Please read through these notes and the form before you fill it in. If you do not complete the form in full, there may be a delay in processing your application.

When you need to fill in this form

This form is in two parts, **Part A** and **Part B**. Everyone must fill in both parts. If you want accreditation for more than one process, you must fill in a separate **Part B** for each process.

You can use photocopies of Part B, but make sure you take the copies you need before you start to write on the form.

Part A covers

- the applicant
- the proposed packaging waste reprocessing site, and
- environmental permits you currently hold for the site.

Part B asks about the kind of recovery operation which you carry out on the site. It deals with

- where the waste comes from
- the amount of waste you are able to process each year
- the equipment you use
- your plans for developing your business.

Use one copy of Part B for each recovery operation on site.

There is no charge for accreditation. The accreditation applies only to the applicant and the site referred to in this form – it cannot be transferred to another person or site.

About this application

Why you are filling in this application?

Please tick one of the descriptions.

- I am applying for the first time
- I am renewing an existing accreditation

Name of reprocessor

Part A

1 Contact details

1.1 Please supply relevant contact details for this application.

This can be someone acting as an 'agent' for the applicant.

Name

Title	First
Surname	
Position	
Address	
Postcode	
Phone	
Fax	
Mobile	
Email	

2 The applicant

2.1 Please tell us the status of the applicant

- Individual or partnership
 Corporate body

2.2 Please give us the applicant's details

Name

Title	First
Surname	
Status	
Position	
Company if applicable	
Address	
Postcode	
Phone	
Fax	
Mobile	
Email	

First time applicants – please go to question 3.1

Renewal applicants – please go to question 3.2

3 The site

Location of the site

3.1 Please send us a site plan showing the area of land to which this application relates.

Full address of the site

Postcode

Ordnance Survey national grid reference. Please give the reference for the site entrance if there is more than one grid reference

--	--	--	--	--	--	--	--	--	--

Ownership or occupancy of the site

3.2 What interest does the applicant have in the site?

- Freeholder (in Scotland, feuholder)
 Leaseholder
 Other please specify below

--

Planning status of the site

Renewal applicants

3.3 Has your planning status changed since your last application?

- No go to '4 Environmental permits'
Yes go to question 3.4

First time applicants

3.4 Do you have the necessary planning permission for your operations at this site?

- No If planning permission is not required please provide evidence.
Yes Please enclose a copy. (Or a copy of your application if you have applied for planning permission)

4 Environmental permits *continued*

Reprocessing of packaging waste accreditations

4.7 Do you, the company or any of its directors have any other accreditations, including exporter accreditation?

No

Yes *please give accreditation numbers*

5 Management systems

5.1 Do you operate any quality or environmental management schemes?

Please give any information that you think will help your application, for example in-house systems, EMAS, ISO14001 or ISO9000.

--

5.2 Are you an obligated company (as defined in Producer Responsibility Obligations (Packaging Waste) Regulations 1997 (as amended))?

No

Yes *please give details*

Registration number

--

Compliance scheme

--

Part B

If you want accreditation for more than one process on the site, you need to fill in a separate Part B for each process. Please take as many copies of Part B as you need before you start to fill it in.

The figures you use should relate to the last calendar year.

6 The process

6.1 What is the recovery/recycling process operation code for the process covered by this form?

Recycling/reclamation

- R2 – organic substances which are not used as solvents
- paper/board
 - wood
 - plastics
- R3 – metals and metal compounds
- steel
 - aluminium recycling
- R4 – inorganic materials *glass recycling*

Energy recovery

- R9 – mainly as a fuel or other energy generation

Organic recycling

- R10 – spreading on land for agricultural or ecological improvement *includes composting and other biological transformation processes, except waste excluded under Article 2(1)(b)(iii) of the Waste Directive.*

7 Materials

Inputs

7.1 Please give details of the materials you used for this process in the last calendar year

Give an estimate if the process has been operational for less than a year.

The following are

- estimated figures the recorded figures

Material inputs

Tonnes/calendar year

Packaging waste <i>UK-sourced</i>	
Packaging waste <i>non-UK</i>	
Mixed waste <i>UK-sourced</i>	
Non-packaging waste	
Raw materials <i>please specify</i>	
Total inputs	

Please give descriptions on separate sheets if you need to.

7.2 What percentage of any mixed waste tonnage is packaging?

per cent

7 Materials continued

Outputs

7.3 Please give details of the material outputs from the process for the last calendar year

Give an estimate if the process has been operational for less than a year.

The following are

- estimated figures the recorded figures

Material outputs

Tonnes or kW

Material not processed on site

Contaminants *for example plastic contraries in paper reprocessing*

Product *please describe (energy is also a product)*

Other *please specify*

Total outputs

Please give descriptions on separate sheets if you need to.

8 Your site and plant

8.1 Are you renewing an accreditation?

No

Yes go to '9 Future business plans'

Process overview

8.2 Please give the following details

- an operational plan
- a systems diagram or flow chart of the process
- a description of main items of equipment used for processing waste into products or energy
- a plan of the storage and main working areas
- plans of main areas.

Plant use

8.3 Please give the following details

Total capacity per year

tonnes

Maximum output per year *Please give units used if different to tonnes.*

tonnes/other units:

Recording deliveries and outputs

8.4 Please give details of your documentation systems

A description of the systems used to

- record the receipt of waste to your site
- weigh packaging waste
- record the movement of materials, waste, outputs and product from your site
- classify packaging waste and grades
- assess how the amounts of packaging waste are reprocessed, including sampling details if appropriate
- establish reprocessing logs.

9 Future business plans

9.1 Please provide copies of 3-year business plans

In particular, we want to know how you intend to

- develop the collection of packaging waste
- encourage the development of end-markets for materials
- increase recycling
- sell your packaging waste recovery notes (PRNs).

The plan should also tell us about

- revenues generated from PRNs in the previous 2 years
- any existing contracts.

10 Checklist

First time applications – Please enclose

- Site plan *question 3.1*
- Supporting documentation for planning status *question 3.4*
- Process overview documents *question 8.2*
- Description of documentation systems *question 8.4*
- 3 year business plans *question 9.1*
- Other attachments.

How many copies of Part B
are you submitting in total?

How many continuation sheets
are attached to this form in total?

Renewal applications – Please enclose

- 3 year business plans *question 9.1*
- Supporting documentation for any planning status changes *question 3.4*
- Other attachments.

How many copies of Part B
are you submitting in total?

How many continuation sheets
are attached to this form in total?

11 Data protection notice

The information provided will be processed by the Environment Agency and SEPA to deal with your application, to monitor compliance with the licence/permit/registration conditions, to process renewals, and for maintaining the relevant public register(s).

We may also process and/or disclose it in connection with the following:

- offering/providing you with our literature/services relating to environmental matters.
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities, emergency services, DEFRA on environmental issues)
- carrying out statistical analysis, research and development on environmental issues
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving our service.

We may pass it on to our agents/representatives to do these things on our behalf.

You should ensure that any persons named on this form are informed of the contents of this data protection notice.

12 Declaration

I declare that the information in this application is true to the best of my knowledge and belief.

I understand that accreditation may be refused if I give false or incomplete information.

Signature

Name *please use block capitals*

Position

Date

13 What happens next

- Remember to keep copies of the form(s) and all the documents you send with it.
- Please send the completed form(s) to us at the appropriate address. If you do not complete this application in full, there may be a delay in processing the form.

If your site is in England or Wales

Send your application to
National Waste Registration Unit
The Environment Agency
10-11 Albert Embankment
London SE1 7SP
Phone 0208 305 4023
Fax 0208 305 4027

If your site is in Scotland

Send your application to
The Producer Responsibility Unit
The Scottish Environment Protection Agency (SEPA)
The Castle Business Park
Stirling FK9 4TR
Phone 01786 457700
Fax 01786 446885

Reprocessors wanting to continue their accreditation in the following year must apply by 15 October.



ENVIRONMENT
AGENCY

Application for accredited export status

Waste management

Environmental Information Regulations 1992 (SI 1992 No. 3240)



For Agency use only

Date stamp

Company name

Applicant contact name

Waste material to be exported

Date of application inspection

Application valid or invalid

Date returned

Comments

Accreditation number

Please read through these notes and the form before you fill it in.

When you need to fill in this form

Use this form if you want to issue packaging waste export recovery notes (PERNs) for packaging waste that you export for reprocessing overseas.

Parts of the form you need to fill in

The form is in five parts. You need to fill in only one copy of **Part A** and **E**. Please complete separate **Parts B, C and D** for each waste material, destination country and reprocessor.

You can use photocopies of Parts B, C and D but make sure you take the copies you need before you start to write on the form.

Part A covers

- the applicant
- merchants or agents the applicant uses.

Part B covers

- the **source** of the waste material to be exported
- the **type** of waste material to be exported.

Use one copy of Part B for each waste material.

Part C – the destination country that the packaging waste is to be exported to.

Use one copy of Part C for each destination country.

Part D – the overseas reproducers to be used.

Use one copy of Part D for each reprocessor.

Part E – checklist, declaration and signature.

If you do not complete the form in full, there may be a delay in processing your application. All applications and supporting paperwork must be in English.

There is no charge for accreditation. The accreditation applies only to the applicant referred to in this form – it cannot be transferred to another person.

Public registers

The fact that an exporter is accredited, or that accreditation has been removed, is considered by us as information which should be disclosed to the public.

The following information that you supply to us as an accredited exporter may also be made publicly available:

- name and address of accredited exporter
- waste material type that is being exported
- amount of packaging waste exported
- number of PERNs that have been issued/sold
- revenue gained from sale of PERNs
- how exporters use PERN revenue.

Part A

1 Contact details

1.1 Please give us details of someone we can phone or write to with questions about this application.

This can be someone acting as an 'agent' for the applicant.

Name

Title	First
Surname	
Position	
Address	
Postcode	
Phone	
Fax	
Mobile	
Email	

2 The applicant

2.1 Please tell us the status of the applicant

- Individual *please go to question 2.2*
 Partnerships *please go to question 2.3*
 Corporate body *please go to question 2.5*

2.2 Please give us the applicant's details

Name

Title	First
Surname	
Status	
Position	
Trading or business name <i>if there is one</i>	
Address	
Postcode	
Phone	
Fax	
Mobile	
Email	

2 The applicant continued

Partnerships

2.3 Please give the following details?

If the application is from a formal partnership, please provide written evidence, such as a deed of partnership.

Trading or business name of partnership *if there is one*

Business address <i>if different from 2.2</i>
Postcode
Phone
Fax
Mobile
Email

2.4 Please give us the following details for each partner.

Continue on separate sheets if you need to.

Partner 1

Title	First
Surname	

Partner 2

Title	First
Surname	

Partner 3

Title	First
Surname	

Corporate bodies

2.5 Please give us the following information

Full company name

--

Former company name (if any)

--

2.6 Business address

Main office address

Postcode
Phone
Fax
Mobile
Email

Part B

If you want accreditation for more than one packaging waste material, you need to fill in a separate Part B for each packaging waste material. Please take as many copies of Part B as you need before you start to fill it in.

6 About the packaging waste material

Applicants must ensure that the export of packaging waste material complies with Transfrontier Shipment of Waste Regulations 1994.

6.1 What is the packaging waste material to be exported?

For example, plastic, paper, steel, aluminium etc.

--

6.2 Please provide details of the origins of the packaging waste

--

6.3 Is the packaging waste mixed?

No go to question 6.5

Yes please give details of its content

--

6.4 How did you determine the packaging content?

Describe the sampling methodology used

--

6.5 Please give the HM Customs & Excise commodity code

You can find these at www.uktradeinfo.com/ go to ICN Online and browse.

Intrastat classification commodity code

--	--	--	--	--	--	--	--	--	--

Transporting the packaging waste material

6.6 What is the planned transport method?

Please tick all that apply.

Transport method	Name of carrier
<input type="checkbox"/> road	
<input type="checkbox"/> rail	
<input type="checkbox"/> sea	

6.7 Please list the port(s) of departure

Departure ports

Please continue on separate sheets if you need to.

6.8 Please list all intermediate transfer and processing sites in the UK and overseas

UK transfer sites

UK processing sites

Overseas transfer sites

Overseas processing sites

Please continue on separate sheets if you need to.

Part C

If you want accreditation for more than one destination country, you need to fill in a separate Part C for each country. Please take as many copies of Part C as you need before you start to fill it in.

7 Destination country

Destination countries must consent to this packaging waste material being imported and applicants must ensure that the correct procedures have been followed.

7.1 What is the destination of the packaging waste material?

Country

Port of entry

7.2 Please give us the following details

1 Name of importing agent *if applicable*

Title First

Surname

Position

Company name

Address

Postal code

Phone

Fax

Mobile

Email

2 Name of importing agent *if applicable*

Title First

Surname

Position

Company name

Address

Postal code

Phone

Fax

Mobile

Email

3 Name of importing agent *if applicable*

Title First

Surname

Position

Company name

Address

Postal code

Phone

Fax

Mobile

Email

4 Name of importing agent *if applicable*

Title First

Surname

Position

Company name

Address

Postal code

Phone

Fax

Mobile

Email

Part D

You need to fill in a separate Part D for each overseas reprocessor used.
Please take as many copies of Part D as you need before you start to fill it in.

8 The reprocessor

8.1 Please give us the following details

Contact name

Title	First
-------	-------

Surname

Position

Company name

--

Address

--

--

Postal code

Country

Phone

Fax

Mobile

Email

9 The process

9.1 What is the recovery/recycling process operation code for the process covered by this Part D?

Recycling/reclamation

R2 – organic substances which are not used as solvents

paper/board

wood

plastics

R3 – metals and metal compounds

steel

aluminium recycling

R4 – inorganic materials *glass recycling*

Energy recovery

R9 – mainly as a fuel or other energy generation

Organic recycling

R10 – spreading on land for agricultural or ecological improvement *includes composting and other biological transformation processes, except waste excluded under Article 2(1)(b)(iii) of the Waste Directive.*

10 Output of the reprocessor

10.1 Please give details of the reprocessors beneficial output generated from the UK-sourced packaging waste

For example products from recycled materials.

--

11 Documentation systems

For each load of waste exported, we will expect to see

- purchase invoices or relevant information on the acquisition of the packaging waste
- payment records from the foreign reprocessor for each load of waste exported
- records of the packaging waste weight
- classification of packaging waste and grades
- evidence that the packaging waste is UK sourced
- reprocessing logs.

11.1 What recording methods does the reprocessor use to record the UK packaging waste delivered and reprocessed?

For example weighbridge tickets.

--

12 Load rejection

12.1 Please tell us about your arrangements for returned loads to the UK

Include arrangements the reprocessor or importing country have implemented, for example financial bonds.

--

Part E

13 Checklist

I enclose

- company registration document *question 2.7*
- 3-year business plan *question 5.1*
- Recording method documents "Documentation systems" on page 6

How many items are you submitting?

Other attachments

How many copies of **Part B** are you submitting in total?

How many copies of **Part C** are you submitting in total?

How many copies of **Part D** are you submitting in total?

Continuation sheets

If you need more space for any of your answers, please use a continuation sheet. But make sure that you label each sheet clearly with

- the question number it applies to
- the number of the sheet, *for example 3 of 5*

How many continuation sheets are attached to this form in total?

14 What happens next

Where to send your form and supporting materials

If your site is in England or Wales

Send your application to
National Waste Registration Unit
Environment Agency
10–11 Albert Embankment
London SE1 7SP
Phone 0208 305 4036
Fax 0208 305 4027

If your site is in Scotland

Send your application to
Producer Responsibility Unit
Scottish Environment Protection Agency (SEPA)
Castle Business Park
Stirling FK9 4TR
Phone 01786 457700
Fax 01786 446885

*Remember to keep copies of all the documents you send us.
We will not return any documents sent.*

Accreditation is granted on an annual basis. Applications for accreditation in the following year should be made by 31 October each year.

15 Data protection notice

The Environment Agency is responsible for regulating environmental protection, flood defence, water resources and fisheries. It has a duty to discharge its functions to protect and enhance the environment and to promote conservation and recreation.

The information provided will be processed by the Environment Agency to deal with your application, to monitor compliance with the licence/permit/registration conditions and to process renewals.

We may also process and/or disclose it in connection with the following:

- offering/providing you with our literature/services relating to environmental matters.
- consulting with the public, public bodies and other organisations (eg Health and Safety Executive, local authorities, emergency services, DEFRA on environmental issues)
- carrying out statistical analysis, research and development on environmental issues
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving our service.

We may pass it on to our agents/representatives to do these things on our behalf.

You should ensure that any persons named on this form are informed of the contents of this data protection notice.

16 Declaration

I declare that the information in this application is true to the best of my knowledge and belief.

I understand that accreditation may be refused if I give false or incomplete information.

Signature

Name

Position

Date



ENVIRONMENT
AGENCY

2003 registration of individual producers of packaging waste

Waste management

The Producer Responsibility Obligations (Packaging Waste) Regulations 1997
(as amended)
Regulations 6 and 8



For Agency use only

Date stamp

Cheque number

Entered by

Check 1

Check 2

Data re-submission

Registration number

Company name

Mandatory and voluntary information

Most of the information we ask for on this form is mandatory – it is required by law as part of your application, and we cannot process the application without it. The form also asks for information to help us handle your application quickly and fairly. These questions are marked 'this information is voluntary', with grey answer spaces like this

Please read through this form and the notes that came with it before you start to fill it in.

When you need to fill in this form

Use this form to register with Environment Agency or SEPA (Scottish Environment Protection Agency) as a company obligated under the packaging waste legislation.

Your application to register must reach us by 7 April 2003.

If you send in an application with information missing or incomplete, your registration may be delayed or rejected.

Fees for processing your application to register

We charge a fee of £950 for processing your application.

You must send a cheque made payable to the 'Environment Agency' or 'SEPA' (whichever applies) with the application form. We cannot deal with the application unless the fee is enclosed.

Any of your subsidiary companies who apply to register separately will have to pay the same fee for their registration.

Sending compliance plans

You must send a compliance plan with your application if your turnover is more than £5 million.

Any business registered directly with us in 2002 must send in a compliance plan by 30 June 2003.

The plans must include

- the type of evidence you will obtain to meet your obligation, for example PRNs/PERNs
- confirmation of any contract with reproprocessors/exporters
- the frequency that you propose to obtain this evidence, for example monthly, quarterly.

If you intend to use reproprocessors/exporters who are not accredited by us you must also

- identify the reproprocessor/exporter
- give full details of these non-accredited reproprocessors/exporters, for example names and addresses and estimates of tonnages to be provided.

If you intend to meet your obligation (or at least part of it) by using packaging waste of which you are the end user ('backdoor' waste), please provide

- details of tonnages and materials
- names and addresses of reproprocessors/exporters you intend to use.

We will refer to your compliance plan once you submit your Certificate of Compliance. There is more about this in the *General information* notes that came with this form.

Continues on the next page

Seller obligation (consumer information obligations)

If your main activity is as a seller, you must give your customers information about

- the return, collection and recovery systems available to them
- their role in contributing to reuse, recovery and recycling of packaging and packaging waste
- the meaning of symbols and icons on packaging
- how to get copies of the *National Waste Strategy*.

We will ask you to show how you informed customers when we make routine compliance monitoring visits.

Special waste

Sellers of 'special packaging' (packaging which would be classed as special waste when it is discarded) must also provide consumers with this information.

You must also complete the 'Special waste data tables' on page 6.

Continuation sheets

If you need more space for any of your answers, please use a continuation sheet. But make sure that you label each sheet clearly with

- the question number it applies to
- the number of the sheet, *for example 3 of 5*.

If you need help and advice

We have made the application form as straightforward as possible, but please contact us if you need any advice on the information we ask for. Please get in touch with us on 0845 933 3111 or in Scotland, SEPA 01786 457700.

Keep a copy

The Regulations say you must to keep a copy of this form and any additional sheets that you submit, for 4 years. We may ask to see the copies when we monitor your performance.

1 Type of application

1.1 Are you already registered with the Agency?

No

Yes my current registration number is

Please record any changes of name or address in questions 2.1, 2.2 and 3.1

2 Applicant

Name of business

2.1 Please give us the following information

Full company name

Business name of the producer if different from the business registered (i.e. trading as)

2.2 Registered office

Full address of registered office

Postcode

Phone

Fax

Email

Company registration number

If the company is registered outside of England, Scotland or Wales please give the country of registration

2.3 Company's UK Standard Industrial Classification (SIC) code 1992 if applicable

SIC code

If you are unsure of your SIC code please contact the Office for National Statistics (ONS) describing your main business activity by fax – 01633 812555 / 652038 / 652037 or email: classifications.helpdesk@ons.gov.uk

2.4 What is your turnover?

between £2–5 million

over £5 million you must send us a compliance plan as detailed on page 1.

3 Contact details

3.1 Please give us details of someone we can phone or write to with questions about the registration

Name	
Title	First
Surname	
Position	
Address	
Postcode	
Phone	
Fax	
Email	

4 The registration

4.1 Are you registering as a holding company on behalf of one or more producers in a group of companies?

- No
Yes go to question 4.3

4.2 Are you registering as a subsidiary in a group of companies?

- No go to '5 Packaging activities and data tables'
Yes please supply the holding/parent company's details

Name of applicant
Trading name
Registered office address
Postcode
Company registration number

Now go to '5 Packaging activities and data tables'

4 The registration continued

4.3 Please give details of all subsidiaries registering

We will ask you to give us separate data for each subsidiary when we monitor your performance. You can copy this page or continue on separate sheet(s) if you need to.

Number of subsidiaries registering

Subsidiary company's name

Full registered address

Postcode

Contact name

Phone

Email

1992 SIC code

SIC code

Company registration number

Type of business carried out for example paper merchant

4.4 Please give the following details for all subsidiaries not included in this registration

You can copy this page or continue on separate sheet(s) if you need to.

Number of subsidiaries

Subsidiary company's name

Full registered address

Postcode

Contact name

Phone

Email

1992 SIC code

SIC code

Company registration number

Type of business carried out for example paper merchant

5 Packaging activities and data tables – (data submission form)

Guidance information given here should help you complete these data tables. Please note the figures incorporated must be from the packaging handled in the previous calendar year.

We need this information to calculate the total UK obligation on recycling and recovery.

5.1 Are you completing this section as

- a first submission a resubmission where data previously submitted needs revision, for example after a routine compliance monitoring visit
- Date of resubmission

5.2 Please give us the following details

Your obligation is based on all the activities detailed in this section. You must decide what your main activity is.

Lesser activities must be shown in the 'secondary' column.

Packaging activity	main tick one only	secondary tick all that apply
manufacturing	<input type="checkbox"/>	<input type="checkbox"/>
conversion	<input type="checkbox"/>	<input type="checkbox"/>
packing/filling	<input type="checkbox"/>	<input type="checkbox"/>
selling	<input type="checkbox"/>	<input type="checkbox"/>
importing	<input type="checkbox"/>	<input type="checkbox"/>
special producer	<input type="checkbox"/>	<input type="checkbox"/>

Master table of packaging and packaging materials supplied

What to include

Please ensure that you give details of packaging and packaging materials

- which you sourced in the UK then supplied to the next stage in the packaging chain or to end users
- which you imported and supplied on, or performed further activities on yourself
- exported outside the UK (including third party exports).

Do not include

You do not need to give details of any packaging and packaging materials you imported

- as an end user or
- which you subsequently exported

– list these in *Tables 3b and 3c on page 5.*

Information about special packaging can be entered in '6 Special waste data tables' on page 6.

Table 1 – packaging and packaging materials supplied – totals in tonnes

Activity	paper	glass	aluminium	steel	plastic	wood	other
manufacturing							
conversion							
packing/filling							
selling							

Exported materials

Table 2 a – materials exported by the producer in tonnes

What to include

Details of packaging and packaging materials you exported

- yourself
- through an agent acting on your behalf (where you have retained ownership of the goods and packaging).

Write the tonnage against the activity which you performed before export.

Do not forget to add these tonnages to the corresponding box in Table 1 above.

Activity	paper	glass	aluminium	steel	plastic	wood	other
manufacturing							
conversion							
packing/filling							
selling							

Table 2 b – materials exported by a third party in tonnes

Do not include

Packaging material you import and subsequently export – list them in *Tables 3c on page 5.*

No assumptions must be made on third party exports. You will be required to maintain documentary evidence that supports these figures and produce it on request by us.

Activity	paper	glass	aluminium	steel	plastic	wood	other
manufacturing							
conversion							
packing/filling							
selling							

5 Packaging activities and data tables (data submission form) continued

Imported materials

What to include

Write the tonnage figure in the activity row to reflect the purpose for which the packaging was imported. (For example, if you import plastic granules to make into plastic bags, place the figure in the 'conversion/plastic' answer cell.

If you go on to perform this activity add the tonnage in the 'conversion' row of Table 1 on page 4 as well).

Imported packaging (primary, secondary or transit) of which you are the end user – list in Table 3b below.

Table 3 a – materials imported for the purpose of an activity in tonnes

Transit packaging that you are the end user of should be entered in Table 3b below.

Activity	paper	glass	aluminium	steel	plastic	wood	other
conversion							
packing/filling							
selling							

Table 3 b – packaging around UK imports of which you are the end user in tonnes

paper	glass	aluminium	steel	plastic	wood	other

Table 3 c – imported packaging which is subsequently exported in tonnes

Include only these specific packaging items that have been imported then exported whether or not further activities have been performed on them.

paper	glass	aluminium	steel	plastic	wood	other

Statement of obligations

Your recovery and recycling obligations are based on the amount of packaging and packaging materials handled and the activity performed on them.

Obligated businesses must achieve a minimum 50 per cent recycling rate on the total tonnage obligation. For example, recovery obligation of 100 tonnes = 50 tonnes must be recycled and supported by evidence.

See WMP1 general information for details of UK targets and how to calculate your obligation.

Table 4

Please give the tonnages for each material to be recycled

Please give whole tonnes – round figures up or down, for example 61.52 = 62, 3.21 = 3.

	Tonnes
paper	
glass	
aluminium	
steel	
plastic	
Total	

What will your total recovery tonnage be for 2003?

	tonnes
--	--------

Optional or voluntary information

Table 5

Please tell us how much packaging was reused

	Total tonnes for the year
paper	
glass	
aluminium	
steel	
plastic	
wood	
other	

Table 6

Please tell us how much composite packaging you handled

	Total tonnes for the year
paper	
glass	
aluminium	
steel	
plastic	
wood	
other	

5.3 Do you handle or produce special packaging?

No go to '7 Checklist' Yes go to '6 Special waste data tables'

6 Special waste data tables

Please complete these tables if you perform an activity on, or handle, 'special packaging' (packaging which when discarded would be classed as special waste).

6.1 Are you completing this section as

- a first submission a resubmission where data previously submitted needs revision, for example after a routine compliance monitoring visit

Date of resubmission

Master table of special packaging and packaging materials supplied

What to include

Please ensure that you give details of packaging and packaging materials

- which you sourced in the UK then supplied to the next stage in the packaging chain or to end users
- which you imported and supplied on, or performed further activities on yourself
- exported outside the UK (including third party exports).

Do not include

You do not need to give details of any packaging and packaging materials you imported

- as an end user or
 - which you subsequently exported
- list these in *Tables 3b and 3c on page 7*.

Table 1 – special packaging and packaging materials supplied – totals in tonnes

Activity	paper	glass	aluminium	steel	plastic	wood	other
manufacturing							
conversion							
packing/filling							
selling							

Exported materials

Table 2 a – materials exported by the producer in tonnes

What to include

Details of special packaging and packaging materials you exported

- yourself
- through an agent acting on your behalf (where you have retained ownership of the goods and packaging).

Write the tonnage against the activity which you performed *before export*.

Do not forget to add these tonnages to the corresponding box in Table 1 above.

Activity	paper	glass	aluminium	steel	plastic	wood	other
manufacturing							
conversion							
packing/filling							
selling							

Table 2 b – materials exported by a third party in tonnes

Do not include

Special packaging material you import and subsequently export – list them in *Tables 3c on page 7*.

No assumptions must be made on third party exports. You will be required to maintain documentary evidence that supports these figures and produce it on request by us.

Activity	paper	glass	aluminium	steel	plastic	wood	other
manufacturing							
conversion							
packing/filling							
selling							

6 Special waste data tables continued

Imported materials

What to include

Write the tonnage figure in the activity row to **reflect the purpose** for which the packaging was imported. (For example, if you import plastic granules to make into plastic bags, place the figure in the 'conversion/plastic' answer cell. *If you go on to perform this activity add the tonnage in the 'conversion' row of Table 1 on page 6 as well).*

Imported packaging material (primary, secondary or transit) which you dispose of – *list in Table 3b below.*

Table 3 a – materials imported for the purpose of an activity in tonnes

Include only these specific packaging items that have been imported then exported whether or not further activities have been performed on them.

Activity	paper	glass	aluminium	steel	plastic	wood	other
conversion							
packing/filling							
selling							

Table 3 b – packaging around UK imports which you dispose of as end user in tonnes

paper	glass	aluminium	steel	plastic	wood	other

Table 3 c – imported packaging which is subsequently exported in tonnes

Include only these specific packaging items that have been imported then exported whether or not further activities have been performed on them.

paper	glass	aluminium	steel	plastic	wood	other

Continues on the next page

7 Checklist

I enclose

- a compliance plan, *my turnover is more than £5 million – question 2.4; my business is registered directly with you.*
- details of my 'consumer information obligations' (see guidance note on seller obligations in *General information*). This only applies if your main activity is as a 'seller'.
- a cheque for £950 made payable to the 'Environment Agency' or 'SEPA' (whichever is applicable).

Continuation sheets

If you need more space for any of your answers, please use a continuation sheet. But make sure that you label each sheet clearly with

- the question number it applies to
- the number of the sheet, *for example 3 of 5*

How many continuation sheets are attached to this form in total?

8 Data protection notice

The information provided will be processed by the Environment Agency and SEPA to deal with your application, to monitor compliance with the licence/permit/registration conditions, to process renewals, and for maintaining the relevant public register(s).

We may also process and/or disclose it in connection with the following:

- offering/providing you with our literature/services relating to environmental matters.
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities, emergency services, DEFRA on environmental issues)
- carrying out statistical analysis, research and development on environmental issues
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving our service.

We may pass it on to our agents/representatives to do these things on our behalf.

You should ensure that any persons named on this form are informed of the contents of this data protection notice.

9 Declaration

I declare that the information in this application and data forms is true to the best of my knowledge and belief.

I understand that registration may be refused or cancelled if I give false or incomplete information.

I agree to inform you of any changes to the information given on this application straight away.

Applicants can use the phone numbers listed below.

Signature

Name

Title	First
Surname	
Position	
Date	

10 What to do now

After you fill in the form, please make sure that you read through it again and make sure you have

- answered all the questions
- included all the documents you need to send us.

The checklist will help you with this.

We cannot deal with your application if you do not

- send the fee with the form
- complete your 'Statement of obligations' on page 5.
- enclose a compliance plan if required, see page 1
- complete the form and sign it in '9 Declaration'.

Please take a photocopy of the form and any documents you are sending with it.

Where to send your application

Send the form to the Agency you are registering with.

It must reach us by 7 April 2003.

In England or Wales

National Waste Registration Unit – Producer Responsibility
Environment Agency
10 Albert Embankment
London SE1 7SP
Phone 0208 305 4036
Fax 0208 305 4027

In Scotland

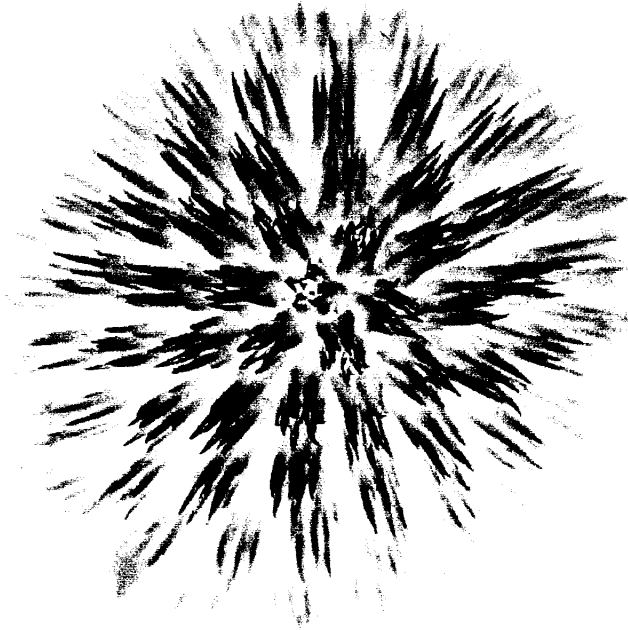
Producer Responsibility Unit
Scottish Environment Protection Agency (SEPA)
Castle Business Park
Stirling FK9 4TR
Phone 01786 457700
Fax 01786 446885

11 What happens next

For applications received on or before 7 April 2003 and that are fully completed and accurate, registration will normally be granted. We will let you know in writing within 6 weeks of that date.



The WRAP Business Plan
 creating markets for recycled resources



附錄四

WRAP

Waste and Resources Action Programme
 The Old Academy
 21 Horse Fair, Banbury
 Oxon OX15 0AH

Tel: 01295 819900
 Fax: 01295 819911
 E-mail: info@wrap.org.uk
www.wrap.org.uk

Printed on items 98, 75% recycled 35% mill made and virgin fibres

Published June 2001

890401

Executive summary

Creating and operating sustainable waste management and recycling presents WRAP with tremendous challenges and opportunities. Separating and retrieving material from the waste stream may be the logical start to the resource cycle, but it is only after effective reprocessing that WRAP is able to achieve its real raison d'être: the establishment and satisfaction of demand for recycled products.

What is WRAP?

WRAP (The Waste and Resources Action Programme) is a new organisation which has been established to promote sustainable waste management. Its particular focus is creating stable and efficient markets for recycled materials and products. A company limited by guarantee, WRAP has substantial Government funding of over £40 million for the period 2001 to 2004, provided by the DTFR, DTI, the National Assembly of Wales and the Scottish Executive.

Why was it set up?

Sustainable waste management is one of the biggest challenges faced by any modern economy. Britain currently produces more than 400m tonnes of waste each year, and most of this is sent straight to landfill. In its UK Waste Strategies, Government has recognised that this is no longer sustainable, and has set demanding targets to reduce waste and to increase recycling and re-use. WRAP has a key role to play in helping to meet those targets.

Why should we recycle?

Many of our natural resources are limited, so it makes sense to use them carefully and to re-use them wherever possible. Sending waste to landfill also contributes to the production of greenhouse gases – one of the most powerful greenhouse gases – and uses scarce land resources. Recycling is often the most sustainable option.

What will WRAP do?

WRAP sees itself operating on both the supply and demand sides of the market in order to:

- Create market confidence
- Create a critical mass of demand
- Improve the economics of recycling
- Deliver sufficient high quality material to recyclers

We aim to create a continuous demand for recycled products and to ensure that demand is fulfilled.

How will WRAP achieve this?

WRAP will undertake seven programmes of work. Three will be focused on generic areas where action is needed if there is to be a step-change in recycling: financial mechanisms, procurement and standards and specifications. The remaining four programmes are focused on specific material streams – paper, glass, wood and plastic.

The cumulative effect of the programmes should be to ensure that at least 15% recycling is achieved across all of our key material streams. This is already the case for some materials but others, such as plastic, will present more of a challenge. However, over the three year life of WRAP we will do everything in our power to deliver a recycling rate of 15% in plastics.

Who will WRAP work with?

WRAP will work with potential users to identify why they don't use recycled products now, what would persuade them to do so, and then help the waste industry and the reproducers to meet those requirements.

WRAP will also be working closely with local authorities, who are responsible for collecting the material; waste management companies and the community sector who collect and separate it, and reproducers who transform it into a valuable resource. WRAP has already established strong links with the newly-formed Market Development Network and supports its aims in recognising the importance of sharing information and experience and avoiding duplication of effort.

Key actions and targets

PAPER

WRAP recognises there are great opportunities to raise the level of paper recycling, to find new uses for recycled pulp and to increase the uptake of recovered fibres in many products. Priorities include stimulating a significant increase in newspaper reprocessing capacity, analysing fibre requirements across the UK paper industry and investigating whether overseas price stabilisation mechanisms could be introduced in the UK.

Targets include: Supporting investment that will create new manufacturing capacity to deliver a 500,000 tonnes a year increase in newspaper recycling

PLASTICS

Among WRAP's priorities are marketing existing recycled plastic products and removing discriminatory standards. These will be linked to the development of 'buy recycled' policies with large public and private sector buyers and backed by an R&D programme to develop plastics recycling technology.

Targets include: 20,000 tonnes increase in mixed plastics reprocessing for industrial products

WOOD

WRAP's priority is to stimulate demand for recycled wood products through a marketing and education initiative while driving a research programme to support development of new uses for recycled wood, including composites with plastic.

Targets include: Doubling wood packaging recovery to 350,000 tonnes a year by the end of 2003/4

FINANCIAL MECHANISMS

WRAP will undertake a series of initiatives to stimulate investment in capacity to process recovered materials and, where necessary, to stabilise market conditions. Improving communication between recyclers and potential investors is a priority.

Targets include: Attracting at least another £10 million investment a year in reprocessing capacity with the potential to leverage the investment through WRAP's own resources

PROCUREMENT

WRAP's programme will encompass both stimulating private and public sector purchases of recycled goods and materials and establishing a reliable supply of feedstock from the waste stream. Priorities are identifying what buyers really want, working with companies which already have a strong 'buy recycled' record and promoting best practice in the collection of high-quality municipal waste.

Targets include: Commitment from at least half of all local authorities to adopt a 'buy recycled' policy, tailored to suit their local circumstances by end 2003/4

STANDARDS

WRAP will seek to demonstrate that secondary materials are capable of meeting the same standards as virgin materials and can be used for the same purpose. The programme will also tackle discrimination against secondary materials in existing standards and specifications.

Targets include: Programme of standards development and implementation for compost products in 2001/2, complete by end 2003/4

GLASS

WRAP will review key standards, specifications and testing procedures and implement a research and business support programme to help identify and bring to market high volume, high value uses of recovered glass.

The programme will also encourage more awareness of recycled glass products and help divert higher volumes from municipal and commercial waste streams.

Targets include: Securing an extra 350,000 tonnes of glass a year from all sources for recycling, including 100,000 tonnes from commercial sources

Challenges

Every year Britain sends over 65m tonnes of rubbish from industry, commerce and households to landfill. This means that every hour we throw away enough rubbish to fill the Albert Hall.

happens to the rest, and how much recycled material they use. It is as much a part of good environmental stewardship as controlling energy and water use, limiting emissions and preventing pollution.

As a private sector company, we are in a good position to forge close links with business, and we will be looking to both the business community and the public sector to show leadership by creating a strong demand for recycled materials and products. We must also help the waste and recycling industries to respond to that demand with high quality, reliable products.

A partnership approach is vital. There are already many people and organisations doing impressive work in this area, and we look forward to working with them to achieve our common goals.

Recycling and using recycled products must become the first choice. It should be second nature.

Vic Cocker CBE
Chairman



This is just a single example of why sustainable waste management is one of the biggest challenges faced by any modern economy. WRAP has been created to help respond to that challenge, and as its Chairman, I am determined we will do so with passion, vision and focus.

Our vision is a step change in attitudes and in the reality of waste minimisation and recycling. To bring that about, we have devised a demanding programme of work for the next three years, and set ambitious targets by which our progress can be measured.

Waste and recycling are such important issues they should be on the agenda of every board in the country – directors need to know how much waste their organisation produces, how much of it is recycled, what

Mission

To promote sustainable waste management by:

- working to create stable and efficient markets for recycled materials and products
- removing barriers to waste minimisation, re-use and recycling

Introducing the resource cycle

The idea of a cycle is at the heart of our lives. We talk about life cycles, the water cycle and the cycle of the seasons.

As we launch our Business Plan, we'd like to introduce you to 'the resource cycle'. It's how we use our limited resources in a way which balances social and commercial benefit – re-using what we have where we can. Resources may be finite. Their uses are infinite.

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	Inside back cover

Action plan

CREATE MARKET CONFIDENCE	CREATE A CRITICAL MASS OF DEMAND	IMPROVE THE ECONOMICS OF RECYCLING	DELIVER SUFFICIENT HIGH QUALITY MATERIAL TO THE RECYCLERS
<p>Review key standards, specifications and testing procedures in most promising areas for using recycled glass</p> <p>Deliver an R&D programme to develop plastics recycling technology, and support composite product development</p> <p>Undertake a standards programme featuring a national regrading scheme for the use of reclaimed timber</p> <p>Undertake an urgent review of standards and specifications, and prioritise those offering the greatest potential for boosting the use of recycled products and materials</p> <p>Develop comprehensive standards for composite products with support for implementation and monitoring in start up phase</p>	<p>Develop greater take up of recovered material in the graphics, printing and writing sectors</p> <p>Investigate the potential for alternative fibre applications and support development in these areas</p> <p>Undertake a standards and specifications programme to remove barriers to the use of recycled and introduce standards for plastic recyclates</p> <p>Boost the demand for recycled products and raise awareness of the benefits of recycling</p> <p>Encourage more awareness of recycled glass products</p> <p>Raise awareness and understanding of the range and quality of recycled plastic products available with a marketing initiative, and develop buy programmes for the wider public and private sector buyers</p> <p>Stimulate demand for recycled wood products through a marketing and education initiative</p> <p>Support development of new uses for recycled wood, including composites with plastic</p> <p>Commission market research on business attitudes to identify key decision makers on resource use and what influences their buying decisions</p> <p>Demonstrate that buying recycled materials and products makes good sense by identifying companies who would be most likely to buy them, and work with them to develop a business sector to show them how to adopt similar practices</p> <p>Seek to modify standards and specifications that discriminate unnecessarily against recycled material or products</p>	<p>Investigate paper sector price stabilisation mechanisms used in other countries and establish whether they could be introduced in the UK</p> <p>Conduct a research and business support programme to identify and bring to market high volume, high value uses for recovered glass</p> <p>Develop a source of advice and support for recycling businesses to help them access investment proposals and identify the best sources of capital</p> <p>Develop a more detailed understanding of the needs of recycling businesses, and develop appropriate financial support, e.g. loan guarantee fund</p> <p>Assess feasibility of an "intermediary body" or other mechanism to hedge price in sectors where price instability is a major issue</p> <p>Create a critical mass of demand (see column left)</p>	<p>Help divert higher volumes of glass from municipal and commercial waste streams</p> <p>Develop a quality sourcing initiative to promote best practice in the collection of municipal waste for recycling</p> <p>Develop a recycling performance benchmarking scheme</p> <p>Develop a training programme for managers and operational staff</p>
OTHER KEY ACTIVITIES			<p>Stimulate a significant increase in newspaper reprocessing capacity</p> <p>Analyse fibre requirements across the whole UK paper industry</p> <p>Stimulate a significant increase in recycled fibre plant capacity</p> <p>Encourage product design that supports efficient recycling, and encourage the incorporation of recycled plastics in existing product lines</p> <p>Stimulate increased investment in the panelboard industry to utilise greater amounts of recycled wood</p>

Direction

Reaching the Government's targets on recycling will be a real challenge, but also presents tremendous opportunities. Secondary resources – recycled materials – could become a vibrant and influential sector of the economy if we can exploit their full potential.



We have deliberately framed this business plan to be strategic, action-oriented and to set specific targets. This is a hard-edged approach and sets the tone for our work over the next three years.

We will develop WRAP's programme in co-ordination with the many examples of good work already being carried out in this area and I am grateful for the high level of co-operation we have already experienced. I would like to take this opportunity to thank the hundreds of individuals and organisations who contributed to our working papers, attended our seminars and commented on the draft business plan.

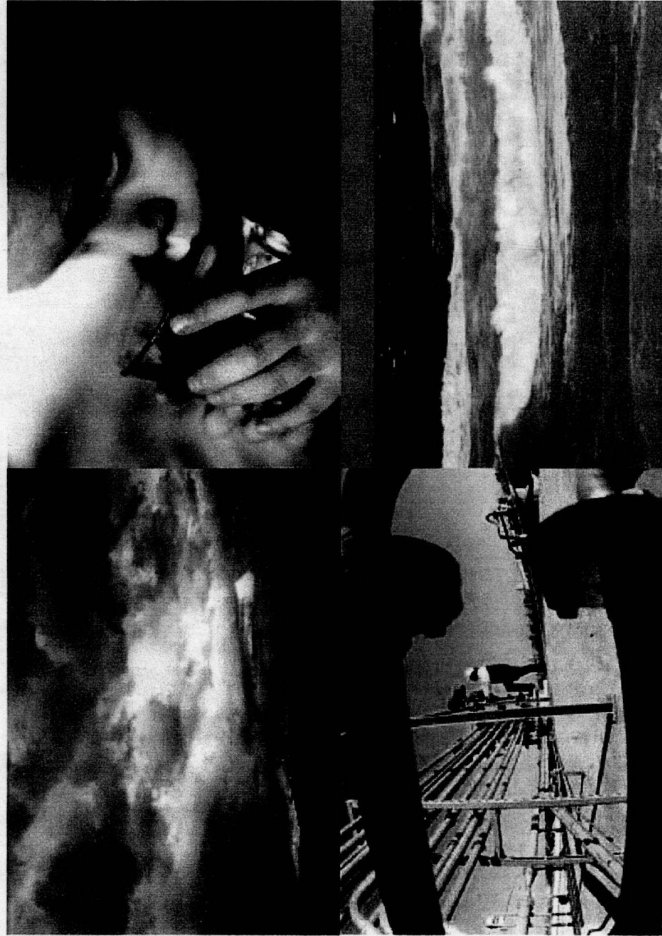
I am looking forward to the next three years. This business plan sets a demanding agenda, but we are fortunate to be a well resourced organisation, and all of our energy will be focused on achieving our targets.

Jennie Price
Chief Executive

As a newcomer to the waste and recycling sector, it is evident that this is a time of real change. The Landfill Directive, the producer responsibility legislation and the Government's waste strategies are just examples of the increasingly strong emphasis on sustainable waste management and recycling.

We want to establish that recycling is a process, not an event. Separating and retrieving material from the waste stream is a vital first step, but alone it will not be enough. Once the material has been retrieved, there must be sufficient capacity to reprocess it, and genuine demand for the finished product. Only when the product containing recyclate has been purchased and is in use has recycling taken place. It is the last stage – creating demand – that is WRAP's raison d'être, but the other stages must also work well so that the demand we will stimulate can be satisfied.

REFRESH Water is vital to life but only 1% of it exists as freshwater. So, today, man intervenes in the water cycle – cleaning water before and after we use it. It is a finite resource – the water we drink today has existed for thousands of years.



Setting the context

Focus

WRAP is a national programme for England, Wales and Scotland. England and Wales alone generate some 400m tonnes of waste each year. WRAP will concentrate on the 100m tonnes accounted for by commercial, industrial and municipal waste.*

Our work may also extend to the construction and demolition sector where its waste stream affects the flow of materials on which WRAP will focus, such as wood, or where it offers a potential market for materials. We will not, however, deal with mining wastes or sewage sludge.

Our approach will take full account of the needs and interests of the devolved administrations through discussions with the Scottish Executive and the National Assembly for Wales.

STRATEGY TO ACTION

WRAP's vision is to bring about a step change, not only in attitudes but also in the reality of waste minimisation and recycling. We want waste and recycling to be on the agenda of every board or directors of every business in the country.

The first stage of our strategy is to concentrate on achieving a significant increase in recycling. In the context of WRAP's overarching mission, to promote sustainable waste management, this is only a starting point and other options higher up the waste hierarchy also merit attention. But in these early days of WRAP's life, we need a sharp focus, not a broad brush.

WRAP's plan to achieve its strategy is to undertake seven programmes of work which will:

- Create critical confidence
- Improve the economics of recycling
- Deliver sufficient high quality feedstock to the recyclers

We will identify the areas where we can add most value, avoiding duplication with the many experienced and successful organisations already active in this area. We will have a strategic focus and will stimulate demand by seeking to ensure all three key elements of an efficient market are in place, namely:

- Reliable supply of high quality materials
- Sufficient and sophisticated reprocessing capacity
- A healthy and diversified level of demand for the end products

Our business plan will be a rolling, not a fixed, document with regular reviews to reflect changing circumstances.

* Department of the Environment, Transport and the Regions (2000) WRAP: Waste Resources Action Programme. The programme was originally from the Environment Agency municipal waste survey 1999 and national waste production survey 1999. www.detr.gov.uk

Setting the context

Framework

We plan seven major programmes, three focused on generic areas where action is needed if there is to be a step change in recycling – financial mechanisms, procurement, and standards and specifications, and four focused on specific material streams – paper, glass, plastics and wood.

The four material streams on which we will focus have been chosen because they offer the best potential for tonnage gains (paper and glass) and the opportunity to develop markets where current recycling levels are low but have potential for significant increases (plastics and wood).

Other materials will receive support through our work in the generic programmes, notably organics in the specifications. Establishing and implementing standards for composted products will overcome what is perceived to be the major barrier to growth in the market for composted products.

In time, our generic programmes may present opportunities for work on other materials, for example tyres and waste oils.

The programmes and the priorities identified within them will be reviewed regularly to ensure they reach our targets.

The cumulative effect of the programmes should be to ensure that at least 15% recycling is achieved across all of our key material streams. This is already the case for some materials but others, such as plastic, will present more of a challenge. However, over the three year life of WRAP we will do everything in our power to deliver a recycling rate of 15% in plastics.

The seven programmes are a starting point. As they evolve, we will address the wider agenda on sustainable waste management, including reducing waste and design for recycling.

We will devise and implement a separate strategy for communications, information and education to support them and will work with other stakeholders in these areas to ensure efficiency.

We will retain a clear focus to ensure we do not duplicate the work being done by other organisations such as Envirowise (in business waste minimisation) and the emerging regional market development initiatives. We will take a step-by-step approach to developing our capabilities and our contribution to the wider agenda.

Our seven programmes

WRAP recognises the complexity of the paper industry and the wide range of products it produces. We use the term 'paper' here for brevity, noting that it covers a wide range of products and recovered grades.

Our priorities are to:

- stimulate a significant increase in newsprint reprocessing capacity
- analyse fibre requirements across the whole UK paper industry to identify areas where more recovered paper could be used, such as in corrugated packaging and tissue
- investigate price stabilisation mechanisms used in other countries and establish whether they could be introduced in the UK

Following these priorities, we will then also develop greater take up of recovered material in the graphics, printing and writing sectors, for example in magazines. To support this demand, we will stimulate a significant increase in recycled fibre (RCF) plant capacity.

We will also investigate the potential for alternative fibre applications, such as MDF, moulded pulp and insulation and support development in these areas.

We intend to boost the demand for recycled paper by effective marketing and raising awareness of the benefits of recycling.

To support investment that will create new manufacturing capacity to deliver a 500,000 tonnes a year increase in newspaper recycling

To increase the use of recovered paper in graphics, printings and writings sector by 180,000 tonnes a year

To benchmark use of recycled papers in this sector and achieve 100% increase in market share

CASE STUDY — UK PAPER



You can already buy excellent quality recycled paper for office use. UK Paper, for example, produces high quality, 100% recycled paper which is thick, clean and offers high whiteness and brightness levels comparable with virgin fibre products.

The plant which produces this range has the capacity to produce 180,000 tonnes of paper per year, equivalent to 16% of the nation's office waste paper.

A drop of blood contains millions of red cells which constantly travel the body delivering oxygen and removing waste. Bones continually produce new cells each lasting around 120 days.

Our seven programmes

Our priorities are to review key standards, specifications and testing procedures in the most promising areas for using recovered glass, backed by a research and business support programme, so that we can identify and bring to market high volume, high value uses of recovered glass.

We will also encourage more awareness of recycled glass products and help divert higher volumes of glass from municipal and commercial waste streams – paying particular attention to the education needed to support this diversion.

Bottle banks are the most publicly visible and well established methods of collecting waste glass. Numbers of these have steadily increased, especially during the last decade, but more needs to be done to encourage their use and to make them more readily accessible.

WRAP recognises the need for bottle banks to be appropriately located to maximize usage and will encourage an increase in the availability of bottle banks to reach a ratio of 1,400 households.

35% (770,000 tonnes) recycling of municipal waste glass a year

Securing an extra 350,000 tonnes of glass a year from all sources for recycling, including 100,000 tonnes from commercial sources

Absorb 100,000 more tonnes of glass a year through new uses including shot blasting, aquaculture and glass fibre insulation

Divert at least 200,000 tonnes of green and possibly mixed-colour glass into the construction industry for use as an aggregate

20% increase – 20,000 tonnes – in flat glass collection for recycling

CASE HISTORY – FREE FORM ARTS TRUST

Recycled glass products for urban design and regeneration schemes are being developed in partnership with artists to create high quality glass paving blocks which are now widely specified by local authorities and other designers. Transforming recycled glass into visually pleasing and durable products for public art, landscaping and construction has highlighted many new uses for kiln formed glass.

The Trust has established a Green Bottle Unit to create the high quality, 100% recycled products and to demonstrate how wider involvement in recycling glass can



contribute to environmental regeneration. The partnership with artists, designers and waste technology sectors to find ways of recycling industrial waste which bring positive benefits to the community and the urban environment.

The use of recycled glass products such as those produced by Free Form help reduce energy consumption, as materials are sourced locally, reducing transport emissions, air pollution and water consumption and reduce landfill (glass makes up 6-10% of landfilled materials).

The shell is a pure example of Nature's reprocessing abilities. This green from organic matter as the home of a sea creature. Discarded, it is ground down by the action of the sea and becomes sand. Reclaimed by people sand is used in manufacturing processes including glass and computer chips.

Our seven programmes

This is a photograph of a tiny section of a plastic cola bottle, showing its moulding and scratches from a journey in the sea. The image was created by Paul Kenny who found it on a beach in Ireland. It is about the impact of people on nature and of nature on a synthetic product.



Our marketing initiative will raise awareness and understanding of the range and quality of recycled plastic products already available. It will be linked to the development of buy recycled policies with large public and private sector buyers. These two projects will be our early priorities in this programme.

We will also undertake a standards and specifications programme to remove discriminatory specifications and introduce standards for plastic recyclates, including uses for plastic film.

WRAP will deliver an R&D programme to develop plastics recycling technology and support composite product development.

We will also encourage product design that supports efficient recycling and work with plastics manufacturers to encourage the incorporation of recycled plastics in existing product lines.

20,000 tonnes increase in mixed plastics reprocessing for industrial products

Sector-specific targets for increases in recycled content of products

Identify at least one new technology to produce a composite product using recycled resins with wood or rubber

A significant increase in plastic bottle recycling, amount to be determined following a focused research project to be completed within six months

CASE STUDY – FORD

Motor company Ford has a Total Waste Management (TWM) programme built on two simple concepts – assigning responsibility for managing all of the waste at a facility to a single, professional waste management supplier, then establishing an incentive-driven payment plan which promotes the 'reduce, re-use, recycle' philosophy.

Since its implementation, Ford's TWM programme has resulted in significant waste management and disposal cost savings. At one plant alone, for example,

the volume of waste per vehicle produced has been more than halved from 8kg per vehicle to less than 4kg.

Ford was the first manufacturer in Europe to install 100% recycled batteries made from old motor-vehicle batteries. For a used car, sent to be recycled, Ford's programme has been able to source material for manufacturing heater and air conditioning components. This project alone saves around 2,000 tonnes of waste material annually that previously would have been sent to landfill.

This is just part of the 20,000 tonnes of non-metallic waste material which Ford Motor Company recycles into quality car parts each year throughout Europe.

Elsewhere, steel drums are recycled for use in heavy machinery instead of being sent to landfill. Recycled plastics is used to make protective seat covers and research is continuing to devise a way of using paint sludge as a vehicle insulating material.

Our seven programmes

The ebb and flow of a tide is created by the gravitational pull of the moon. This constant receding and returning action is part of the process which turns stone fragments into smooth, rounded pebbles.



Our priority is to stimulate demand for recycled wood products through a marketing and education initiative. This will be targeted at the construction industry and local government, and will highlight the opportunities and benefits of using recycled products such as coloured mulches and extrusions.

To double wood packaging recovery to 350,000 tonnes a year by end 2003/4

To achieve 40% recycling and re-use of construction and demolition wood waste a year, an estimated additional 100,000 tonnes to reach 480,000 tonnes

Our research programme will support development of new uses for recycled wood, including composites with plastic, and we plan a standards programme featuring a national regrading scheme for the use of reclaimed timber.

We will also seek to stimulate increased investment in the panelboard industry to utilise greater amounts of recycled wood.

CASE STUDY - TRACEY TIMBER RECYCLING LTD.

Large volume timber recycling can be highly successful. Tracey Timber Recycling Ltd converts more than 50,000 tonnes of waste wood each year mainly into a variety of wood chips. Sources include pallet manufacturers, demolition and construction industry waste, sawmills and millage contractors.

The level of sophistication and technology required to produce woodchip is constantly rising as mills and other users demand

higher standards, but they can be achieved by the use of new technologies and stringent production controls.

Tracey also produces a range of its own products based around the wood shredding process, including a range of decorative coloured woodchips which can also be used for gardens, golf course paths, horse arenas and children's playgrounds, where the product has attained BS EN 1177.

Our seven programmes

We need to build the confidence of buyers and specifiers in using recycled materials. The first step in that process is to listen to them, so WRAP will commission a major piece of market research on business attitudes to identify key decision makers on resource use, what influences their buying decisions and any technical barriers to the use of recycled products. This information will help us to identify the priorities for our work on standards and specifications and will be the foundation of our work in promoting a buy recycled culture.

The second step is to demonstrate that buying recycled materials and products makes good business sense. We will identify companies who are already making it work for them, and work with their colleagues in the same sectors to show them how they can adopt similar procurement practices.

Targets will be set for both followers and leaders.

A suite of good practice guidance available electronically and on paper, and a helpline will complement this work.

And in order to secure high quality feedback from the waste stream, WRAP will develop a quality sourcing initiative to promote best practice in the collection of municipal waste for recycling. Our approach will focus on high participation rates, recovery rates and low levels of contamination. This work will be supported by a recycling performance benchmarking scheme, and a training programme for managers and operational staff.

A specified amount (dependent on data obtained in current usage) of recycled materials to be used in three named industry sectors by end 2003/4

Commitment from at least half of all local authorities to adopt a 'buy recycled' policy, tailored to suit their local circumstances by end 2003/4

To develop the current recycled paper procurement project in Government across other products and set procurement targets in three specific areas by end 2001/2

A measurable increase, which will be set after evaluation of a baseline survey of attitudes, in the positive perception of recycled products by business leaders by end 2003/4

Although weather forms a distinct pattern and follows a cycle which alternates between high and low pressure, its behaviour is difficult to predict. The frequency and intensity of these cycles are the subject of major studies and research directed at improving our ability to survive and live comfortably within them.



Our seven programmes

Addressing communication between recyclers and potential investors is a priority.

We will develop a source of advice and support for recycling businesses, particularly SMEs, to help them put together strong investment proposals and identify the best sources of capital. Our second priority is to develop a more detailed understanding of the potential financial needs of businesses involved in recycling, to enable us to develop appropriate financial support such as a loan guarantee fund or an equipment lease guarantee scheme.

WRAP will review the commercial mechanisms used in countries with more established recycling industries to identify mechanisms which could work in the UK, and will assess the

feasibility of an 'intermediary body' or another mechanism to hedge prices in those sectors where price instability is a major issue.

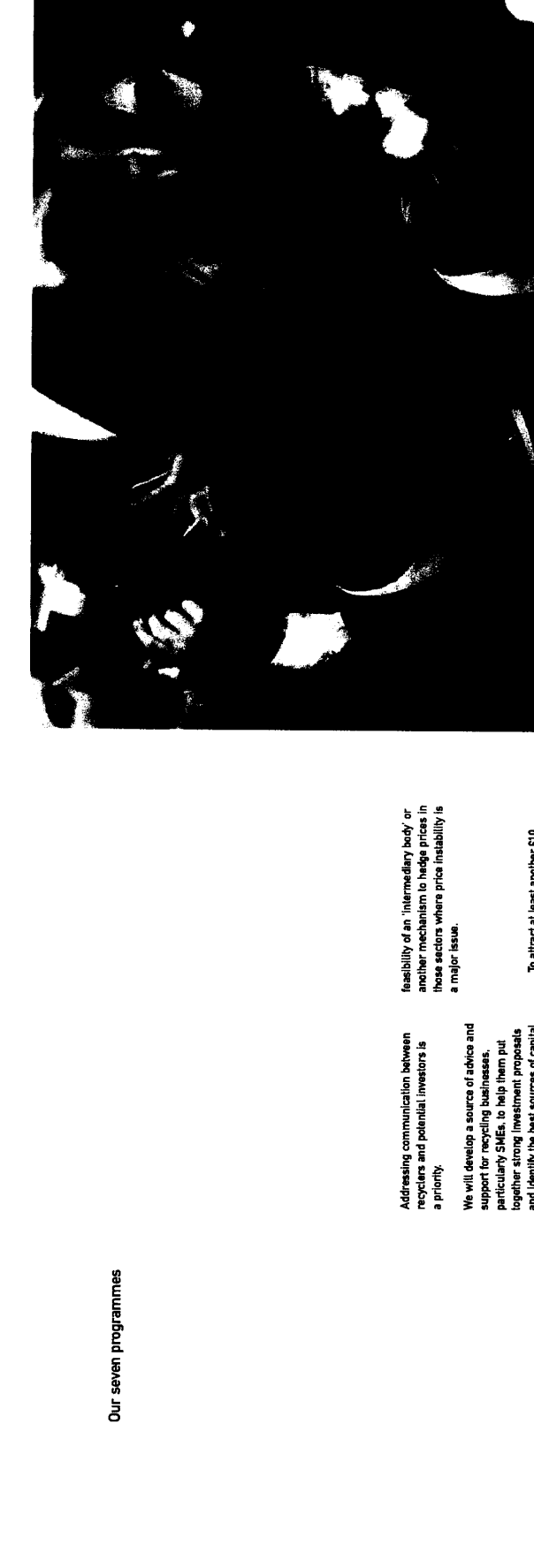
To attract at least another £10 million investment a year in reprocessing capacity, with the potential to leverage the investment through our own resources

To identify and facilitate the creation of at least one market stabilisation/risk minimisation tool by 2002/3

CASE STUDY - J SAINSBURY

The retail sector offers some excellent examples of good recycling practice. J Sainsbury recycles, donates or composites nearly 60% of its waste – more than 111,000 tonnes of cardboard and 3,600 tonnes of plastic packaging each year. Food sold in its organic range is packed in fully biodegradable materials.

Sainsbury's has been involved in composting store food waste for five years and has 46 stores linked to three composting trials in the UK (in Berkshire, Suffolk and London). Between 1998 and 2000 the firm cut the amount of waste sent to landfill by 9,000 tonnes. Customers at 340 of the chain's UK stores are encouraged to use on-site recycling bins.



Money circulates – we all need it in most days of our lives. Our key objective is to create a stable market and commercially viable markets for raw materials and products.

Our seven programmes

Working on our four key material streams, plus composted products, we will undertake an urgent review of existing product standards, and prioritise those which offer the greatest potential for boosting the use of recycled products and materials.

We will work with existing standards rather than seeking to create new ones specifically for recycled materials, as a separate set of standards could reinforce the negative perception problems that already exist for some recycled products.

Another priority is to develop comprehensive standards for composted products, complete with support for implementation and monitoring during the start up phase, and advice on best practice in inputs and compost processes.

Where existing specifications and standards do discriminate unnecessarily against recycled materials or products, we will seek to modify them and, where appropriate, provide input to British Standards Institute's five year rolling review programmes.

Delivery of the review of existing standards (and prioritisation for action) by end 2007/2.

Focused activity on 6 standards/specifications issues each year, identified through our prioritisation process, to deliver greatest potential uptake of recycled materials

Programme of standards development and implementation for compost products in 2007/2, complete by end 2009/4

CASE STUDY - B&Q

Under its QUEST programme, the DIY store B&Q has helped some suppliers reduce packaging volume by 25%. Removing polystyrene trays from one product alone saved £100,000 per year. In total, waste reduction saves the firm £750,000 annually.

In-store waste is segregated by staff, hauled back to a central distribution centre and recycled. Unsalable paint and wallpaper, scrap timber and broken ceramic tiles are

donated to schools and community groups for re-use, strengthening community links. In 2000, the company recycled 11,000 tonnes of cardboard, 1,241 tonnes of plastic, 2,915 tonnes of scrap timber and 376 tonnes of metal. B&Q customers are in the loop too being able to buy a garden trellis made from post-consumer recycled polystyrene waste, and peat-free compost made from decomposed green waste.



In an average human life cycle, the body is made up of more than 100 trillion cells and the heart beats three billion times. During a lifetime, the body is maintained in a state of continuous repair and renewal and through processes of this process is endlessly repeated.

Priorities and resources

WRAP has more than £40 million of Government funding for the three year period commencing 2001-2002. We also want to stimulate funding partnerships between public, private and community sectors.

Our priorities, which reflect the funding profile, are outlined in each of our seven programmes, and will be underpinned by detailed action plans. Because procurement action lies at the heart of our mission, all aspects of this programme will be given a high priority during Year 1.

Our work will be led by a small core of full-time staff, supplemented by external specialists on short-term contracts.

We expect a significant proportion of the seven work programmes to be

delivered by permanent staff, to build up and maintain expertise within the organisation.

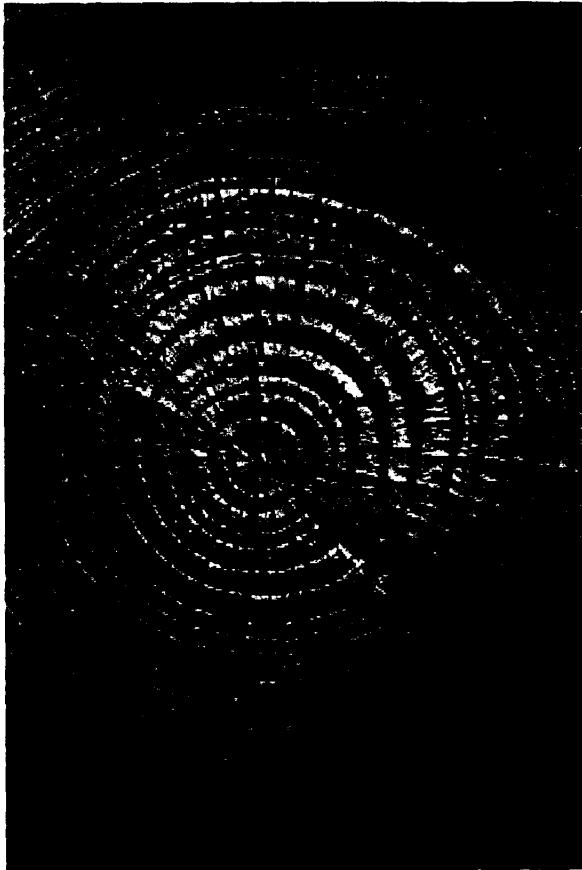
In particular, three full-time staff will be dedicated to the drive to promote the procurement of recycled materials and products, supported by WRAP's senior management team.

Specialists will be employed for each of the material streams with which WRAP will be concerned. They will also participate in the delivery of WRAP's work on standards, assisted by external specialists where necessary.

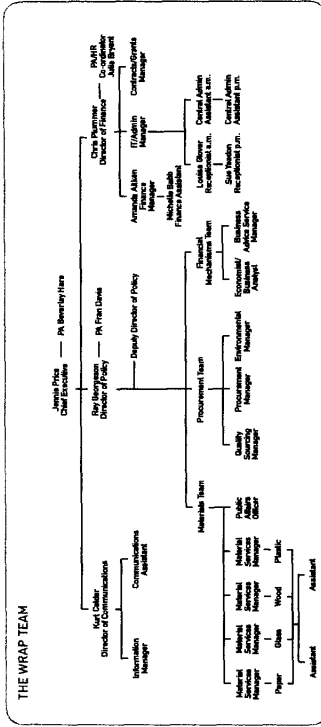
If any of WRAP's feasibility and development studies identify a shift in emphasis in any of the work programmes, staffing will be adjusted accordingly.

FUNDING				
£m	2000-01	2001-02	2002-03	2003-04
DETR	1.5	5.0	10	10
DTI	-	2.5	5	5
NAW*	-	0.45	*	*
SE**	-	0.5	0.8	0.8
Total	1.5	8.45	15.8	15.8

* Level of funding for years two and three
 * National Assembly of Wales
 ** Scottish Executive



The oldest trees in the world are said to have been growing for several thousand years – although the age and identity of the oldest is a matter of dispute. The rings inside a felled tree trunk are nature's own time capsule, recording age, growth and changes in weather.



Accounting for our progress

Accountability

Our targets will be...

- **Specific**
 - **Measurable**
 - **Actionable**
 - **Realistic**
- Time limited...and will be reviewed at the end of Year 1 in the light of our data gathering activities and feasibility studies. We will then adjust them if necessary.

WRAP is a private, non-profit making company, limited by guarantee. The first members of an eventual nine-strong board team are:

- Vic Cocker CBE, Chairman
- Michael Averill, Group Chief Executive of Shanks Group plc
- Professor George Fleming, University of Strathclyde Environmental
- Richard Bird, Head of Energy, Environment and Waste Directorate, DETR
- Jennie Price, Chief Executive

The Board is advised by David Dougherty, founder and former Executive Director of the Clean Washington Centre, Seattle.

A public recruitment process is underway for a further four non-executive directors of WRAP. This will bring the Board up to its full complement. WRAP wishes to ensure that a full range of skills and experience are available to the company, and that there is broad (but not direct) representation of stakeholder interests at Board level.

The executive team will prepare an annual work programme for Board approval. This will form the basis of WRAP's annual grant agreement with the sponsoring Government departments and the devolved administrations.

Our work programme will be monitored quarterly and, together with the financial provisions, will be subject to annual audit.

ENERGY SAVINGS

Making products from recovered materials WRAP will initially prioritise can cut the amount of overall energy needed, compared with starting with virgin raw materials, by as much as 95%.

Some examples:

- **Newspaper** 75%¹
- **Plastic** up to 85%²
- **Glass** 10-20%³

¹ Advanced Newspaper (1996), Newspaper Recycling Study, www.recyclenewspaper.co.uk
² BSC (1996), www.bsc.co.uk, The Energy Institute (1996), www.energyinst.org.uk
³ Dependence on percentage of cullet used, from Metcher University (1996), Sustainable Industrial development and promotion of energy conservation technology, www.technology.gov.uk

Accounting for our progress

Engaging

We plan to build positive and constructive relationships with all stakeholders in sustainable waste management. The need for a step change, not only in attitudes but also in the reality of recycling, will be demanding upon all. It will be a hard-won victory.

WRAP will seek a balance between providing a range of opportunities, and not oversteering stakeholders with the wrong message.

- To build a strong and engaged network of stakeholders, we will be working with the following groups:
 - The business community, including awarding bodies, company executives and a range of industry bodies
 - The wider community, including local authorities, schools, colleges, universities, and other organisations, and individuals, as a range of citizens and consumers of the services which we, as WRAP, will support and promote locally

REGISTER AN OFFICER

WRAP will be a limited liability company, and will be registered with the Registrar of Companies.

CONTACT

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RE-READ You are now invited to re-read the Business Plan. It is all about resources. Finite resources. Infinite possibilities.

08 March 2004

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ABOUT LONDON REMADE

Introduction

London Remade' is a strategic partnership between the business sector, London boroughs and regional government, waste management companies and the not for profit sector.

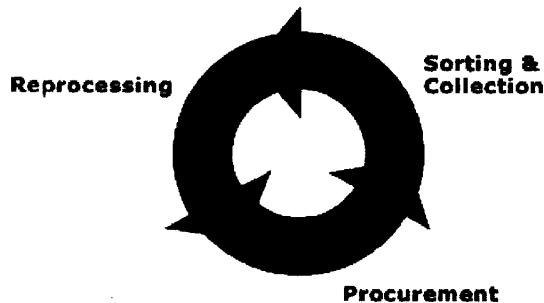
Our principle objective is to develop and promote new markets and secondary industries based on the reprocessing and reuse of London's recycled materials.

The programme is supported by Single Regeneration Budget funding from the London Development Agency whose recently published Economic Development Strategy for London acknowledges the role organisations like London Remade have to play delivering sustainable economic growth. The programme operates pan London however our inward investment programme is particularly focused on the Thames Gateway region of London and on the promotion of river transport.

At London Remade we are redefining the term recycling.

No longer will placing your paper in the 'recycling bin' constitute recycling. - to complete the loop, and the recycling process, you will need to purchase post consumer recycled paper.

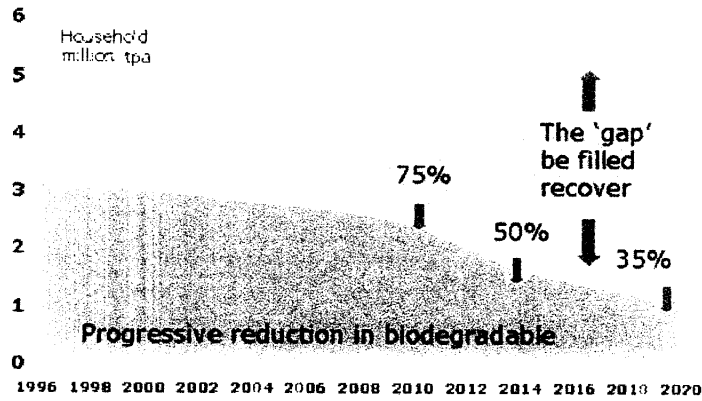
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Challenges

Whilst recycling rates are increasing we continue to generate waste at an unsustainable rate (currently estimated at 3% per annum) and forthcoming restrictions on landfill practices will require alternatives to current landfill practices.

EC Landfill Directive targets for

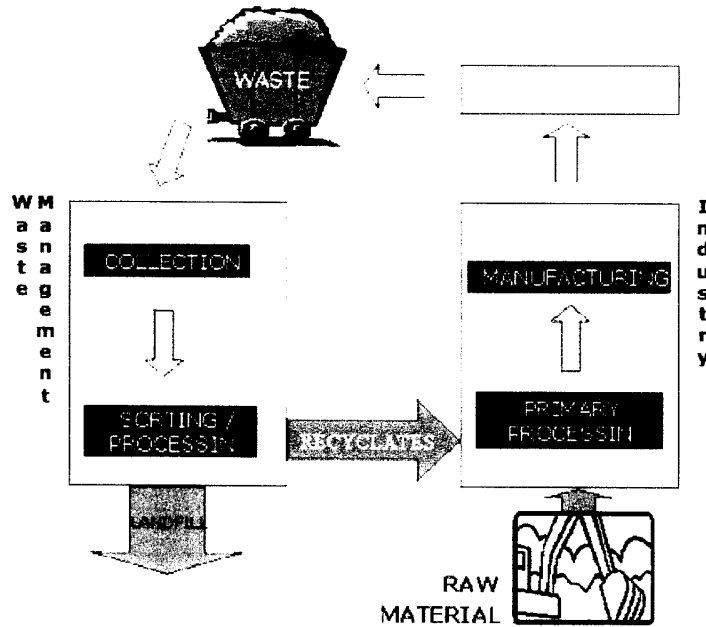


To address this challenge London has been set some very challenging recycling targets which effectively require a doubling of 1998 rates by 2003.

We must therefore find radical new ways to manage London's waste and London Remade is working to divert 250,000 tonnes of London's waste back into products and goods by 2004.

Market Development

An acknowledged barrier to increasing recycling rates is the absence of diverse and stable markets for recycled materials. For example glass cullet has traditionally only had one market - the glass container industry and in the UK this has been primarily been restricted to clear glass.



We are looking to develop alternative markets for recycled materials by encouraging the manufacturing sector to substitute raw materials with secondary materials and by persuading consumers to purchase / specify recycled products & materials.

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OUR PROGRAMME

The London Remade Programme

Origins

The London Remade programme has developed from the earlier work of London Waste Action which, between 1997 - 2000, ran The London Waste Recycling Programme with the London Boroughs to increase recycling rates.

The next logical stage was to work on developing markets for these materials and London Remade was created to deliver this.

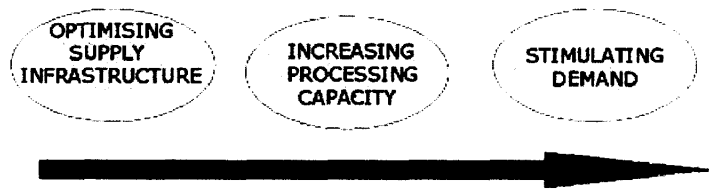
Material Prioritisation

To assess the opportunities for developing markets in London a Materials Prioritisation Study was carried out and published in 2000. This report contains a material by material assessment of the current market opportunities from which it emerged that the greatest opportunities for developing markets existed for organics, glass and mixed paper. The London Remade programme has therefore prioritised these materials and is based on the pioneering Clean Washington Centre (CWC) project in Seattle which demonstrated that there was a sound economic and social argument for developing markets using secondary materials recovered from the waste stream.

Single Regeneration Budget (SRB)

Following a successful bid to the London Development Agency for SRB funding London Remade was awarded up to £5.4M of SRB funds. Details of the current years programme can be found in our Delivery Plan.

The programme is working right the way along the supply chain, from consumer to waste producer, and this is reflected by our focus in 3 key areas which are being developed in a co-ordinated manner.



Supply Infrastructure - Whilst highly developed logistical systems exist for the movement of goods the collection and sorting infrastructure for recyclates lags far behind. Improving the efficiency of the supply side is an essential part of the jigsaw to ensure that reprocessors can provide manufacturers with viable alternatives to virgin resources.

Expanding Reprocessing capacity - we are looking to reprocess an

- Reprocessing Capacity:
- Market Development:..
- Supply Infrastructure:..
- Principal Sponsors:..
- Business Support & Tra
- Our Achievements:..
- About Us:..