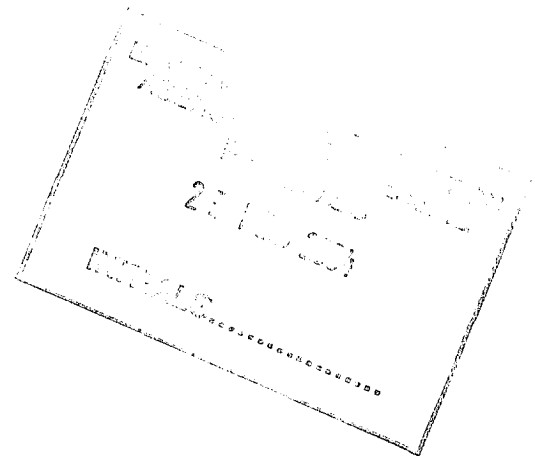


Appendix 10

STI's Contribution to Hazardous Waste Management Plan

Dublin Waste Management Plan

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The contribution made by Sterile Technologies Ireland to the Hazardous Waste Management Plan.

Up to the mid 1990's, all healthcare waste generated in Ireland was disposed of by means of incineration, based on hospital sites or commercially operated. By the later half of the 1990's all of these incinerators were decommissioned and an environmentally sensitive alternative to healthcare waste disposal was sought by the newly formed Joint Waste Management Board on behalf of the respective Departments of Health in Dublin and Belfast.

In 2000 STI began to provide this sustainable alternative to the disposal of this waste stream and put an end to the incineration or exportation of healthcare waste.

According to 1998 reports (National Hazardous Waste Management Plan 2001) more than 3659 tonnes of healthcare risk waste was exported for disposal. In effect Ireland was not disposing of this category of hazardous waste within its own jurisdiction. Exportation for disposal was both inefficient and unsustainable.

The commissioning of the STI facilities in Ireland has meant that more than 95% of the annual 5600 tonnes of healthcare waste currently generated is treated using the cleanest and most environmentally sound technology. This waste is treated to 6 log₁₀ standard of disinfection which allows the residue to be safely placed in standard landfill. This means that 99.9999% of the microbial population is rendered inactive. The technology uses heat and water as the vehicles for achieving this high level sterilisation and employs no chemicals and vents no harmful emissions.

STI has carried out extensive research since 2000 into possible avenues for material recovery from healthcare waste. The company has evaluated potential suppliers of technology for this project. Some companies have professed to have acumen in this area and in particular the application of their technology to healthcare waste recovery. STI has found that in some cases this acumen has not been realised and production scale trials have failed to meet expectation.

Systems capable of achieving up to 20% weight reduction immediately, increasing to at least 25% within three years have been identified. This potentially represents 1400 tonnes annually and accounts for almost 0.5% reduction of the national annual total hazardous waste arising projected to 2006. This recycling process forms part of this licence review.

This is in line with both the National Waste Management Plan and consequently the Dublin Regional Waste Management Plan.

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Dublin Waste Management Plan

Executive Summary

1. Background

The Dublin Waste Management Plan represents common regional action by the four Dublin Authorities – Dublin Corporation, Fingal County Council, South Dublin County Council and Dun Laoghaire Rathdown County Council. This Waste Management Plan has been formulated under the terms of Part II of the Waste Management Act 1996 and the Waste Management (Planning) Regulations 1997. The Plan, to be reviewed after 5 years, addresses key issues such as waste prevention, recycling, recovery and safe disposal. The Plan relates to the Dublin Region comprising the administrative areas of the four Dublin Authorities which have a combined population of 1,056,666 based on the 1996 Census.

The successful implementation of the Plan will require a concentrated approach by the four authorities acting as one with a common approach to waste planning, regulation and cost recovery. The Plan seeks radical change in cutting current waste growth levels, greatly increasing recycling, introducing waste recovery and minimising landfill. It challenges industry, business generally and householders to minimise, separate and recycle waste in preference to disposal.

The Waste Management Plan was developed based on studies carried out for the Dublin Waste Management Strategy by the MCCK Consultancy Group. The Waste Strategy Report was produced in December 1997 and presented to the Dublin Local Authorities in January 1998. The Strategy Study recommendations were accepted by each of the four Authorities in January 1998 who agreed to make a common Dublin Waste Management Plan. The Draft Plan was subsequently published for public consultation in July 1998. This final Plan incorporates the revisions necessary following the two-month consultation period.

The planning period for the Dublin Waste Management Strategy was 20 years. This Waste Management Plan will be reviewed after five years in the light of the Waste Management situation at that time.

The need to re-examine waste management planning in the Dublin region is based on the premise that current landfilling rates of some 80% to 90% cannot continue. To meet emerging new EU and national legislation, alternatives to landfill must be found. The increasing emphasis on pre-treatment of waste prior to landfill, the refinement of technologies which derive energy from waste and the desirability of dealing with solid waste as far as possible within the Dublin Region constitute a case for the comprehensive review of Dublin's waste management policy. This Waste Management Plan endorses this view.

This Plan supersedes and replaces all previous Waste Plans prepared in the Dublin Region under the European Communities (Waste) Regulations 1979 and where appropriate, the European Communities (Toxic and Dangerous Waste) Regulations 1982.

Waste management is a dynamic process with constantly increasing environmental standards and emerging new technologies. The past five years have seen enormous change

in National waste policy and practice. This Waste Management Plan must therefore have flexibility to respond to likely developments over the currency of the plan period.

The information presented in this Plan regarding costs and revenues have been gathered over the period 1997/1998. These figures will be reviewed and updated over the period of the plan.

2. *National Waste Policy Framework*

The Waste Management Policy of the Dublin Local Authorities is guided by National waste management policy as dictated by the Waste Management Act 1996 and associated regulations. This relatively new legislation is firmly grounded in EU Waste Management Policy summarised by the waste hierarchy of prevention, recycling, energy recovery and disposal and also guided by the following three principles:-

- *Precautionary Principle – i.e. preventative action should be taken if serious risk exists*
- *Proximity Principle - Waste should be treated or disposed of close to its source i.e. within the Dublin Region if possible*
- *Polluter Pays Principle – the costs of Waste Management are borne by those who generate the waste*

This Policy requires Waste Management Plans to have the following broad objectives which are laid down in the Waste Management Act, 1996:

- a) *to prevent or minimise the production or harmful nature of waste;*
- b) *to encourage and support the recovery of waste;*
- c) *to ensure that such waste that cannot be prevented or recovered is disposed of without causing environmental pollution;*
- d) *to ensure in the context of Waste Disposal that regard is had to the need to give effect to the Polluter Pays Principle.*

This Waste Management Plan seeks to effect increased standards of environmental protection by giving priority to waste prevention, recycling and recovery. The Plan is also firmly grounded in the Polluter Pays Principle in terms of cost recovery from all waste producers.

Subsequent to the publication of the Draft version of this Plan, a new National Waste Policy on Waste Management was outlined by the Minister of Environment and Local Government on 1st October, 1998. The main thrust of the policy is to reduce national dependence on landfill and increase private sector involvement. The importance of the regional approach to waste management is underlined. New higher waste recycling/ diversion from landfill targets are set out, over a 15-year period. The targets established by this Dublin Waste Management Plan are compatible with achieving the requirements of the new National policy.

3. *Local Development Policy*

The Plan plays a central role, together with the 1998 City/County Development Plans in moving the Dublin Local Authorities towards a unified Region. It is part of a wider environmental regional policy to prepare strategic planning guidelines for the Dublin Region balancing increased environmental protection with sustainable development. The Plan takes due regard of current and draft City/County Development Plans. These Plans subscribe to the concept of sustainable development, which provides the key to a quality of life for all its citizens.

4. *Public Consultation / Involvement*

An initial two-month consultation period was conducted at the commencement of the Dublin Waste Management Strategy Study in March 1997. This evoked a substantial response from the public and other interests which helped to inform the development of the strategy and subsequent Draft Plan. In accordance with the Waste Management Act 1996, the Draft Waste Management Plan went on public display for a period of two months. In addition, copies of the Waste Strategy Report and Draft Plan were made available in all public libraries of the four local authority areas.

When the public were asked for their views in March 1997, the principal public concerns coming across to the Dublin Local Authorities was the perception that household waste was a real problem and that recycling of this particular waste stream should get urgent priority. There was a call for greater public education and the need for a more proactive approach by the Local Authorities in becoming involved in waste minimisation schemes at community level. There was concern that industry was not paying its full share of the burden of responsibility which waste generation creates and a call for a reduction in waste packaging in particular. There was a clear link in the public mind between waste packaging on the one hand and the general problem of litter control on the other.

In formulating the waste strategy the Dublin Authorities and its consultants responded to the extensive public involvement process by bringing the wishes expressed to bear on the evaluation of alternative strategies. This had considerable dividends in the broad welcome which the strategy received when launched in January 1998, which underpinned public confidence that the selected waste management approach was the correct one as it was sustainable, likely to meet the public desire for greater recycling and appeared practical in financial terms.

There were a number of detailed submissions received following the public display of the Draft Plan. These were primarily from non-government organisations along with some private individuals and public bodies/representatives. A number of common concerns were expressed with regard to issues such as allocation of funding, recycling of household versus commercial/industrial waste and waste incineration. These submissions have been taken into account in the finalising of this Plan. In addition 175 completed questionnaires were received from members of the public.

This recommended strategy is now the basis for the Plan. New waste legislation and the new National Waste targets (announced in October 1998) place much greater obligations on the Local Authorities in terms of waste planning and regulation together with the need to deal with waste in environmentally sustainable ways with a greater emphasis on waste reduction, recycling and recovery. Meeting these new challenges will create the need for a

more streamlined organisational approach for efficient service delivery, more resources both in terms of staffing and finance and this in turn will require greatly increased expenditure levels to meet all of the new requirements.

This will require increased funding and greater emphasis on the Polluter Pays Principle in the form of use related charges as the financial motor to drive any new Waste Management Strategy approach. This Waste Management Plan relies on the recovery of Waste Management costs in this way to fund the Best Practicable Environmental Option towards solving the current problem.

5. Required Content of Plan

The Waste Management (Planning) Regulations 1997 require that a Waste Management Plan shall set out the present position regarding Waste Management in the Dublin Region and anticipated trends and developments over the period of the Plan. The Regulations also require an evaluation of Waste Policy Options in relation to the provision of services, the management of individual wastes, the achievement of waste hierarchy objectives and the enforcement/implementation of up to date legislation. Each of these aspects was considered in detail during the Waste Management Strategy Study completed in December 1997. This Executive Summary deals principally with the background and framework for the Plan, an outline of the key policy objectives, and concrete measures to fulfil those objectives.

6. Social and Economic Activity

In addition to summarising the quantities and nature of wastes generated in the Dublin Region for the purposes of the Plan, it was necessary to look behind this waste generation to individual land uses such as residential, commercial, industrial and agricultural activities to ascertain trends and the overall existing position on waste generation, treatment and disposal for each area of social and economic activity within the Dublin Region. Trends in population change, the physical description of the local environment, the nature, scale and distribution of commercial, industrial, agricultural and tourism activity were assessed together with the main elements of the transportation infrastructure during preparation of the Plan.

7. Agricultural Activity

Almost 50,000 hectares of land in the Dublin Region are used for agricultural purposes based on the 1997 agricultural census figures. North Fingal has historically been the source of fresh vegetables for the Dublin Region and agriculture is still strong in this region. There are four fishery harbours in the region: Dun Laoghaire, Howth, Balbriggan and Skerries. The principal locations for fish processing are close to the fish markets of Howth and Chancery Street (Dublin 7), with other companies distributed over the area.

8. Waste Generation in Dublin Region

In total there are approximately 3.5 million tonnes of waste arising in the Dublin Region, some 2.3 million of which is handled by the Local Authorities while the remainder, mainly agricultural and industrial waste is managed by the individual sectors from which it emanates. In terms of the 2.3 million tonnes handled by the Dublin Authorities,

approximately 53% of this waste is of construction/demolition origin, some 17% is industrial in origin while household and commercial sectors each contribute about 13% of the waste stream handled. Bulky items in skips and other wastes delivered to landfills by private means (including some green wastes) make up the bulk of the remainder.

It is estimated that there are some 50,000 tonnes of hazardous waste generated in the Dublin Region, which represents less than 1.5% of the overall waste stream in circulation. Waste management planning for hazardous waste is now the remit of the Environmental Protection Agency while local authorities are required to carry out the planning for non hazardous wastes.

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There is also a specific requirement to identify what are termed "Priority Waste Streams". These include packaging waste, construction/demolition waste, end of life vehicles, waste tyres, waste oils, batteries, electrical goods and PCBs. Management systems have been identified for each of these waste streams depending on the degree of hazard involved and in terms of non-hazardous waste planning.

9. *Defining the Problem*

In drawing up a new Waste Management Plan for the Dublin Region, the local authorities face three practical problems:

- *lack of recycling and disposal infrastructure in the short to medium term as well as in the long term*
- *current environmental standards in waste management are not adequate to meet modern legislation – current landfilling rates cannot continue, alternative methods must be found*
- *there is totally inadequate funding to support even the current system – to improve standards, increase recycling and provide a proper system of waste regulation will require significant additional cost recovery from all waste producers*

At present, the majority of household and commercial waste, with a large proportion of construction/demolition waste, is disposed of to Ballyally Landfill in the Fingal area, which is rapidly nearing capacity. The commissioning of the Arthurstown waste disposal facility for baled waste at the end of 1997 provided a facility for municipal baled waste over the coming years. Nevertheless, there is an urgent need for new waste management initiatives to reduce the waste volumes produced and to divert waste from landfill to the maximum possible extent.

10. *Development of New Waste Management Plan*

Having regard to the strategy objectives of meeting various EU and national Recycling Targets, increasing recycling and reducing landfill, a number of waste management scenarios were modelled to enable the Best Practical Environmental Option to be chosen:

- Scenario 1:** To meet Mandatory Recycling Targets and comply with Draft EU Landfill Directive.
- Scenario 2:** To achieve Maximum Realistic Level of Recycling.
- Scenario 3:** To meet Mandatory Recycling Targets, comply with EU Draft Landfill Directive and achieve efficient bulk waste reduction through thermal treatment.
- Scenario 4:** To achieve Maximum Realistic Level of Recycling to comply with EU Draft Landfill Directive and achieve bulk waste reduction

through thermal treatment.

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These four scenarios were compared on the basis of meeting strategy requirements in terms of technical capacity, environmental acceptability and cost incurrence. A detailed modelling exercise was carried out to determine the cost and environmental impact of each scenario. The environmental assessment had regard to factors such as global warming, acidification, nitrification and photochemical ozone formation, heavy metals and dioxins.

Scenario 4 has been chosen as the Best Practicable Environmental Option in that it minimises landfilling to the greatest possible extent, maximises recycling, meets all legal requirements and is the most robust and secure option for the future. The new approach includes thermal treatment of waste, which is the subject of further study in terms of available technologies, emission standards, number and size of plants, procurement and siting. The proposal to maximise recycling also involves the biological treatment of organics (mostly household kitchen waste and green waste from gardens and parklands). This form of treatment is also the subject of further study commencing with pilot collection schemes on source separation. The Dublin Local Authorities have an open mind currently on likely future forms of thermal and biological treatment but require the best available technology not entailing excessive cost in each case.

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PLAN SUMMARY

11. Waste Management Policies and Works Objectives

Over the period of this Waste Management Plan the Dublin Local Authorities shall, subject to resources being available, implement the following policies and objectives to meet the national and EU waste hierarchy of waste minimisation, recycling, energy recovery and disposal.

12. Waste Minimisation Policy

- *The Dublin Region shall adopt a 'Green Region' approach in launching a new 'waste reduction/minimisation initiative' with the support of resident associations, community and business groups. This shall be done in collaboration with existing community initiatives including Global Action Plan which some Dublin Local Authorities are supporting as part of Local Agenda 21 objectives.*
- *Re-organised Waste Services Departments in each local authority will promote public education targeted at schools, community groups, industrial estates, to create a new focus on waste management obligations of householders, institutions, commercial and industrial enterprises.*
- *The Dublin Local Authorities shall use their new waste regulation powers under the Waste Management Act 1996 to assist wherever possible waste reduction and minimisation schemes at industrial, commercial and household level.*
- *This Waste Management Plan seeks to halt the current trend of waste generation growth per annum in the Dublin Region. Taking into account the implementation of recommendations on waste minimisation at household and industrial level, the following growth rate targets per capita shall apply:*

Reduction in Waste Growth Rates (Targets for 1998 – 2011)

<i>Period / Waste Type</i>	<i>1 1998 – 1999</i>	<i>2 1999 – 2002</i>	<i>3 2003 – 2006</i>	<i>4 2007 – 2011</i>
Household	2%	1%	0.5%	0%
Green Waste	0%	0%	0%	0%
Bulky Waste	2%	1%	0.5%	0%
Commercial	1%	0.5%	0.5%	0%
Industrial	1.5%	1%	0.5%	0%

(The current situation is that waste generation per capita is increasing annually, by up to 3 % per annum for household waste for example. The Plan aims to halt this growth in waste production and achieve a stable level of waste generation)

13. Waste Collection Policy

- **Provision of home address source separation and collection of recyclables (kerbside) to the Dublin Region to cover 80% of the population. This recognises that 100% coverage is not feasible having regard to source separation difficulties at high rise apartment complexes and local collection difficulties**
- **Provision of bring-banks in remaining areas and the provision of 10 no. new Waste Recycling Centres based on the European model of stand-alone urban civic amenity sites, where the public can bring various types of recyclable waste (including green waste and waste oils) and bulky items which cannot be handled by conventional waste collection methods. Two such centres are currently planned both of which will also have transfer facilities – at Newtown Industrial Estate and at Ballyogan Road in Dun Laoghaire.**
- **Source separation and separate collection of household organic waste, possibly based on alternate week collection using a dual bin system, ultimately to cover 80% to 90% of households (subject to a feasibility study on the type and location of such facilities).**
- **Source separation of priority wastes (e.g. batteries, oils, etc.) in the household and commercial waste stream and their return to recycling schemes.**
- **Source separation and separate collection of commercial and industrial waste from private enterprises as well as from construction/demolition activities shall be regulated using waste collection permits and bye-laws under the Waste Management Act 1996. Source separation of construction/demolition waste at large infrastructural and building projects shall be regulated using bye-laws in the short-term (1999-2000), and in the medium/ long-term (2000-2016) shall be also regulated at planning permission stage.**

14. Waste Recycling and Recovery Policy

- **The provision of additional sorting and baling facilities in the Dublin Region for recyclables collected prior to transport to markets.**
- **Provision of green garden waste depots and composting facilities to collect and treat green waste from parks, and garden waste delivered by residents to recycling centres, etc. Currently, new facilities are planned at Ballyogan and Lucan.**
- **Facilities for the biological treatment of kitchen organic waste using composting or biological digestion processes in plants serving the region. A feasibility study is in hand to determine collection, treatment methods and siting criteria.**
- **Because of the critical shortage of disposal capacity and in order to satisfy the requirements of the Packaging Waste Directive and the requirement for diversion of biodegradable waste from landfills under the proposed EU Landfill Directive, the provision of thermal treatment with energy recovery, for a capacity in the region of 500,000 – 700,000 tonnes per annum. A feasibility study is in hand to confirm treatment type and siting criteria.**

- *The provision of facilities in the North and South County areas for the reception, sorting and recycling of construction/demolition waste as an urgent priority having regard to the volume of this waste currently delivered to landfills in the Dublin Region. In conjunction with these facilities, consideration of the use of recycled material in local authority construction projects and their specification acceptance requires urgent attention. In addition, provision will be made for maximum recycling and ultimate disposal of various municipal type wastes from major infrastructural projects in the Dublin areas including soils. Currently a construction / demolition waste recycling centre is planned for Balleally.*
- *The provision of recycling facilities/treatment for dealing with priority wastes and household hazardous wastes (e.g., batteries, oils and paints) is required.*
- *The following are the recycling and recovery targets for the period of the Plan.*

Recycling and Recovery Targets (1999 – 2004)

<i>Source</i>	<i>Recycling</i>	<i>Thermal</i>	<i>Landfill</i>
Households	60%	39%	1%
Commerce/Industry	41%	37%	22%
Construction/Demolition	82%	0%	18%
Total	59%	25%	16%

15. Disposal Policy

- *Arthurstown Landfill shall continue to be utilised for the benefit of the Dublin Region.*
- *The existing Balleally Landfill will be replaced at suitable sites within the Dublin Region. A minimum additional void space of 10 –11 million tonnes shall be provided to service the period between the years 2000 and 2011 and thereafter depending on requirements.*
- *The servicing of existing and proposed landfills using the existing baling / transfer station at Ballymount (220,000 t/annum), proposed baling / bulk transfer station at Ballyogan (120,000 t/annum) and proposed bulk transfer station at (50,000 t/annum) shall be optimised on a regional basis to best serve the needs of the four local authorities.*

16. Hazardous Waste

The Environmental Protection Agency is responsible for hazardous waste planning under the Waste Management Act 1996. The EPA is currently formulating the National Hazardous Waste Management Plan. This Plan shall have regard to the recommendations of the National Plan in the context of the Dublin Region in the terms of waste prevention, recycling, recovery and disposal arrangements.

17. Implementation of 'Polluter Pays Principle'

Under present conditions, the industrial and commercial sectors contribute to the cost of waste management through gate fees at local authority landfills in the region. However, implementation of new waste management objectives as outlined in this Plan will place an increased cost burden on the local authorities. The costs of future waste management in the Dublin Region shall be borne by the waste producers by the introduction of use related charges on a consistent basis across the region, on industry, commercial organisations and householders.

18. Policy Implementation

The principal dates for implementation of new facilities are as follows:-

• Construction/Demolition Waste Recycling Dublin)	-	1999	(North
Dublin)		2000	(South
• Waste Recycling Centres	-	1999 / 2004	
• Home Address Collection (inc. new reception (processing) facilities)		1999/2000	
• Green Garden Waste Composting	-	2000/2001	
• Dual Collection and Biological Treatment	-	2002	
• Thermal Treatment Plant	-	2004	
• Additional Landfill (extension or greenfield)	-	2000	

The overall effect of the Plan will be to dramatically cut dependence on landfill from approx. 80% for all wastes in 1997 to 16% by the year 2004, provided new recycling schemes and thermal treatment are put in place. Also recycling of Dublin's municipal, industrial and construction/demolition wastes will increase to some 60% from a current 20% (10% for municipal waste only). Construction/demolition waste is the single largest waste stream currently disposed to landfill. This Waste Management Plan is responding to legal obligations and to public calls for reduced landfilling and increased recycling.

19. Paying for Waste Management

The Plan examines the annual costs of the proposed strategy, including annual operating costs plus annual investment costs. The total investment costs of new waste facilities up to year 2011 is IR£253 million - IR£29 million (12%) on collection, IR£165 million (65%) on recycling and recovery and IR£59 million (23%) on landfill. This shows that current expenditures of the order of IR£24M per annum will increase by approximately IR£20M

over the first 5 years and by over IR£30M to almost IR£60M per annum in conjunction with the major investments in thermal treatment and other facilities (see table below).

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In addition to implementing the Plan, it is a policy objective that IR £5M be invested over a 2-3 year period in setting up the new structures recommended, i.e., planning, regulation, and community environmental officers together with significant community based initiatives in waste reduction and minimisation, schools programmes, media promotion, etc., as outlined in the Plan.

Ultimately, over the period 1998 - 2011, the average cost will be approximately IR£20M per annum in excess of current expenditures. These figures are based on waste management costs calculated as part of the Dublin Waste Strategy Study in 1997.

Plan Implementation - Capital Investment Requirement (Expressed As NPV)

Year	IR£
1997/1998	27,028,296
1999	25,339,140
2000	20,303,510
2001	14,628,743
2002	23,969,959
2003	116,793,144
2004	538,284
2005	1,625,505
2006	409,208
2007	1,829,571
2008	2,851,518
2009	2,707,324
2010	6,039,451
2011	8,526,909
Total	252,590,562

Source: Dublin Waste Strategy Model

At present, the cost of waste management in the region is largely borne by the general local authority budgets and contributed to by industrial/commercial waste producers directly. This indicates that the "polluter pays" principle is not widely applied. Faced with an additional IR£20M-IR£30M annual outlay, the local authorities in the region shall put in place appropriate charging mechanisms to provide the necessary funding to implement this Plan. In other European Countries, it is in fact the norm to charge householders, commerce and industry for these services.

It is a policy objective of this Plan that charges shall be levied on waste producers which include both householders and industrial /commercial enterprises. Such charges may be related to the waste volumes or weights produced, which would provide incentives for minimisation and recycling.

20. Public and Community Aspects

A primary objective of the Plan shall be the minimisation of waste produced through support for community and waste producer initiatives by the local authorities. The many elements of this approach will require at a minimum one central new unit to deal with waste awareness education to encourage and support householder, community and private enterprise involvement in waste minimisation and recycling.

A "Green Region" or similar identification is necessary in ensuring that the four Dublin Authorities as the waste planners lead the debate. Central to the Dublin Waste Management Plan will be the concept of a common regional waste plan adopted by each of the four authorities working together. This common regional action concept is central to EU and National Waste Policy of shared responsibility for the environment.

The waste debate shall be assisted by appropriate mobile units which can visit schools, libraries, major public events, shopping centres etc., equipped with up to date literature and staffed by suitably qualified personnel with sufficient knowledge of waste management issues. As the issues of waste and litter are clearly linked in the public mind, this promotional appeal shall be widened to the waste area and supported by the new waste awareness unit(s).

A substantial package of public education shall be implemented over the period 1998-2000 to prepare Dublin for waste management in the new Millennium. This will include:-

- *Public education programmes to encourage waste minimisation, home composting, etc. focusing on priority waste streams*
- *Support for implementation of "Global Action Plan (GAP)" and other initiatives in the community in accordance with Local Agenda 21 objectives*
- *Public information leaflets and video to be produced for widespread distribution to waste producers*
- *Support for home composting and local recycling initiatives (such as Sunflower Recycling) through existing or new community action with Local Authority support*
- *Provision of regular Newsletter reports, published targets and monitoring of waste management as part of an ongoing public communication programme*

The public information role is seen as particularly important in ensuring a full understanding among waste producers and the public generally of the nature and volume of waste being produced, the options for its reduction and recycling and the need for waste treatment and disposal facilities. A clear link between the relative levels of service delivery/environmental protection and resulting costs must be generated in the public mind. Both tangible and intangible (feel good factor, etc.) costs need to be included in the overall assessment of cost.

21. Organisational Aspects

The Waste Management Act 1996 imposes significant obligations, to be implemented nationally. These shall involve the following:-

- *Waste producer obligations; will be implemented through bye-laws enacted by local authorities which will cover segregation of waste and source separation into specified fractions, identification of waste fractions and how they should be presented for collection together with the duty to use only authorised collectors.*

- **Obligations of waste collector; to operate under permit from the local authority in the area, which shall require collection of waste strictly in accordance with bye-laws and specify appropriate destinations, standards of equipment, information and reporting requirements on the part of waste collectors. Local Authorities shall encourage a higher standard of aesthetics in collection receptacles particularly in tourist areas (e.g. Hotels, Restaurants, Temple Bar, etc.).**
- **Obligations of waste disposal or treatment facility operator; to operate under EPA licence which shall specify the size and nature of the facility, its operational parameters, environmental monitoring requirements, control of waste delivered, measurement of waste volumes, reporting and general compliance with licence requirements.**

Local Authorities shall make provision for waste management planning on a local/regional basis, together with waste regulation (including enforcement), provision of general services and support, and in the control of the operation of waste facilities. The Dublin Local Authorities shall implement:-

- **The setting up of newly focused Waste Services Departments within existing structures of each local authority. This will replace the existing Cleansing Department in Dublin Corporation and affect the structures of the Parks and Environmental Departments in the three counties.**
- **Initiatives which can be undertaken by common regional action to effect and manage change in Dublin's Waste Management Strategy shall be examined and recommended. This will require substantial new resources to fund new planning, regulation and public awareness functions in particular.**
- **The provision of the necessary institutional and organisational structures, technical resources and facilities to implement these responsibilities and to enforce regulation of the waste management process shall be implemented.**
- **Sufficient funding mechanisms shall be put in place to finance the new organisational, institutional and regulatory obligations of local authorities.**

The overall effect of the changes shall be to ensure an acceptable common standard of environmental protection with consistency of implementation, efficiency and overall effectiveness across the Dublin Region.

22. A Common Approach Working Together

This Waste Management Plan is intended to enable the Dublin Local Authorities to meet their obligations in a robust and sustainable way, to provide a fresh approach for the better management of Dublin's waste and to achieve cost recovery under the Polluter Pays Principle. These opportunities and challenges are best met by a common future approach by the four Dublin authorities working together for the people of Dublin.