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WASTE MANAGEMENT PLAN FOR THE DUBLIN REGION 2005 - 2010



ANNUAL PROGRESS REPORT 2008



WASTE MANAGEMENT PLAN
Working for the Dublin Region



Waste Management Plan for the Dublin Region 2005 – 2010

Annual Progress Report 2008

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EXECUTIVE SUMMARY



WASTE MANAGEMENT PLAN
Working for the Dublin Region

Introduction

The Waste Management Plan for the Dublin Region 2005 – 2010 (hereafter Waste Plan) was prepared jointly by the Dublin Local Authorities, Dublin City Council (DCC), Dun Laoghaire-Rathdown County Council (DLRCC), Fingal County Council (FCC) and South Dublin County Council (SDCC).

The Dublin Local Authorities are committed to the ongoing implementation of waste plan objectives and the Annual Progress Report 2008 provides an update on the progress achieved in the Dublin Region.

Dublin Regional Profile

Since the adoption of the Waste Plan in 2005, the Dublin Region has experienced mixed economic growth. In 2006 the region, like the rest of the country, continued to grow and prosper. A slow down in the construction sector followed in 2007 and has continued into 2008, impacting significantly on employment in the sector with a high number of construction workers made redundant. This change to the economic environment of the Irish construction scene has since been overshadowed by the global financial and banking crisis which has impacted on Irish businesses and jobs across every sector. It is anticipated that negative economic growth will be recorded for Ireland in 2008.

| Key Facts | 2002 (CSO) | 2006 (CSO) | % Change |
|---------------------------------|------------|------------|----------|
| Population | 1,122,821 | 1,187,176 | + 6% |
| Number of Households | 379,372 | 420,429 | + 11% |
| Number of Persons per Household | 2.96 | 2.7 | - 7% |

Dublin as the country's economic core has been badly affected with the level of unemployment increasing in the region. It is expected that the economic recession in the region will effect growth in waste arisings particularly from the commercial and construction sectors. Construction in Dublin has slowed down considerably in the last 12 months and a significant reduction in C&D arisings is anticipated over the coming years.

Dublin's Waste Strategy

The Waste Plan sets out the regional policy framework for Dublin and the strategy for the sustainable management of waste arisings in the Region to 2010. The policy in the current Plan builds on the long-term regional waste strategy and continues to endorse the EU Waste Management Hierarchy. The strategy aims to deliver maximum recycling and use thermal treatment with energy recovery for the treatment of residual wastes and by doing so minimise the use of landfill disposal. The waste targets to 2013 for the region reflect this approach and the Dublin Local Authorities are committed to developing a recycling society in the Region.

| Adopted Targets: | |
|------------------|-----|
| Recycling | 59% |
| Energy Recovery | 25% |
| Landfill | 16% |

Regional Waste Arisings Data

The slow down in economic growth experienced in the country in 2007 has continued into 2008 and has been mirrored in the Dublin Region. A levelling off in the growth of household, commercial and construction and demolition arisings has been recorded. The quality of waste data continues to improve and more waste is now being correctly identified and recorded through the waste reporting systems. Further improvements can be made in the key categories of household, commercial and construction and demolition waste.

PROGRESS SINCE 2006

Prevention of Waste

Waste prevention and minimisation are key policy objectives of the current Waste Plan. The Dublin Local Authorities have been active in implementing these objectives through the appointment of prevention staff and provision of resources. There are currently 7 Environmental Awareness Officers (EAOs), 2 Green Business Officers (GBOs) and 2 Green Schools Officers (GSOs) in the Dublin Region. In addition to these staff the Local Authorities have appointed other supporting education and awareness staff.

It is the role of the Environmental Awareness officer to promote, organise and manage prevention and awareness initiatives at the household and community level. This includes implementing activities such as educational workshops on waste management, home composting seminars, tidy towns competitions, waste events and community support and advice programmes.

The An Taisce Green Schools Programme continues to grow in popularity in the Dublin Region with the Local Authority GSOs responsible for expanding the programme to as many schools as possible. Twenty seven new schools entered the programme since 2006 with an increase in the number of Green Flags awarded in the region in 2007 highlighting the continued progress being made at this level.

By the end of 2007 a total of 444 schools were registered for the green schools programme in the region, an increase of 6.5% from 2006.

173 Green Flags were awarded by the end of 2006 compared to 137 in 2004.

24 waste related projects were funded under the Local Agenda 21 initiative and a total of € 115,128 was provided in 2007.

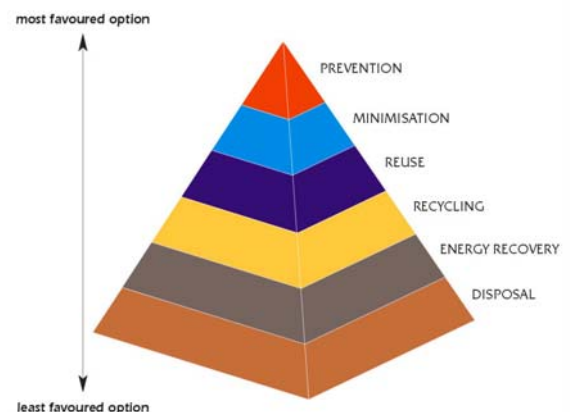
The GBOs in the region are responsible for raising awareness, education and providing support for businesses who want to develop more sustainable waste management practices. There are a number of programmes underway in the region particularly in the Dun Laoghaire Rathdown area where a project with the Dundrum Town Centre has yielded significant waste reduction results. Further success is being achieved by introducing similar programmes of this nature.

Reuse

Waste reuse is a recognised waste prevention activity and it is a higher order solution for managing waste materials in the context of sustainable resource management and climate change. To promote reuse in the Dublin Region the Local Authorities funded the development of the online reuse facility, FREE Trade (www.DublinWaste.ie/freetrade).

This service was launched in August 2006 and provides householders with a practical and simple application for reuse. Since its launch, the total number of items reused on FREE Trade is reported to be over 15,000 (as of November 2008). This service has over 23,000 members and continues to be hugely popular with householders.

In addition to FREE Trade the Dublin Local Authorities continue to support reuse programmes by providing advice and financial support to community groups.



WASTE DATA: PROGRESS SINCE 2006

Household Waste Collection

The quantity of household waste generated in the Region in 2007 has been calculated to be 470,220 tonnes. This figure represents an increase of 1.3% in household arisings generated since 2006. The data collected shows that in 2007 the amount of waste generated per household was 1.12 tonnes per household.

There has been an improvement in household recycling rates for the region since 2006, with an increase from 27% in 2006 to 28% in 2007. The Dublin Local Authority door-to-door collection service currently provides a black bin and a green bin service to all customers. In 2007 the rollout of brown bin continued in Dublin City Council and Fingal County Council and it is now estimated that over 140,000 households are now receiving a brown bin collection service.

| Waste Source | Regional 2006 | Regional 2007 |
|-------------------------|----------------|----------------|
| Total Recycled | 126,805 | 132,332 |
| Total Disposed | 337,070 | 337,889 |
| Total Arisings | 463,875 | 470,221 |
| Recycling Rate % | 27% | 28% |

An increase in the number of recycling centres and bring banks in the region continues to contribute significantly to the collection of recyclable materials. Additional household collection services such as bulky waste collections and mobile hazardous waste collections continue to be provided in the region.

Commercial and Industrial Waste

In 2007 800,641 tonnes of C&I waste was reported in the Dublin Region. This represents a decrease of 2.3% in C&I waste arisings since 2006. The decrease recorded is considered to be a result of the economic slow down in 2007. In terms of recycling C&I waste, the region has increased rates from 49% in 2006 to 50% in 2007. It can be difficult to obtain final destination information on this waste stream as the Local Authorities are no longer required to report C&I arisings to the EPA.

Municipal Waste

A municipal waste recycling rate of 41% was calculated from the data reported in 2007 and represents an increase of 1% from the 2006 figure. Municipal waste recycling continues to progress towards the regional target of 45%. The continued drive to maximise source separation across the household and commercial sectors and divert material from landfill continues to improve the management of municipal wastes.

| Waste Stream | Total tonnes 2006 | Total tonnes 2007 |
|--------------------------------------|-------------------|-------------------|
| Municipal Waste generated | 1,320,598 | 1,306,441 |
| Municipal Waste Recovered | 529,116 | 533,939 |
| Municipal Waste Recovery Rate | 40% | 41% |

Biodegradable Municipal Waste

The amount of BMW landfilled by the region in 2007 was calculated to be 417,025 tonnes. This represents a reduction of 14,336 tonnes since 2006. This figure takes into account the municipal waste landfilled in the Dublin region. The 2013 target set in the Waste Plan requires the landfilling of BMW to be reduced to BMW to 175,030 tonnes and remains a difficult challenge to be met. The continued rollout of the brown bins in the Dublin Region will help to reduce the quantity of biodegradable municipal waste being sent to the landfill.

WASTE DATA: PROGRESS SINCE 2006

Packaging Waste

Packaging waste arisings are calculated from the quantity of packaging waste landfilled within the region plus the quantity of packaging waste recovered. Packaging waste recovery continues improve in the Dublin Region, from 49% in 2006 to 52% in 2007. This suggests that the region is on course to meet the long-term target set in the Waste Plan of 55%.

| Packaging waste | Recovery Rate |
|-----------------|---------------|
| 2003 | 37% |
| 2006 | 49% |
| 2007 | 52% |

Construction and Demolition Waste

In 2007 a slow down in the construction activities occurred in Ireland and Dublin with a drop in C&D arisings in 2007. This was reflected in the C&D waste arisings recorded in 2007. The total quantity of C&D waste reported to the Local Authorities in 2007 was 7,052,034 tonnes. This represents a decrease of 7.9% in the quantity of C&D waste recorded in 2006, although this waste stream remains the most significant arising in the region.

| C&D Waste Arisings | 2003 Performance | 2006 Performance | 2007 Performance | Target |
|-----------------------------------|------------------|------------------|------------------|-------------|
| Total C&D Waste Arisings | - | 7,654,550 | 7,052,034 | |
| % C&D Waste Recovered (Excl soil) | 4% | 14.4% | 34% | 85% by 2013 |
| % C&D Waste Recovered (Incl soil) | - | 82% | 90% | |

Priority Waste Streams

WEEE – The Dublin Local Authorities provide for the collection of household WEEE at their recycling centres across the region. In addition DCC and SDCC have also set up designated collection centres for the collection of WEEE delivered to retailers in Kylemore Park and Cookstown respectively. The total household WEEE collected for recovery in 2007 was 10.9 Kg per capita, exceeding the regional target of 4Kg per capita.

ELVs- The End-of-Life Vehicle regulations came into operation on June 8, 2006 and these impose substantial obligations on local authorities in terms of registration, administration, modification of permits, inspection and enforcement. They must maintain a register with all relevant details for the producers and Authorised Treatment Facilities within the functional area. In 2007 there are now 5 ATFs in operation in the Region, with 14,187 tonnes of material recorded.

Tyres - In 2007 the DEHLG published Waste Management (Tyres and Waste Tyres) Regulations 2007 and impose obligations on retailers, manufacturers, local authorities and farmers. However, Local Authorities are no longer required to report this waste stream to the EPA. In 2007 a reported 9,542 tonnes of tyres were collected in the Region.

REGIONAL INFRASTRUCTURAL DEVELOPMENTS

Biological Treatment Facilities

At present two proposed biowaste treatment facilities for the Dublin Region are under development, at Ballyogan Recycling Park to serve the South of the Region and at Kilshane Cross Recycling Park to serve the North part of the Region. Each facility has achieved regulatory approvals to treat up to 45,000 tonnes per annum of food waste and green waste. Ballyogan is currently at contract negotiation/signing stage, while Kilshane is at tender assessment report and bidder recommendation stage. In addition to these facilities, additional capacity to manage commercial/industrial organic waste is required in the Region. A capacity range of 50,000 – 100,000 tonnes per annum is recommended and it is envisaged that this will be developed by the private waste sector. No private sector biological facilities are operational in the region at this stage.

Materials Recovery Facility

In the Waste Plan the Local Authorities identified the need to develop a regional MRF for the processing of household recyclables collected through the green bin collection service. This facility has been put in place and is located in Ballymount, Dublin 12. It is on a nine acre site and has been designed to cater for the processing of green bin materials in the Dublin Region for the next 20 years. The facility has an annual capacity of 100,000 tonnes per annum and represents an investment of €23 million. The facility is at its final commissioning phase and it is due to be operational in early 2009.

Energy Recovery

The proposed Waste-to-Energy (WtE) facility will be located on the Poolbeg Peninsula in Dublin and the site will cover an area of 5.5 hectares (13.6 acres). The facility will be able to handle 600,000 tonnes of municipal waste annually. The facility will produce energy to meet the needs of approximately 50,000 houses in the form of electricity supplied to the National Grid. It is estimated that the facility will take 36 months to construct and will be operational in 2012 at an estimated cost of €300 million.

Planning permission and an EPA Waste Licence have been granted for the facility. In addition two applications were submitted to the Commissioner for Energy Regulation in May 2008 to seek authorisation to construct a generating station and for a licence to generate electricity. A decision on these applications is pending. A grid connection application has also been lodged with the ESB in June 2008. In accordance with the Planning and Development Act 2001, the Strategic Infrastructure Act 2006 and the Foreshore Acts 1933-2003, foreshore consent is required from the Minister for Agriculture, Fisheries and Food if it is proposed to locate the development wholly or partially on the foreshore. An application for Foreshore lease or Licence was completed and submitted to the relevant authority in July 2008. A decision is currently awaited.

Landfill

There are 2 landfill facilities active in the region, Arthurstown and Balleally, and both are operated by the Local Authorities. Based on the current rates of filling both facilities are due to close in 2009 and 2010 respectively. The long-term landfill target of 16% by 2013 remains a considerable challenge and similarly the reduction in the levels of BMW currently being landfilled in the region

The Dublin local authorities are pursuing the development of a new landfill at lands in Nevitt, County Fingal. Delivery of the proposed landfill is required to provide adequate safe disposal capacity for the Region's residual waste in the short-term. In the long-term it is an objective of the current Waste Management Plan to provide a landfill of up to 10 million tonne capacity for a 20 to 30 year period for the disposal of residual waste which cannot be recycled or recovered.

REGIONAL ENFORCEMENT

Since the adoption of the Waste Plan enforcement and regulation in the region has increased with significant increases in the number of facility audits, inspections, and complaints investigated.

| | Regional 2007 | Regional 2006 |
|---|---------------|---------------|
| No. of facility audits carried out | 68 | 85 |
| No. of inspections carried out | 3,344 | 2,049 |
| No. of complaints received | 624 | 616 |
| No of enforcement procedures taken | 127 | 156 |

In 2004, a Regional Enforcement Unit was set up to cover Dublin City Council and Fingal County Council functional areas and the unit has since grown. The unit currently consists of ten field officers, two administrative staff, an Environmental Manager and Assistant Environmental Manager. The unit has recently expanded its remit and since 1st August 2007 now also covers the South Dublin County Council functional area.

The Waste Enforcement Unit is based within the Dublin City Council area, but the Field Officers operate largely on a mobile basis. The main function of the Regional Enforcement Unit is to limit the risk of environmental pollution and ensure compliance with the Waste Management Act 1996, as amended, and all relevant regulations made thereunder. The unit achieves this by providing a rapid response to complaints, liaising with other Regulatory bodies, carrying out audits on waste facility permits, waste collection permits and all producers of waste, carrying out checkpoints and by taking legal proceedings where necessary.

IMPLEMENTATION CHALLENGES

Possible Statutory Delays

The key waste infrastructural projects, i.e. regional biological facilities, regional MRF, regional Waste-to-Energy, and regional landfill, are all at different stages of completing the required statutory processes. Delivery of these facilities within this time period is critical if regional targets for recycling and landfill diversion are to be met. Possible future delays to these projects beyond current projected timelines could cause significant environmental and financial impacts.

Waste Collection Permit Review

In June 2008 Dublin City Council commenced a review of 197 existing collection permits under the 2007 Regulations. The collection permit review is progressing and Dublin City Council expects to issue the first of the revised permits by the end of December 2008. The conditions of the revised permits will give effect to the objectives of the Regional Waste Plan and the National Hazardous Waste Management Plan 2008

Variation to the Waste Plan

On the 3rd March 2008 following an extensive period of consultation the Dublin Local Authorities varied the Waste Management Plan for the Dublin Region 2005 - 2010.

The Variation provides for the insertion into the Plan of specific objectives that the collection of household waste from single dwelling households (other than those in purpose built apartment blocks) will be carried out by the Dublin Local Authorities or, alternatively the Dublin Local Authorities will make arrangements by way of a public tendering process for the collection of such household waste (which may be on a geographical or area basis). The Variation was the subject of a legal challenge and judicial review proceedings commenced in the high court in October 2008. The hearing ceased in early December and a decision is expected by the end of February 2009

1 INTRODUCTION

The Waste Management Plan for the Dublin Region 2005 – 2010 (hereafter Waste Plan) was prepared jointly by the Dublin Local Authorities, Dublin City Council (DCC), Dun Laoghaire-Rathdown County Council (DLRCC), Fingal County Council (FCC) and South Dublin County Council (SDCC).

The Waste Plan was made on the 11th November 2005 and sets out a regional policy framework for the sustainable management of waste arisings in the Region. Specific waste policy objectives, recycling targets and a programme of implementation for key waste infrastructural projects are all included in the Waste Plan.

The Dublin Local Authorities are committed to the ongoing monitoring of waste plan objectives and the preparation of an Annual Progress Report. The aim of the report is to provide an update on the implementation of the Waste Plan.

This report is the second Annual Report since the making of the Waste Plan and in keeping with Section 22.1 of the Waste Plan details the performance of the local authorities and includes details of:

- Key Performance Indicators.
- Prevention/Minimisation and associated waste awareness activities.
- The delivery of the main collection systems, facilities and infrastructure required by the Plan.
- Regulation and Enforcement activities.
- Difficulties and challenges emerging in Plan implementation
- Financial Performance and implementation of Polluter Pays Principle.

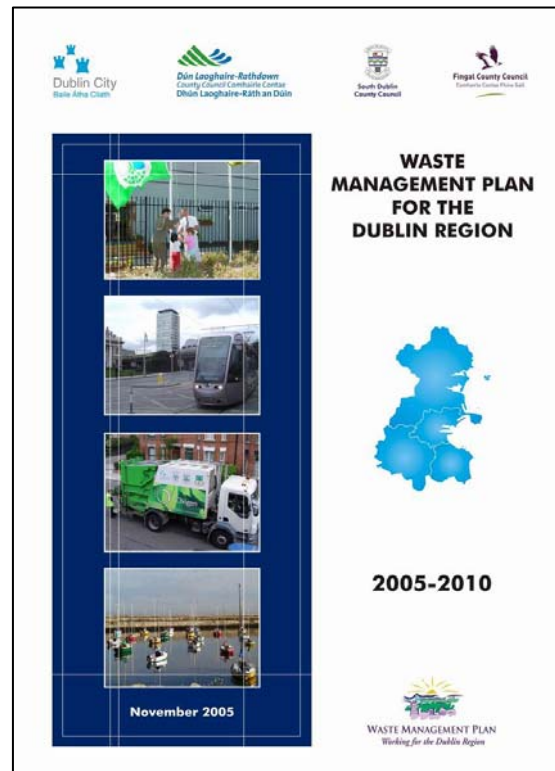
The report contains an update of key waste data and indicators for 2007. There are limitations to the scope of the Annual Report and the waste policy statement, objectives and targets for the Region have not been reviewed as part of this process. These will be addressed when the review of the Waste Management Plan commences in 2010.

This report has been prepared by RPS Consulting Engineers on behalf of the Dublin Local Authorities.

1.1 DUBLIN REGIONAL PROFILE

Since the adoption of the Waste Plan in 2005, the Dublin Region has experienced mixed economic growth. In 2006 the region, like the rest of the country, continued to grow and prosper. A slow down in the construction sector followed in 2007 and has continued into 2008, impacting significantly on employment in the sector with a high number of construction workers made redundant. This change to the economic environment of the Irish construction scene has since been overshadowed by the global financial and banking crisis which has impacted on Irish businesses and jobs across every sector. It is anticipated that negative economic growth will be recorded for Ireland in 2008.

Dublin as the country's economic core has been badly affected with the level of unemployment increasing in the region. It is expected that the economic recession in the region will effect growth in waste arisings particularly from the commercial and construction sectors. Construction in Dublin has



slowed down considerably in the last 12 months and a significant reduction in C & D arisings is anticipated over the coming years.

1.2 DUBLIN'S WASTE STRATEGY

The Waste Plan sets out the regional policy framework for Dublin and the strategy for the sustainable management of waste arisings in the Region to 2010. The policy in the current Plan builds on the long-term regional waste strategy and continues to endorse the EU Waste Management Hierarchy. The strategy aims to deliver maximum recycling and use thermal treatment with energy recovery for the treatment of residual wastes and by doing so minimise the use of landfill disposal. The waste targets to 2013 for the region reflect this approach and the Dublin Local Authorities are committed to developing a recycling society in the Region.

| Adopted Targets: | |
|-------------------------|------------|
| Recycling | 59% |
| Energy Recovery | 25% |
| Landfill | 16% |

2 WASTE GENERATION

Waste generation in the Dublin Region appears to show a levelling off with decreases in tonnages for key waste streams recorded. This trend reflects the slow in economic growth in the region which remains the primary driver for waste generation. The reporting and recordings mechanisms for waste data have improved, although achieving consistency of reporting still requires improvement. The main responsibility for the accuracy of information remains with the major waste collectors.

2.1 DUBLIN REGION WASTE QUANTITIES

The waste quantities presented in this report are for the year 2007 and were obtained from the following sources:

- Local Authority (EPA) National Waste Database Returns 2007
- EPA Programme for Municipal Waste Characterisation Surveys 2005
- EPA National Waste Database Report 2005
- RPS Household residual bin Survey 2007
- 'Collection Permit Data 2007 for the Dublin Region (Dublin City, Fingal & South Dublin County Councils)' by Patel Tonra on behalf of DCC, FCC and SDCC 2007
- REPAK data, 2007.

Table 2.1 outlines the key waste categories and corresponding waste arisings reported to the Local Authorities in the Dublin Region for 2003, 2006 & 2007.

2.2 QUALITY OF DATA

The quality of waste data continues to improve and more waste is now being correctly identified and recorded through the waste reporting systems. Further improvements can be made in the key categories of household, packaging and construction and demolition waste. The Local Authorities are no longer required to report to the EPA on several waste streams such as End of Life Vehicles, Tyres and Commercial & Industrial waste.

Household

The revised Local Authority (EPA) national waste returns data forms were issued to Local Authorities in February 2007. The quality of this data is generally good although reporting issues for particular Recycling Centres and Bring Banks were identified. These include:

- Double counting of particular waste streams at recycling centres.
- Inaccurate reporting of waste sources and quantities.

Commercial and Industrial

Since the reporting of Commercial and Industrial waste data to the EPA is no longer a requirement for the Local Authority, it is difficult to obtain complete information on this waste stream. Dublin City Council commissioned a report 'Waste Collection Permit Data for the Dublin Region (Dublin City, Fingal and South Dublin County Councils)'. Dun Laoghaire Rathdown County Council were not included in this report. The data collected from DLRCC was submitted from Waste Collection Permit Holders operating in the functional area in 2007. The following problems were noted in relation to the collection of accurate data for Commercial & Industrial Waste:

- Not all waste collection Annual Environmental Reports (AERs) were returned.
- The accuracy of the data is reliant on the waste collectors.

- Significant quantities of this waste stream may be recovered/ disposed outside the region and the final destination of waste is often not recorded.
- Inaccurate reporting and classification of waste sources.

Table 2.1: Waste Arisings Generated and Managed in the Dublin Region for 2003, 2006 & 2007

| Waste Type | Total 2003 (tonnes) | Total 2006 (tonnes) | Total 2007 (tonnes) | % Increase or Decrease since 2006 |
|---------------------------------------|---------------------|---------------------|---------------------|-----------------------------------|
| Household Waste Arisings | 459,579 | 464,121 | 470,220 | +1.3% |
| Commercial/Industrial Waste | 669,592 | 819,861 | 800,641 | -2.3% |
| Construction and Demolition Waste | 3,965,922 | 7,654,550 | 7,052,034 | -7.9% |
| Contaminated Soils | 8,688 | 10,869 | 9,542 | -12.2% |
| Litter and Street Sweepings | 30,235 | 36,616 | 35,580 | -2.8% |
| Packaging waste | 511,738 | 279,593 | 288,081 | +3% |
| Priority waste streams: | | | | |
| Waste tyres | 8,554 | 5,058 | 9,542 | +88.7% |
| End of life vehicles | 56,493 | 7,389 | 14,187 | +89.2% |
| Household Hazardous waste | 634 | 2,104 | 2,054 | -2% |
| Waste Electrical Electronic Equipment | 11,822 – 29,374 | 22,680 | 24,088 | +7.1% |
| Water Treatment Sludges | 3,599 | 6,825 | 7,061 | +3.5% |
| Sewerage Sludge | - | 4623 | 7,466 | +61.5% |

Data Sources:

Household Waste: Local Authority (EPA) National Waste Database Questionnaires>Returns (2007)

Commercial/Industrial Waste: Waste Collection Permit Data 2007 for the Dublin Region (Dublin City, Fingal & South Dublin County Councils), Regional Landfill AERs, Waste Collection Permit AERs.

Construction and Demolition Waste: Local Authority (EPA) National Waste Database Questionnaires>Returns (2007)

Contaminated Soils: Local Authority (EPA) National Waste Database Questionnaires>Returns (2007) and does not include quantities reported in TFS forms.

Litter and Street Sweepings: Local Authority (EPA) National Waste Database Questionnaires>Returns (2007).

Packaging Waste: REPAK, Waste Composition Data and Regional Landfill AERs.

Waste Tyres & ELVs: Collection Permit Data 2007 for the Dublin Region (Dublin City, Fingal & South Dublin County Councils), Waste Collection Permit AERs.

WEEE: Local Authority (EPA) National Waste Database Questionnaires>Returns (2007) & Collection Permit Data 2007 for the Dublin Region (Dublin City, Fingal & South Dublin County Councils), Waste Collection Permit AERs.

Household Hazardous Wastes: Local Authority (EPA) National Waste Database Questionnaires>Returns (2007).

Water Treatment Sludges and Sewerage Sludges: Balleally AER (2007)

2.3 HOUSEHOLD WASTE

The overall quantity of household waste generated in the Dublin Region in 2007 was reported as 470,220 tonnes. This represents an increase of 1.3% in the quantity of household waste arisings generated in 2006. Full analysis of the household waste stream and data reported for 2007 is included in Section 5.

2.4 COMMERCIAL & INDUSTRIAL (C&I) WASTE

The C&I waste arisings recorded in 2007 have decreased by 2.3% on 2006 represent a decline. As previously outlined, there were a number of limitations associated with C&I data. The consistency and accuracy of C & I data remains a challenge, while Local Authorities are no longer responsible for reporting this information to the EPA. Details of the C & I waste generated in the region are presented in Section 6.

2.5 CONSTRUCTION & DEMOLITION (C&D) WASTE

Construction and Demolition waste arisings have decreased by 7.9% on 2006. This indicates that there was a decrease in C&D waste arisings by 602,516 tonnes in 2007. This decrease reflects the slow down in the construction industry being currently experienced nationally. Details of the C&D wastes recorded in the region in 2007 are presented in Section 8.

2.6 CONTAMINATED SOILS

There has been a 12.2% decrease in the quantity of contaminated soils reported between 2007 and 2006.

2.7 LITTER AND STREET SWEEPINGS

Litter & Street Sweepings has decreased from 36,616 tonnes recorded in 2006 to 35,580 tonnes in 2007.

2.8 PACKAGING WASTE

Packaging waste arisings 2007 are estimated to have increased by 3% since 2006. The total packaging waste arisings is a combination of packaging waste landfilled in the region and packaging waste recovered. Packaging waste recovered in 2007 was provided by REPAK. Details of the packaging waste generated in the region are presented in Section 7.

2.9 OTHER PRIORITY WASTE STREAMS

A total of 9,542 tonnes of waste tyres was reported for 2007. This represents an increase of 88.7% since 2006. Local Authorities are no longer responsible for reporting this information to the EPA.

Household Hazardous waste quantities managed has decreased to 2,054 tonnes. This indicates a 2% decrease in household hazardous waste generated in the Dublin Region. This figure includes the quantities of household hazardous wastes recovered, at recycling centres and bring banks, and the quantity of hazardous wastes landfilled. The landfilled figure has been estimated from waste composition data from surveys of the black bin.

The quantity of ELV's reported in 2007 by the Local Authorities was 14,187 tonnes and is a significant 89.2% increase on the figure reported in 2006.

Implementation of the WEEE directive in August 2005 has made significant progress in the collection of WEEE. In 2007, 24,088 tonnes of WEEE was reported in the region. WEEE arisings consists of WEEE reported at the Recycling Facilities, WEEE collected at the two WEEE Collection Centres for retailers in the Region, WEEE collected by private operators and WEEE landfilled.

The quantity of waste treatment sludges reported for 2007 has increased from 6,825 tonnes in 2006 to 7,061 tonnes in 2007. The total quantity of sludges reported was sent to Balleally landfill by Fingal County Council.

Details of the priority waste streams generated in the region are presented in Section 9.

3 WASTE PREVENTION AND MINIMISATION

3.1 INTRODUCTION

Waste prevention and minimisation are key policy objectives of the current Waste Plan and the Dublin Local Authorities have been active in implementing these activities.

The appointment of resources and in particular three specific roles are central to delivering the required objectives and these are:

- The Environmental Awareness Officers (EAOs)
- The Green Schools Officers (GSOs)
- The Green Business Officers (GBOs)

The remit of these public roles including on-going deliverables, are defined in the Waste Plan. In addition to these staff the Local Authorities have appointed other supporting education and awareness staff. The following sections outline the progress made by the Local Authorities in resourcing waste prevention and awareness roles and the delivery of related campaigns and programmes.

3.2 RESOURCING WASTE PREVENTION

Since 2006 the total number of staff employed by the Dublin Local Authorities has remained unchanged at 17. Each Local Authority has a mix of prevention and awareness staff as shown in Table 3.1. All of the Local Authorities have Environmental Awareness Officers with Green School Officers appointed in DCC and DLRCC and Green Business Officers appointed in DCC and FCC.

Table 3.1 Local Authority Prevention and Awareness Staff as of December 2008

| | DCC | DLRCC | FCC | SDCC |
|-------------------------------------|-----|-------|-----|------|
| Environmental Awareness Officers | 2 | 1 | 2 | 2* |
| Green Business Officers | 1 | 1 | - | - |
| Green Schools Officers | 1 | - | 1 | - |
| Other Educational & Awareness Staff | 5 | 1 | | - |

Data provided as per December 2008.

** Note SDCC has 2 EAOs serving schools, businesses and community organisations.*

3.3 COMMUNITY PREVENTION AND AWARENESS INITIATIVES

The role of the EAOs in the Dublin Local Authorities continues to grow, responding to the needs of the householders and the community. The EAOs are responsible for the continuous implementation of local educational and promotional campaigns targeting all waste types, the promotion and improvement of local recycling infrastructure and providing support and funding to local community and voluntary waste and recycling programs.

The following sections detail a selection of community campaigns and initiatives delivered and on going by EAOs in Dublin in 2007.

3.3.1 Dublin City Council

Dublin City Council offers advice on waste management issues at a grass roots level to a variety of community groups. This is delivered through workshops and evening seminars for organisations such as residents groups, ladies clubs, etc.

Dublin City Council continues to run the Dublin City Neighbourhoods Awards. The 18 different categories of the awards were presented by the Lord Mayor in August 2008 with best school going to St Paul's J.N.S, Ayrfield, Dublin 13.

The Ballymun regeneration project is ongoing and held a conference "Greener Ballymun" in April 2008 to highlight positive environmental projects initiated under the regeneration programme. The conference included a ministerial address by John Gormley T.D., Minister for the Environment, Heritage and Local Government

Work with the Liberties Regeneration Project has commenced in 2008 and will be ongoing for the foreseeable future.

3.3.2 Dun Laoghaire Rathdown County Council

The National Spring Clean Campaign is in its 7th year of existence in the Dun Laoghaire Rathdown County Council Area. This project is an anti litter campaign which is run nationwide. The objective of the project is to increase awareness of litter issues.

In March 2007, DLRCC promoted 'Real Nappy Week'. The aim of this project was to supply members of the Dun Laoghaire Rathdown Area with information about the environmental and economic benefits of using real nappies. The Dun Laoghaire Rathdown County Council held a public talk the 16th of March at Stillorgan Library.

During the 2007 Festival of World Cultures, DLRCC ran an environmental awareness exhibition called 'Cool Earth', where visitors could attend workshops or seminars, shop for eco goods or research green building and renewable energy initiatives. The exhibition also featured a selection of stands and information by environmental, waste & energy organisations and businesses. The Dublin Local Authorities were represented at the FREE Trade stand where demonstrations of the service were given to members of the public.

3.3.3 Fingal County Council

The Environmental Awareness team in Fingal County Council continue to host regular talks and workshops for the public in the training facility at the Estuary Recycling Centre, Swords.

The team provide 'The Recycling Story' tours of the Estuary Recycling Centre. These tours are available to individuals and groups.

Organised by the Environment Section of Fingal County Council, 2008 marked the 34th year of the "Fingal Cleaner Communities Awards". The competition is open to residents, businesses and schools within the county and in 2008 there were 331 entrants across all categories. This was an increase of 183% over entry levels of 2007. A total of 80 prizes were awarded on the night with the overall prize being awarded to Robswall, Malahide.

3.3.4 South Dublin County Council

In 2007-2008 South Dublin County Council continued the Beautiful South Dublin County Schools Competition. The competition promotes environmental awareness among school children. The theme of the 2008 competition was litter and how to keep your school and local area litter free. A similar competition aimed at communities and business' is also run by South Dublin County Council, called the Beautiful South Dublin County Competition. The objectives of this programme is to make South Dublin County a better and greener place, to develop and awareness of the environment, to encourage teamwork and community involvement.

Eco Week is an annual week long series of events aimed at raising environmental awareness throughout the County. In 2008 the focus was on the issue of Climate Change and how each of us needs to change our ways in order to change the world. Workshops, seminars and activities were provided to schools and the local community free of charge.

Global Action Plan (**GAP**) have been operating in South Dublin County during 2007-2008 delivering a wide variety of environmental action projects in the Rapid Areas of West Tallaght and North Clondalkin. The project provides people with practical tools to build and strengthen sustainable communities by empowering local people to make a difference to their local areas, socially, economically and environmentally.

In 2007 - 2008 South Dublin County Council supported **National Spring Clean** an annual anti-litter initiative. The initiative encourages every sector of society to actively participate and take responsibility for litter.

In 2007 - 2008 South Dublin County Council also worked with **PURE** (Protecting Uplands & Rural Environments), a project established to combat illegal dumping/fly-tipping that occurs in the Wicklow/Dublin uplands.

3.3.5 Local Agenda 21

The Local Agenda 21 Environmental Fund promotes sustainable development by assisting small scale environmental projects at the local level that innovate partnerships between Local Authorities and local community groups, schools and environmental NGOs.

Table 3.2 shows that of the 58 projects funded in 2007, approximately 40% of the projects were waste related. This represents a drop of 17% in waste related projects since 2006. The table shows an overall funding increase of 14% allocated for Local Agenda 21 Projects from €101,076 in 2006 to €115,128 in 2007. The 2007 funding figure represents an increase of 99.8% over the 2004 figure of €57,626.40.

Table 3.2: Local Agenda 21 Environment Fund 2007 Projects and Funding

| Local Authority | Total number of projects 2007 | Total spend on funding 2007 | Waste related projects 2007 |
|-------------------|-------------------------------|-----------------------------|-----------------------------|
| DCC | 11 | €37,142 | 4 |
| DLRCC | 10 | €22,170 | 5 |
| FCC | 18 | €27,636 | 8 |
| SDCC | 19 | €28,180 | 6 |
| Total 2007 | 58 | €115,128 | 23 |
| Total 2006 | 49 | €101,076 | 29 |
| Total 2004 | 43 | €57,626.40 | 32 |

3.4 GREEN BUSINESS ACTIVITIES

The role of the Green Business Officers (GBO's) in Dublin is to raise awareness and provide support to businesses who want to develop more sustainable waste management practices. They also assist in developing a comprehensive Environmental Management System to evaluate, manage and minimise the environmental impacts of their local authority's own activities. There are currently 2 GBO's active in the region – one in Dublin city and one in Dun Laoghaire–Rathdown county.

3.4.1 Dun Laoghaire Rathdown County Council

Dun Laoghaire Rathdown County Council, working in conjunction with Dundrum Town Centre, is participating in Phase 2 of the Local Authority Prevention Demonstration (LAPD) Programme which was set up by the EPA as part of the National Waste Prevention Programme. The programme aims to reduce food waste and energy use at Dundrum Town Centre and is due to be completed in June 2009 with the publication of a case study of best practice for the retail sector.

The EnviroCom Awards are presented by the Healthy County Forum whose members include Dun Laoghaire Rathdown County Council, Dun Laoghaire Rathdown Chamber, the Health Service Executive, An Garda Síochána, Dun Laoghaire VEC, County Dublin VEC and Dun Laoghaire Rathdown Community Forum. The aim of the EnviroCom awards is to recognise and reward environmental achievers from all sectors and size of businesses in the county. The EnviroCom Awards were launched in 2007 and will be an annual event to continue to encourage the development of sustainable communities.

3.5 GREEN SCHOOLS CAMPAIGN

Substantial progress was made in terms of delivering prevention and awareness programmes in schools in 2007 through the expansion of the An Taisce Green Schools Programme across the region. Table 3.4 shows a 7% increase on the 2006 figures for the total number of schools registered in 2007 as part of the Green Schools Programme. A 23% increase was recorded in the number of green flags awarded by the end of 2007.

Table 3.3: Green School Registrations and Green Flags Awarded (2007)

| Local Authority | Total Number of Schools in each Local Authority 2007 | | | Number of Schools Registered 2007 | | | Green Flags Awarded By End 2007 |
|-----------------|--|-----------|-------|-----------------------------------|-----------|-------|---------------------------------|
| | Primary | Secondary | Total | Primary | Secondary | Total | Total |
| DCC | 225 | 105 | 330 | 131 | 51 | 182 | 52 |
| DLRCC | 78 | 30 | 121 | 60 | 21 | 89 | 46 |
| FCC | 82 | 22 | 115 | 65 | 22 | 87 | 40 |
| SDCC | 93 | 32 | 125 | 73 | 21 | 94 | 35 |
| Total 2007 | 478 | 189 | 667 | 329 | 115 | 444 | 173 |
| Total 2006 | 477 | 177 | 654 | 244 | 89 | 417 | 137 |
| Total 2004 | 457 | 208 | 665 | 235 | 78 | 313 | 54 |

* In FCC & DLRCC the total figures include 'other' schools such as special, post primary and primary/secondary. For SDCC, the total figure includes special schools, montessori schools and crèches. The DCC primary schools figure includes special schools.

3.6 DUBLIN REGIONAL WASTE AWARENESS WEBSITE

DublinWaste.ie is the Dublin Local Authorities regional waste awareness website. The website was launched in 2004, with the aim of improving awareness and communication on waste management and recycling to households and community. Four years on, the website is hugely popular with users providing comprehensive information on every aspect of waste management.

The website contains useful and practical guidance for householders on waste prevention, reuse, recycling and home composting as well as details on waste collections, waste charges, household hazardous collections and recycling options. The site has an active news section with regional and local articles and notices posted on the site frequently. The website is updated and monitored on a daily basis by the management team, who maintain a dedicated customer support phone service and an email helpdesk service. In addition the website hosts four interactive features namely:

- Recycling Search
- FREE Trade
- Online Forum
- Online Survey Poll

The interactive features are an important component of the website and help to maintain a consistent level of traffic to the website on a monthly basis.

Table 3.4: Traffic to the Website May 2004 to December 2007

| Year | Total Hits | Average Hits per Month | % Increase (Year on Year) |
|--------------------------|------------|------------------------|---------------------------|
| 2004 (May to Dec) | 35,946 | 4,493 | - |
| 2005 (Jan to Dec) | 146,068 | 12,172 | 306% |
| 2006 (Jan to Dec) | 358,882 | 29,907 | 146% |
| 2007 (Jan – Dec) | 1,096,234 | 91,353 | 205% |
| 2008 (Jan-Nov) | 1,189,866* | 115,000 | 25% |

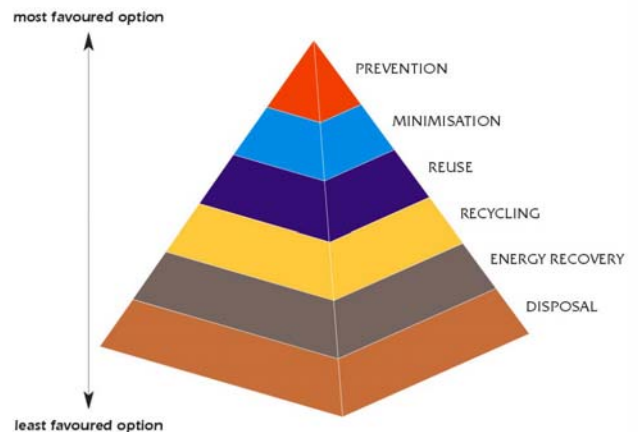
*Google Analytics has been used since April 2008. Prior to this Urchin was used to estimate hits to the website.

4 WASTE REUSE

Waste reuse is a recognised waste prevention activity and it is a higher order solution for managing waste materials in the context of sustainable resource management and climate change.

The current Waste Plan encourages reuse and specific objectives have been set down. The Local Authorities have promoted reuse in the Dublin Region through the development of the online reuse facility, FREE Trade (www.DublinWaste.ie/freetrade). This service was launched in 2006 and provides householders with a practical and simple application for reuse.

In addition to the development of the online reuse service, FREE Trade, the local authorities continue to encourage householders to reuse household items by using second hand stores and charity shops.



4.1 FREE TRADE

In September 2006 FREE Trade was officially launched as part of the services provided on DublinWaste.ie. The objective of FREE Trade is to encourage the reuse of items in the community rather than disposing of items through other channels such as landfill. The Dublin Local Authorities fund and oversee the management of the website and all developments including the FREE Trade initiative.



The FREE Trade service allows users to post notices for unwanted household goods and advertise them to other site users. All items are posted for free, and there is no charge involved in using the service. Parties interested in any post on the website can contact the advertiser using the contact details provided. The DublinWaste.ie management monitor FREE Trade posts on a daily basis to ensure that members are complying with the terms and conditions of the service.

Members of the public who wish to use the FREE Trade service and pass on unwanted household or similar items are required to open a DublinWaste.ie user account. Through their account, users can upload details of items, post these on the site and manage the items. All content on items are uploaded by users including the option to add up to 5 photographs. Notices for both *Offered* and *Wanted* items can be posted on the site.

Alternatively users who wish to browse the website are free to access and view items without the need to open up an account. If while browsing a user finds an item/notice of interest posted on the site, the user is free to contact the member. Using the on-screen details, and make arrangements to view/collect the item. There are 21 categories on the website covering a wide range of items and includes baby goods, household appliances, furniture, homeware, musical instruments, sporting goods, motors parts and accessories etc.

4.1.1 How are Items Quantified?

In order to quantify the number of items passing through the FREE Trade section a quantification system exists. When a user closes or deletes an item they are asked to identify the end destination of the item as shown in the screen shot. The aim of this system is to record the number of items that have been reused or disposed of through other outlets.

To help DublinWaste.ie quantify items reused through the Free Trade service please select the most relevant option from the list provided for your item:

- Offered Item was reused and passed to another Free Trade user.
- Offered Item was reused through another outlet.
- Offered Item was recycled at a recycling centre.
- Offered Item was disposed at a landfill.
- Offered Item is being closed and will be reactivated at a later date.

Submit Cancel

4.2 FREE TRADE DATA

Since the launch of FREE Trade in August 2006, the total number of items reused is reported to be 15,583 up to the end of November. An estimated 50% of the items reused through FREE Trade are classified as furniture. They may consist of items such as beds, wardrobes, suites of furniture etc. Table 4.1 provides a breakdown of the number of items reused through FREE Trade since the launch in 2006.

Table 4.1: Number of items free traded since 2006

| Year | Number of items free traded | % Increase (Year on Year) |
|------------------|-----------------------------|---------------------------|
| 2006 (Aug - Dec) | 1,551 | - |
| 2007 (Jan – Dec) | 6,174 | 298% |
| 2008(Jan to Nov) | 7,858 | 27% |

4.2.1 How FREE Trade Promotes Sustainable Waste Management

Community: The service encourages resource reuse and therefore has a very positive community dimension. Membership has grown steadily since the launch of the website and currently stands at over 22,500 members (Nov 2008). The service also provides an outlet for households without transport to pass on unwanted items and save on the costs of otherwise doing so. The items posted on the site are generally of a high quality. As a result the FREE Trade service acts as useful outlet for all, including low income households, students, first time home owners and foreign nationals and all households in the Dublin Region.

Waste: The initiative is a Local Authority waste management service and is funded jointly by the four Dublin Local Authorities. The delivery of the service has ensured the implementation of policy objectives as outlined in the Waste Management Plan for the Dublin Region 2005 – 2010. The Regional Waste Plan is firmly grounded in the EU Waste Management Hierarchy and the rollout of this service illustrates public commitment to higher order waste.

Climate Change: The initiative has an indirect benefit in energy terms by extending the life-cycle of a material and helping to reduce the demand for new consumer products. By increasing the longevity of a product there are energy savings when compared to the high energy demand of virgin materials. In a broader sense this impacts positively on greenhouse gas emissions and climate change.

Environmental: The initiative delivers significant benefits to the environment by helping to extend the lifespan of household or similar items. Items posted on the site retain a value and use. They are considered a resource rather than a waste if they were being discarded. This has positive implications for the environment in terms of diverting materials from landfill. The service encourages and supports resource recovery a higher and more desirable approach to the sustainable management of wastes.

5 HOUSEHOLD WASTE COLLECTION AND RECYCLING

5.1 ARISINGS

The quantity of household waste generated in the Dublin Region in 2007 is estimated to be 470,239 tonnes. This figure represents an increase in household waste generated of 6,117 tonnes or 1.3% compared to the data reported for 2006. Table 5.1 provides a breakdown of the quantity of household waste recorded in each local authority area in 2007.

Table 5.1: Growth in Household Waste Arisings 2003 - 2007

| Local Authority | Household Waste 2003 (Tonnes) | Household waste 2006 (Tonnes) | Household waste 2007 (Tonnes) |
|----------------------------|----------------------------------|----------------------------------|----------------------------------|
| DCC | 201,133 | 192,952 | 191,541 |
| DLRCC | 81,587 | 73,252 | 71,054 |
| FCC | 78,181 | 95,531 | 103,618 |
| SDCC | 98,678 | 102,597 | 104,008 |
| TOTAL | 459,579 | 464,121 | 470,221 |
| <i>Waste per Household</i> | <i>1.21</i> | <i>1.10</i> | <i>1.12</i> |
| <i>HH Waste per Capita</i> | <i>0.41</i> | <i>0.41</i> | <i>0.41</i> |

Source: Local Authority (EPA) National Waste Database Returns 2007

The waste generated per household and the household waste per capita figures have remained constant from 2006 figures as there has been little change in overall household waste arisings. It should be noted that population figures used were obtained from the CSO 2006 National Census as estimates for 2007 were unavailable.

5.2 LOCAL AUTHORITY COLLECTION SYSTEMS

In the Dublin Region waste is collected from households through an integrated system of bring banks, public recycling centres and door-to-door collections of green, brown and black bins. Table 5.2 provides a breakdown of the household collected in the Dublin Local Authority functional areas and the estimated recycling rates for each Local Authority.

The Dublin Local Authority door-to-door collection service currently provides a black bin and a green bin service to all customers. The black bin is used for disposing of household residual waste i.e. the leftover waste that cannot be put in your green or brown bin, home compost bin, or those materials that cannot be recycled at your local bring bank or recycling centre. The green bin accepts dry recyclables including paper, cardboard, food tins, aluminium cans, tetrapak and plastic bottles and is collected on a fortnightly basis.

In 2007, the rollout of brown bin in parts of the Dublin City Council region commenced following Fingal County Council who started a brown bin service in 2005. Since the roll out of the brown bin system in the Fingal and Dublin City Council areas it is now estimated that over 140,000 households are now receiving the brown bin service. The brown bin accepts food and garden waste and is also collected on a fortnightly basis.

Table 5.2: Recycling Rate for Household Waste 2006 and 2007

| Waste Source | DCC Tonnes | DLRCC Tonnes | FCC Tonnes | SDCC Tonnes | Regional 2007 Tonnes | Regional 2006 Tonnes |
|--|----------------|---------------|----------------|----------------|----------------------|----------------------|
| Bring Banks | 12,192 | 5,564 | 4,096 | 5,632 | 27,484 | 26,584 |
| Recycling Centres, Bulky & Greenwaste Collections | 4,184 | 10,021 | 7,947 | 8,888 | 31,040 | 35,337 |
| Kerbside – Green bin | 25,704 | 14,598 | 13,273 | 15,597 | 69,172 | 62,194 |
| Kerbside – Brown bin | 1,315 | 0 | 3,266 | 36 | 4,617 | 2,667 |
| Mobile Hazardous Waste Collection | - | - | 7 | 12 | 19 | 23 |
| Total Recycled | 43,395 | 30,183 | 28,589 | 30,165 | 132,332 | 126,805 |
| Kerbside – Black Bin (Includes private collectors) | 145,070 | 35,964 | 68,164 | 64,613 | 313,811 | 310,386 |
| Delivered for disposal | 3,076 | 4,907 | 6,865 | 9,230 | 24,078 | 26,684 |
| Total Disposed | 148,146 | 40,871 | 75,029 | 73,843 | 337,889 | 337,070 |
| Uncollected waste | - | - | - | - | - | 246 |
| Total Arisings | 191,541 | 71,054 | 103,618 | 104,008 | 470,221 | 464,121 |
| 2007 Recycling Rate % | 23% | 42% | 28% | 29% | 28% | 27% |
| 2006 Recycling Rate % | 21% | 43% | 25% | 30% | | |

Source: Local Authority (EPA) National Waste Database Returns 2007. Figures for household waste collected includes waste collected by private collectors.

The household recycling rate for 2007 has increased from 27% in 2006 to 28% in 2007. Significant progress remains to be made if the regional target of 60% is to be reached by 2013. There has been a slight increase in the total quantity of waste disposed to landfill (0.24%). There has been an increase in the quantity of household waste being recycled in 2007 by 4.2%. The overall the regional recycling rate was estimated to be 28% in 2007.

However, it is important to note that the expansion of the brown bin collection system to all householders in Dublin is ongoing and given time to adjust to the new system it is expected that usage of this system will improve significantly in future years. Each individual collection system is discussed further in the following sections.

5.3 KERBSIDE COLLECTIONS

In the Dublin Region the Local Authorities provide a door-to-door collection service for black and green bins. Fingal County Council and parts of the Dublin City Council areas have implemented brown bin systems. Private collectors are also involved in door-to-door collections to households and apartments in Dublin.

5.3.1 Black Bin Residual Waste Collection

All households being served by the local authorities have a black bin collection service. In 2007 the kerbside black bin collection increased by 3,425 tonnes, an increase of 1% on the previous year.

In the Dublin City Council area there has been a 2% drop in the volume of waste collected through kerbside black bin collections. This may be due to the introduction of the brown bin and improved segregation of household waste.

However, in the Dun Laoghaire, Fingal & South Dublin areas the volume of waste collected through the black bin collection has increased by 1%, 4% and 5% respectively from 2006.

5.3.2 Green Bin Kerbside Recycling Collection

In Table 5.3 the quantity of material collected through the kerbside green bin collection is examined. This table shows the steady growth in the volume of waste collected through the green bin continues with a 10.6% increase in waste collected in between 2007 and 2006. The 2007 figure represents a 92% increase in materials collected from the corresponding figure from 2003. The increase in materials collected is due to increased collection frequency (now fortnightly) and the acceptance of plastic bottles in the green bin. The green bin service remains hugely popular.

Table 5.3: Green Bin Recyclables Collected 2003, 2006 & 2007

| Local Authority | Green Bin Recycling Collection 2003 (tonnes) | Green Bin Recycling Collection 2006 (tonnes) | Green Bin Recycling Collection 2007 (tonnes) |
|-----------------|--|--|--|
| DCC | 14,252 | 22,491 | 25,704 |
| DLRCC | 7,967 | 13,211 | 14,598 |
| FCC | 6,398 | 12,633 | 13,273 |
| SDCC | 7,243 | 13,859 | 15,597 |
| Total | 35,860 | 62,194 | 69,172 |

Source: Local Authority (EPA) National Waste Database Returns 2007

5.3.3 Brown Bin Kerbside Collection service

It is a long-term objective of the Dublin Local Authorities to roll out a separate brown bin collection for the collection of organic waste from households. A pilot brown bin kerbside collection has been in place in Fingal County Council since late 2005 and this service has been gradually expanded. It is now estimated that over 80,000 households in Fingal avail of this service. It is expected that all Fingal customers will have a brown bin service by the end of 2008.

In 2006 Dublin City Council commenced the roll out of the brown bin on a pilot basis which has since been expanded to a full service. There are now over 60,000 brown bins rolled out in the Dublin City Council area and it is anticipated that the majority of single dwelling households will have a brown bin service by the end of 2008. South Dublin County Council and Dun Laoghaire Rathdown County Council plan to roll out brown bins in 2009.

An increase in the quantity of brown bin waste collected through the door-to-door brown bin collections has been recorded. The overall increase in the volume of waste collected through brown bin kerbside collection between 2007 and 2006 was 92%, refer to Table 5.4 for more details.

Table 5.4: Local Authority Brown Bin Collection Service

| Area | Year | Tonnes |
|-------------------|----------------|--------------|
| FCC | 2006 | 1,971 |
| FCC | 2007 | 3,266 |
| DCC | 2006 (Sep-Dec) | 411 |
| DCC | 2007 | 1,315 |
| Total 2006 | N/A | 2,382 |
| Total 2007 | N/A | 4,581 |

Source: Local Authority (EPA) National Waste Database Returns 2007

5.4 UNCOLLECTED WASTE

The recorded amount of uncollected waste in each of the four Local Authorities in 2007 was zero.

5.4.1 Home Composting

In 2007 there was an overall increase of 5.9% recorded in home composting for the Dublin Region. Table 5.5 highlights the increases for each local authority and the estimated amount of compost generated.

Table 5.5: Home Composting Tonnages in the Dublin Region

| Area | 2007 Tonnes | 2006 Tonnes |
|--------------|----------------|----------------|
| DCC | 4,071 | 4,000 |
| DLRCC | 2,581 | 2,305 |
| FCC | 961 | 875 |
| SDCC | 1,088 | 1,037 |
| Total | 8,701 | 8,217 |

Source: Local Authority (EPA) National Waste Database Returns 2007

5.5 RECYCLING CENTRES

In the Dublin Region in 2007 a total 55,137 tonnes was collected through recycling centres in Dublin. Of this approximately 56% or 31,058 tonnes of the waste accepted was recycled. This represents an 11% decrease in the volume of waste collected at recycling centres since 2006.

Dublin City Council, Dun Laoghaire Rathdown County Council and South Dublin County Council have all recorded decreases in the quantity of waste collected at their recycling centres.

The drop in quantities accepted at the recycling centres needs further examination. The figures show a drop in the recycling quantities and the expanded green bin service could be reducing the amount of dry recyclable type materials accepted at these facilities.

Table 5.6: Recycling Centres in the Dublin Region

| Local Authority | Name/Location | Waste Collected 2006 (Tonnes) | Waste Collected 2007 (Tonnes) |
|-----------------|-------------------------------------|--|---|
| DCC | Shamrock Terrace, North Strand Road | 9,542 (5,656 recycled) | 7,261 (4,184 recycled) |
| | Pigeon House Road, Ringsend | | |
| DLRCC | Ballyogan | 18,270 (12,463 recycled) | 14,928 (10,021 recycled) |
| | Eden Park Recycling Centre | | |
| FCC | Balleally Landfill | 11,533 (5,216 recycled , includes green waste) | 14,812 (7,947 Recycled, Includes green waste) |
| | Estuary Recycling Centre, Swords | | |
| | Coolmine Recycling Centre | | |
| | Balbriggan Recycling Centre | | |
| SDCC | Ballymount Baling Station | 22,676 (12,002 recycled, includes green waste) | 18,118 (8,888 recycled, includes green waste) |
| | Esker Green Waste Centre | | |

Table 5.7 shows the number of recycling centres in operation in the Dublin region at the end of 2007 was 10.

Table 5.7: Number of Existing Recycling Centres

| Local Authority | DCC | DLRCC | FCC | SDCC | Region |
|----------------------------|-----|-------|-----|------|--------|
| Recycling Centres 2003 | 2 | 1 | 3 | 1 | 7 |
| Recycling Centres 2006 | 2 | 2 | 4 | 1 | 9 |
| Recycling Centres 2007 | 2 | 2** | 4 | 2* | 10 |
| Total Regional target 2010 | 12 | | | | |

Source: Local Authority (EPA) National Waste Database Returns 2007

*Note SDCC operates a greenwaste facility at Esker, Lucan which accepts garden waste, prunings and trimmings. This facility is included in the above table.

** Dun Laoghaire Rathdown County Council developed a new recycling centre in Shanganagh (near Shankhill) which commenced operations in March 2008.

5.5.1 Community Bring Centres

The 127 bring banks in Dublin City Council includes 10 community bring centres. Community bring centres are similar to recycling centres serving a smaller community but closer to bring banks in operation. They accept fewer waste streams than large scale recycling centres but all materials are accepted free of charge. Opening hours of bring centres tend to be more restricted than recycling centres. The community bring centres are:

- Collins Avenue, opposite DCU extension, Dublin 9.
- Oscar Traynor Rd, Coolock, Dublin 5
- Grangegorman Upper, Dublin 7
- Kylemore Park North, Ballyfermot, Dublin 10

- Gulistan terrace, Rathmines, Dublin 6
- Herzog Park, Orwell Rd, Rathgar, Dublin 6
- Sweeney's Terrace, off Cork Street, Dublin 8
- 49/51 Windmill Rd., Crumlin, Dublin 12
- Eamon Ceannt Park, Crumlin, Dublin 12
- Colaiste Eoin, Cardiffsbridge Road, Finglas, Dublin 11

5.6 BRING BANK

Bring Banks are an essential outlet for householders to recycle materials which often cannot be put in the household green bin collection such as glass and textiles. Bring bank facilities in the Region accept glass, textiles, plastics, cans, paper and card, composite packaging and batteries. The number of bring banks in the Dublin Region has increased by 7.8%, from 321 in 2006 to 346 in 2007. To date Dublin City Council and Dun Laoghaire Rathdown County Council have exceeded the targets set out for their number of new bring banks. Table 5.8 shows the number of bring banks in each local authority area for 2003, 2006 and 2007.

Table 5.8: Number of Bring Banks in the Dublin Region in 2003, 2006 and 2007

| Local Authority | DCC | DLRCC | FCC | SDCC | Region |
|--------------------------------------|-----------------|-----------------|---------|---------|---------|
| Bring Banks 2003 | 73 | 64 | 76 | 50 | 263 |
| Bring Banks 2006 | 129 | 69 | 79 | 44 | 321 |
| Bring Banks 2007 | 127 | 81 | 80 | 58 | 346 |
| Total target | 122 | 77 | 96 | 79 | 374 |
| New Bring Banks target | Target Exceeded | Target Exceeded | 16 | 21 | 28 |
| Existing Ratio (population per site) | 1: 3,986 | 1:2,396 | 1:3,000 | 1:4,258 | 1:3,431 |
| Target Ratio (population per site) | 1:3,500 | 1:2,500 | 1:2,500 | 1:2,500 | 1:3,174 |

Source: Local Authority (EPA) National Waste Database Returns 2007

In 2007 there was an overall increase of 2.6% in the tonnage of material collected at bring banks in the Dublin Region.

Revisions have been applied to the quantities recorded in 2006 at the Dublin City Council bring banks. Dun Laoghaire Rathdown County Council reported a decrease of 3.2% on 2006 in the volume of material collected at bring banks. This is more than likely due to increased use of the green bin collection. Particular households being served by a private collector who is operating in the Dun Laoghaire area and is encouraging householders to recycle glass through the green bin. This service is reducing the quantity of glass collected through bring banks in the area as borne out in the figures. Bye laws are being prepared by the Local Authority and whether glass can continue to be collected in this manner is under review.

Fingal County Council and South Dublin County Council have both reported increases in the volume of material being recycled at their bring bank facilities.

Table 5.9: Quantity of materials accepted at Bring Banks, 2007

| Material | SDCC (tonnes) | FCC (tonnes) | DCC (tonnes) | DLRCC (tonnes) | Total (tonnes) |
|----------------------------|---------------|--------------|---------------|----------------|----------------|
| Glass | 4,793 | 3,842 | 9,043 | 4,617 | 22,295 |
| Aluminium cans | 47 | 31 | 52 | 52 | 182 |
| Plastics | 450 | 0 | 906 | 239 | 1,595 |
| Textiles | 340 | 222 | 494 | 364 | 1,420 |
| Small batteries | 2 | 2 | 56 | 3 | 63 |
| Paper & Card | - | 0 | 1,636 | 278 | 1,914 |
| Steel cans | - | - | 5 | 7 | 12 |
| Composite packaging | - | - | - | 5 | 5 |
| 2007 Total (tonnes) | 5,632 | 4,097 | 12,192 | 5,565 | 27,486 |
| 2006 Total (tonnes) | 4,752 | 4,085 | 12,000 | 5,747 | 26,584 |

5.7 HAZARDOUS COLLECTIONS

The Dublin Local Authorities provide for the collection of household hazardous wastes at recycling centres, bring banks or through mobile hazardous waste collection services. Table 5.10 shows that the quantity of household waste collected at recycling centres in 2007 has remained almost identical to the 2006 figure.

Table 5.10: Household Hazardous Waste Collected at Recycling Centres 2006 & 2007

| Waste Type | DCC Tonnes | DLRCC Tonnes | FCC Tonnes | SDCC Tonnes | Regional Tonnes collected 2007 | Regional Tonnes collected 2006 |
|--------------------------|---------------|---------------|----------------|---------------|--------------------------------|--------------------------------|
| Batteries | 19.72 | 37.25 | 64.87 | 57.02 | 178.9 | 184.69 |
| Oils | - | 20.04 | 26.4 | 32.39 | 78.8 | 62.75 |
| Fluorescent tubes | - | 1.35 | 2.72 | 0.54 | 4.6 | 2.62 |
| Other Hazardous waste* | 252.81 | 68.32 | 106.448 | 85 | 512.6 | 523.17 |
| Subtotal (tonnes) | 272.53 | 126.96 | 200.438 | 174.95 | 774.9 | 773.23 |
| kg per capita | 0.23 | 0.65 | 0.84 | 0.71 | 0.65 | 0.65 |

*This includes paints, varnishes, oil-related waste, aerosols, gas cylinders etc. Batteries include small batteries and lead acid batteries.

The overall amount of hazardous material collected has risen slightly by 0.2% with 0.65kg being collected per person at the recycling centres in 2007.

South Dublin County Council and Fingal County Council carried out mobile hazardous waste collections in 2007 and the overall quantity collected was 19 tonnes. This represents a decrease of 4 tonnes collected from the previous year.

5.8 BULKY WASTE COLLECTIONS

Households generate a significant amount of household waste that is bulky in nature and cannot be accommodated in the regular collection service. All Local Authorities accept this waste stream at the recycling centres identified in Table 5.6. Additional occasional collection services are also provided by Local Authorities.

Dublin City Council offers a bulky waste pay-by-use collection service within the North Central and South East areas of their functional area. The householder must order a skip bag (capacity of approximately 1.4 m³) costing €75 and, when full, contact DCC to arrange for its collection. The bag may be filled with bulky materials such as furniture, carpets, mattresses, doors, kitchen units etc. Dublin City Council also provides a free occasional service to households every 3 years. Householders are notified a few days in advance of the service and can leave relevant items in front of their homes on the day of the service for collection.

There is no bulky waste collection service in Dun Laoghaire Rathdown County Council. Bulky waste is accepted at Ballyogan Recycling Centre.

Fingal County Council provides a prepaid weekly and fortnightly bulky household waste collection service since 2004. Persons with bulky household waste to dispose of should contact Fingal County Council in advance to arrange booking dates. A charge is payable per item and a maximum of 5 items can be collected on each collection day. Payment is made on collection day with €8 bin tags. Only prepaid, prearranged items are collected.

South Dublin County Council provide a free rotated junk collection service to communities. Households are notified of the service in advance and a designated area is provided for households to leave bulky waste, for a specific length of time for collection. The length of time this areas remains a designated junk collection area is dependent on the quantity of material present.

6 COMMERCIAL AND INDUSTRIAL WASTE COLLECTION AND RECYCLING

6.1 ARISINGS

Commercial and Industrial waste is waste generated by businesses and industries in the region and falls under the general municipal waste category. In 2007, Patel Tonra were commissioned by Dublin City Council to produce a report - 'Waste Collection Permit Data For the Dublin Region (Dublin City, Fingal and South Dublin County Councils)'. This report was based on the Annual Returns submitted by Collection Permit Holders in 2007 and provides a summary of the municipal waste arisings for the region. Data for Dun Laoghaire Rathdown County Council was obtained from the Annual Returns submitted to them by collection permit holders in their region in 2007.

Table 6.1 provides a breakdown of reported C&I waste collected in the 4 Local Authority areas in 2007. The table shows that the quantity of Commercial and Industrial waste has decreased slightly from 2006. The slow down in economic growth in the region more than likely accounts for this decrease. Reporting on this waste stream remains a challenge with waste streams often incorrectly classified with the permit holders ultimately responsible for reporting accurate and consistent data.

Table 6.1: Commercial and Industrial Waste Collected in the Dublin Region 2007

| Waste Categories | DCC (tonnes) | DLRCC (tonnes) | FCC (tonnes) | SDCC (tonnes) | Total (tonnes) |
|-----------------------|----------------|----------------|----------------|----------------|----------------|
| Cardboard/Paper | 157,844 | 15,138 | 96,659 | 65,340 | 334,981 |
| Mixed Municipal Waste | 95,226 | 40,283 | 27,480 | 60,609 | 223,598 |
| Bulky Waste | 57,789 | 3,978 | 23,333 | 22,243 | 107,343 |
| Metal | 11,292 | 900 | 8,139 | 4,746 | 25,076 |
| Septic Tank Sludge | 5,877 | 7,394 | 6,089 | 2,986 | 22,345 |
| WEEE | 5,290 | 991 | 4,724 | 2,672 | 13,677 |
| Other Fractions | 3,822 | 10,389 | 3,285 | 2,121 | 19,617 |
| Wood | 3,106 | 1,603 | 1,211 | 1,639 | 7,560 |
| Glass | 2,656 | 2,591 | 1,133 | 1,003 | 7,382 |
| Other* | 17,195 | 8,470 | 7,348 | 6,048 | 39,061 |
| 2007 TOTAL | 360,096 | 91,737 | 179,401 | 169,407 | 800,641 |
| 2006 Total | 355,063 | 74,960 | 131,955 | 257,883 | 819,861 |

Data provided by the 'Waste Collection Permit Report 2007 for the Dublin Region (Dublin City, South Dublin & Fingal County Councils)'. The data for Dun Laoghaire Rathdown County Councils was taken from the waste collection permits submitted.

6.2 RECOVERY RATE

In 2007 the recovery rate for commercial and industrial waste in the Dublin Region increased to 50%, from 49% in 2006. This represents an estimated 401,607 tonnes of material.

6.3 MUNICIPAL WASTE RECYCLING

In 2007, municipal waste arisings of 1,306,442 tonnes were recorded, indicating a 1% decrease in municipal waste generated in 2006. Table 6.2 provides a breakdown of the municipal waste generated. It is divided up in to household waste, commercial & industrial waste and litter/street sweepings.

Table 6.2: Dublin Region Municipal Waste Arisings and Recovery Rate 2003, 2006 & 2007

| Waste Stream | Total tonnes 2003 | Total tonnes 2006 | Total tonnes 2007 |
|---------------------------------------|------------------------------|------------------------------|------------------------------|
| Household Waste Generated | 459,579 | 464,066 | 470,221 |
| Commercial/Industrial Waste Generated | 669,592 | 819,861 | 800,641 |
| Litter and Street Sweepings | 30,235 | 36,616 | 35,580 |
| Municipal Waste generated | 1,129,171 | 1,320,598 | 1,306,442 |
| Household Waste Recovered | 74,714 | 126,805 | 132,331 |
| Commercial/Industrial Waste Recovered | 227,894 | 402,311 | 401,607 |
| Municipal Waste recovered | 302,608 | 529,116 | 533,938 |
| Municipal Waste Recovery Rate | 26% | 40% | 41% |

Table 6.2 shows that the municipal waste recovery rate has increased to 41%, which is a 1% increase on the 2006 figure. The Dublin Region is performing well in terms of recovering municipal waste compared to other regions in Ireland. The rollout of the brown bin to commercial premises is required to further increase recovery rates.

7 PACKAGING WASTE

7.1 PACKAGING WASTE ARISING

Packaging waste arisings are calculated from the quantity of waste recovered and the quantity of packaging waste landfilled. Table 7.1 provides a breakdown of packaging waste arisings in the Dublin Region in 2003, 2006 and 2007. The overall arisings reported in 2007 have increased slightly by approximately 3%. Data for the quantity of household and commercial/industrial waste was provided by REPAK.

Table 7.2 Estimated Packaging Waste Arisings for the Dublin Region for 2003, 2006 and 2007

| Packaging waste | Landfilled (tonnes) | Recovered (tonnes) | Arisings (tonnes) | Recovery Rate |
|-----------------|---------------------|--------------------|-------------------|---------------|
| 2003 | 321,190 | 190,548 | 511,738 | 37% |
| 2006 | 142,927 | 136,632 | 279,593 | 49% |
| 2007 | 139,375 | 148,706 | 288,081 | 52% |

7.2 RECOVERY

In 2007 an increase in the quantity of packaging recovered has been reported. In 2006, the recovery rate for packaging was 49% in the Dublin Region and this figure has increased to 52% in 2007. This indicates that continued progress is being made in relation to the recovery of packaging waste.

7.3 ESTIMATE OF PACKAGING WASTE LANDFILLED

The quantity of packaging waste landfilled in the region was calculated using data from 2006 Annual Environmental Reports for landfills in the region and composition studies data carried out on household and C&I municipal waste.

For household waste, the composition data is taken from studies carried out on the black bin by the Dublin Local Authorities in 2007. For C&I waste, the composition data is taken from studies on waste destined for landfill, completed by the EPA in 2005, and published in the EPA National Waste Database Report 2005. Table 7.2 outlines the packaging factors and the proportion of packaging waste, determined from these compositional studies.

Table 7.2 Packaging Factors for Landfilled Household and C&I Waste

| Packaging Material | Household ¹ % | C/I ² % |
|--------------------|--------------------------|--------------------|
| Paper & Cardboard | 4.5 | 3.7 |
| Plastic | 9.4 | 9.0 |
| Glass | 3.5 | 1.6 |
| Metals | 2.3 | 1.7 |
| Wood | 0.2 | 0.3 |
| Textiles | 0 | 0 |
| Other | 0.8 | 0.9 |
| TOTAL % | 20.7% | 17.4% |

1 Source: RPS Black Bin Waste Composition Study 2007 (DCC, DLRCC, FCC and SDCC area) 2007

2 Source: EPA National Waste Database Report 2005. Note there has been no update for packaging factors for C/I waste in 2006/2007. However a report will be published in 2009 updating this data.

There has been a decrease in the quantity of packaging waste landfilled in 2007, estimated to be 3,581 tonnes, refer to Table 7.3 for more details.

Table 7.3 Quantity of Packaging Waste Landfilled in Dublin Region

| 2007 | | |
|--|------------------|------------------------------|
| | Household | Commercial/Industrial |
| Total Waste Landfilled (Tonnes) | 337,889 | 399,034 |
| % Packaging | 20.7 | 17.4 |
| Packaging Waste Landfilled (Tonnes) | 66,943 | 69,432 |
| Total Packaging Waste Landfilled 2007 | 139,375 | |
| Total Packaging Waste Landfilled 2006 | 142,927 | |
| Total Packaging Waste Landfilled 2003 | 321,190 | |

8 CONSTRUCTION AND DEMOLITION (C & D) WASTE

8.1 ARISING

Over the last 10 years the generation of C&D waste has grown significantly in the region mirroring the consistent high level of building construction during the same period. The total quantity of C&D waste reported to the Local Authorities in 2007 was 7,052,034 tonnes. This represents a decrease of 7.9% in the quantity of C&D waste recorded in 2006, although this waste stream remains the most significant arising in the region.

8.2 RECOVERY/ DISPOSAL

Table 8.1 provides a breakdown of the C&D waste collected in the region and subsequently managed inside and outside the region. The total quantity of C&D waste arisings reported to the Local Authorities in 2007 was 7,052,034 tonnes. Of this total approximately 15.2% or 1,075,018 tonnes was recovered at permitted sites within the Dublin Region, while 12.5% or approximately 878,899 tonnes was recovered at licensed landfills within the region. It is assumed that the balance of the remaining C&D waste (61.9%) is recovered outside the Dublin Region.

Table 8.1 shows that the regional recovery rate for C&D waste has increased from 82% in 2006 to 90% in 2007.

Table 8.1: Collection and Management of construction and demolition waste 2006 & 2007

| Collection (tonnes) | | | | |
|---|------------------|-----------|------------------|-----------|
| | 2007 | 7,052,034 | 2006 | 7,654,550 |
| Management (tonnes) | Recovery | Disposal | Recovery | Disposal |
| Recovery at licensed landfills within the region - Cover/landscaping material - Other landfill engineering purposes | 878,899 | | 1,568,298 | |
| Disposal at licensed landfills | | 52,639* | | 0 |
| Recovery at Permitted Sites | 1,075,018 | | 1,011,556 | |
| Recovery at licensed facilities outside the region | 4,362,280 | | 3,701,325 | |
| Total | 6,316,197 | | 6,281,179 | 0 |
| Recovery Rate | 90% | 0.7% | 82% | 0% |

Note: the disposal quantities reported have been obtained from Balleally Landfill. This figure does not include data for Arthurstown Landfill as this facility does not accept C&D waste for disposal.

In 2007, the quantity of C&D waste collected was reported to be 7,052,034 tonnes. The total quantity of C&D waste managed in 2007 was 6,368,836 tonnes. There is therefore 683,199 tonnes of C&D waste which has not been recorded. This highlights the need for further improvement in the recording of C&D waste arisings in the region.

8.3 SOIL AND STONES

Table 8.2 provides a breakdown of the collection and management of soil and stones reported in 2007. Of the total C&D waste arisings of 7,052,034 tonnes reported 82.6% is classified as soil and

stones which represents 5,822,355 tonnes of material. Of this 5,822,355 tonnes approximately 11.3% was recovered within the region at permitted sites. The recovery rate for soil and stone material was 99.4% for 2007.

Table 8.2: Collection and Management of C&D Waste, Soils and Stones 2006 & 2007

| Collection of soil and stones (tonnes) | 2007 | 5,822,355 | 2006 | 6,049,979 |
|--|------------------|-------------|------------------|-----------|
| Management (tonnes) | Recovery | Disposal | Recovery | Disposal |
| Recovery at licensed facilities - Cover/landscaping material - Other landfill engineering purposes | 771,708 | | 1,568,298 | 0 |
| Disposal at licensed landfills | | 32,039 | | 0 |
| Recovery at Permitted Sites | 656,328 | | 780,356 | |
| Recovered outside of Dublin Region | 4,362,280 | | 3,701,325 | 0 |
| Total | 5,822,355 | | 6,049,979 | 0 |
| Recovery Rate | 99.4% | 0.6% | 100% | 0% |

Note: the disposal quantities reported have been obtained from Balleally Landfill. This figure does not include data for Arthurstown Landfill as this facility does not accept C&D waste for disposal.

Table 8.3 provides a breakdown of the quantity of C&D waste arisings (excluding soil and stones) collected and managed in 2007. Overall a 23% decrease in the quantity of this C&D waste was reported. In 2007, an additional 187,490 tonnes of this C&D waste was recovered which represents an increase of 81% on the 2006 figure.

Table 8.3: Collection & Management of C & D Waste, Excluding Soil & Stones 2006 & 2007

| Collection of construction and demolition waste, excluding soil and stones (tonnes) | 2007 | 1,229,679 | 2006 | 1,604,571 |
|---|------------------|-----------|------------------|-----------|
| Management (tonnes) | Recovery | Disposal | Recovery | Disposal |
| Recovery at licensed facilities - Cover/landscaping material - Other landfill engineering purposes | 107,192 | | 0 | 0 |
| Disposal at licensed landfills | | 20,600 | 0 | 0 |
| Recovery at Permitted Sites | 418,690 | N/A | 231,200 | N/A |
| Others: - Recovery at licensed facilities - Recovery at permitted sites outside the region - Disposal outside the region | 683,197 | | 1,373,371 | |
| Total | 1,229,679 | | 1,604,571 | |

Note: the disposal quantities reported have been obtained from Balleally Landfill. This figure does not include data for Arthurstown Landfill as this facility does not accept C&D waste for disposal.

9 PRIORITY WASTE STREAMS

9.1 WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The Waste Management (WEEE) Regulations 2005 (SI 290) implements the requirements of the WEEE Directive (2002/96/EC) and requires producers to be responsible for the financing of the collection, treatment, recovery and environmentally sound disposal of WEEE and it came into operation on 13 August 2005. It means that final users of household WEEE are entitled to return items of WEEE free of charge, either to retail outlets in instances where a replacement item is purchased, or to other authorised collection points, including local authority recycling centres.

In the case of non-household WEEE, i.e. business-to-business WEEE, the business user is responsible for the delivery of their WEEE to an appropriate recovery facility and for ensuring environmentally sound management. Businesses often agree take back arrangements with a supplier when purchasing new electrical equipment.

There are seven Recycling Centres across the Dublin Region which will accept WEEE. Approximately 3,758.3 tonnes of WEEE was collected at the recycling centres in 2007. This is an 11% decrease on the amount collected the previous year. A detailed breakdown of the items accepted is shown in Table 9.1.

Table 9.1: WEEE collected at Recycling Centres & by Private Collectors in 2007 (tonnes)

| | DCC | DLRCC | SDCC | FCC | Dublin Region |
|-------------------------|------------|--------------|--------------|----------------|----------------|
| Fluorescent bulbs/lamps | - | 1.4 | 0.5 | 2.7 | 4.6 |
| Fridges & Freezers | - | 84.7 | 105.6 | 240.8 | 431.1 |
| TVs & PC Monitors | - | 216.4 | 189.8 | 326.1 | 732.3 |
| White Goods | - | 495.3 | 29.1 | 637.5 | 1161.9 |
| Other Large Appliances | - | - | - | - | 0.0 |
| Other ITC | - | 0.1 | 319.6 | 67.2 | 387.0 |
| Other WEEE | - | - | 17.6 | 324.9 | 342.4 |
| Total 2007 | 699 | 797.9 | 662.3 | 1,599.2 | 3,758.3 |
| Total 2006 | 762 | 871.0 | 1,257 | 1,334.0 | 4,224 |

Source: Local Authority (EPA) National Waste Database Returns 2007

Note: In 2007 Local Authority (EPA) National Waste Database Returns, DCC did not provide a breakdown of the WEEE collected.

The WEEE collected from Commercial and industrial sources is recorded in Table 9.2. In 2007, 13,677 tonnes of Waste Electrical and Electronic Equipment was collected in the four Local Authority areas. This table shows an increase in the quantity of WEEE collected by private operators by 20.3%, 2312 tonnes more than the previous year.

Table 9.2: WEEE Collected by Private Operators

| Waste Category | Tonnage Collected SDCC | Tonnage Collected DCC | Tonnage Collected FCC | Tonnage Collected DLRCC | Tonnage Collected Region |
|----------------|------------------------|-----------------------|-----------------------|-------------------------|--------------------------|
| WEEE 2007 | 2,672 | 5,290 | 4,724 | 991 | 13,677 |
| WEEE 2006 | 7,453 | 2,414 | 959 | 539 | 11,365 |

Source: Local Authority (EPA) National Waste Database Returns 2006, 2007 figures from 'Waste Collection Permit Data 2007 for the Dublin Region (Dublin City, Fingal and South Dublin County Councils)' by Patel Tonra & 2007 Waste Collection Permit Data from DLRCC

The household WEEE collected per capita recorded has increased from 4.1 Kg in 2006 to 10.9 Kg in 2007. The Household WEEE figure is a calculated by combining the WEEE collected at Recycling Centres, with the WEEE collected at WEEE Retail Collection Centres (Cookstown, operated by South Dublin County Council, and Kylemore Park Recycling Centre, operated by Dublin City Council), and finally the WEEE collected directly by appointed collectors. These collectors are appointed by either of the compliance schemes WEEE Ireland or EPR, who are responsible for collating and reporting this data. WEEE Ireland record and manage data for Dublin City Council, South Dublin County Council and Dun Laoghaire Rathdown County Council areas with ERP Recycling responsible for data in the Fingal County Council area.

9.2 END OF LIFE VEHICLES (ELVS)

The End-of-Life Vehicle regulations came into operation on June 8, 2006 and these impose substantial obligations on local authorities in terms of registration, administration, modification of permits, inspection and enforcement.

The regulations allow individuals to bring their end of life vehicles to an Authorized Treatment Facility (ATF) for recycling free of charge. Producers are obliged to set up a national system of ATFs in each local authority, dependent on the population of the functional area. These ATFs are permitted or licensed facilities for the shredding or dismantling and recovery of ELVs.

Each producer putting vehicles on the Irish market was obliged to apply for registration with the relevant local authorities on September 21st, 2006 and be registered by November 1st, 2006. Renewal of registrations shall be applied for no later than January 31st of each year following the year of the initial registration. The local authority is responsible for the enforcement of the obligations of the producers, with regard to their registration and must maintain a register with all relevant details for the producers and ATFs within the functional area.

Table 9.3 provides a breakdown of the number of Authorized Treatment Facilities in each of the Dublin Local Authority Areas. The overall number of ATFs in the Dublin Region has risen from 5 ATFs to 7 ATFs.

Table 9.3: No of Authorised Treatment Facilities (ATFs) in the Dublin Region, 2006 & 2007

| Local Authority | No. of ATFs 2006 | No. of Applicants Awaiting A decision | No of ATFS 2007 | No of Applicants Awaiting a decision |
|---------------------------------------|------------------|---------------------------------------|-----------------|--------------------------------------|
| Dublin City Council | 3 | 0 | 3 | 0 |
| Dun Laoghaire Rathdown County Council | 0 | 0 | 0 | 0 |
| South Dublin County Council | 1 | 3 | 1 | 4 |
| Fingal County Council | 1 | 0 | 3 | 1 |
| Region | 5 | 3 | 7 | 5 |

However in terms of recording the quantity of ELVs, Local Authorities are no longer required to record the number of End Of Life Vehicles in their functional area in the National Waste Database Returns submitted to the EPA as was the case in 2006. This data is now recorded during the processing of Annual Returns from collection permit holders. ELV collection has risen to 13,977 tonnes, an 89% increase on the figure reported in 2006.

Table 9.4: Tonnes of ELVs collected in the Region in 2006 & 2007

| Local Authority | ELVs (tonnes) 2006 | ELVs (tonnes) 2007 |
|--|-----------------------|-----------------------|
| Dublin City Council | 2,445 | 4,378 |
| Dun Laoghaire Rathdown County Council | 1,212 | 738 |
| South Dublin County Council | 2,648 | 4,136 |
| Fingal County Council | 1,084 | 4,725 |
| Region | 7,389 | 13,977 |

Source: Local Authority (EPA) National Waste Database Returns 2006, 2007 figures from 'Waste Collection Permit Data 2007 for the Dublin Region (Dublin City, Fingal and South Dublin County Councils)' by Patel Tonra & 2007 Waste Collection Permit Data from DLRCC

9.3 WASTE TYRES

The quantity of waste tyres reported in 2007 shows an increase of 88.7% on 2006. In 2007 the number of tyres recorded in the Dublin Region was 9,542 tonnes. This data is no longer recorded in the Local Authority National Waste Database Returns and is taken from the Collection Permit Holder's Report. The accuracy of this information is therefore dependent on the reports provided by Active Waste Collection Permit Holders in the Dublin Region.

Table 9.4: Quantity of Waste Tyres 2007

| | DCC (tonnes) | FCC (tonnes) | DLRCC (tonnes) | SDCC (tonnes) | Total (tonnes) |
|------------------------------------|-----------------|-----------------|-------------------|------------------|-------------------|
| 2007 Quantity collected | 6,039 | 1,220 | 386 | 1,897 | 9,542 |
| 2006 Quantity Collected | 2,357 | 1,007 | 451 | 1,243 | 5,058 |

Source: Local Authority (EPA) National Waste Database Returns 2006, 2007 figures from Patel Tonra report 2007 & 2007 Waste Collection Permit Data from DLRCC

10 WASTE DISPOSAL

The long term objective for the Dublin Local Authorities region is to minimise the quantity of waste disposed to landfill. In the Dublin Region considerable progress has been made in diverting material away from landfill, however disposal remains the primary treatment destination for municipal waste.

10.1 WASTE DISPOSAL – SITUATION 2007

Table 10.1 provides a breakdown of waste generated in Dublin and sent to landfill for disposal. Approximately 59% municipal waste and street cleanings was disposed of to landfill in 2007. In 2007 a 2.7% decrease or a drop by 21,761 tonnes in the landfilling of municipal waste generated in the Dublin region occurred since 2006.

Table 10.1: Waste Disposal to landfill 2006 & 2007

| Waste Type | 2006 Tonnes | 2007 Tonnes |
|-----------------------|----------------|----------------|
| Household | 337,070 | 337,889* |
| Commercial/Industrial | 420,428 | 399,034** |
| Street cleanings | 36,616 | 35,580*** |
| Total | 794,114 | 772,503 |

Note the estimated quantities of waste landfilled outside the region have been generated using the AERs submitted by the large Private Waste Collectors in 2007.

*An estimated 22,853 tonnes of household material is landfilled by private collectors outside of the region as recorded by Local Authorities in the 2007 National Waste returns.

** An estimated 120,000 tonnes of commercial/industrial material is landfilled outside of the region. This assumption made in the 2006 Annual Progress Report and remains valid. An analysis of commercial/industrial waste collected by key waste collectors in the region was also undertaken.

*** It is estimated that all litter and street sweepings are landfilled in the region.

10.2 HOUSEHOLD WASTE DISPOSAL

Household waste is primarily collected by Local Authorities who dispose of this material at Balleally and Arthurstown. Over 22,000 tonnes of residual waste is now being disposed of outside the region to facilities in Meath, Kildare and Wicklow. Table 10.2 provides a breakdown of household waste sent to landfill in 2006 and 2007 and shows a slight increase in residual household waste generated in the region. There has been an overall decrease of 1,433 tonnes in household waste arisings generated since 2006. 72% of the household waste generated in 2007 was disposed of to landfills in the Dublin Region.

Table 10.2: Household Waste Disposal in 2006 and 2007

| Waste Type | 2006 Tonnes | 2007 Tonnes |
|------------|----------------|----------------|
| Landfilled | 337,070 | 337,889 |

10.3 COMMERCIAL/INDUSTRIAL WASTE DISPOSAL

Table 10.3 shows that in 2007 the quantity of Commercial and Industrial waste landfilled decreased by 21,394 tonnes, a 2.3% drop on the quantity landfilled in 2006. It is difficult to obtain accurate data on the end destination for this waste stream as the majority of this waste is collected by private waste collectors. An assessment of the annual waste returns for collectors of commercial and industrial waste was undertaken and it is assumed that 120,000 tonnes of this is being landfilled outside the region.

Table 10.3: Commercial and Industrial Waste Disposal in 2006 and 2007

| Waste Type | 2006 Tonnes | 2007 Tonnes |
|---------------------------|----------------|----------------|
| Recycled | 399,433 | 401,607 |
| Landfilled | 420,428 | 399,034 |
| Commercial waste arisings | 819,861 | 800,641 |

10.4 EXISTING LANDFILLS

There are two waste landfills currently serving the Dublin Region. These are Balleally Landfill and Arthurstown Landfill which are operated by Fingal County Council and South Dublin County Council respectively.

Private landfills operate in neighbouring counties serve the Region to some extent and these include Kildare, Wicklow, Meath, Cavan and Monaghan.

Table 10.4 provides a breakdown of the quantity of waste accepted in 2007, the expected closure date and the void space remaining for the two existing facilities in the region.

Table 10.4: Status of the Local Authority Landfills in the Dublin Region in 2007

| | Balleally | | Arthurstown | |
|------------------------|---------------------------|---------|-----------------------------|---------|
| Operator | Fingal County Council | | South Dublin County Council | |
| Tonnes Landfilled | Civic Amenity Household | 4,867 | Total | 480,529 |
| | Household | 63,708 | | |
| | Commercial/Trade | 61,773 | | |
| | Sewage Sludge | 7,466 | | |
| | Ind. Non-Hazardous Sludge | 7,061 | | |
| | Total | 144,875 | | |
| Expected Closure Date | December 2010 | | July/August 2009 | |
| Current Remaining void | 476,387tonnes (AER 2007) | | 582,243 tonnes (AER 2007) | |

10.5 LANDFILL GAS RECOVERY

Landfill gas recovery is carried out at landfill sites which are both operational and at sites which are closed. Table 10.3 provides a breakdown of the energy which has been generated from these facilities in 2007. The overall energy generation figure recorded for 2007 was 116,003MWh. This data was obtained from Bioverda Power Systems.

Table 10.5: Energy Recovery from Dublin Landfills, 2007 & 2006

| Landfill | Energy Capture/generation 2007 (MWh) | Energy Capture/generation 2006 (MWh) |
|-----------------|---|---|
| Balleally | 23,762 | 20,529 |
| Ballyogan | 11,124 | 11,124 |
| Dunsink | 6,774 | 8,026 |
| Friarstown | 3,162 | - |
| Arthurstown | 71,181 | 53,930 |
| Total | 116,003 | 93,609 |

11 REGIONAL INFRASTRUCTURAL DEVELOPMENTS

11.1 INTRODUCTION

Since the preparation of the draft Annual Progress Report 2007 twelve months ago, the development of regional scale public infrastructure by the local authorities has continued in line with Waste Plan objectives. The following sections provide an update on the status of the key treatment facilities under development.

11.2 BIOLOGICAL TREATMENT FACILITIES

The Dublin Waste Management Strategy (1997) identified the need for development of biological treatment facilities in the Dublin Region. This was further progressed based on the positive outcome of a feasibility study for Biological Treatment which was carried out by the Dublin Local Authorities in 1999.

At present two proposed biowaste treatment facilities for the Dublin Region are under development. One will be located in Ballyogan Recycling Park to serve the South of the Region and at Kilshane Cross Recycling Park to serve the North part of the Region. Each facility has achieved regulatory approvals to treat up to 45,000 tonnes per annum of food waste and green waste.

Planning approval for Ballyogan Recycling Park was granted through an Environmental Impact Statement approval in 1998 while the facility waste licence was approved in 2001. Kilshane Cross Recycling Park was approved by an Bord Pleanála in 2006 while the Environment Protection Agency approved the facility waste licence in 2007.

The technology to be used at Ballyogan Recycling Park is composting and at Kilshane Cross Recycling Park either composting or anaerobic digestion (or both) may be used depending upon the proposal of the preferred bidder. Ballyogan is currently at contract negotiation/signing stage, while Kilshane is at tender assessment report and bidder recommendation stage.

In addition to these facilities, additional capacity to manage commercial/industrial organic waste is required in the Region. A capacity range of 50,000 – 100,000 tonnes per annum is recommended and it is envisaged that this will be developed by the private waste sector. No private sector biological facilities are operational in the region at this stage.

11.3 MATERIALS RECOVERY CAPACITY

The Regional need identified in the Waste Plan to develop additional Materials Recovery Facility (MRF) capacity. The private sector have developed significant MRF capacity in the region to date as documented and a selection of facilities were identified in the Annual Progress Report 2007. The Dublin Local Authorities have also been active in this capacity with a regional MRF to open shortly.

11.3.1 Local Authority Capacity – Ballymount MRF

In the Waste Plan the Local Authorities identified the need to develop a regional MRF for the processing of household recyclables collected through the green bin collection service. The facility is located in Ballymount, Dublin 12 on a nine acre site and has been designed to cater for the processing of green bin materials in the Dublin Region for the next 20 years. The facility has an annual capacity of 100,000 tonnes per annum and represents an investment of €23 million.

The appointment of a service provider to operate the facility has been completed and a successful tender has been selected. The facility is at its final construction phase and it is due to be operational in early 2009.

11.3.2 Private Sector Capacity

The private sector has developed significant capacity for the treatment of dry recyclable type waste in Dublin during the last 5 years. The Annual Progress Report 2007 identified MRFs developed by the private sector since 2005. In the last twelve months the following new facilities have come on stream:

11.4 ENERGY RECOVERY

Waste to Energy has an important role to play in the long term management of residual waste in Dublin. Considerable progress has been made in advancing the project since the Waste Plan was developed.

The proposed waste to energy facility will be located on the Poolbeg Peninsula in Dublin and the site will cover an area of 5.5 hectares (13.6 acres). The facility will be able to handle 600,000 tonnes of municipal waste annually. The facility will produce an electrical power output of 60MWe, enough energy to meet the needs of approximately 50,000 houses in the form of electricity supplied to the National Grid. The facility will also have the capacity to provide district heating for up to 60,000 homes in the Poolbeg and adjacent areas of Dublin. It is estimated that the facility will take 36 months to construct and will be operational in 2012 at an estimated cost of €300 million.



The procurement of the facility was by way of a public/private partnership. In August 2007 Dublin City Council entered into a contract with Dublin Waste to Energy Ltd to design, build, finance and operate the proposed Dublin waste to Energy Plant at the Poolbeg peninsula. Some site clearance along with preparatory works commenced in 2008. Full-scale construction is expected to commence in 2009.

11.4.1 Update on Statutory Processes

An application for approval of the project was lodged with An Bord Pleanála and a decision to grant approval was issued in November 2007, subject to 13 conditions.

A waste licence application was lodged with the Environmental Protection Agency and a Proposed Decision to grant the waste licence was issued by the Agency in November 2007. Following the issue of the Proposed Decision fourteen third party objections were lodged with the EPA. The EPA held an oral hearing of the objections to the Proposed Decision between the 14th of April and the 1st of May 2008. Planning permission and an EPA Waste Licence were granted for the facility in December 2008.

Two applications were submitted to the Commissioner for Energy Regulation in May 2008 to seek authorisation to construct a generating station and for a licence to generate electricity. A decision on these applications is pending.

A grid connection application has also been lodged with the ESB in June 2008.

In accordance with the Planning and Development Act 2001, the Strategic Infrastructure Act 2006 and the Foreshore Acts 1933-2003, foreshore consent is required from the Minister for Agriculture, Fisheries and Food if it is proposed to locate the development wholly or partially on the foreshore. An application for Foreshore lease or Licence was completed and submitted to the relevant authority in July 2008. A decision is currently awaited.

11.5 LANDFILL

Until such time as the Waste to Energy facility is operational, currently estimated to be 2012, the Region's reliance on landfill will remain. The long-term waste strategy for the region includes the development of a regional landfill for the disposal of residual waste which cannot be recycled or recovered.

11.5.1 Fingal Landfill

The Dublin local authorities are pursuing the development of a new landfill at lands in Nevitt, County Fingal. Urgent delivery of the proposed landfill is required to provide adequate safe disposal capacity for the Region's residual waste in the short-term. In the long-term it is an objective of the current Waste Management Plan to provide a landfill of up to 10 million tonne capacity for a 20 to 30 year period for the disposal of residual waste which cannot be recycled or recovered.

A Planning Application was lodged on the 2nd May 2006, which included a detailed EIS, with An Bord Pleanála. An Bord Pleanála held an oral hearing on the project in October 2006. In September 2008, An Bord Pleanála re-opened the oral hearing to discuss specifically issues related to Archaeology. For clarity and completeness An Bord Pleanála decided to re-open the oral hearing for a third time, in November 2008, on a list of other issues, including hydrogeology and need for the project. The planning process for this facility is on-going and a decision is not expected before early 2009.

An EPA Waste Licence application for the facility was submitted to the EPA on the 5th July 2006. A Proposed decision on the EPA waste licence was issued on September 20th 2007. An EPA oral hearing was conducted in the week beginning 3rd March 2008. Further information on hydrogeological issues was sought by the Agency in October 2008 and once this information is submitted the Agency will re-open the oral hearing in 2009.

11.5.2 Arthurstown Landfill - short term extension

A short term extension at Arthurstown has been secured. However this is regarded as a short term solution.

11.5.3 Landfill Contingency

A critical shortage of municipal landfill capacity is imminent with the closure of Arthurstown Landfill and Balleally Landfill in 2009-2010. Urgent delivery of the proposed Fingal landfill is required to replace these facilities and provide adequate safe disposal capacity for residual waste in accordance with this plan.

In keeping with the objectives in Section 18.9 of the Waste Plan, the Dublin Local Authorities will "seek options" for the short disposal of municipal types in other regions as required.

12 REGULATION AND ENFORCEMENT

12.1 INTRODUCTION

Local Authorities play a vital role in ensuring that regulation and enforcement is carried out according to the current Waste Management Plan. To ensure continued progress in this area continuous government funding is essential. The enforcement section of each individual Local Authority is responsible for issuing waste facility permits. However the nominated lead authority, Dublin City Council, issues waste collection permits.

Staff members of the Local Authorities enforcement units focus on overseeing regulation compliance and enforcement in the following areas:

- Waste Facility Permits – including ELV's
- Plastic Bag Levy
- WEEE Regulations
- Tyre Regulations
- Battery Regulations
- C1
- Packaging Regulations
- Unauthorised Waste Activities
- Construction & Demolition Waste Management Plans
- Section 22 – Old landfills
- Illegal land filling
- Complaints from general public and other Regulatory bodies such as the EPA, Gardai and the DoEHLG.
- Recommendation of Minimum Criteria for Environmental Inspections (RMCEI)

The following actions are taken by enforcement units to ensure the above items are complied with:

- Inspections on:
 - Producers of Waste
 - Permitted Facilities
 - Collection Permit Holders
- Auditing:
 - Routine Business Audits
 - WEEE Audits
 - Plastic Bag Audits
 - Building site Audits
 - Packaging Audits
- Checkpoints
- Issuing littering fines
- Dealing with environmental complaints
- Enforcement procedures
- Liaising with other bodies: LA's, Gardai, etc.

12.2 INSPECTIONS, AUDITS AND COMPLAINTS

Waste enforcement refers to activities such as audits, inspections, investigating complaints and taking enforcement procedures. Table 12.2 provides a breakdown of the enforcement procedures carried out in the Dublin Region in 2007.

In order to ensure companies and facilities comply with regulations and permits, inspections are carried out in accordance with the 'RMCEI' plan. In 2007 a total of 3,354 inspections were carried out.

Inspection took place at waste facilities, facilities accepting WEEE, retailers, facilities that handle C&D waste, facilities that handle packaging waste, illegal landfilling and dumping, checkpoint inspections and site inspections in response to complaints.

Enforcement teams are also involved in the auditing of waste collection data submitted by waste collection permit holders. Previously there were a high number of inconsistencies in data and reports submitted by waste collectors. In order to reduce the number of inconsistencies and increase the coherency in data compilation and reporting, the enforcement sections of the Local Authorities are reviewing submitted information and following up on specific information required by means of written communications. An electronic and a paper copy of a supplied spreadsheet must be submitted by permit holders.

Table 12.2: Local Authority Enforcement Progress, 2007

| | DCC | DLRCC | SDCC | FCC | Regional 2007 | Regional 2006 |
|--|--|-------|-------------|-----|------------------|------------------|
| No. of facility audits carried out | 40 | 0 | unavailable | 28 | 68 | 85 |
| No. of inspections carried out | WCP: 269 Bus. Audits: 305 C & D Audits: 195 WEEE: 394 Plastic Bag: 132 Packaging: 300 Road Check: 46 | 809 | 409 | 486 | 3,345 | 2,049 |
| No. of complaints received | 386 | 66 | unavailable | 172 | 624 | 616 |
| No. of enforcement procedures taken | 39 | 42 | 1 | 45 | 127 | 156 |

Regional Enforcement Unit

In 2004, a Regional Enforcement Unit was set up to cover Dublin City Council and Fingal County Council functional areas and the unit has since grown. The unit currently consists of ten field officers, two administrative staff, an Environmental Manager and Assistant Environmental Manager. The unit has recently expanded its remit and since 1st August 2007 now also covers the South Dublin County Council functional area.

The Waste Enforcement Unit is based within the Dublin City Council area, but the Field Officers operate largely on a mobile basis, responding to complaints and carry out routine inspections in the 3 Local Authority Areas. The main function of the Regional Enforcement Unit is to limit the risk of environmental pollution and ensure compliance with the Waste Management Act 1996, as amended, and all relevant regulations made thereunder. The unit achieves this by providing a rapid response to complaints, liaising with other Regulatory bodies, carrying out audits on waste facility permits, waste collection permits and all producers of waste, carrying out checkpoints and by taking legal proceedings where necessary.

12.3 TRANSFRONTIER SHIPMENT OF WASTE (TFS)

As of July 12, 2007, Dublin City Council is designated as the National Competent Authority for the export, import and transit of waste shipments under the Waste Management (Shipments of Waste) Regulations, 2007. The new Regulations give effect to provisions contained in Regulation (EC) No. 1013/2006 of the European Parliament and Council of June 14, 2006, on transfrontier shipments of waste, which sets out new notification procedures, specifies revised waste listings and strengthens enforcement provisions in relation to waste movements within, into and out of the EU.

From 12 July 2007, all transfrontier shipments of waste originating in any local authority area in the State that are subject to the prior written notification procedures must be notified to and through Dublin City Council at the National TFS Office established to implement and enforce the Regulations. Since the establishment of the office in 2007, it has processed over 6,000 movements of waste.

A dedicated team of authorised officers from the National TFS Office inspect Irish ports, throughout the country on a daily basis in order to ensure full compliance with the new Regulations by checking that that materials move with correct documentation and to facilitate the acceptance of the material at its country of destination. The officers have significant powers under the Regulations to conduct inspections of vehicles, ships, trains, and aircraft and to seize or prohibit exports of waste where necessary. Since 2007 over 4,000 TFS inspections have been conducted, ranging from physical port inspections for exports and imports of waste to the EU and countries outside to EU, end of life vehicles, cases of illegal shipments and issues with TFS documentation and waste classification. Combined inspections have been carried out with other local authority enforcement units on matters of TFS.

13 IMPLEMENTATION CHALLENGES

The implementation of the Waste Plan objectives remains a challenge for the Local Authorities. The local authorities remain committed to delivering the necessary integrated waste infrastructure and solutions for the Region to meet regional recycling and diversion targets by 2013.

13.1 POSSIBLE STATUTORY DELAYS

The key waste infrastructural projects, i.e. regional biological facilities, regional MRF, regional Waste-to-Energy, and regional landfill, are all at different stages of completing the required statutory processes.

Table 13.1 provides a summary of the status of the statutory processes for each of these facilities and the possible delays to the delivery of the project awaiting statutory approvals.

13.2 WASTE COLLECTION PERMIT REVIEW

Dublin City Council is the nominated authority for the Dublin Region and is responsible for issuing permits and administering the Waste Management (Collection Permit) Regulations 2007, as amended (hereafter 2007 Regulations) on behalf of the four Dublin Local Authorities.

Dublin City Council commenced a review of 197 existing collection permits under the 2007 Regulations in June 2008. This review was undertaken in order to give effect to the 2007 Regulations and have introduced a multi-region waste collection permit system. The new multi-region waste collection permits remove the requirement for permit holders to hold separate waste collection permits for each region in which they operate. Waste collection permit applications and permit review applications for the collection of waste in more than one region can now be made to one nominated authority on one application form.

Where the permit holder decides to make an application in respect of the collection of waste in more than one region then an application for a multi-regional waste collection permit shall be made in respect of all regions concerned to the nominated authority in the region where the principal waste collection activities are proposed to take place in accordance with the 2007 Regulations.

The collection permit review is progressing and Dublin City Council expects to issue the first of the revised permits by the end of December 2008. The conditions of the revised permits will give effect to the objectives of the Regional Waste Plan and the National Hazardous Waste Management Plan 2008 – 2013.

13.3 VARIATION TO THE WASTE PLAN

On the 3rd March 2008 following an extensive period of consultation the Dublin Local Authorities varied the Waste Management Plan for the Dublin Region 2005 - 2010. In March 2008 the Dublin Local Authorities published the following documents for public information:

- Uncontrolled Fracturing of the Household Waste Collection Market, Environmental and Technical Report including Responses to Consultation Process, RPS, (February 2008)
- Variation to the Waste Management Plan, Dublin Local Authorities (March 2008)

Table 13.1 Summary of Statutory Processes for Regional Waste Facilities

| | Kilshane Biological | Ballyogan Biological | Fingal Landfill | Waste-to Energy Project |
|---------------------------------|-------------------------------------|-------------------------------------|---|--|
| Planning | Full planning permission in place. | Full planning permission in place. | <p>A Planning Application was lodged in July 2006, including a detailed EIS, with An Bord Pleanála. An Bord Pleanála held an oral hearing on the project in October 2006. A decision was delayed on the project over archaeology issues.</p> <p>An Bord Pleanála held an oral hearing on Archaeology in September 2008. Consequently it was decided to re-open key issues and an oral hearing was held on these issues in November 2008. The planning process for this facility is on-going and a decision is expected in early 2009.</p> | <p>A planning permission application and Environmental Impact Statement was lodged to An Bord Pleanála in June 2006.</p> <p>An Oral Hearing on the project commenced on the 19th April 2007 and was completed in May 2007. Planning Permission was granted by An Bord Pleanála in November 2007.</p> <p>No additional objections have been received and planning permission is in place.</p> |
| Environmental Licensing | EPA Waste Licence has been granted. | EPA Waste Licence has been granted. | <p>An EPA Waste Licence application for the facility was submitted to the EPA on the 5th July 2006. A Proposed decision on the EPA Waste Licence was issued on September 20th 2007.</p> <p>The EPA oral hearing was conducted week beginning 3rd March 2008. A second oral hearing is due to be held in 2009 over water issues.</p> | <p>A waste licence application was lodged with the Environmental Protection Agency and a Proposed Decision to grant the waste licence was issued by the Agency in November 2007. Following the issue of the Proposed Decision third party of objections were lodged with the EPA.</p> <p>The EPA held an oral hearing of the objections to the Proposed Decision between the 14th of April and the 1st of May 2008. The EPA is expected to issue a Final determination in December 2008.</p> |
| Revised Operational Date | 2nd Quarter 2010 | 2nd Quarter 2010 | 2nd Quarter 2010 | 1st Quarter 2012 |

The Variation provides for the insertion into the Plan of specific objectives that the collection of household waste from single dwelling households (other than those in purpose built apartment blocks) will be carried out by the Dublin Local Authorities or, alternatively the Dublin Local Authorities will make arrangements by way of a public tendering process for the collection of such household waste (which may be on a geographical or area basis). Full details of the variations are as follows:

New Section 18.4A:

Section 18.4 of the Plan entitled Household Waste Collection and Recycling is varied by the insertion of the following paragraphs after the section entitled “Waste in Apartments – Additional Policies”:

“Section 18.4A: Household Waste Collection from Single Dwelling Households

In considering the household waste collection market in the Dublin Region the Dublin Local Authorities, in line with a recent decision of the Competition Authority, have identified the following two distinct service markets:

- *Single dwelling households; and*
- *Purpose-built apartment dwellings.*

This section 18.4A deals with the collection of household waste from single dwelling households only.

(i) Existing situation for single dwelling households

As indicated in section 7.1 of this Plan the household waste collection service for single dwelling households in the Dublin Region is predominantly operated directly by the Dublin Local Authorities. The preferred approach to managing household waste is based on the principle of source separation of the waste into different waste fractions. Key aims of segregation are to deliver clean and high value materials for recovery, in a cost effective and environmentally safe manner to the householder and to reduce material going to landfill.

To achieve this objective the Dublin Local Authorities are committed to rolling out a 3-bin (brown, green, black/grey) kerbside collection system to all single dwelling households in the Region and good progress has been made to date in achieving this objective. The black and green bin kerbside service is available to almost all single dwelling households in the Region. Pilot brown bin collection routes are also in operation with the continued expansion of this service to all households to be implemented during the lifetime of the Plan.

(ii) Post-implementation review of household waste collection

The Dublin Local Authorities have reviewed the workings of household waste collection in the Dublin Region since the implementation of this Plan. Since this time the private sector has entered the household waste collection market for single dwelling households alongside the Dublin Local Authorities. The Dublin Local Authorities have identified a number of concerns which relate to the entry of the private sector into the single dwelling household waste collection market.

These concerns centre on encouraging and supporting the recovery of waste and the prevention of environmental pollution and include:

- The environmental implications of multiple refuse collection vehicles servicing individual routes on air, noise, carbon emissions and traffic.

- The concentration of private sector household collection services on higher density routes leaving more rural routes without a service and increasing the possibility of illegal tipping, backyard burning and other environmental pollution.
- Loss of collection services to low income households (who may benefit from waivers) in areas where Local Authorities have had to withdraw from the collection market.
- The cost/price to consumers of a situation where multiple refuse collection vehicles service individual routes.

The loss of revenue from the provision of household waste collection services from single dwelling households would jeopardise the ability of the Local Authorities to provide waste services in an economically sustainable manner. In particular the provision of infrastructure (treatment facilities, bring centres, recycling centres and facilities for household hazardous waste), education and awareness programs and services to waiver customers (households unable to pay for services) would be prejudiced. Finally, the funding of enforcement services to manage illegal tipping, backyard burning and other environmental pollution arising from households would also be prejudiced.

The June 2006 Waste Management Benchmarking Study by Forfás indicated that the direct collection of waste by municipalities is common in most of the EU countries benchmarked. This is mainly household waste but in some cases some commercial waste as well. The study demonstrates that Ireland is almost unique among the benchmark countries in having private services directly involved in the collection of waste without any municipal involvement in establishing the contract and determining what happens to the waste.

(iii) Specific objectives

Specific objectives with respect to the collection of household waste from single dwelling households are:

- Each Dublin Local Authority shall either collect specific streams of source separated household waste from single dwelling households within its functional area or arrange for the collection of such household waste by means of competitive tendering process(es).
- Such collection of this source-separated household waste shall be by a single operator in designated areas, which may comprise all or part(s) of a functional area or a number of functional areas within the Dublin Region. The single operator shall either be a Dublin Local Authority or the successful tenderer under a competitive tendering process.”

The variation is currently the subject of court proceedings with an outcome on the hearing expected by the mid 2009.

14 IMPLEMENTING THE POLLUTER PAYS PRINCIPLE

In the current Waste Plan the Dublin Local Authorities set out as a policy objective the continued implementation of the Polluter Pays Principle through user-related waste charging systems. Waste charges were introduced nationally from the 1st January 2005 aiming to encourage householders to reduce the amount of residual waste generated and increase recycling. The Local Authorities adopted different pay-by-use schemes and pricing arrangements are set on a local authority basis rather than on a regional basis. Details of the schemes and changes in waste charges in the different Local Authority Areas are outlined in the Section 14.1.

14.1 LOCAL AUTHORITY PAY-BY-USE SCHEMES

Different PBU systems are used to implement the Polluter Pays Principle throughout the Dublin Region. These include:

- Tag-a-bin / tag-a-bag type systems – this commonly used system requires the householder to attach a pre-paid tag or label to their waste bin/bag presented for collection. The cost of tags/labels varies depending on the type of waste being presented. This system is applied by Fingal County Council and South Dublin County Council per lift of the black bin.
- Pay-By-Weight systems – this system charges the householder according to the weight of waste presented for collection. The householder is charged an annual standing charge and a separate charge for each lift of the residual bin. An additional charge for every kilogram of waste collected in the residual bin also applies. Dun Laoghaire Rathdown County Council operates a Pay-By-Weight system for the black bin collection service.
- Pay-By-Volume system – this system charges the householder according to the weight or volume of waste presented for collection. Householders are charged an annual standing charge and a separate charge for each lift of the residual bin. This type of system is used by Dublin City Council.

Each local authority in Dublin applies different waste charges to householders in their region. In addition income from the household waste collection service are used to fund other waste services such as the green and brown bin collections, bring banks, recycling centres, mobile hazardous collections, bulky waste collections waste awareness and educational programmes. The waste charges for 2008 are listed below.

Dublin City Council: In 2008 there has been an increase in the standing charge for the standard black bin, 240l & 140l respectively from €88 & €71.50 to €91 & €74 respectively. There has also been an increase in the charge per lift from €5.50 to €5.70 for 240l black bins and from €3.30 to €3.40 for 140l black bins. In 2007 bin tags for bag collections cost €2.80 this has now increased to €2.90 in 2008.

Dun Laoghaire Rathdown County Council: In Dun Laoghaire Rathdown County Council there will be no change in the waste charges in 2008. Charges will consist of an €80 standing charge, a €4 charge per collection and a €0.25 charge per kg collected. These charges are the same for both 240l and 140l black bins.

Fingal County Council: Fingal County Council introduced a new recycling service from February 2008. This includes fortnightly (free) kerbside collections of brown & green bins. An annual fixed charge was introduced from January 2008 and was set €110 per annum. Black bin tags will remain at €8 per tag in 2008

South Dublin County Council: The Pay-Per-Use System of charging for refuse collection came into operation on Monday 2nd February 2004. It requires participants to attach a bin tag to their black bin when leaving it out for collection. The Tags cost €8 for a standard bin (240l) and €4 for a small bin (120l).

14.2 WAIVER SCHEME

As part of the universal waste management service provided by the Dublin Local Authorities a waiver of household waste collection charges is offered to householders on grounds of personal hardship. The waiver scheme ensures equity of access to waste collection services ensuring all households in Dublin can receive the same level and quality of service. It is estimated that approximately 70,000 households are in receipt of a waiver and the cost to the local authorities for this scheme is in the region of €12 - €13 million. Details of the waiver scheme in each local authority area are provided below:

- **Dublin City Council:** To qualify for Dublin City Council's waiver scheme, the householder's sole income must be a Department of Social and Family Affairs Allowance or Pension, and there are no other persons residing in the premises who are in receipt of any income above these limits. Alternatively, a waiver is available if the householder's total income is exempt from tax under the Finance Acts and there are no other persons residing in the premises who are in receipt of any income above these limits.
- **Dun Laoghaire Rathdown County Council:** Since 2005, the waiver scheme has been in place for those that meet the eligibility criteria. For those that qualify, the €80 standing charged is waived but the 'lift' charges and the 'per kilogram' charges are to be paid. An additional waiver worth €120 applies to households of a couple with four or more children or a single parent with three or more children. If the applicant lives in multi-occupancy premises, then the charges are paid by the management company/owner whilst the occupier claims the waiver/refund.
- **Fingal County Council:** Households qualify for a waiver from Fingal County Council if the household receives the Family Income Supplement or if no member of the household pays income tax.
- **South Dublin County Council:** A waiver is provided to households where the family income is from the Department of Social & Family Affairs or household incomes are exempt from income tax. For those that qualify, households are entitled to bin tags free of charge and are given a free fortnightly refuse collection service.

15 KEY PERFORMANCE INDICATORS

15.1 HEADLINE INDICATORS

The Dublin Waste Management Plan sets out a series of headline performance indicators for the Dublin region, which are recommended for monitoring the overall success of the Plan Implementation. Table 15.1 summarises the headline indicator data collected for 2007 and presented alongside the data for 2003 and 2006.

A series of Secondary Indicators have been developed for each waste category and these are essentially the building blocks in determining the headline Indicators for the region. These are presented along with headline indicators in Section 15.2 to 15.9.

Table 15.1: Headline Indicator Performance 2003 and 2006

| | Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance | Target |
|---|--|-------------------------|-------------------------|-------------------------|--------------------------------|
| 1 | Household Waste Generated per household | 1.21 tonnes/annum | 1.10 | 1.12 | 1.25 tonnes/annum 2006 onwards |
| 2 | Municipal Waste Recycling Rate | 26% | 40% | 41% | 45% by 2010 |
| 3 | Proportion of Household and C/I waste sent for Energy Recovery | 0 % | 0% | 0% | 38% by 2013 |
| 4 | Tonnage Biodegradable Municipal Waste Landfilled | 431,340 | 470,361 | 417,025 | 175,030 by 2009 (requires WTE) |
| 5 | % C&D Waste Recycled (excl soil) | 4% | 14.4% | 42.8% | 85% by 2013 |
| 6 | Kg (household) WEEE collected for Recycling per capita | 2.5 Kg | 4.1 Kg | 10.9 Kg | 4 Kg by 2006 |
| 7 | % Household Hazardous Waste in residual waste stream | 1.1% | 0.4% | 0.4% | 0.75% by 2008 |
| 8 | % Recycling of Packaging Waste | 37.2% | 48.8% | 51.6% | 55% by 2011 |

15.2 PREVENTION AND MINIMISATION

Household Waste Generated per household (tonnes/annum) is the headline indicator for the Prevention and Minimisation of Waste. A target of 1.25 tonnes generated per household per annum from 2006 onwards was established in the Dublin Waste Management Plan 2005 – 2010.

| Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance | Target |
|--|------------------|------------------|------------------|------------------------|
| Household Waste Generated per Household (tonnes/annum) | 1.21 | 1.10 | 1.12 | 1.25 from 2006 onwards |

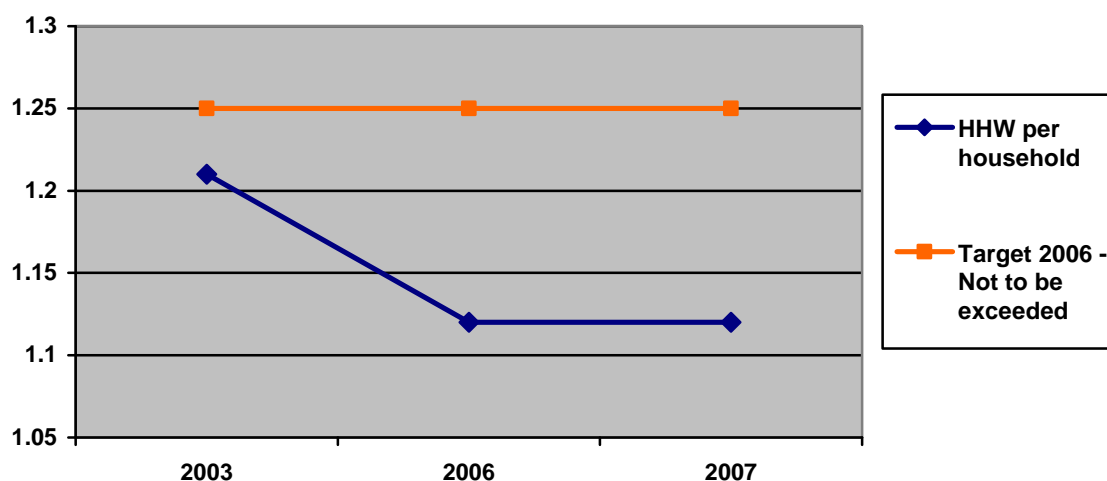


Figure 15.1 Prevention and Minimisation: Household Waste Generated Per Capita

Figure 15.1 shows that for 2007 the headline indicator was 1.12 tonnes per annum and is less than the regional target of 1.25 tonnes/annum.

Between 2006 and 2007 the quantity of household waste has increased slightly. On the face of it there appears to be a decoupling of household waste from economic growth in the region. However the extent of this decoupling is unknown as the number of annual returns returned by permit holders is incomplete while the consistency of this data remains an issue. Local Authorities also recognise that household wastes collected from apartment complexes are often mixed with commercial wastes and subsequently classified and reported incorrectly. This scenario distorts the household waste figures and the indicators reported for prevention and minimisation.

15.2.1 Secondary Indicator - Quantity of Household Waste Generated Per Capita

The secondary indicator, household waste generated per capita, has also remained constant at 0.40 tonnes per capita.

| Secondary Indicator | 2003 Performance | 2006 Performance | 2007 Performance |
|--|------------------|------------------|------------------|
| Household Waste Generated per capita (tonnes/per capita) | 0.41 | 0.41 | 0.41 |

15.3 RECYCLING OF MUNICIPAL WASTE

The municipal waste recycling rate is the headline indicator for municipal waste and a target of 45% by 2010 was set in the Waste Plan.

| Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance | 2010 Target |
|--------------------------------|------------------|------------------|------------------|-------------|
| Municipal Waste Recycling Rate | 26% | 40% | 41% | 45% |

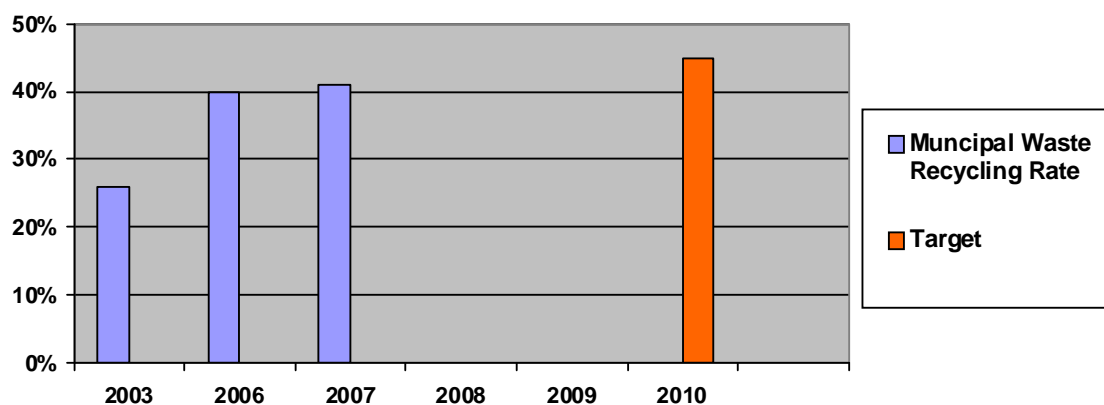


Figure 15.2 Municipal Waste Recycling Rate (%)

A municipal waste recycling rate of 41% was reached in 2007 and represents a 1% increase on the 2006 figure. The commercial sector continues to perform well with high levels of segregation of dry recyclable and packaging waste types driving recovery in this sector. The household recovery rate continues to progress with the roll out of the brown bin underway. The full rollout of these systems is expected to push on household recovery rates.

15.3.1 Secondary Indicator - Household Waste Recycling Rate

The Household Waste Recycling Rate is a secondary indicator for Municipal Waste and has increased to 28% in 2007. The long-term regional target of 60% remains a challenge.

| Secondary Indicator | 2003 Performance | 2006 Performance | 2007 Performance | 2013 Target |
|--------------------------------|------------------|------------------|------------------|-------------|
| Household Waste Recycling Rate | 16% | 27% | 28% | 60% |

15.3.2 Secondary Indicator - Commercial/Industrial Waste Recycling Rate

The Commercial and Industrial Recycling Rate for the region is also a secondary indicator and has increased from 49% in 2006 to 50% in 2007. This exceeds the long-term regional target of 41% for this waste stream.

| Secondary Indicator | 2003 Performance | 2006 Performance | 2007 Performance | 2013 Target |
|--|------------------|------------------|------------------|-------------|
| Commercial/Industrial Waste Recycling Rate | 34% | 49% | 50% | 41% |

15.4 CONSTRUCTION AND DEMOLITION WASTE

The National Waste Policy Statement, Changing Our Ways, set a national target of 85% recycling of C&D waste by 2013. This target was adopted by the Dublin Local Authorities in the Waste Management Plan and is the long-term regional goal.

| Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance | Target |
|-----------------------------------|------------------|------------------|------------------|-------------|
| % C&D Waste Recovered (Excl soil) | 4% | 14.4% | 42.8% | 85% by 2013 |
| % C&D Waste Recovered (Incl soil) | - | 82% | 90% | |

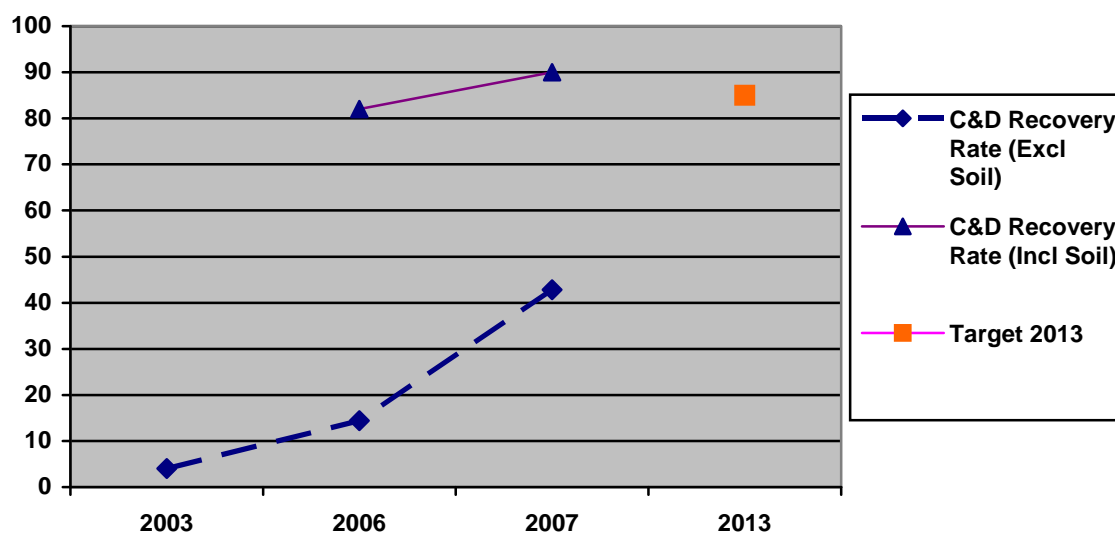


Figure 15.3 Construction and Demolition Recovery Rate (%)

In 2007 over 7 million tonnes of Construction and Demolition wastes were collected in the Dublin Region. Approximately 83% was soil and stone material and was recovered at Local Authority Waste Permit Facilities outside of the region. The amount of C&D materials such as timber, metals, wood and concrete recovered has increased although there remains considerable opportunity to develop recycling of these materials further. Overall the combined recovery rate for C&D waste materials (including soil and stone) was estimated to be 90% for the Region exceeding the national target of 85%.

15.4.1 Secondary Indicator - construction and demolition waste recycling quantity

The C&D Waste Recycling tonnages for 2007 were 418,690 tonnes, representing an increase of over 81% compared to 2006 data.

| Secondary Indicator | 2003 Performance | 2006 Performance | 2007 Performance |
|--|------------------|------------------|------------------|
| Construction and Demolition Waste Recycling (Tonnages) | 128,537 | 231,200 | 418,690 |

15.5 WASTE ELECTRICAL AND ELECTRONIC WASTE

The headline indicator for Waste Electrical and Electronic Waste is Kg (household) WEEE collected for recycling per capita. A target of 4Kg by 2006 was established the Waste Plan.

| Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance |
|--|------------------|------------------|------------------|
| Kg (household) WEEE Collected for Recycling per capita | 2.5 Kg | 4.1 Kg | 10.9 Kg |

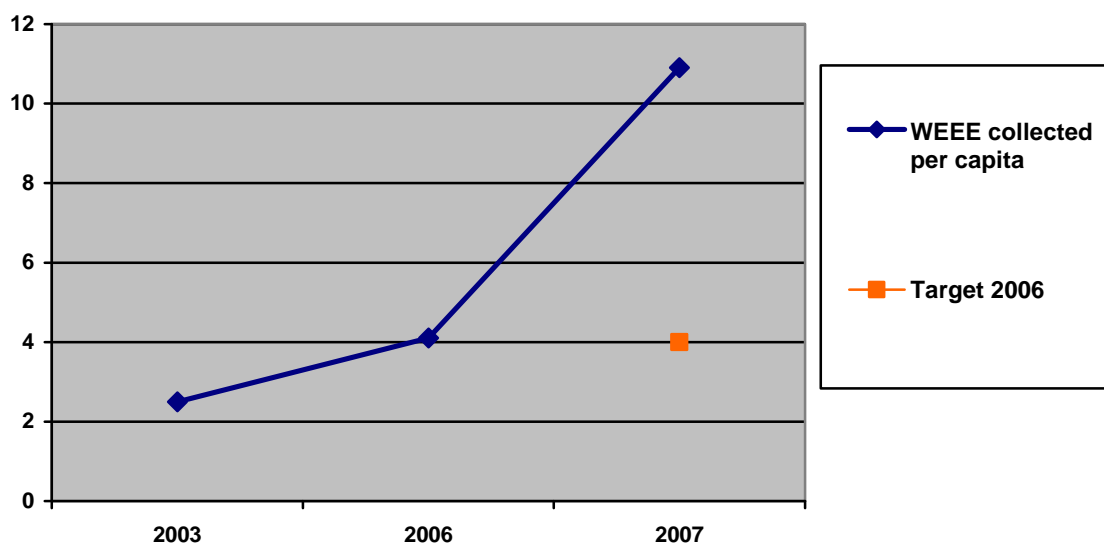


Figure 15.4: WEEE Collected (kg) for Recycling per Capita

Figure 15.4 shows that the Region collected 10.9 Kg of WEEE per capita for recycling for 2007. The household WEEE was collected from local authority recycling centres, at designated collection centres for retailers in the region and . A total of 12,887.4 tonnes of household WEEE was collected in the Region for in 2007.

15.5.1 Secondary Indicator - Estimated Quantity of WEEE Landfilled

Waste composition surveys undertaken in 2007 of the household black residual bin in the region indicate that small WEEE makes up 1.9% of the bin contents. This figure has been used to estimate the quantity of WEEE landfilled in the Region in 2006 as shown in the table below.

| Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance |
|--------------------|------------------|------------------|------------------|
| WEEE landfilled | No data | 6,456 tonnes | 5,986 tonnes |

15.6 HOUSEHOLD HAZARDOUS WASTE

For household hazardous waste the selected headline indicator is the % household hazardous waste in residual waste bin. The Waste Plan set a target of reducing the percentage of Household Hazardous Waste in the residual waste stream to 0.75% by 2008.

| Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance | Target |
|--|------------------|------------------|------------------|---------------|
| % Household Hazardous Waste in residual waste stream | 1.1% | 0.4% | 0.4% | 0.75% by 2008 |

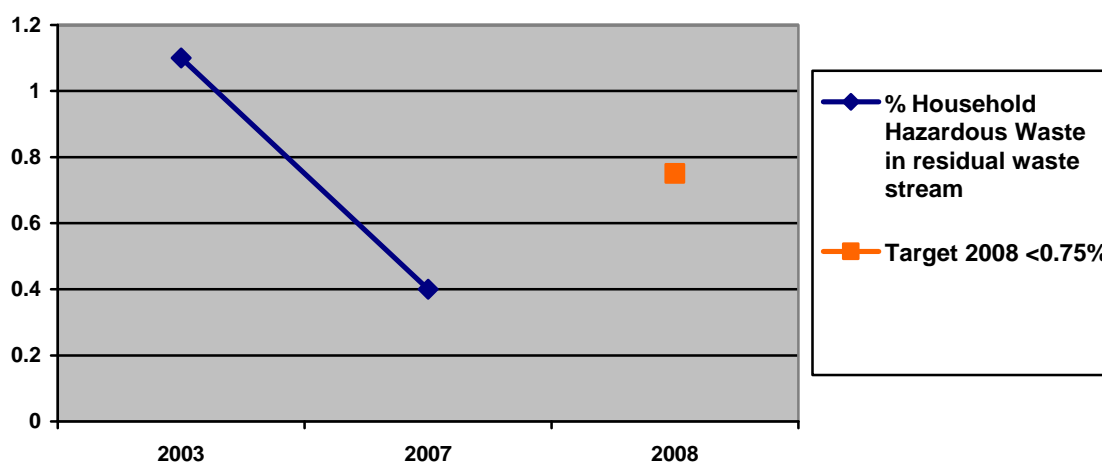


Figure 15.4: % Household Hazardous Waste in Residual Waste Stream

Waste composition surveys undertaken in 2007 of the household black residual bin in the region indicate that hazardous wastes made up 0.4% of the bin contents. No composition surveys were undertaken in 2008.

15.6.1 Secondary Indicator - Estimated Quantity of Hazardous Waste Landfilled

Based on the composition data recorded in 2007, the estimated quantity of household hazardous waste landfilled in 2007 in the Dublin region is shown in the table below. A decrease in the quantity of hazardous waste landfilled was recorded in 2007.

| Secondary Indicator | 2003 Performance | 2006 Performance | 2007 Performance |
|---------------------------------------|------------------|------------------|------------------|
| Household Hazardous Wastes landfilled | 5,055 tonnes | 1,359 tonnes | 1260 tonnes |

15.7 PACKAGING WASTE

The selected headline indicator for Packaging Waste Recovery is % Recycling of Packaging Waste. Ireland has made significant progress towards meeting National and European targets and the Dublin Region is playing its part as shown by the data below.

| Headline Indicator | 2003 Performance | 2006 Performance | 2007 Performance | Target |
|--------------------------------|------------------|------------------|------------------|-------------|
| % Recycling of Packaging Waste | 39.7% | 48.8% | 51.6% | 55% by 2011 |

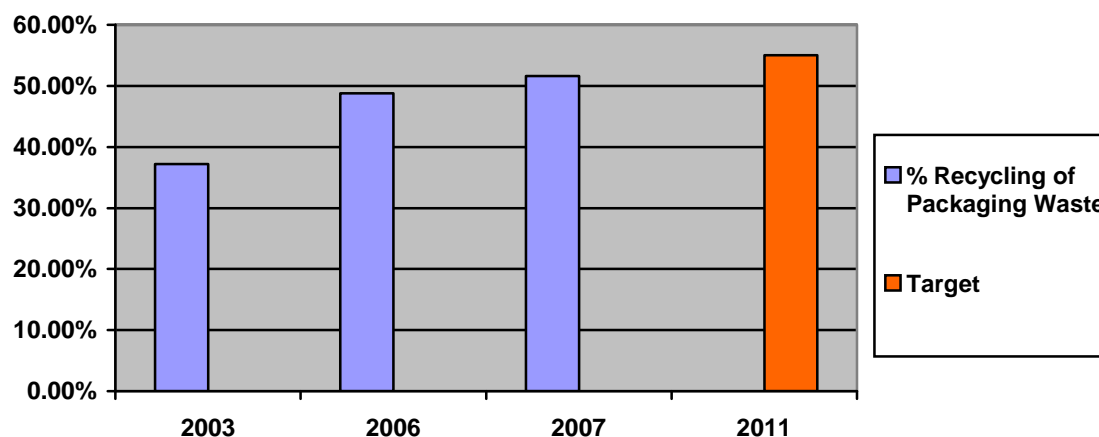


Figure 15.6: Recycling of Packaging Waste

The packaging waste recycling rate in the region has continued to increase, with a 51.6% recovery rate recorded for 2007. Steady progress towards the regional target of 55% continues. Quantities of packaging waste recovered were provided by REPAK.

15.7.1 Secondary Indicator - Quantity of Packaging Waste Landfilled

Waste composition surveys of mixed residual commercial waste bins and of the household residual black bin were completed in 2005 and 2007 respectively. The updated data is presented in the following table and shows a decrease in the concentration of packaging waste in the residual household and commercial waste streams.

| | Household | | Commercial | |
|-------------------|-----------|------|------------|------|
| | 2003 | 2007 | 2003 | 2005 |
| % Packaging Waste | 30 | 20.7 | 44.8 | 17.4 |

An estimated quantity of packaging waste landfilled for 2007 has been generated using the updated composition data and the estimated landfill figures for household and commercial waste.

| Secondary Indicator | 2003 Performance | 2006 Performance | 2007 Performance |
|----------------------------|------------------|------------------|------------------|
| Packaging Waste landfilled | 321,190 tonnes | 142,927 tonnes | 139,375 tonnes |

15.8 RECOVERY OF ENERGY FROM WASTE

The Waste Management Plan as set a target for energy recovery of 39% for household waste and 37% for commercial waste. No household and commercial/industrial waste arisings was sent for Energy Recovery from Dublin in 2006.

| Headline Indicator | 2006 Performance | 2007 Performance | Target |
|--|------------------|------------------|-------------|
| Proportion of Household and C&I waste sent for Energy Recovery | 0 % | 0 % | 38% by 2013 |

It remains the policy of the Dublin Local Authorities region to develop a WTE in Poolbeg, Ringsend for the long-term treatment of residual municipal waste arisings.

15.8.1 Secondary Indicator – Landfill Gas and WWTP Biogas Recovery

Landfill gas capture and utilisation systems are in place at regional landfills, namely Arthurstown, Ballyogan, Balleally, Friarstown and Dunsink Landfills. The total energy generated and recovered through these systems is presented in the table below and has increased significantly for 2007 from 2006. .

| Secondary Indicator | 2003 Performance | 2006 Performance | 2007 Performance |
|-----------------------|------------------|------------------|------------------|
| Landfill Gas Recovery | n/a | 93,609MWh | 116,003MWh |

15.9 LANDFILL DISPOSAL

In the area of waste disposal the quantity of biodegradable waste landfilled has been identified as the most suitable headline indicator. The National Strategy on Biodegradable Waste published by the DEHLG in 2006 set regional targets and these have been included in the Waste Plan by the Dublin Local Authorities.

| | Municipal | Municipal |
|--------------|-----------|-----------|
| | 2006 | 2007 |
| % BMW | 65%* | 74%** |

* EPA National Waste Report 2005

** EPA National Waste Report 2006

| Headline Indicator | 2006 Performance | 2007 Performance | 2013 Target |
|--|------------------|------------------|----------------|
| Tonnage Municipal Waste Landfilled | 664,114 tonnes | 592,609 tonnes | |
| Tonnage Biodegradable Waste Landfilled | 470,361 tonnes | 417,025 tonnes | 175,030 tonnes |

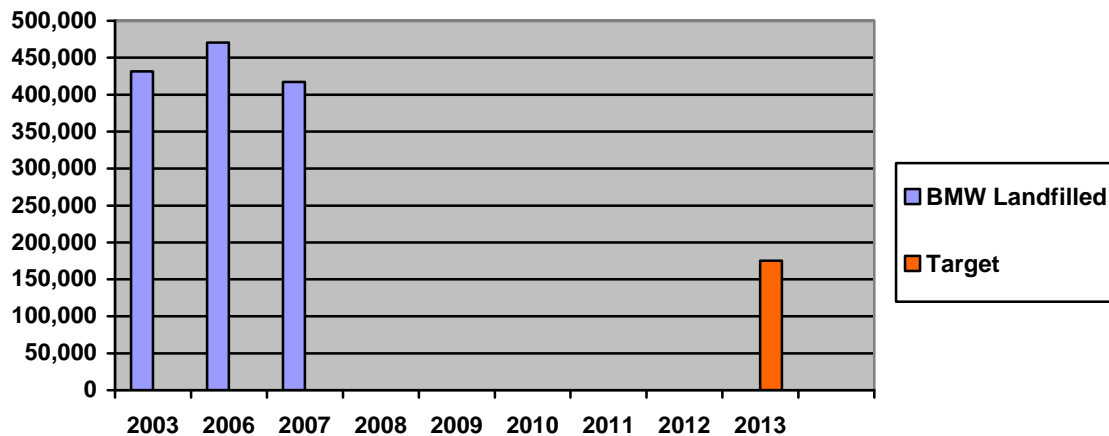


Figure 15.7 BMW Landfilled Quantities

Since the making of the current Waste Plan, Ireland has received a derogation of 4 years on its BMW targets for 2006 and 2009. The 2009 target of 175,030 tonnes has been pushed back to 2013 and remains the long-term target. Figure 15.7 shows that the level of BMW landfilled in the region in 2007 decreased (from 2006) primarily due to increased diversion of BMW through enhanced segregated collection systems. This quantity of BMW reported is for material landfilled at the 2 regional facilities at Arthurstown and Balleally. The long-term diversion target for the Region remains a significant challenge with the rollout of brown bins and the delivery of the regional waste-to-energy facility urgently required.

15.9.1 Secondary Indicator - % BMW in the Residual Bin

The BMW percentage of the household waste black bin was determined to be 63.6% from the waste composition surveys completed in 2007.

| | Household |
|--------------|-----------|
| | 2007 |
| % BMW | 63.6% |