



Disposal of Fridges and Freezers

01 April 2003

Report to the City Council

Disposal of Fridges and Freezers



Further copies of this report can be obtained from:

Scrutiny Support Officer: Megan Montgomery
Telephone: 0121 303 1728
E-mail: megan.montgomery@birmingham.gov.uk

Reports that have been submitted to Council can also be downloaded free of charge from the Scrutiny page of the **Birmingham Assist** web site (go to www.birmingham.gov.uk/scrutiny and click on the Scrutiny logo).



Disposal of Fridges and Freezers

Contents

Contents	2
Preface	3
1: Executive Summary	4
2: Summary of Recommendations	5
3: Introduction	6
3.1 Reason For Review	6
3.2 Terms Of Reference	6
3.3 Methodology	6
4: Background	8
4.1 Recent Changes to Legislation and the Economy	8
4.2 Collection of Fridges and Freezers	9
4.3 Disposal Arrangements	10
5: The Current Situation	11
5.1 Bulky Waste Collections	11
5.2 Numbers of Fridges for Disposal	12
5.3 The Cost of Disposal	13
6: Conclusions and Recommendations	15
6.1 Future Changes in Legislation	15
6.2 Bulky Waste Collections	16
6.3 Changes to the Disposal Process	17
6.4 Progress on Implementation	18
Appendix 1: Fridge and Freezer Disposals	19



Disposal of Fridges and Freezers

Preface

By Councillor Mike Nangle

Chair of Local and Street Services Overview and Scrutiny Committee



The disposal of fridges and freezers created a major problem for the Council. The effect was that the Council experienced an increase in the number of units to be disposed of, as well as a significant cost increase in disposal. This meant that we were looking at an additional cost of over £800k in the 2002/3 year, and it was this that originally raised the concerns of the Committee.

Thankfully for the Council, two factors have led to a significant improvement in our position. Firstly, the market for de-polluting fridges and freezers of ozone-depleting substances has become more stable over the last year, meaning that the cost of disposal has fallen. Secondly, the Government has agreed a means of ensuring that the additional costs of disposal we have experienced are covered.

This has resolved the main issues with which the Committee first expressed concern. What remains is for the Council to take forward the provision of this service in the context of the localisation of services, and I look forward to this with interest.



Disposal of Fridges and Freezers

1: Executive Summary

- 1.1.1 Following changes to EC legislation the Council is now required to take certain precautions to prevent the uncontrolled release of CFCs in the disposal of fridges and freezers.
- 1.1.2 These changes led to a significant increase in the cost of disposing of fridges and freezers, from £4 a unit to £25.29 per unit during 2002.
- 1.1.3 Additionally, the cessation of retailer 'take-back' schemes at the end of 2001 led to an increase in the numbers of units that the Council is required to dispose of.
- 1.1.4 The market for de-polluting and recycling fridges and freezers has become more stable over the last year. The Council's contractor for disposing of the units now offers a significantly reduced price of £16.50 per unit.
- 1.1.5 There is now no financial issue for the Council related to the increased cost of disposing of fridges and freezers. The Government has agreed a grant of £881k to the Council to cover the additional disposal costs. This will be incorporated into the Standard Spending Assessment settlement for 2003/4 onwards.
- 1.1.6 The implementation of the Waste Electrical and Electronic Equipment (WEEE) Directive is likely to cause further difficulties to the Council. The Council needs to take an active role in the development of the UK legislation, and to develop an action plan before it affects us.



Disposal of Fridges and Freezers

2: Summary of Recommendations

	Recommendation	Responsibility	Completion Date
R1	<p>The Council should maintain close links with DEFRA and take an active part in the forthcoming consultation process on the WEEE Directive.</p> <p>This should be towards an overall aim of producing and implementing a response plan to the Directive, once its precise impact is known.</p> <p>This action plan should result in implementation of these measures by the time that the legislation comes into force.</p>	Director of Environmental and Consumer Services	Continuous throughout the transposition of the Directive into UK Law
R2	<p>The resourcing of the bulky waste collection service should be reviewed and the workload calculated on the basis of a practical number of collections.</p> <p>This should be reviewed in the course of determining the requirements of providing localised waste collection services.</p>	Director of Environmental and Consumer Services	30 September 2003
R3	<p>Progress towards achievement of these recommendations should be reported to the Local and Street Services Overview and Scrutiny Committee on a six-monthly basis until completed. The first report should be within six months of approval of these recommendations by Council.</p>	Director of Environmental and Consumer Services	01 October 2003



Disposal of Fridges and Freezers

3: Introduction

3.1 Reason For Review

- 3.1.1 Budget scrutiny in mid-2002 revealed a cost increase in relation to the collection and safe disposal of fridges and freezers.

3.2 Terms Of Reference

- 3.2.1 This review covers the following areas:

- ⦿ Examine implementation of legislative requirements
- ⦿ Assess the impact in Birmingham
- ⦿ Examine the financial implications for City Council
- ⦿ Assess the future approach to be taken and required standards

3.3 Methodology

- 3.3.1 A presentation was made to members of the Local and Street Services Overview and Scrutiny Committee at its meeting on 9th December 2002. At that meeting an officer from the Environmental and Consumer Services (ECS) Department outlined the background to the issue and indicated the current position.
- 3.3.2 Also present at the meetings were representatives of European Metals Recycling (EMR). EMR is currently contracted to Tyseley Waste Disposal (TWD) for the disposal of fridges and freezers. TWD are the Council's main waste disposal contractor.
- 3.3.3 A further meeting took place, involving officers from the ECS Department and Scrutiny officers. A detailed examination of the historical background, the current position and future possibilities were explored at this meeting.



Disposal of Fridges and Freezers

3.3.4

The process was observed first hand, with a visit to Tyseley Public Waste Disposal site, Ladywood Furniture Project and EMR's new disposal facility at Darlaston.



Disposal of Fridges and Freezers

4: Background

4.1 Recent Changes to Legislation and the Economy

- 4.1.1 The EC regulation 2037 (29 June 2000) specified changes to the process of manufacture, repair and disposal of fridges and freezers. These relate to the treatment of Ozone Depleting Substances (ODS - such as chlorofluorocarbons (CFCs)) contained within each unit.
- 4.1.2 ODS are used in fridges and freezers in two ways:
- ⦿ The foam used to insulate the cabinet (80% of the CFCs)
 - ⦿ The liquid refrigerant used to cool the fridge / freezers. This also contaminates the oil used to lubricate the circulatory system (20% of CFCs in the unit)
- 4.1.3 The regulation essentially requires that the Council (as the Waste Disposal Authority) takes certain precautions to ensure that ODS are removed (and not released into the atmosphere) from refrigeration equipment, during disposal.
- 4.1.4 Regulation 2037 also prohibits export of ODS outside the EC. This has had a considerable impact on the way we process the units. Before the new legislation it was far easier for waste disposal operators to dispose of old fridges and freezers, either by
- ⦿ Crushing them completely (allowing uncontrolled CFC release), or
 - ⦿ Exporting them to Third World countries, particularly Africa
- 4.1.5 Major electrical goods retailers (such as Comet and Curry's) used to voluntarily operate 'take-back' schemes. Essentially, this meant that when a consumer purchased a new fridge or freezer, the retailer would take away and dispose of the old unit. This was operated as an incentive for the customer.
- 4.1.6 Fridges and freezers collected under a take-back scheme are classified as 'business waste'. The retailer must store the units pending disposal and this means that they are storing 'business



Disposal of Fridges and Freezers

waste'. The Environment Agency requires the retailers to be approved and certified for this.

4.1.7

However, the retailers ceased to operate these schemes from November 2001. There is significant cost associated with obtaining and maintaining this certification. Retailers clearly decided that operating the take-back service was not cost effective.

4.2 Collection of Fridges and Freezers

4.2.1

The City Council has a duty under the Environmental Protection Act (1990) to provide a collection and disposal service for discarded waste from domestic properties. This includes fridges and freezers.

4.2.2

All waste collected or handled by the Council is the responsibility of Tysley Waste Disposal as the Council's waste disposal contractor. The exception is waste taken directly to landfill or recycled through the Council's activities.

4.2.3

There are currently only two options for the collection and disposal of fridges and freezers either

- ⦿ The public deliver, or
- ⦿ The unit is collected

4.2.4

The public can deliver the unwanted units to a PWD site. There are five such sites around Birmingham. Each site segregates fridges and freezers from other waste at delivery, and this means of collection accounts for around 60% of units collected in Birmingham.

4.2.5

The Council also collects unwanted fridges and freezers from householders without charge as part of the Bulky Waste Collection Service. Enquiries have found that all other Core City Councils also provide a similar free collection and disposal service.

4.2.6

The reason for this is believed that it reduces the number of abandoned fridges and freezers dumped in streets, lay-bys and on waste ground.

4.2.7

Ladywood Furniture Project is an initiative set up and supported by EDD. LFP is responsible for the collecting and storing the fridges and freezers. It is a community business, involving staff, volunteers and others, in a range of activities around transport and recycling and re-use of donated household effects.



Disposal of Fridges and Freezers

- 4.2.8 It is at this point that the two collection flows are brought together. LFP collect from the five PWD sites. Bulky Waste Collections also deliver fridges and freezers to LFP.
- 4.2.9 The main cost within this process is transportation. Whilst fridges and freezers are not heavy, they are large, bulky items. They must also be handled carefully and stored to prevent any damage (and potential release of CFCs).
- 4.2.10 The main purpose of LFP is to ensure that the numbers of units transported to EMR are of sufficient volume to make this process economical. Rather than transport each bulky waste collection to the disposal point, they are stored to reduce the amount of transport time.
- 4.2.11 As an additional (largely social) benefit, LFP removes potentially re-usable units from the waste. Such units are refurbished and sold at nominal cost to those in need. However, at present, less than 1% of units collected can be re-used in this way.

4.3 Disposal Arrangements

- 4.3.1 Fridges are delivered by LFP to EMR for disposal under a contract with Tyseley Waste Disposal. At present the units are stored by EMR pending disposal at their site in Darlaston, Walsall.
- 4.3.2 Disposal is currently carried out by EMR at their disposal plant in Willesden, North West London. EMR are in the process of commissioning a new shredding plant at Darlaston, Walsall. This plant is expected to be commissioned shortly and will then deal with all waste fridges and freezers from Birmingham.
- 4.3.3 The shredding plant consists of three stages:
 - ⦿ Removal of peripheral items (cable, shelves, plastic boxes and so forth)
 - ⦿ Removal of the compressor and liquid refrigerant (a CFC)
 - ⦿ Shredding of the cabinet body (and extracting the CFC from the insulating foam)
- 4.3.4 EMR have recycling markets for some of the various parts recovered. They are also seeking markets for other parts and the treated insulation foam.



Disposal of Fridges and Freezers

5: The Current Situation

5.1 Bulky Waste Collections

- 5.1.1 The Council currently provides a free collection service for bulky domestic waste. This includes fridges and freezers, as well as other bulky domestic items such as furniture, washing machines and so forth.
- 5.1.2 Including 'orphan' units (i.e. those that have been dumped), this currently accounts for around 46% of units collected in Birmingham. The remaining 54% are taken by the public to PWD sites.
- 5.1.3 There has been a slight shift in this figure towards more bulky waste collections over the last year. For 2001/2 there were around 42% of units collected.
- 5.1.4 Details of bulky waste collections for 2002/3 are shown in Fig. 1 below. Unfortunately, it is not possible to separate fridges and freezers in the statistics, but this does illustrate broad trends about the service. Fig. 2 shows that
- ⦿ The number of collection requests has increased significantly from 4,419 in 2001/2 to over 18,000 already this year
 - ⦿ Whilst 81.70% of collections were made within the month, they were generally not made within the 10-day target period (only 38.89% were)
 - ⦿ Although requests have massively increased, collection percentages (either within ten days or the month) have not fallen significantly
- 5.1.5 The increase in the number of collections is believed to be due to the collapse of the retailer take-back schemes and a general increase in awareness of the need to dispose of fridges and freezers in this manner.



Disposal of Fridges and Freezers

	Collected	Outstanding	Total Requests	Completed in 10 Days	% Collected	% in 10 Days
2001/2 Total	4,409	10	4,419	1,984	99.77%	44.90%
Average per Month	367.42	0.83	368.25	165.33		
2002/3 April	1,858	21	1,879	1,113	98.88%	59.23%
May	1,701	68	1,769	824	96.16%	46.58%
June	879	707	1,586	494	55.42%	31.15%
July	1,505	869	2,374	254	63.40%	10.70%
August	2,041	616	2,657	792	76.82%	29.81%
September	1,800	539	2,339	937	76.96%	40.06%
October	2,165	56	2,221	908	97.48%	40.88%
November	1,925	112	2,037	1,102	94.50%	54.10%
December	1,101	354	1,455	545	75.67%	37.46%
Total	14,975	3,342	18,317	6,969		
Average per Month	1,663.89	371.33	2,035.2	774.33	81.70%	38.89%

Note: This figure is for all bulky waste collections. It therefore includes items other than fridges and freezers.

Fig. 1: Bulky Waste Collections 2002/3

Source: Environmental and Consumer Services

5.2 Numbers of Fridges for Disposal

- 5.2.1 The number of fridges collected for disposal from April to October 2002 is shown in Appendix 1, Fig. 3. This shows that
- ⦿ Fridges and freezers for disposal have more than doubled in the last 20 months
 - ⦿ After the implementation of Regulation 2037 and the cessation of retailer take-back schemes, the number for disposal radically increased
 - ⦿ The forecast number of units for disposal by the end of 2002/3 is 36,071 – an increase of nearly 250% on 2001/2
- 5.2.2 The number of units disposed of appears to be stabilising after the increases experienced at the start of 2002.



Disposal of Fridges and Freezers

5.2.3

The only way that this figure is likely to decrease is if someone else accepts responsibility for disposal of units. The most likely source of this is for the retailers to re-commence the take-back schemes, as an incentive to customers when purchasing a new unit.

5.3 The Cost of Disposal

5.3.1

To give an element of perspective, Birmingham City Council disposes of around 550,000 tonnes of domestic waste per annum. Of this, fridges and freezers comprise around 1,000 tonnes (approximately 0.18%). The cost of processing normal household waste is around £50 per tonne.

5.3.2

However, the cost of processing fridges and freezers recently rose to over £800k – over £800 per tonne. In broad terms this meant that

- ⦿ Fridges and freezers were around 16 times more expensive to process than normal domestic waste
- ⦿ Around 3% of the annual waste processing budget of £26.6m is spent processing just 0.18% of the waste

5.3.3

The changes in the cost to the Council of disposing of fridges and freezers are shown in Fig. 2 below.

5.3.4

Disposal costs increased significantly with the introduction of EC Regulation 2037, and the requirement to extract the CFCs. The market for de-polluting the fridges and freezers was also not well developed. There was limited availability of the equipment, and due to the high capital set-up costs involved, companies offering this service charged relatively high prices. The end result was that the cost to the Council increased to £25.29 per unit.

5.3.5

The cost has now fallen due to several factors:

- ⦿ EMR will be processing the units at a new plant in Darlaston, Walsall. This also enables EMR to deal with units from other Councils in the area, making the operation more cost effective
- ⦿ Units are no longer transported to the EMR plant at Willesden
- ⦿ Units are stored for less time prior to transportation
- ⦿ The market for processing fridges and freezers is more stable than it was previously in early 2002



Disposal of Fridges and Freezers

5.3.6

The end result is that the Council is paying £16.50 per unit for collection and disposal from 01 January 2003. This figure will be reviewed annually from 01 April, although due to the January review it is unlikely to change in April 2003.

To 16 December 2001:		Cost Per Unit
Ladywood Furniture Project	• De-Gassing	£4.00
Total		£4.00
17 December 2001 to 31 December 2002:		Cost Per Unit
Ladywood Furniture Project	• De-Gassing • Transport to EMR Darlaston	£4.49
European Metals Recycling	• Storage • Foam Processing	£18.50
Tyseley Waste Disposal	• Handling Charge (10%)	£2.30
Total		£25.29
From 01 January 2003:		Cost Per Unit
Ladywood Furniture Project	• Collection • Storage • Transport to EMR Darlaston / West Bromwich	£3.00
European Metals Recycling	• De-Gassing • Storage • Foam Processing	£12.00
Tyseley Waste Disposal	• Handling Charge (10%)	£1.50
Total		£16.50
Fig. 2: Costs of Disposal (Per Unit)		
<i>Source: Environmental and Consumer Services</i>		

5.3.7

The total costs of disposal for 2001/2 and 2002/3 are shown in Fig. 4 in Appendix 1. This demonstrates that the current estimated cost for 2002/3 is £829,223, based on the new rates.

5.3.8

The Government approved a grant of £881,354 to the Council in December 2002 for the 2002/3 year. An equivalent amount is expected to be included in the Standard Spending Assessment (SSA) settlement for 2003/4 onwards. This means that the Council's continuing costs of collection and disposal are met, and there is no longer an issue with the cost.



Disposal of Fridges and Freezers

6: Conclusions and Recommendations

6.1 Future Changes in Legislation

- 6.1.1 With the payment to the Council from the Government in December 2002, the financial part of the Council's problem originating from Regulation 2037 was resolved.
- 6.1.2 Whilst there is no further legislation likely specifically in the area of fridges and freezers, the Waste Electrical and Electronic Equipment (WEEE) Directive is likely to lead to further requirements to de-pollute specific waste items prior to disposal. This will probably come into force in February 2003.
- 6.1.3 Whilst this has yet to be implemented as an EC Directive (which then requires transposition into UK Law within 18 months), this is imminent. The WEEE Directive poses specific difficulties for the recycling industry in segregating materials for disposal.

Conclusions:

- 1. *The City Council is presently coping financially with the required change in operations that has resulted from Regulation 2037.*
- 2. *The WEEE Directive will, if pro-active responses are not developed in advance, cause similar difficulties to Regulation 2037 for the Council.*



Disposal of Fridges and Freezers

	Recommendation	Responsibility	Completion Date
R1	<p>The Council should maintain close links with DEFRA and take an active part in the forthcoming consultation process on the WEEE Directive.</p> <p>This should be towards an overall aim of producing and implementing a response plan to the Directive, once its precise impact is known.</p> <p>This action plan should result in implementation of these measures by the time that the legislation comes into force.</p>	Director of Environmental and Consumer Services	Continuous throughout the transposition of the Directive into UK Law

6.2 Bulky Waste Collections

- 6.2.1 Bulky waste collections are presently subject to a managerial target of collection within ten days of the original request. Fridges and freezers are included within this target, but are not measured separately from other bulky waste.
- 6.2.2 Given the volume of fridges and freezers anticipated to be collected in the City in 2002/3 (16,600 – see Appendix 1), this now represents a significant element of bulky waste collections.
- 6.2.3 Bulky waste that has been dumped is not measured separately from arranged collections. The reason for this is that when street collections of bulky waste are made, people often leave bulky waste outside their house for collection. Whilst this is technically dumped, it would not be correct to classify this the same as where someone consciously abandons their waste in an area such as a park or lay-by.

Conclusions:

- 3. *There appears to be a slight increase in the proportion of fridges and freezers collected through bulky waste collections, and a corresponding fall in the number taken to PWD sites.*
- 4. *This proportion needs to be monitored closely in relation to the workload for the bulky waste collection vehicles.*
- 5. *The Council is not currently meeting the ten-day target for collection of bulky waste.*



Disposal of Fridges and Freezers

6. *Promoting the free bulky waste collection service further is likely to put increased strain on resources that already appear to be stretched too far.*
7. *The specific impact of the free bulky waste collection service on reducing the incidence of dumping is not currently measurable.*

	Recommendation	Responsibility	Completion Date
R2	<p>The resourcing of the bulky waste collection service should be reviewed and the workload calculated on the basis of a practical number of collections.</p> <p>This should be reviewed in the course of determining the requirements of providing localised waste collection services.</p>	Director of Environmental and Consumer Services	30 September 2003

6.3 Changes to the Disposal Process

- 6.3.1 It is difficult to envisage any further change to the disposal process for fridges and freezers. This is currently an efficient operation, disposing of the collected units in compliance with the new legislation. The Government has agreed to provide the necessary funding to operate this service via the SSA.
- 6.3.2 The cost of this service may change in the future. It has already fallen in the last year as EMR have made their operations more competitive now that the market for disposal is more stable.
- 6.3.3 The sensitivity of the price of disposal depends upon the volumes being recycled locally and local competition in carrying this out. However, broadly it seems sensible to assume that costs will remain broadly similar.

Conclusions:

8. *The disposal process is relatively efficient and meets the requirements of Regulation 2037.*
9. *The cost of the process has been covered by the Government for the 2002/3 year and future years.*



Disposal of Fridges and Freezers

6.4 Progress on Implementation

- 6.4.1 It was clear in carrying out this review that the Environmental and Consumer Services team dealing with fridges and freezers are very positive and keen to deal with the mounting problems they face. This attitude will clearly be of benefit in finding solutions to these problems.
- 6.4.2 In order to keep the Committee informed of progress in implementing the recommendations within this report, it is recommended that the department report back on progress on a six monthly basis, following agreement of these recommendations at Council.

	Recommendation	Responsibility	Completion Date
R3	Progress towards achievement of these recommendations should be reported to the Local and Street Services Overview and Scrutiny Committee on a six-monthly basis until completed. The first report should be within six months of approval of these recommendations by Council.	Director of Environmental and Consumer Services	01 October 2003



Disposal of Fridges and Freezers

Appendix 1: Fridge and Freezer Disposals

		Bulky Waste - BCC Direct	PWD Sites	Total
2001/2	April	246	437	683
	May	207	514	721
	June	488	415	903
	July	246	505	751
	August	402	430	832
	September	146	434	580
	October	484	466	950
	November	465	448	913
	To 16 December	235	289	524
	From 17 December	289	445	734
	January	719	1,358	2,077
	February	1,180	1,319	2,499
	March	1,010	1,509	2,519
Total 2001/2		6,117	8,569	14,686
2002/3	April	1,273	1,679	2,952
	May	1,198	1,625	2,823
	June	891	1,539	2,430
	July	1,101	1,938	3,039
	August	2,242	2,074	4,316
	September	2,281	1,912	4,193
	October	1,095	1,182	2,277
Projected:				
2002/3	November	1,100	1,200	2,300
	December	1,100	1,200	2,300
	January	1,440	1,707	3,147
	February	1,440	1,707	3,147
	March	1,440	1,707	3,147
Forecast End of Year Position 2002/3		16,601	19,470	36,071
Monthly Average		1,383	1,623	3,006
Fig. 3: Numbers of Fridges / Freezers Disposed Of				
<i>Source: Environmental and Consumer Services</i>				



Disposal of Fridges and Freezers

	Total Units	LFP Costs	EMR Costs	Total Month Cost
2001/2 April	683	£2,732		£2,732
May	721	£2,884		£2,884
June	903	£3,612		£3,612
July	751	£3,004		£3,004
August	832	£3,328		£3,328
September	580	£2,320		£2,320
October	950	£3,800		£3,800
November	913	£3,652		£3,652
To 16 December	524	£2,096		£2,096
From 17 December	734	£3,625	£14,937	£18,562
January	2,077	£10,258	£42,267	£52,525
February	2,499	£12,343	£50,855	£63,197
March	2,519	£12,441	£51,262	£63,703
Total 2001/2	14,686	£66,095	£159,320	£225,416
2002/3 April	2,952	£14,580	£60,073	£74,653
May	2,823	£13,943	£57,448	£71,391
June	2,430	£12,002	£49,451	£61,452
July	3,039	£15,010	£61,844	£76,853
August	4,316	£21,317	£87,831	£109,147
September	4,193	£20,709	£85,328	£106,037
October	2,277	£11,246	£46,337	£57,583
Projected:				
2002/3 November	2,300	£11,360	£46,805	£58,165
December	2,300	£11,360	£46,805	£58,165
January	3,147	£10,385	£41,540	£51,926
February	3,147	£10,385	£41,540	£51,926
March	3,147	£10,385	£41,540	£51,926
Forecast End of Year Position 2002/3	36,071	£162,681	£666,542	£829,223
Monthly Average	3,006	£13,557	£55,545	£69,102

Fig. 4: Costs of Disposal, 2001-3

Source: Environmental and Consumer Services

The information in Fig. 4 and 5 is based upon the audited numbers of disposals for which the Council is invoiced by Tyseley Waste Disposal / EMR and LFP.