

Comparing the costs of alternative waste treatment options



WRAP's eleventh gate fees report analyses the gate fees charged for a range of waste treatment, recovery and disposal options as reported by local authorities. In addition, gate fees are supplied by organic facility operators for both local authority, and commercial and industrial waste sources.

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Executive summary

This report summarises the findings of WRAP's eleventh annual gate fee survey. The survey covers gate fees charged to local authorities in the UK for a range of municipal waste recycling, recovery, treatment and disposal options, for the calendar year 2017. Some commercial gate fees are also reported, which have been provided by organic waste treatment facilities.

The aim of this report is to increase price transparency and, by improving the flow of information, improve efficiency in the waste management market. A lack of market information may reduce a local authority's ability to make informed decisions on waste management options. The publication of indicative gate fee information, such as this, should assist authorities in making better informed decisions regarding waste management options.

Summary gate fee data reported by local authorities from 2017 for a range of technology types are presented in Table 1. This year the survey coverage has changed slightly in that:

- Open air windrow was not included in the survey (as per last year), due the stability of this market over a number of years;
- Wood waste recycling and recovery was not included;
- Residual waste treatment processes, such as Mechanical Biological Treatment (MBT) and the manufacture of a refuse derived fuel (RDF) were also not included this year.

Table 1: Summary of the UK gate fees reported by local authorities, 2017 (£/tonnes)¹

Treatment	Materials / Type of facility / Grade	Median	Mode ²	Range ³	No of gate fees reported
MRF	All contracts (4 materials or more)	£22	£0 to £5	-£37 to £95	94
Organics	In-Vessel Composting (IVC) ⁴	£49	£45 to £50	£9 to £47	34
	Anaerobic Digestion (AD)	£26	£35 to £40	-£5 to £68	62
	All	£86	£85 to £90	£33 to £117	62
EfW ⁵	Pre-2000 facilities	£57	£55 to £60	£44 to £94	20
	Post-2000 facilities	£89	£85 to £90	£33 to £117	42
Landfill	Non-hazardous waste including landfill tax ⁶	£107	£106 to £111	£88 to £168	80
Lanum	Non-hazardous waste excluding landfill tax	£20	£20 to £25	£2 to £82	80

Some of the commercial gate fees as reported by organic operators are reported in Table 2 below. However it should be noted that the response rates of operators are low and therefore the sample sizes small, meaning these figures may not truly represent the

¹ All gate fees reported excluding haulage costs.

² Mode is the gate fee range (in £5 increments) which received the most responses in the survey data.

³ Range lists simply the ranges between the maximum and minimum data points in the survey data collected.

⁴ IVC gate fee is for mixed food and green waste.

⁵ Incineration with energy recovery.

⁶ The standard rate of landfill tax for 2017/18 is £86.10 /tonne.

market. Limited results for each material type are also presented due to the limited number of responses.

Table 2: Summary of commercial gate fees provided by operators, 2017 (£/tonne)

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Eacility type	Cata foo tyma	No. of gate	Gate fee (£/tonne)		
Facility type	Gate fee type	fees	Median	Range	
IVC – all waste streams*	Overall	19	£35	£19 to £65	
AD – all waste streams*	Contract	54 (2 negative)#	£11	-£13 to £60	
	Spot	30 (2 negative)#	£15	-£15 to £60	

^{*} Note: 'All waste streams' refers to the multiple ways waste can be presented, mainly mixed organics, or separate green or food waste, but also whether package or presented in plastic or biodegradable bags.

Introduction

Data gathering for this gate fee survey was conducted in December 2017 and January 2018, collecting data for the calendar year 2017. The survey targeted three main stakeholder groups: local authorities (including unitary, waste collection and waste disposal authorities); private sector operators of waste management facilities; and senior managers of large waste management companies operating within the UK market.

The pricing of municipal waste management services can be complex. In providing summary gate fee information (as in this report) other factors relating to the provision and operation of waste management services, which may also be important to a local authority, are not addressed. Users of the gate fee information in this report should be aware of the following:

- Not all waste management services are costed or charged on a simple gate fee basis (£/tonne). In some cases a tonnage-related payment is just one element of a wider unitary charge⁷ paid by an authority. For many authorities it is not appropriate, or practicable, to isolate a pro-rata cost per tonne for a facility that may form just part of a broader integrated service provision. As a consequence, only services for which it has been possible to identify a gate fee (£/tonne) are included within this report.
- The gate fee information for individual treatment options may not be directly applicable in instances where multiple services are being procured, for example, a service that includes collection together with EfW (every effort is made to eliminate such responses from the sample).
- Contract terms, risk allocations and performance guarantees may vary significantly between different authorities' contracts, even in instances where the same technology is being utilised. Such differences could have a significant impact on the associated gate fees.
- A significant proportion of municipal waste management services are delivered under medium to long-term contracts. Gate fees for such historic long-term contracts are included in the survey sample but may not be reflective of the current market.

⁷ For an integrated or PFI infrastructure waste services contract, the private sector contractor can bundle the payments for a variety of waste management services (including potentially the initial capital spend and the ongoing maintenance and operation cost for associated waste management facilities) into a single ('unitary') charge to the local authority customer, rather than charging individual gate fees for each individual service.

[#] Note: negative gate fees mean a payment is made to the waste supplier.

- However, where reasonable samples were available the gate fees associated with more recent contracts have been separately reported.
- Year on year changes in gate fees may reflect sampling variation. For instance, of the 213 local authorities responding in 2017, 157 also responded to the 2016 survey (74%), but 56 did not, meaning they are unique respondents to the 2017 survey. This difference in samples needs to be considered when comparing the 2017 survey to those reported last year.
- Gate fees in this report are presented in nominal terms with no adjustment for inflation.

Key Findings

The key findings in this year's survey are as follows for the UK:

Materials Recovery Facilities (MRF)

- The upward trend in MRF gate fees reported last year appears to be continuing. The median MRF gate fee for contracts sorting 4 or more materials is £22/tonne, compared to £15/tonne last year. This year, 16% (14) of local authority respondents⁸ report not paying a gate fee for MRF services i.e. a zero or negative gate fee, in comparison to 21% (20) last year and 28% (30) in 2015. For contracts signed in 2017, the median gate fee is £35/tonne, compared to £29/tonne last year.
- Of the authorities supplying responses, 64% (75) report a change in gate fee in 2017 (59% in 2016), with 19 (23 in 2016) reporting a decrease and 39 (25 in 2016) an increase in gate fee, again suggesting a tendency to an increase in gate fees between 2016 and 2017. Of those reporting a change in gate fee and providing a reason, 7% report the signing of a new contract, 12% report fee change as result of a regular contractual review, 37% changes in commodity prices (of which 29% as part of a contractual monthly or quarterly review), 7% a change in the level of contamination, 4% as a result of both commodity pricing and contamination changes, and 30% contractual indexation to the retail prices index (RPI) increases (3% gave no explanation).
- Interviews with five large waste contractors and a single dedicated MRF operator for this survey (in January and February 2018) emphasised the impact of the Chinese restrictions on recyclate imports, reflected in commodity price movements during the year and upward pressure on MRF gate fees. Companies interviewed report that MRF gate fees currently (Q4 2017 Q1 2018) are higher than the survey median, typically £35/tonne reflecting the current survey's reported gate fees for new contracts. Those interviewed expect upward pressure on gate fees throughout 2018, stabilising (maybe £5 higher than at the start of the year) by the end of 2018.

In-Vessel Composting (IVC)

• The median IVC gate fee for all types of municipal feedstock (i.e. mixed organics, or green or food waste presented separately) being sent to IVC facilities is £46/tonne, which is a £3 increase in the gate fee reported last year. The median gate fee for mixed food and green waste, the most common feedstock type sent to IVC facilities, has also increased by £3/tonne since last year, to £49/tonne compared to £46/tonne. Separate food waste is the most expensive at £61/tonne (an increase from

⁸ Local authorities running their own waste management facilities (i.e. not paying a gate fee reflecting market conditions) have been excluded from the data

£55/tonne), and green waste the least at £31/tonne (an increase from £29/tonne). The median for municipal mixed food and green waste cited by the operators, is similar to the local authorities at £50/tonne, and green waste is slightly lower at £27/tonne.

- The majority (83%) of local authorities sending waste to IVC facilities do so under contract and are therefore likely to be reporting historic contract gate fees, which may explain why there are some differences between gate fees cited by local authorities and the operators. Waste contractors also said they expect IVC gate fees to have remained somewhat stable (in real terms i.e. in line with inflation), primarily due to the impact of long term contracts.
- Approximately 40% of authorities said their gate fees had changed in the last 12 months, with all being small increases, and the vast majority (70%) citing inflation/indexation as the reason.

Anaerobic Digestion (AD)

- The downward trend of the last few years in AD gate fees appears to be continuing. The median AD gate fee reported by local authorities for 2017 is £26/tonne, which is slightly lower than the £29/tonne gate fee from last year's survey. Contracts which were reported to have started before 2014 had a median gate fee of £42/tonne. This decreased to those starting in 2016 reporting having a median gate fee of £13/tonne. Those which started in 2017 have a median gate fee of £40/tonne but four of the seven contracts were in Scotland and Wales, which is probably a reflection of the very different markets in these countries in comparison to England. This demonstrates that the picture is still regional, with some areas with stable gate fees and others in decline.
- For England, the pattern over the last four years has been of steady decline with £35/tonne in 2014/15, £30/tonne in 2015/16, £26/tonne last year, to the current £23/tonne. However, the 2017 median gate fee for local authority generated food waste reported by facility operators is substantially lower than that reported by local authorities themselves at £7/tonne. This is likely to be a more representative reflection of the current market. The median gate fee in London has remained the same as last year at £26/tonne, although the majority of these contracts were signed in 2014, and two authorities report renewals in 2018. The median gate fee in Wales remains fairly similar to last year at £49/tonne (£50/tonne last year) which perhaps reflects the fact that a high proportion of the contracts in Wales are long-term PFI contracts which is helping to maintain the prices.
- In many parts of the UK, historic prices paid by local authorities do not reflect the fall
 in current commercial pricing. Commercial contract and spot median gate fees
 reported by the operators stand at £11 and £15/tonne respectively. Waste
 contractors said that England is undergoing a period of consolidation which may risk
 reducing capacity and result in stabilised gate fees.

Energy from Waste Facilities (EfW)

- This year, reported median gate fee for incineration with energy recovery (EfW) is £86/tonne compared to £83/tonne last year. For pre-2000 EfW facilities, the median gate fee is £57/tonne, compared to £56/tonne last year. For post-2000 facilities, median gate fee is £89/tonne compared, compared to £91/tonne last year. Three authorities reported new contracts in 2017 for post-2000 facilities with a median gate fee of £91/tonne.
- Commercial prices of £90-£100/tonne are reported, depending upon the local competitive position.

Non-hazardous landfill

- After last year's increase (from £19 to £22/tonne), overall UK gate fees have actually seen a slight decrease to £20/tonne (exclusive of landfill tax). However, variability across the UK is increasing with a range of £2 to £82/tonne. Landfill gate fees vary regionally, depending upon the availability of capacity locally and of alternative options such as EfW or ports for RDF export.
- Local authorities and waste contractors expect to see increases in landfill gate fees in future years as available landfill capacity reduces.

Detailed Summary

Materials Recovery Facilities (MRF)

- The median MRF gate fee (for MRF contracts which sort 4 materials or more) is £22/tonne (based on 94 responses from local authorities), up from a median of £15/tonne last year.
- Only 16% of local authority respondents report not paying a gate fee for MRF services i.e. a zero or negative gate fee, in comparison to 20% (20) last year and 28% (30) in 2015.
- The local authority gate fees reported include historic data (long term contracts) therefore the median may not necessarily reflect the current market. For contracts signed in 2017, the median MRF gate fee has increased to £35/tonne (9 reported contracts started in 2017) from a low point of -£19/tonne in 2013/14.
- Of the 117 authorities supplying responses, 64%(75) reported a change in gate fee in 2017 (59% in 2016), with 19 (23 in 2016) reporting a decrease and 39 (25 in 2016) an increase in gate fees, again suggesting some hardening in gate fees between 2016 and 2017. Of those reporting a change in gate fee and providing a reason, 5 (7%) report the signing of a new contract, 9 (12%) report fee change as result of a regular contractual review, 6 (8%) changes in commodity prices (with an additional 22 (29%) as part of a contractual monthly or quarterly review), 5 (7%) a change in the level of contamination, 3 (4%) as a result of both commodity pricing and contamination changes and 23 (30%) contractual RPI increases. Two authorities (5%) gave no explanation.
- Most gate fees reported ranged from £0 to £5/tonne (i.e. the mode); the full range of responses was from -£37 to £95, narrower than last year (-£77 to +£90). Reported gate fees are influenced by a wide range of factors including material mix, contract length and age, contractual pricing mechanism, annual tonnage, MRF technology employed, and the degree of risk share between the authority and contractor.
- Analysing median gate fee and gate fee range per UK nation (plus London) shows
 Wales and Northern Ireland experiencing higher median gate fees and minimum gate
 fees than England, potentially due to relative market size. This corroborates trends
 seen in previous years.
- Reported contract length covers a wide range, although the majority (51% of responses) are short term i.e. 5 years or less, with 28% between 6 and 10 years. Nevertheless, there are some long term contracts reported with 14% of responses giving contract lengths over 20 years. There seems to have been a slight move from short term (63% last year reducing to 51%) to medium term contracts (19% last increasing to 28% this year), with the proportion of long term contracts remaining at 14%.
- In 2015's survey, significant drops in the value of key recyclate types were cited as instrumental in an overall increase in gate fees to a median of £25/tonne; in 2016 commodity prices recovered somewhat from an end of 2015 minimum resulting in a lower overall gate fee of £15/tonne. For 2017, from WRAP data, price changes for key material types from December 2016 to December 2017 show continued increases in materials such as +63% for mixed cans, +33% for glass and +25% for plastic bottles, with some plastics (-20% to -44%) and card (-29%) showing significant decreases over the same period.
- Of the 123 respondents expressing an opinion, 102 (84% v 66% last year) expect gate fees to increase in the future. Of factors which local authorities report as influencing MRF gate fees, commodity prices, input material quality and operating

- costs, in rank order, are deemed those having most impact on gate fees now and in the future, the same as in last year's survey.
- In recent years, waste management contractor interviews have highlighted that MRF gate fees would continue to fluctuate year-on-year, dictated by changes in commodity prices. This is certainly the case for 2017 too. In 2017, the interviews of six contractors emphasised the impact of the Chinese restrictions on recyclate imports, reflected in movements of prices for paper and plastics during the year which resulted in upward pressure on MRF prices. Companies interviewed report that prices currently are higher than the survey median, typically £35/tonne reflecting the survey 2017 new contract prices (maybe +£10/t for streams including glass). Operators are looking for alternative markets for separated materials but this is a long-term issue. The companies interviewed expect upward pressure on MRF gate fees throughout 2018, stabilising (maybe £5 higher than at the start of the year) by the end of 2018.

Table 3: Summary of MRF gate fees reported by local authorities by nation (and London) (2017) (£/tonne)

Country/Region	Median	Mode	Range	Number of gate fees
UK Contracts started in 2017	£35	£35 to £40	£9 to £47	9
UK	£22	£0 to £5	-£37 to £95	94
England (incl. London)	£13	£0 to £5	-£37 to £65	66
London	£43	£45 to £50	-£7 to £54	8
Wales	£52	N/A	£14 to £78	7
Northern Ireland	£43	£35 to £40	-£11 to £68	11

In-Vessel Composting (IVC)

- The median for all types of municipal feedstock being sent to IVC facilities is £46/tonne, which is a £3 increase in the gate fee reported last year.
- The median gate fee for mixed food and green waste for the UK, the most common feedstock type sent to IVC facilities, has also increased by £3/tonne since last year, to £49/tonne compared to £46/tonne. Separately collected food waste is the most expensive at £61/tonne (increased by £55/tonne), and green waste the least at and £31/tonne (also increased from £29/tonne).
- For food waste the operators survey median was £44/tonne, which is significantly lower than that cited by local authorities which was £61/tonne. Both have increased since last year with operators reporting £39/tonne last year. Regional differences in policy and legislation may impact the market for food waste e.g. the Waste (Scotland) Regulations 2012 boost food waste collections, and data from Wales has not been able to be reported separately this year due to low response rates, reflecting that Welsh authorities are following the Welsh Government Collection Blueprint and collecting food separately and green waste separately.
- Operators also report an increase in mixed food and green waste gate fees since last year. The median is similar to the local authorities at £50/tonne, and green waste is slightly lower at £27/tonne.

- The discrepancy between separately collected food and green waste gate fees specified by local authorities and operators may be due to local authorities reporting contract gate fees which have been agreed a number of years ago. The analysis shows that 83% of the authorities report sending material to an IVC facility under a contract. Median gate fees for contracts started in 2017 were reported at £46/tonne, compared to £36/tonne for those started in 2016.
- Approximately 40% of the authorities said that their gate fees had changed in the last 12 months, with all being increases, and the vast majority (70%) citing inflation/indexation as the reason.
- The waste contractor interviews suggested that IVC gate fees have remained somewhat stable (i.e. in line with inflation) as mainly their operation is based on long term municipal contracts. This disagrees to some extent with the results from the survey. Contract start dates reported by the local authority respondents have shown 23 new contracts signed in the last 3 years, and that 55% of reported contracts have a term of 5 years or less, suggesting there is more churn in the market than the operator interviews indicate.
- The median of all commercial gate fees (based on a very small sample of only 19 data points) is £35/tonne, which is a decrease on last year's £44/tonne.

Table 4: Summary of IVC gate fees reported by local authorities by waste type (2017) (\pounds /tonne) for UK

Waste Type	Median	Mode	Range	Responses
All materials	£46	£55 to £60	£9 to £73	62
Mixed food &	£49	£45 to £50	£28 to £63	34
green waste				
Food waste only	£61	£60 to £65	£18 to £73	7
Green waste	£31	£25 to £30	£9 to £61	20
only				

Anaerobic Digestion (AD)

- The median AD gate fee for 2017 is £26/tonne, which is slightly lower than the £29/gate fee in last year's survey. The range is similarly large as last year, with three local authorities citing an income or £0/tonne gate fee for their food waste.
- For England, the pattern over the last four years has been of steady decline with median gate fees of £35/tonne in 2014/15, £30/tonne in 2015/16, £26/tonne last year, and this year £23/tonne and the range has widened with the lowest gate fees dropping below £0/tonne. The median gate fee paid by local authorities in London has remained the same as last year at £26/tonne, although operator interviews suggest this does not reflect significantly lower current market prices. However, the majority of these contracts were signed in 2014 when market prices were higher and two authorities' contracts are up for renewal in 2018.
- The median gate fee in Wales remains fairly similar to last year at £49/tonne (£50/tonne last year) and the range also has remained virtually the same (£14 to £62/tonne compared to £14 to £65/tonne). This is perhaps reflective of that fact that a high proportion of the contracts in Wales are long-term PFI contracts which is helping to maintain the prices in Wales.
- Contracts which were reported to have started before 2014 had a median gate fee of £42/tonne. This decreased until those starting in 2016 reported having a median gate fee of £13/tonne. This trend changed with contracts starting in 2017 having a

- median gate fee of £40/tonne. However it should be noted, that four of the seven contracts which started in 2017 were in Scotland and Wales, which is probably a reflection of the very different markets in these countries in comparison to England.
- The 2017 median gate fee for local authority generated food waste reported by facility operators is substantially lower than that reported by local authorities themselves at £7/tonne. This is likely to be a more representative reflection of the current market, particularly in England.
- In many parts of the UK, historic prices paid by local authorities do not reflect the fall in current commercial pricing. Commercial contract and spot median gate fees reported by the operators stand at £11 and £15/tonne respectively (compared to £25 and £10/tonne last year).
- Waste contractors continue to point to a decline in gate fees, although perhaps less steep decreases than last year. The picture is very regional depending on local supply and demand. Low prices (sub £10/tonne) reflect competitive markets in areas such as London, the South West and West Midlands. Higher prices in Wales reflect the long term PFI contracts which were established when market gate fees were higher.
- Some of the contractors suggested that the English market was going through a
 period of consolidation and that there was a risk smaller operators may have to close,
 which would have an inverse effect on the gate fees due to a reduction of available
 capacity.

Table 5: Summary of Anaerobic Digestion facility gate fees reported by local authorities*

(£/tonne) by nation (and London)

(2) come, 2) nation (and 20110011)	Median	Mode	Range	Number of gate fees
UK	£26	£35 to £40	-£5 to £68	62
England (incl. London)	£23	£25 to £30	-£5 to £68	43
London	£49	£60 to £65	£15 to £62	10
Wales	£35	£35 to £40	£13 to £43	9
Commercial & industrial food waste prices (UK)*	£11	Not calculated	-£13 to £60	54

^{*} Note: commercial & industrial prices provided by operators

Energy from Waste Facilities (EfW)

- As in previous years, results are reported for the UK as a whole, segregating results for facilities built before and after 2000.
- This year, the overall median gate fee reported by local authorities for EfW (incineration with energy recovery) is £86/tonne compared to £83/tonne last year.
- For pre-2000 EfW facilities, the median gate fee is £57/tonne, compared to £56/tonne last year. For post-2000 facilities, median gate fee is £89/tonne, compared to £91/tonne last year.
- Looking at trends in gate fees over time, the pre-2000 gate fee has consistently hovered around £60/tonne. Only one authority reported a new contract with pre-2000 facility in 2017. For post-2000 facilities, median gate fees appear to have peaked at £100/tonne in 2014/15 showing a slow downward trend since then. This

year 3 authorities reported new contracts with post-2000 facilities, with median gate fee £91/tonne.

- Based upon the responses to this survey, in the period 2013 to 2017, a total of 36 new contracts are reported to have started. For pre-2000 facilities, new contracts are being signed at gate fees significantly above the overall median gate fee (£85/tonne compared to the overall median of £57/tonne) suggesting an upward trend in pricing for new contracts. For post-2000 facilities, new contracts are being signed with gate fees slightly lower than the median and range of all contracts reported for this type of facility.
- The range in reported gate fees is broad at £33 to £117 (£85-90 mode range). This is because there is a significant range of contractual and funding factors which can have an influence on gate fee charged including mode of financing (PFI/PPP or prudential borrowing), whether the asset reverts to the local authority or not, contract length, and whether the authority made a capital contribution. Operators reported that contracts are getting more sophisticated and more unique, therefore making it difficult to compare individual gate fee figures.
- Discussions with the waste management contractors confirmed that for contracted customers such as local authorities, gate fee figures of £80-90/tonne are usual, with commercial prices for commercial customers (with short contracts or spot prices) of £90-£100. Although commercial facilities are starting to be built, commercial spot prices depend to a large extent on the availability of capacity at municipal EfWs, local landfill gate fees and the proximity to ports for RDF export. Spot prices of up to £100/tonne are being quoted, but this varies regionally depending on other available options. It is expected generally that commercial prices will increase as landfill capacity disappears. Another influence is the price of energy recovery capacity abroad. RDF export prices are going up due to a variety of influences including weak Sterling and the lack of free capacity in the Netherlands. This has been sending spot RDF export prices up towards £100/tonne.

Table 6: Summary of Energy from Waste (Incineration with energy recovery) gate fees

reported by local authorities 2017 (£/tonne)

Type of facility	Median	Mode	Range	Number of gate fees
All	£86	£85 to £90	£33 to £117	62
Pre-year 2000	£57	£55 to £60	£44 to £94	20
Post-year 2000	£89	£85 to £90	£33 to £117	42

Non-hazardous landfill

- Across the UK the median landfill gate fee reported by local authorities is £20/tonne, ranging from £2 to £82/tonne, and mode of £10 to £15/tonne. This is a decrease on last year's median of £22/tonne. However, variability of the gate fees around this median is getting larger, which is mirrored by the fact the median does not fall within the modal range.
- Gate fees are highest in Wales (which has increased from £26 to £32/tonne since last year) and lowest in Northern Ireland at £13/tonne.

- There are regional differences in England, with the lowest gate fees seen in Yorkshire and the East of England, both at £13/tonne.
- Local authorities and waste contractors expect to see increases in landfill gate fees, due to an increasing lack of available capacity.

Table 7: Summary of landfill gate fees reported by local authorities by nation (£/tonne)

	Median	Mode	Range	Number of	Median
	Median	Mode	Kalige		2016
				gate fees	
UK	£107	£96 to £101	£88 to £168	80	£107
(including					
£86.10					
landfill tax,					
2017/18 tax					
•					
year)					
UK	£20	£10 to £15	£2 to £82	80	£22
(excluding					
landfill tax)					
England	£22	£20 to £25	£2 to £50	54	£23
(incl.			22 (0 200	3 .	
London)					
-				_	20.5
Wales	£32	£45 to £50	£2 to £48	4	£26
Northern	£13	£5 to £10	£8 to £52	4	£12
Ireland					

