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WEEE COMPLIANCE FEE METHODOLOGY

PROPOSED METHODOLOGY FOR THE CALCULATION OF A
COMPLIANCE FEE IN RELATION TO THE WASTE ELECTRONIC AND
ELECTRICAL EQUIPMENT REGULATIONS 2013

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Glossary

Term	Definition
AATF	Approved Authorised Treatment Facility
BIS	Department for Business, Innovation & Skills
Defra	Department for the Environment, Food and Rural Affairs
EEE	Electrical and Electronic Equipment
Fee	The compliance fee
Fee Escalator	The mechanism by which a greater shortfall versus a PCS's collection target leads to a greater uplift to the Fee's cost per tonne
FTI Consulting	FTI Consulting LLP
GBP	British pounds
JTA	Joint Trade Associations Group (Producer Responsibility)
LA	Local Authority
LA-DCF	Local Authority Designated Collection Facility
PBS	PCS Balancing System
POM	Put on Market
POPs	Persistent organic pollutants
PCS	Producer Compliance Scheme
WEEE	Waste Electrical and Electronic Equipment
WEEE Regulations	Waste Electrical and Electronic Equipment Regulations 2013

1. Introduction

Purpose of this report

- 1.1 This report has been prepared by FTI Consulting LLP (“FTI Consulting”) for the Joint Trade Associations (“JTA”). It sets out a proposed calculation methodology for the compliance fee (the “Fee”) in accordance with Regulation 76 of the Waste Electrical and Electronic Equipment Regulations 2013 (as amended) (“WEEE Regulations”) for the compliance year ending 31 December 2023.
- 1.2 We understand that this report will help inform the JTA’s proposal to the Department for the Environment, Food and Rural Affairs (“Defra”) for the Fee calculation methodology for the 2023 compliance year.
- 1.3 The restrictions and limitations on our work are set out in Appendix 1.

Instructions

- 1.4 FTI Consulting has been instructed by the JTA to:
 - (1) set out the objectives of the Fee and the criteria against which the proposed methodology should be assessed;
 - (2) review recent developments in the Waste Electrical and Electronic Equipment (“WEEE”) market and evidence on the effectiveness of the Fee methodology adopted in previous compliance years; and
 - (3) recommend the most appropriate Fee calculation methodology for 2023.

Sources of information

- 1.5 In preparing this report, we have relied on:
 - UK government publications relating to the WEEE Regulations, including guidance published at the time the WEEE Regulations were introduced;¹

¹ DEFRA (September 2022), Submit a proposal for a WEEE compliance fee methodology. <https://www.gov.uk/government/publications/weee-submit-a-proposal-for-a-compliance-fee-methodology/waste-electrical-and-electronic-equipment-weee-regulations-2013-guidance-on-submitting-proposals-for-a-weee-compliance-fee-methodology>

- data published by the Environment Agency;
- information from the recycling trade press; and
- discussions with JTA members concerning the WEEE market and operation of the Fee.

1.6 We identify where we have relied on this information throughout the report.

Structure of this report

- 1.7 In Section 2, we explain our understanding of the objectives of the Fee. We consider the history of the WEEE market, and what criteria should be used in assessing an appropriate Fee methodology.
- 1.8 In Section 3, we summarise our understanding of developments in the WEEE market in 2023, which might affect the appropriate Fee methodology.
- 1.9 In Section 4, we set out a proposed Fee methodology taking account of the issues discussed in sections 2 and 3.
- 1.10 In Section 5, we set out our proposed Fee formula for 2023.
- 1.11 In Appendix 1, we explain the restrictions and limitations in producing this report.
- 1.12 In Appendix 2, we summarise the development of the Fee methodology and its rationale since the introduction of the WEEE Regulations.
- 1.13 In Appendix 3, we set out worked examples of the proposed Fee methodology in use.

2. Objectives of the WEEE compliance fee

Introduction

- 2.1 In this section we set out our understanding of the history of the WEEE market, Defra guidance on the Fee methodology, and the criteria against which we consider the Fee methodology should be assessed.

History of the WEEE market

- 2.2 The previous WEEE Regulations were introduced in 2007, in response to EU Directive 2002/96/EU. Under these regulations, producers of Electrical and Electronic Equipment (“EEE”) were required to finance the collection, treatment, recovery and environmentally-sound disposal of WEEE. Producers were required to join a Producer Compliance Scheme (“PCS”) which would be responsible for organising the recycling of WEEE on their behalf. PCSs collected evidence notes showing the amount of WEEE collection and treatment they had financed.
- 2.3 Under these regulations, each PCS was responsible for financing the treatment of a percentage of household WEEE reported in each category. Each PCS’s percentages were set by reference to the EEE intended for private households that was put on the UK market by its members in the year. As a result, no PCS knew its recycling obligations until the end of the year.
- 2.4 Collectors of WEEE were free to make arrangements with any PCS, regardless of whether the PCS required the WEEE to meet its recycling obligations, and the requirement for a PCS to finance its share of all WEEE arising in a year resulted in a significant amount of “trading” of evidence notes between PCSs. Historically, some PCSs were consistent “over-collectors”, and others were consistent “under-collectors”.
- 2.5 Demand for evidence notes was inelastic, due to high penalties for non-compliance. This mechanism had the following undesirable consequences:
- (1) PCSs with a shortage could be forced to pay extremely high prices for evidence notes on the secondary market, as there was no alternative method of compliance;
 - (2) if any PCS had a surplus of evidence notes, it was guaranteed that another PCS would face a shortfall;

- (3) there was no incentive for a PCS with a surplus to attract new producers with lower fees;
 - (4) there was limited incentive for WEEE collectors and PCSs to operate efficiently and keep costs down, as they were guaranteed to sell all their evidence notes at prices that could bear little or no relation to the true cost of treatment; and
 - (5) for certain positive value streams, PCSs could profit from both the collection of materials and the sale of evidence notes. There was consequently an additional incentive for PCSs to collect more than their own obligation of such WEEE streams to maximise their profits.
- 2.6 In December 2013, the UK Government laid the 2013 WEEE Regulations. These regulations transposed the recast Directive 2012/19/EU and came into effect in January 2014.
- 2.7 Under the 2013 WEEE Regulations, collection targets for household WEEE in tonnes are set for fourteen EEE categories. Each PCS is given a collection target for each category for each compliance year. This target is determined based on the amount of EEE in each category that was put on the market by the PCS's members in the previous year, and other factors determined by Defra.
- 2.8 Regulation 28 of the 2013 WEEE Regulations sets out the responsibilities of PCSs for financing the handling of household WEEE. Under Regulation 33, a PCS may choose to pay a Fee to meet its collection target, where one is set. This prevents the enforced purchase of WEEE evidence notes by PCSs through the secondary market as the only means of achieving compliance. It also works in the event that the UK, despite collecting and treating all WEEE available, falls short of its overall PCS aggregated target, by ensuring all producers still fulfil their financing obligation.
- 2.9 In each compliance period, the Secretary of State may approve a methodology for the calculation of the Fee.

The Fee methodology

- 2.10 The most recent Defra guidance on Fee design proposals was published in September 2022 and specifies:²
- “Proposed methodology for the calculation of the fee:*
- Set out a methodology to calculate a compliance fee across each WEEE collection stream. The calculation should encourage schemes to take all reasonable steps to meet their collection target without recourse to the compliance fee.”*
- 2.11 The UK primarily uses the Local Authority Designated Collection Facilities (“LA-DCF”) network to establish a national network of “public collection points” for consumers, supplemented by one-for-one takeback obligations for most retailers of EEE operating physical stores. There is an implicit objective in the WEEE Regulations to incentivise the collection of WEEE from LA-DCFs.
- 2.12 This is reinforced by Regulation 34 of the WEEE Regulations.³ If a Local Authority (“LA”) requests the collection of WEEE by a PCS, that PCS is obliged to organise collection regardless of the location of the LA-DCF. PCSs may not refuse these collections, irrespective of the cost to them, or whether they have met (or will meet) their collection target without this additional WEEE. PCSs are however able to share the burden of Regulation 34 requests through the PCS Balancing System (“PBS”).

Criteria for assessing the Fee methodology

- 2.13 In this section, we set out the criteria that we consider should be fulfilled by the methodology for setting the Fee. Taking into account the objectives of the Fee and economic incentives of PCSs, we identify the following criteria:
- (1) effectiveness;
 - (2) cost reflectivity;
 - (3) transparency;

² DEFRA (September 2022), Submit a proposal for a WEEE compliance fee methodology. (<https://www.gov.uk/government/publications/weee-submit-a-proposal-for-a-compliance-fee-methodology/waste-electrical-and-electronic-equipment-weee-regulations-2013-guidance-on-submitting-proposals-for-a-weee-compliance-fee-methodology>)

³ Under which LAs have an automatic right of uplift of WEEE for their DCFs.

- (4) reasonableness;
- (5) feasibility;
- (6) robustness; and
- (7) competition issues.

2.14 We explain each below.

Effectiveness

2.15 Under the WEEE Regulations, paying the Fee is a legitimate form of compliance. However, the WEEE Regulations contain an implicit objective to incentivise the collection of WEEE from LA-DCFs. The Fee should therefore be set such that PCSs are always incentivised to collect WEEE directly where it has been made available to them at a reasonable cost. It is an explicit objective in the WEEE Regulations for the fee to be stream specific, so as to account for the different costs of different streams.⁴

2.16 For the Fee to be ‘effective’ in this respect, it must be set higher than or equal to the incremental cost of collecting WEEE. It may also be appropriate to increase the Fee for PCSs that fail to meet their collection targets by a significant extent, to further incentivise collection where possible.

2.17 Equally, the existence of a compliance fee should discourage individual PCSs from intentionally collecting WEEE above their targets (independent of the overall level of UK collections). To be effective, the Fee must be set at a level which encourages collection, but not to encourage intentional over-collection by individual PCSs. Such intentional over-collection could distort the WEEE market.

Cost reflectivity

2.18 The “effective” criterion could alone be met by setting the Fee to some arbitrary, excessively high figure. However, a Fee that is not cost reflective would risk incentivising similar market distortions as arose in the past, such as deliberate over-collection and excessive pricing on secondary markets, as well as influencing the prices charged by recyclers. To avoid this while maintaining effectiveness, the level of the Fee should be related to the additional costs PCSs would have incurred if they had met their target through collections. Hence, the basis for the Fee should be ‘cost reflective’.

⁴ WEEE Regulations, Regulation 76, paragraph (4); and DEFRA (September 2022), Submit a proposal for a WEEE compliance fee methodology.

- 2.19 In assessing the cost reflectiveness of the Fee, consideration will need to be given to several market factors:
- (1) variations in costs (and benefits) by source and by WEEE stream;
 - (2) PCS structure and accounting; and
 - (3) the relative scale of some PCSs and other collectors in certain categories.
- 2.20 A consequence of the 2013 WEEE Regulations is that PCSs and other collectors can over-collect positive net value WEEE to generate profit, whether or not they also gain from the sale of evidence to under-collecting PCSs. We consider that:
- (1) the Fee must be directly related to the true cost of directly collecting and treating WEEE;
 - (2) the Fee for positive net value streams should be set at zero; and
 - (3) the Fee must not be punitive in nature. If it were, PCSs could be incentivised to over-collect, particularly positive net value WEEE, as a way of forcing their competitors to pay the unduly high Fee.

Transparency

- 2.21 A clear and transparent calculation methodology that can be understood by all PCSs is preferable so that they can understand how their Fee has been calculated. A transparent methodology will make commercial decisions easier, and it could reinforce the efficacy of other criteria. For instance, if a method is transparent to PCSs, then it is more likely to be effective in incentivising desired behaviour.
- 2.22 Whilst ensuring transparency, consideration should also be given to maintaining commercial confidentiality. It is important for an appropriate balance to be struck between full transparency and the appropriate treatment of confidential data, the sharing of which could breach competition law.

Reasonableness

- 2.23 The administrative burden and cost of calculating the Fee must not be excessive. PCSs' administrative obligations, such as gathering and submitting data, should be proportionate and not unduly burdensome. The cost of calculating the Fee should be kept at a minimum.

Feasibility

- 2.24 The financial and other data needed to calculate and comply with the Fee must be available. A Fee mechanism that requires data that may not be available or reliable is unrealistic.

- 2.25 It should also be feasible to complete the calculation and administration of the Fee within a reasonable period of time, and certainly within any deadlines set within the WEEE Regulations.

Robustness

- 2.26 The Fee must be calculated in such a way that market participants are not able to manipulate the system. It should not be possible for a PCS to take any actions, including submitting intentionally misstated data, for their own advantage or to harm other PCSs.

Competition issues

- 2.27 The Fee should encourage and promote competition in the market for WEEE and should comply with competition law. In assessing the methodologies, we consider whether potential competition issues may arise, but we do not put forward any legal conclusions.

3. The WEEE market in 2023

Introduction

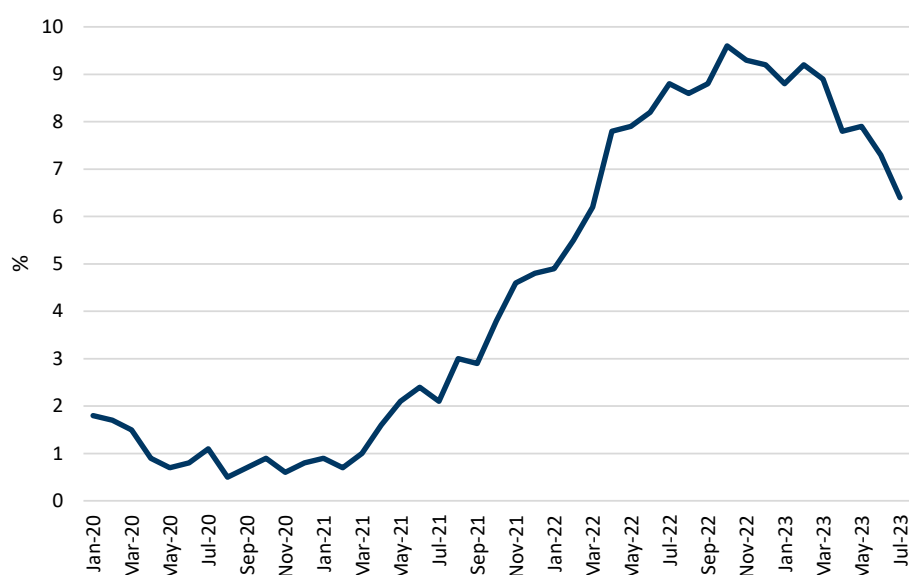
- 3.1 It is appropriate in determining the Fee for each compliance year to consider trends and other developments in the WEEE market and consider whether and how the Fee formula should be modified. Accordingly, we have:
- (1) obtained data and other evidence on WEEE market developments in 2023; and
 - (2) discussed with JTA members the developments they have observed in the WEEE market in 2023.
- 3.2 In this section, based on the data and evidence obtained from our discussions with the JTA, we summarise the following key market developments/issues that should be considered in the context of the Fee:
- (1) The UK economy (high inflation, increasing interest rates, and the cost of living crisis);
 - (2) PCSs not making collections from LA-DCFs;
 - (3) low levels of reuse within the WEEE system;
 - (4) increasing fragmentation of environmental policies amongst the four nations;
 - (5) increased concentration of WEEE in the hands of a small numbers of operators; and
 - (6) the significant increase in disposal of waste vapes.
- 3.3 We then summarise certain Q1 and Q2 2023 collection and EEE Put on Market (“POM”) data that we have been provided with by the JTA.
- 3.4 In summary, the biggest impact on the EEE and WEEE market in 2023 is the current state of the UK economy and the consequent cost of living crisis.

The UK economy (high inflation, increasing interest rates, and the cost of living crisis)

3.5 The UK economy is currently experiencing exceptionally high inflation rates, which at its peak of 9.6%, were the highest rates of inflation the UK has experienced for 40 years. As a reaction to these inflation rates, the Bank of England has sharply increased interest rates from 0.1% in 2021 to 5.25% in August 2023, the highest interest rates the UK has experienced for 15 years. Combined, these factors are putting UK households under considerable financial pressure, and this is feeding through into reduced EEE put on the market in 2023.

3.6 Figure 1 below shows UK annual inflation rates since January 2020.

Figure 1 – UK annual inflation rate (CPIH), January 2020 to July 2023



Source: Office for National Statistics.

3.7 Although inflation has begun to decrease, rates are still high. As at August 2023, the Bank of England forecasts that inflation will fall to 4.9% by Q4 2023.⁵ It is expected that inflation will remain above the 2% target until Q2 2025.

⁵ Bank of England, Monetary Policy Report, August 2023.
<https://www.bankofengland.co.uk/monetary-policy-report/2023/august-2023>

- 3.8 The Bank of England is using interest rates as a tool to bring inflation down to the 2% target. The effects of the Bank of England's increases in the base rate are passing through the UK economy. In particular, mortgage rates have increased, so as homeowners fixed rate mortgages come to an end, homeowners are having to renew at much higher interest rates. These higher mortgage rates are also impacting the rental market with landlords passing on these rate increases to tenants.
- 3.9 The Bank of England expects the base rate to peak at just over 6%, and average just under 5.5% over the next 3 years.⁶
- 3.10 The combined effect of high inflation and increasing interest rates has led to a well-reported cost of living crisis in the UK. UK households have seen a material decrease in their disposable income. The Office for Budget Responsibility is expecting real household disposable incomes to fall by 2.8% between April 2023 and April 2024 (on top of a 4.3% fall between April 2022 and April 2023).⁷
- 3.11 There are clear indications that high inflation and increasing interest rates are impacting the market for the supply of new EEE. As shown in Table 1 below the Q1 and Q2 EEE POM data shows that the impact is already material, with the tonnage of EEE placed on the market 5% down compared to the same period in 2022. If photovoltaic panel EEE is excluded (which is relevant if there are unique reasons why it has increased), the average reduction for all other categories is considerably higher at 9%.⁸

⁶ Bank of England, Monetary Policy Report, August 2023.
<https://www.bankofengland.co.uk/monetary-policy-report/2023/august-2023>

⁷ Office for Budget Responsibility, The outlook for household income and consumption, November 2022. <https://obr.uk/box/the-outlook-for-household-income-and-consumption>

⁸ $(697,109 - 66,714) / (734,116 - 44,649) - 1 = -8.6\%$

Table 1 – Total EEE placed on the market in Q1 and Q2 for 2023 compared to Q1 and Q2 2022, by category

Items	Q1 and Q2 2022	Q1 and Q2 2023	% change in EEE POM
Large Household Appliances	287,670	263,700	(8%)
Display Equipment	49,030	36,789	(25%)
Cooling Appliances Containing Refrigerants	103,886	99,132	(5%)
Gas Discharge Lamps and LED Light Sources	2,901	2,646	(9%)
Mixed WEEE	245,980	228,127	(7%)
Photovoltaic Panels	44,649	66,714	49%
Total	734,116	697,109	(5%)

Source: Environment Agency

- 3.12 We expect that continued high inflation and increasing interest rates means that EEE sales will not pick up in Q3 and Q4. Although not apparent in the UK data for Q1 and Q2, we expect that will also have a consequent impact on WEEE collections, particularly in those streams where new EEE usually results in WEEE arising.
- 3.13 Inflationary pressures, including from higher fuel prices, and energy costs, are not confined to consumers; these pressures are also impacting WEEE transport and treatment costs. There have been widespread reports of cost increases being passed on to PCSs during 2023.

PCSs not making collections from LA-DCFs

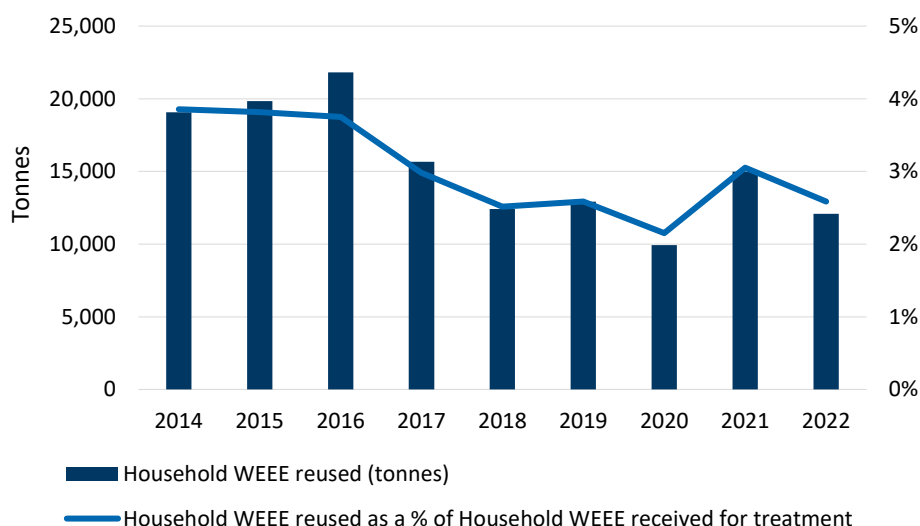
- 3.14 A continuing problem in the market is that a significant portion of PCSs do not collect from LA-DCFs, because such collections are often more expensive and PCSs receive no greater reward for undertaking them. We understand this continues to be the case in 2023, with fewer than 10 PCSs out of a total of 27 collecting from LA-DCFs.
- 3.15 Fee methodologies since 2017 have incorporated an adjustment for the source of WEEE which aimed to increase the incentive for PCSs to collect from LA-DCFs. We consider it necessary to continue to incentivise collections from LA-DCFs, so we have maintained this adjustment. This adjustment is explained in Appendix 2.

Low levels of reuse within the WEEE system

- 3.16 The increasing need for a sustainable economy has led to more of a focus on creating a circular economy. Consequently, there is a greater need to encourage reuse within the WEEE system.

- 3.17 Levels of reuse reported within the WEEE data have remained consistently low, as shown in Figure 2 below.

Figure 2 - Quantity of household WEEE reused, 2014 to 2022



Source: Environment Agency.

- 3.18 The data shows that the tonnage of household WEEE reused has decreased since 2016, both in tonnage and as a percentage of total WEEE received for treatment. Between 2017 and 2022 the amount of WEEE reused has remained roughly stable, at between 10,000 and 15,000 tonnes, or between 2% and 3% of total WEEE received for treatment.
- 3.19 In 2022, of the six WEEE streams that have a Fee, Display Equipment had the highest rate of reuse at 3.7%.⁹ There was no reuse in the Gas Discharge Lamps and LED Light Sources, and Photovoltaic Panels streams in 2022.
- 3.20 We understand that there are many valid reasons for low reported reuse levels, but that it is widely accepted that levels of reuse must improve.

⁹ Environment Agency
(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1160180/WEEE_received_at_an_approved_authorized_treatment_facility.pdf)

Increasing fragmentation of environmental policies amongst the four nations

- 3.21 We understand that environmental matters are devolved and as such, the four nations are, on occasions, choosing to implement policies and interpretations regarding WEEE, that differ quite fundamentally. Examples include the definition of when EEE becomes WEEE and managing WEEE containing Persistent Organic Pollutants (“POPs”). In the medium term, this is likely to make cross border waste movements more problematic, or distortive, as collectors seek to take advantage of policies/interpretations considered more favourable in different jurisdictions. This difference can affect the amount of WEEE arising, and also potentially cost.

Increased concentration of WEEE in the hands of a small numbers of operators

- 3.22 Whilst there has always been concentration of WEEE in the hands of certain collectors, we understand from the JTA that this has increased over the past several years. There are three principal reasons for this:
- (1) certain waste management companies control a significant proportion of LA-DCF WEEE;
 - (2) some distributors have control over a significant volume of WEEE that is returned to them; and
 - (3) vertical integration between PCSs and recyclers, and distributors and recyclers has become more common. That is, it has become more common for PCSs or distributors to own an Approved Authorised Treatment Facility (“AATF”).
- 3.23 This vertical integration could potentially distort the market for WEEE. This is because a PCS or distributor that controls a treatment facility can direct where that WEEE goes. The potential advantages of vertical integration for a PCS are that: (i) it can obtain WEEE more readily; and (ii) it can obtain WEEE more cheaply. Whereas, a PCS that is not vertically integrated may be forced to collect WEEE which is more costly to obtain in order to hit its target. Furthermore, a recycler that has access to an ‘in-house’ PCS can always ensure that any household WEEE it collects is obligated.
- 3.24 An example of a distributor that owns an AATF is AO.com,¹⁰ and an example of an AATF that owns a PCS is WasteCare.¹¹

¹⁰ Source: <https://www.letsrecycle.com/news/ao-recycling-million-fridges/>

¹¹ Source: <https://compliance.wastecare.co.uk/weee-compliance/>

Significant increase in disposal of waste vapes

- 3.25 We understand that during 2022 and 2023 there has been a material increase in the use and incorrect disposal of waste single use vapes.¹² This is causing significant pressures on the WEEE system because many vape producers are free-riders and prices from AATFs show that vape treatment is much more expensive than small mixed WEEE. As vapes are reported in category 7, there are no targets set specifically for them.
- 3.26 We understand that there is thought to be a significant number of vape producers that are not currently registered with a PCS either because they don't know they are EEE products or because they are choosing not to register. As a result, other producers in category 7 are taking a larger share of the cost of collecting and treating vapes. It could be deemed unfair that other category 7 producers are funding the high cost of collecting and treating these unique products, and if the vapes are arising in small mixed WEEE bins, all small mixed WEEE producers could be faced with higher costs. The increased costs caused by vapes are placing pressure on AATFs, PCSs, and some producers.

WEEE collection data

- 3.27 We have been provided with the data for WEEE collections by stream in Q1/2 2023, compared with the pro-rata 2023 targets. Although this data is only for two quarters and is not necessarily representative of the whole year, it is still indicative of whether streams are likely to reach their targets. Table 2 below shows this comparison:

¹² We understand that circumstantial evidence suggests that vapes are the cause of an increasing number of waste fires.

Table 2 – Total WEEE collection volumes 2023 to date, by stream (tonnes)

Items	Q1/Q2 2023	2023 target	Pro-rata 2023 target	% of pro- rata 2023 target
Large Household Appliances	82,867	164,250	82,125	101%
Display Equipment	21,668	41,237	20,619	105%
Cooling Appliances Containing Refrigerants	65,653	135,393	67,697	97%
Gas Discharge Lamps and LED Light Sources	2,068	4,145	2,073	100%
Mixed WEEE	67,042	126,615	63,308	106%
Photovoltaic Panels	161	302	151	107%
Total	239,458	471,942	235,971	101%

Sources: (1) Environment Agency for actual collections; and (2) Defra for collection targets.

- 3.28 This data shows that WEEE collections for all streams except cooling appliances and gas discharge lamps are projected to meet or exceed 2023 targets. Cooling appliances and gas discharge lamps are only slightly below target.

POM data

- 3.29 We have been provided with Household POM data, which is the amount of EEE placed on the market by producers, as published by the Environment Agency for Q1/2 2023, compared to prior year. This is summarised in Table 3 below.

Table 3 – EEE POM Q1/Q2 2023 compared to Q1/Q2 2022, by stream (tonnes)

Items	Q1/Q2 2022	Q1/Q2 2023	% change in EEE POM
Large Household Appliances	287,670	263,700	(8%)
Display Equipment	49,030	36,789	(25%)
Cooling Appliances Containing Refrigerants	103,886	99,132	(5%)
Gas Discharge Lamps and LED Light Sources	2,901	2,646	(9%)
Mixed WEEE	245,980	228,127	(7%)
Photovoltaic Panels	44,649	66,714	49%
Total	734,116	697,109	(5%)

Source: Environment Agency

- 3.30 This data shows that the total POM tonnages of all EEE streams are materially (5%) below the 2022 figures up to Q2. With the exception of photovoltaic panels, all streams have seen much less EEE POM than in 2022.

- 3.31 This is a strong indication that producers are now experiencing a downturn in sales. Taking into account the persistently high levels of inflation, it seems likely that this reduction in EEE POM will continue in the latter half of 2023. We understand from the JTA's informal discussions with producer members that they are consistent with this expectation.

Conclusion

- 3.32 Inflation and interest rates are having a material impact on disposable incomes of UK households, and this is expected to continue at least to the end of 2023.
- 3.33 The data shows that EEE tonnages placed on the market are significantly down on prior years. Informal discussions with JTA producers suggest this is due to the effect of inflation, interest rates, and the reduction in disposable incomes.
- 3.34 However, the reduced EEE POM has not to date fed through to WEEE collections, which are broadly on track to meet the 2023 collections targets.

4. Proposed Fee methodology for 2023

Introduction

- 4.1 We have considered the feedback and information we received from the JTA regarding the operation of the Fee in prior years and the WEEE market conditions for 2023. On that basis, we have considered possible adjustments and refinements to the Fee methodology.
- 4.2 Overall, despite the 2023 EEE data indicating there is a significant reduction when compared to 2022, WEEE collections in Q1 and Q2 are broadly in line with target so there is no compelling reason for seeing 2023 as a unique year for WEEE.
- 4.3 We therefore recommend that the methodology for calculating the 2023 Fee should be based on the formula used in previous years, but with one minor future focused adjustment, to signal the importance of increasing reported reuse within the WEEE system. We explain this adjustment below, before summarising the existing elements of the methodology.

Reuse adjustment premium

- 4.4 Reuse is becoming an increasingly important aspect of a sustainable economy, and the data shows that not only is WEEE reuse less than 3% of total WEEE collections, but also that the amount of WEEE reused has decreased since 2016, although remaining broadly stable since 2017. Given the low levels of WEEE reuse, that the amount of reuse is not increasing, and the need to promote a circular economy, we consider that it is necessary to economically incentivise PCSs to increase reuse via a “reuse adjustment premium” which should be applied to the 2023 Fee formula.
- 4.5 This premium will apply an uplift to the Fee for PCSs that do not obtain sufficient WEEE reuse evidence to reflect the proportion of WEEE reuse evidence a PCS has used to meet its target, compared to the national average of WEEE reuse evidence for that stream. The adjustment we propose is not symmetrical. That is, PCSs which reuse less than the average share of their WEEE pay a higher fee but, for those that reuse more than the average share do not receive a downward adjustment.

- 4.6 We consider that in 2023 the reuse adjustment premium should have only a marginal impact on the compliance fee payable, but that this should signal to PCSs that in future years, the premium may have more prominence in the calculation, subject to Defra's criteria for submission of a compliance fee methodology and an assessment of the robustness of the WEEE reuse market in subsequent years. For this reason, as explained in Section 5, we have set a coefficient of '1' to the premium, but suggest that in future years this coefficient can be increased to increase the incentive for PCSs to reuse WEEE.
- 4.7 Applying our proposed formula, the highest possible reuse adjustment premium, which would apply to a PCS that does not reuse any WEEE, is equal to the total percentage share of WEEE reused in the stream. In 2022 this was highest in Display Equipment at 3.7%.¹³ For streams where no WEEE is reused, the reuse adjustment premium will be zero for all PCSs.
- 4.8 We understand that AATFs already submit reuse data as part of their quarterly WEEE collections reporting to the relevant environment agency. Therefore the inclusion of this premium would not cause further burden to producers.
- 4.9 We note that there may be some conflict between the application of the WEEE source adjustment premium and the reuse adjustment premium. This is because WEEE that is returned to a LA-DCF is far less likely to be reused than WEEE that is returned via, for example, retailer returns. However, we consider that the low levels of reuse (around 3%) mean there is scope for increasing reuse without infringing on the incentive to increase collections from LA-DCFs. Further, the benefit of encouraging both LA-DCF collections and reuse outweighs the downside of the potential minor conflict between the application of the two premia.
- 4.10 We set out the reuse adjustment premium formula in Section 5, and provide calculation examples in Appendix 3 which show that its impact on the Fee is only marginal.

Summary of core elements of the Fee methodology

- 4.11 In this section, we describe the core elements which we propose are retained in the 2023 Fee methodology. These are:
- (1) a separate Fee is calculated for each WEEE stream;
 - (2) the size of the Fee is based on the difference between a PCS's actual collections and a PCS's collection target;

¹³ See paragraph 3.19.

- (3) the size of the Fee is larger for a PCS that does not meet its target in a stream with a national collection surplus, compared to a stream with a national collection shortfall;
- (4) the Fee is based on the average direct costs of LA-DCF collections;
- (5) the Fee reflects the proportion of WEEE collected from LA-DCFs by a PCS to meet its target, compared to the national average of WEEE collected from LA-DCFs for that stream; and
- (6) variable administrative costs are included in the Fee for each WEEE stream unless it is a stream that has a zero Fee.

4.12 We briefly discuss each of these elements further below.

4.13 Elements (1) and (2) are core principles of the Fee which have applied since we proposed the first Fee formula in 2014. We consider that the reasoning behind these core principles remains sound, and does not require any adjustment in 2023. Therefore, our proposal for the 2023 Fee methodology is still based on these principles.

4.14 Element (3) was introduced in 2016, when we added the 'Surplus Escalator', which applies to streams where national total collections exceed target. The purpose of this escalator is to apply a higher fee to PCS' that do not meet their collection target in a market with a surplus of WEEE (when it is easier to avoid a shortfall). Again, we consider the reasoning behind the Surplus Escalator remains sound, and we recommend that it should continue to be applied.

4.15 Elements (4) and (5) were incorporated in 2017, when we added a 'WEEE source adjustment premium' to our Fee methodology to reflect that the cost of collecting WEEE from different sources can vary substantially. In particular, WEEE collected from LA-DCFs generally costs more to collect than WEEE from other sources.

4.16 Consequently, we proposed the introduction of an adjustment to incentivise PCSs to collect WEEE from LA-DCFs, which has been included in the Fee methodology in all subsequent years.

4.17 Although a greater proportion of WEEE in some streams is now collected by retailers or through other non LA-DCF sources, we consider that the logic underpinning the WEEE source adjustment has not changed. We understand it is still more expensive to collect WEEE from LA-DCFs compared to other sources, and the implicit prioritisation of LA-DCF WEEE in the UK Regulations remains unchanged; this means that it remains necessary to incentivise the collection of WEEE from that source, and therefore we recommend that this adjustment continues to be applied.

- 4.18 In relation to element (6), we propose maintaining the 'variable administrative cost' which we introduced into our proposed Fee methodology in 2018. Again, we consider the logic underpinning the inclusion of this element into the Fee methodology remains sound.
- 4.19 As in prior years, we consider that it is inappropriate to artificially incentivise the collection of WEEE in any stream for which: (i) there is a natural economic incentive for PCSs to collect this WEEE; and (ii) other organisations also face the same incentive and thus compete with PCSs to collect WEEE, potentially making it difficult for them to meet collection targets. On this basis, every year since 2015, Defra has agreed that no Fee should apply for such streams. We propose that the Fee should continue to be zero in 2023 for WEEE streams with net positive value, where there is evidence that a substantial volume is being treated outside of the official producer responsibility system. The JTA has advised that it expects the Large Household Appliances stream to again meet these criteria in 2023, and accordingly we recommend a zero Fee for this stream, subject to appropriate data confirming this being made available to Defra at the end of the compliance period.

5. Proposed WEEE compliance fee formula for 2023

Introduction

- 5.1 We explain below the formulae which we propose should be used to calculate the Fee for 2023 for a given WEEE stream (denoted 'n').

Fee formula with Normal Escalator

- 5.2 We consider that the Fee for streams of WEEE where there is a net shortfall versus aggregate targets should be calculated using the following formula:

$$f_n = (t_n - c_n) \times \left[k_n \times \left(1 + \left(\frac{t_n - c_n}{t_n} \right)^2 + p_n + r_n \right) + v_n \right]$$

Where:

- f_n is the Fee for the relevant stream, in British pounds ("GBP").
- t_n is the PCS's target for the stream, in tonnes.
- c_n is the total amount of WEEE in that stream collected by that PCS, in tonnes.
- k_n is the weighted average net cost of collection from LA-DCFs for the stream excluding direct overheads, in GBP per tonne.
- p_n is the WEEE source adjustment premium, defined below.
- r_n is the reuse adjustment premium, defined below.
- v_n is the variable administrative cost per tonne, for that WEEE stream.

WEEE source adjustment premium

- 5.3 The WEEE source adjustment premium is described fully in Appendix 2, but we also set out the formula below.
- 5.4 The WEEE source adjustment premium (p_n) is calculated as follows:¹⁴

¹⁴ We propose that the precise mathematical formula would be:

$$p_n = d * \max \left(a - \frac{l_n + s_n}{c_n}, 0 \right).$$

$$p_n = d * \left(a - \frac{l_n + s_n}{t_n} \right)$$

Where:

- d*** is the percentage amount by which the cost per tonne of LA-DCF collections exceeds the cost per tonne of other WEEE sources, expressed as a ratio.
- a*** is the average share of collections from LA-DCFs, as a proportion of all household collections in that WEEE stream, expressed as a ratio.
- l_n*** is the actual volume of collections from LA-DCFs, made by the PCS itself, in tonnes.
- s_n*** is that PCS's shortfall, in tonnes.
- t_n*** is the PCS's target for the WEEE stream, in tonnes.

Reuse adjustment premium

- 5.5 The reuse adjustment premium is described in Section 4, and we set out the formula below.
- 5.6 The reuse adjustment premium (***r_n***) is calculated as follows:¹⁵

$$r_n = h * \left(\frac{W_n}{C_n} - \frac{w_n}{c_n} \right)$$

Where:

- h*** is the coefficient. We recommend a coefficient of 1 to reflect that the premium should only have a marginal effect in 2023.
- W_n*** is the volume of reuse achieved in the stream, in tonnes.
- C_n*** is the sum of household WEEE collections by all PCSs in the stream, in tonnes.
- w_n*** is the volume of reuse evidence obtained by the scheme, in tonnes.
- c_n*** is the total amount of WEEE in the stream collected by that PCS, in tonnes.

¹⁵ We propose that ***r_n*** cannot be below zero.

Fee formula with Surplus Escalator

- 5.7 We consider that the Fee for streams of WEEE where there is a net surplus versus aggregate targets should be calculated using the following formula:

$$f_n = (t_n - c_n) \times \left[k_n \times \left(\frac{c_n}{T_n} + 2 \times \left(\frac{t_n - c_n}{t_n} \right)^2 + p_n + r_n \right) + v_n \right]$$

Where:

C_n is the sum of household WEEE collections by all PCSs in the relevant stream in the market, in tonnes.

T_n is the national target for that stream, in tonnes.

- 5.8 All other terms are as defined for the “normal” escalator.
- 5.9 As in prior years, we consider that this escalator should only apply when the collections exceed targets by an amount. We propose that this should be set as a fixed proportion of the total tonnage of WEEE collected in each stream, of 1.5%. That is, if the sum of household WEEE collections exceeds the sum of PCS targets by more than 1.5%, then the Surplus Escalator should apply. That is, the Surplus Escalator should apply if:

$$\frac{c_n}{T_n} - 1 > 1.5\%$$

Appendix 1

Restrictions and limitations

Restrictions

- A1.1 This report has been prepared solely for the benefit of the JTA for use for the purpose described in the introduction. FTI Consulting accepts no liability or duty of care to any person other than the JTA for the content of the report and disclaims all responsibility for the consequences of any person other than the JTA acting or refraining to act in reliance on the report or for any decisions made or not made which are based upon the report.

Limitations to the scope of our work

- A1.2 This report contains information obtained or derived from a variety of sources. Where appropriate FTI Consulting has been given assurances regarding the reliability of those sources and information provided. However, we have not sought to independently verify the information we have reviewed.
- A1.3 No representation or warranty of any kind (whether express or implied) is given by FTI Consulting to any person (except to the JTA under the relevant terms of our engagement) as to the accuracy or completeness of this report.
- A1.4 This report is based on information available to FTI Consulting at the time of writing of this report and does not take into account any new information which becomes known to us after the date of this report. We accept no responsibility for updating this report or informing any recipient of this report of any such new information.

Appendix 2

The development of the core Fee methodology

Introduction

- A2.1 For the first compliance year under the WEEE Regulations (i.e. 2014), Department for Business, Innovation & Skills (“BIS”) ¹⁶ adopted the Fee methodology proposed by the JTA, based on a report prepared by FTI Consulting.
- A2.2 In this appendix, we explain the main elements of the Fee methodology which was adopted in 2014 and in eight subsequent compliance years and how it fulfils the criteria set out in Section 2. It excludes:
- (1) the Non-PBS Participant Uplift which was included in the 2016 to 2019 Fee methodologies but which is no longer required because membership of the PBS is now mandatory for all household PCs;
 - (2) the Collection Shortfall Factor and POPs adjustment proposed for the 2019 Fee methodology but which was not adopted by Defra and which is not proposed for the 2023 Fee methodology;
 - (3) the Cost of Living Compliance Fee threshold proposed for the 2022 Fee methodology but which was not adopted by Defra and which is not proposed for the 2023 Fee methodology; and
 - (4) the Covid Compliance Fee Threshold which was adopted for the 2020 Fee methodology as an extraordinary adjustment.

Elements of the Fee methodology

- A2.3 The key features of the Fee methodology originally designed by FTI Consulting and which has been adopted in eight of the past nine compliance years are that:
- (1) a separate Fee is calculated for each WEEE stream;
 - (2) the Fee is set per tonne of shortfall and is based on the average direct costs of collection of PCs (since 2017, this has been based on the costs of WEEE collected from LA-DCFs); and

¹⁶ The UK government department then responsible for the WEEE Regulations.

- (3) an escalator is applied which adjusts upwards the Fee per tonne according to the magnitude of the PCS's shortfall versus its target. The uplift is higher, the larger the individual PCS's shortfall.

A2.4 We consider that the main principles of this methodology remain fundamentally economically sound.

A2.5 Since 2014, the original Fee methodology has been further refined to incorporate additional elements:

- (1) the Surplus Escalator, which is a modified fee methodology for streams of WEEE where there is a net surplus versus aggregate targets;
- (2) the variable administrative cost per tonne for each stream; and
- (3) the WEEE source adjustment premium, which increases the Fee for PCSs which undertake a lower proportion of collections from LA-DCFs compared to the national average for the relevant stream.

A2.6 In the rest of this section we explain: (i) the original Fee methodology; (ii) why the original Fee methodology remains appropriate, including why it is appropriate to set the Fee Escalator based on the relative size of a PCS's collection shortfall as a proportion of its own collection target; and (iii) the three refinements that are now part of the core Fee methodology with the justification for each.

Core Fee methodology

A2.7 In 2014, we proposed that the Fee for each stream should be calculated using the following formula:

$$f_n = k_n \times (t_n - c_n) \times \left(1 + \left(\frac{t_n - c_n}{t_n} \right)^2 \right)$$

A2.8 Where:

- f_n is the Fee for the relevant stream, in GBP.
- k_n is the weighted average net cost of collections from LA-DCFs for the stream, in GBP per tonne. The calculation of this is explained below.
- t_n is the PCS's target for the stream, in tonnes.
- c_n is the amount of the stream of WEEE collected by the PCS, in tonnes.

A2.9 Below, we set out the rationale for this methodology by reference to the criteria set out in Section 2.

Effectiveness and cost reflectivity

- A2.10 In its guidance, Defra explains that the Fee must incentivise PCSs to comply with their obligations by collecting and treating WEEE from LA-DCFs, or by returning WEEE from private households to the system. The methodology set out above incentivises both of these methods of compliance, as we explain below.
- A2.11 Firstly, LAs have a right of free uplift of WEEE (under Regulation 34). This means that all WEEE will be collected from LA-DCFs regardless of the level of the Fee. The benefit of the methodology above is that:
- (1) it encourages PCSs to actively seek to collect WEEE from LA-DCFs up to their targets. The base cost for the Fee is derived from LA-DCF collection costs, which are generally higher than other sources of WEEE and/or evidence notes. Therefore, the Fee payable by the PCS for any shortfall against target should on average be greater than the cost of collection and treatment. As a PCS's shortfall increases, the escalator mechanism increases the Fee, further incentivising collection;
 - (2) it discourages over-collection of net cost WEEE, because there is unlikely to be a material financial or other benefit to a PCS for collecting more than its target (in contrast with the regulations prior to 2014); and
 - (3) it is based on the actual costs incurred by PCSs in the compliance year. This means that the Fee, if any is payable, will be proportionate to costs.
- A2.12 It is important to note that, for streams with positive net value, PCSs will still be incentivised to collect and treat up to and beyond their targets because of the income they can generate, and indeed other collectors may not necessarily make the evidence associated with such WEEE available to PCSs.
- A2.13 Hence, this methodology is both cost reflective, and effective at incentivising compliance by collection. The harmful externalities associated with untreated WEEE will be reduced under this methodology, without the creation of undesirable market distortions.

Transparency

- A2.14 The calculation methodology is clear, and comprehensible to all PCSs. All PCSs using the Fee will understand how the data submitted is used to calculate the Fee, and the different factors which impact the Fee.

A2.15 The methodology also maintains confidentiality, by requiring that individual PCSs' data submissions are only accessible to an independent Administrator. At no point will PCSs have access to the data of other PCSs. PCSs that pay the Fee will see a cost per tonne which includes the weighted average net cost figure and the variable administrative cost combined, but they will be unable to derive any confidential information from this average figure because they will not know which other PCSs' data have contributed to the calculation, nor will they know the proportion of the variable administrative cost.

A2.16 The methodology is therefore transparent.

Feasibility and reasonableness

A2.17 This Fee methodology has been found not to be unduly burdensome in previous compliance years. The Administrator is required to engage with PCSs and verify and calculate data, and the cost of this service to PCSs is not unreasonable given the overall merits of the methodology.

A2.18 As a result, we consider that the methodology is feasible and reasonable.

Robustness

A2.19 Under this methodology, the only way that a PCS could attempt to manipulate the Fee would be by submitting misstated data. The methodology includes several steps to prevent this happening:

- (1) all data submissions must be subject to an independent review by the Administrator who is a registered auditor;
- (2) a director of the PCS is required to sign off on all data submissions to verify that the data is true and fair to the best of his or her knowledge;
- (3) all data submissions will be reviewed by the Administrator. The Administrator will compare data submissions between PCSs to identify any anomalies. Anomalies will be investigated with PCSs; and
- (4) the Administrator has the right to ask questions of PCSs, request further data, request a full audit of data, reject a submission, or remove suspect data from the final calculation.

A2.20 In addition, subject to compliance with the criteria set out in points 1 to 4 above, all PCSs may submit data which will be included in the weighted average net cost calculation/stream, irrespective of whether or not the PCS wishes to use the Fee. This means that the Fee is based on as representative a cost base as possible, given that the number of PCSs collecting from LA-DCFs is limited. This means that the data from any one PCS cannot unduly influence the Fee paid by other PCSs.

- A2.21 In summary, in our opinion it would be extremely difficult for any PCS to manipulate this Fee mechanism. It is therefore robust.

Competition issues

- A2.22 A first benefit of this Fee methodology is that PCSs benefit from cost efficiency as lower costs will result in a lower Fee. Hence, the Fee methodology supports the normal commercial incentives for efficiency and innovation for PCSs.
- A2.23 Secondly, the Fee only enables a PCS to assess whether it is more or less cost efficient than the Fee per tonne charged. However, the Fee will not provide a PCS with a more granular insight into its relative efficiency e.g. it will not be able to tell if it is the most efficient.
- A2.24 Thirdly, this Fee methodology does not create any barriers to entry. New entrants to the market will face the same Fee structure as existing participants.
- A2.25 In our view, this methodology has a positive effect on competition.

Rationale for calculating a PCS' Fee based on the proportionate shortfall against its own target

- A2.26 The current WEEE compliance fee incorporates a non-linear mechanism to uplift a PCS's Fee per tonne of shortfall according to the scale of its shortfall compared to its target. The greater the shortfall versus a PCS's collection target, the greater is the uplift to the cost per tonne. This is referred to as the "Fee Escalator".
- A2.27 Alternative proposals in previous years have suggested that the Fee Escalator should be set based on the absolute value of a PCS's collection shortfall versus the aggregate national collection. Whereas, the JTA proposed that the Fee Escalator should continue to be set based on the relative size of a PCS's collection shortfall as a proportion of its own collection target; the JTA Proposal refers to this as the "Normal Escalator".
- A2.28 There are three principal issues with basing the Fee Escalator on the absolute value of a scheme's collection shortfall versus the aggregate national collection target:
- (1) the formula would not incentivise compliance by collection for smaller PCSs and discriminates against larger PCSs by imposing punitive costs for the same size shortfall (measured as a proportion of their target);
 - (2) the formula does not take account of the aggregate national surplus or deficit positions; and
 - (3) it would not be effective in promoting competition.

A2.29 We expand on each of these issues below.

The formula would not incentivise compliance by collection by some PCSs

A2.30 While it may appear superficially attractive to apply the same uplift for the same absolute shortfall (in tonnes) versus the target, we consider that this would have adverse consequences. This would mean that it would be ineffective in incentivising some PCSs to meet their targets through collections and therefore may not meet the objectives of the WEEE Regulations. PCSs vary substantially in scale, measured based on the volume (in tonnes) of WEEE collected and processed.

A2.31 The formula does not create as strong an incentive for smaller PCSs to meet their targets through collection. It would result in a much larger uplift for moderate shortfalls for larger PCSs. For example, a smaller PCS whose collection target is 5% of the national total, could collect no WEEE at all in a given stream but would only be required to pay a compliance fee per tonne that was 10% higher the weighted average cost of collection. Regulation 76 of the WEEE Regulations requires that the compliance be cost reflective but set at a level “*which encourages schemes to take all reasonable steps to meet their collection target without recourse to the compliance fee*”. This formula does not appear to meet this criteria.

A2.32 For illustrative purposes, we compare the Normal Escalator based on a PCS’s achievement (solid line) against its own target to the Normal Escalator based on a PCS’s achievement compared to the national target with market shares of 5%, 10% and 50% (dotted lines) in Figures 3 and 4 below. Figure 3 shows the impact for a full range of possible shortfalls and Figure 4 shows more clearly the impact for shortfalls of between 0% and 20%.

Figure 3: Uplift implied by national target escalator for PCSs with different market shares

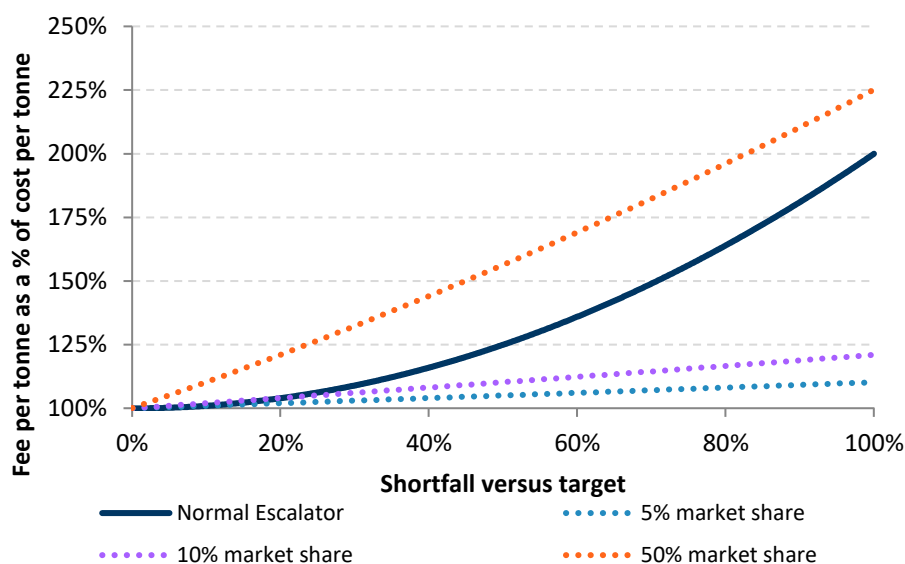
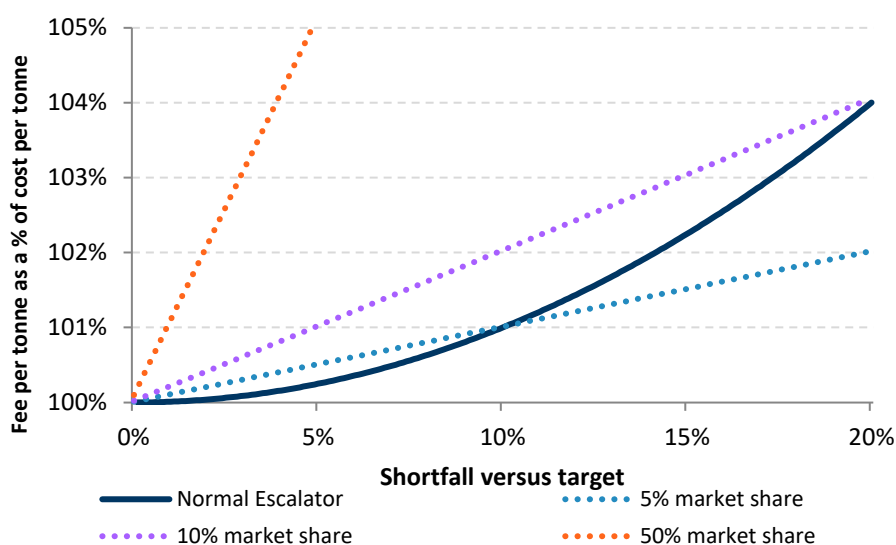


Figure 4: Uplift implied by national target escalator for PCSs with different market shares for shortfalls up to 20% of target



A2.33 Figures 3 and 4 illustrate that, for the escalator calculated using the PCSs achievement against the national target:

- (1) the relationship between the proportionate shortfall and the uplift would be around one-for-one for a large PCS with a 50% market share (in a given stream), resulting in a significant uplift for even a modest shortfall; but

- (2) the penalty for a PCS with a 5% market share (in a given WEEE stream) for incurring a shortfall of greater than 10% would be less than under the escalator calculated using the PCS's achievement against its own target; and
- (3) for a shortfall of 20% (versus its own target), a PCS with a 5% market share would face a cost per tonne uplift of only approximately 2%, while a PCS with a 50% market share would face a cost per tonne uplift of approximately 20%. By contrast, basing the escalator calculation on a PCS's achievement against its own target, all PCSs would face a cost uplift of 4%.

A2.34 Given the current structure of the WEEE collection and treatment market, the calculation of a PCS's escalator using the national target would result in significant differences in the incentives facing different PCSs. Although there are around 28 separate PCSs, we understand that just 6 account for in excess of 80% of collections by WEEE cost. This means that, if these larger schemes were to need to use the Fee, using the national target in the calculation of their escalators would result in a higher Fee uplift (than the use of the PCS's own target) for PCSs representing around 80% of the UK's WEEE collections (in that stream).

A2.35 By favouring smaller PCSs at the expense of larger ones, the use of the national target in the escalator calculation in fact incentivises the PCS market to become less-concentrated, which could result in increased producer costs arising from reduced economies of scale.

A2.36 We consider that a Fee uplift calculated based on the relative size of the shortfall, rather than the absolute shortfall in tonnes, is more appropriate. This is because it creates an appropriate incentive for all PCSs to comply through collection but yields a Fee that is still proportionate to the costs of collecting uncollected WEEE and is commensurate with the risks that PCSs of different sizes may fail to meet their collection target.

The formula does not take into account the aggregate national surplus or deficit position for each stream

A2.37 The use of the national target to calculate the escalator for each PCS does not take into account the aggregate surplus or deficit of the supply of a given WEEE stream against the aggregate national collection targets. Therefore, it imposes the same penalty on a PCS with a shortfall, without regard for how difficult or otherwise it may have been for that PCS to collect and process sufficient WEEE (or to obtain evidence from other sources).

- A2.38 Therefore, if the situation contemplated above arose, in which a significant proportion of PCSs had a shortfall, all PCSs would be heavily penalised irrespective of the underlying cause of the shortfall. Whereas, the calculation of the escalator based on a PCS's achievement against its own target means they would not face a significant penalty if there was an aggregate shortage of WEEE in that stream. The use of the national target could therefore result in PCSs being inappropriately punished for targets that are inadvertently set too high by Defra, or other factors outside their control.

The formula would not be effective in promoting competition

- A2.39 The use of the national target to calculate the escalator for each PCS increases the uplift for larger PCSs for a given shortfall, compared to the use of the PCS's achievement against its own target. This would disincentivise any PCSs from taking on new producers – by taking on a producer, particularly a large producer, a PCS would be putting itself at risk of a punitive Fee payment if calculated using the national target.

Subsequent amendments to the core methodology

- A2.40 In subsequent compliance years, we proposed further refinements to this core methodology. These were:
- (1) Surplus Escalator;
 - (2) Variable administrative costs; and
 - (3) the WEEE source adjustment premium.

- A2.41 We briefly explain these in turn below.

Surplus Escalator

- A2.42 In previous compliance years, it was identified that there may be aggregate surpluses of WEEE versus total collection targets, for some WEEE streams. The escalator mechanism was therefore modified for streams of WEEE where this was the case, to reflect that there was less justification for a PCS to fail to meet its target through collections in such circumstances.

- A2.43 On this basis, a modification to the Fee Escalator was adopted for streams of WEEE where there is a net surplus versus aggregate targets. This is referred to as the Surplus Escalator. The modified Fee formula, to be used when the Surplus Escalator is applicable, is shown below with changes highlighted:

$$f_n = k_n \times (t_n - c_n) \times \left(\frac{c_n}{t_n} + 2 \times \left(\frac{t_n - c_n}{t_n} \right)^2 \right)$$

Where:

C_n is the sum of household WEEE collections by all PCSs in the relevant stream in the market, in tonnes.

T_n is the national target for that stream, in tonnes.

A2.44 This Surplus Escalator is based on the same inputs as the Normal Escalator. The two adjustments had the effect of increasing:

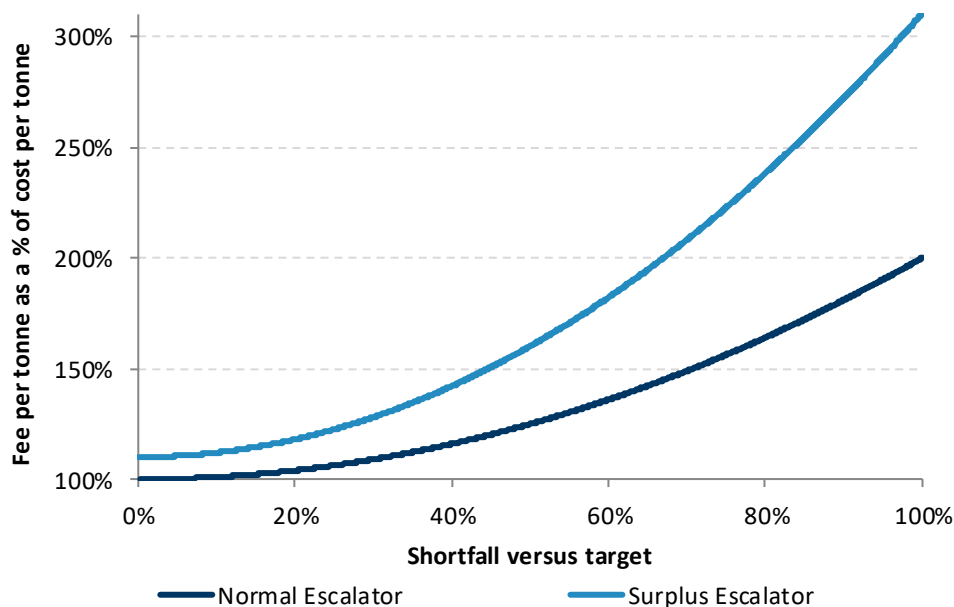
- (1) the starting point of the escalator; and
- (2) the rate at which the Fee increases with increasing levels of collection shortfall versus target.

A2.45 These adjustments mean that the Surplus Escalator:

- (1) starts at a level higher than the cost of collection which is proportionate to the extent of oversupply in that stream. This means that a PCS will pay a Fee per tonne which exceeds the weighted average cost of collection – even for a shortfall of a single tonne – which will further disincentivise under-collection; and
- (2) increases the uplift more quickly than the Normal Escalator as the extent of the shortfall increases. This means that it further disincentivises under-collection, where this should be easily avoidable.

A2.46 In the figure below, we illustrate how the Fee per tonne changes as a PCS's collection shortfall increases, using each escalator.

Figure 5: Effect of escalator mechanism on Fee per tonne of shortfall



Note: The Surplus Escalator is shown based on an illustrative initial uplift of 10%. As set out above, the magnitude of this uplift would vary depending upon the factor by which total collections exceed the aggregate WEEE target.

- A2.47 This figure shows that, under the Normal Escalator, the uplift to the Fee per tonne is around 4% for a shortfall of around 20%. Whereas, under the Surplus Escalator, given a *de minimis* initial uplift, the cost uplift is approximately double, for the same shortfall.
- A2.48 In our opinion, it is fair and appropriate that:
- (1) both escalators more heavily increase the Fee for a PCS which has a larger shortfall. Under the Normal Escalator, the uplift is modest for small shortfalls because such shortfalls could be due to factors beyond the PCS's control, such as the target being set unachievably high; and
 - (2) the Fee uplift is greater for a PCS which falls short of its collection target when there is an aggregate surplus of WEEE in that stream. This is because, in the presence of a surplus of WEEE evidence offered to the market, it should be easier to avoid a shortfall and, if one arises, this is therefore more likely to reflect intentional under-collection by the PCS.
- A2.49 The Surplus Escalator discourages PCSs from deliberately under-collecting to any significant degree, even from sites with relatively high costs. This supports the objectives of the Regulations and associated Defra guidance.

- A2.50 The Administrator determines whether the Normal Escalator or the Surplus Escalator applies to each WEEE stream. A threshold amount should be defined, above which the stream is assessed to be in 'surplus'. This has been set at 1.5% of the total tonnage of WEEE collected in each stream i.e. if the sum of household WEEE collections exceeds the sum of PCS targets by more than 1.5%, then the Surplus Escalator applies. That is:

$$\frac{C_n}{T_n} - 1 > 1.5\%$$

Where:

C_n is the sum of household WEEE collections by all PCSs in the relevant stream in the market, in tonnes.

T_n is the national target for that stream, in tonnes.

- A2.51 The Surplus Escalator fulfils the criteria discussed in Section 2, on the following basis:
- (1) the partial divergence from cost reflectivity is justified because shortfalls are much less likely to arise where the national collection target has been exceeded. In addition, uncertainty about which Fee Escalator will apply, will further incentivise collection, while ensuring that the Fee remains modest and cost reflective when shortfalls occur;
 - (2) the Surplus Escalator does not affect the transparency of the methodology, which remains clear and comprehensible to all PCSs. It also does not affect data confidentiality considerations;
 - (3) no additional information is required from PCSs and so it is not burdensome;
 - (4) the Administrator needs to assess which escalator should apply to each WEEE stream. They will have sufficient information and knowledge to do this and hence this methodology is feasible;
 - (5) the Surplus Escalator does not affect the robustness of the methodology; and
 - (6) the Surplus Escalator increases the incentive for PCSs to collect WEEE, rather than pay the Fee, hence it promotes competition between PCSs.

Variable administrative cost per tonne

- A2.52 For the 2016 compliance period, Defra selected a Fee that was based on direct costs of collection plus “variable administrative costs”. We understand that these comprised allocations of variable administrative costs associated with:
- preparing bids for collection contracts;
 - on-going management of operational contracts including ensuring contractors are performing properly, liaising with LAs, addressing any day to day issues which arise;
 - conducting site audits of both collection sites and treatment operators to ensure that they are operating correctly; and
 - compiling, checking and making the regular reporting submissions required to the relevant enforcement agencies.
- A2.53 In the 2016 and 2017 compliance years, the cost was calculated on a per tonne basis. For 2018, the costs were calculated principally by reference to the number of collections, rather than the volumes collected in tonnes. This had a material impact, given that very different volumes are associated with different WEEE streams. On this basis, we proposed that the same mechanism should be adopted for the subsequent compliance periods.
- A2.54 The variable administrative costs per tonne is calculated for each stream as follows, based on data submitted by PCSs:
- (1) PCS data on variable administrative costs, number of collections by WEEE stream and collection volumes by WEEE stream (in tonnes) is aggregated;
 - (2) an average cost per collection is calculated by dividing the aggregate variable administrative cost by the aggregate number of collections;
 - (3) the aggregate number of collections by WEEE stream is calculated;
 - (4) the average cost per collection is multiplied by the aggregate number of collections for each WEEE stream, to calculate an aggregate variable administrative cost per WEEE stream; and
 - (5) the aggregate variable administrative cost per WEEE stream is divided by the aggregate collection tonnage to calculate a variable administrative cost per stream, in £/tonne, for inclusion in the Fee.

- A2.55 To ensure that the Fee is cost reflective, the calculation allows for the following factors:
- some PCSs undertake collections of other non-WEEE waste, such as batteries, etc. These collections are included in the variable administrative cost per collection calculation because it is not possible to isolate the associated costs, to ensure that the cost per collection is not overstated; and
 - some PCSs collect WEEE from two (or more) streams in the same collection. Given that costs are substantially driven by the number of collections, these are recorded as a single collection (and the corresponding fraction included in total collections for relevant WEEE streams), so that costs are not understated. Pragmatic assumptions are made where a PCS has more complex logistics chains, such as 'milk round' collections.

- A2.56 The variable administrative cost per tonne was incorporated into the calculation by FTI in the 2017 compliance period methodology as follows (this example is for the Normal Escalator):

$$f_n = (t_n - c_n) \times \left[k_n \times \left(1 + \left(\frac{t_n - c_n}{t_n} \right)^2 + u_n \right) + v_n \right]$$

Where v_n is the variable administrative cost per tonne, for that WEEE stream.¹⁷

WEEE source adjustment premium

- A2.57 In 2017, it was noted that some LAs had difficulty obtaining collections and were forced to rely on Regulation 34, even though WEEE collections were below targets. Only a minority of PCSs bid for collection contracts with LAs; there were 32 PCSs accredited in the UK for household WEEE, however only 12 were listed as collecting from LAs in November 2016. Since then, the JTA advises that the number contracting has fallen further to below 10.¹⁸ This suggests that PCSs are still not incentivised to collect from some higher cost LA-DCFs.

¹⁷ The 2016 and 2017 compliance year Fees included a flat-rate overhead cost of £3.50 per tonne for all WEEE streams. For completeness, u_n was the Non-PBS Participant Uplift, which is no longer required.

¹⁸ Source: Defra, WEEE: list of LA-DCFs (<https://www.gov.uk/government/publications/weee-list-of-local-authority-designated-collection-facilities/weee-list-of-local-authority-designated-collection-facilities>)

- A2.58 This can be because PCSs may collect or make arrangements for WEEE from sources other than LA-DCFs and we understand from the JTA that the cost of collecting/obtaining WEEE from different sources can vary substantially. 2017 WEEE collection data shows that for three of the six WEEE streams, more than 40% of the WEEE collected came from non LA-DCF sources (for 2022, this was true for four of the six streams).¹⁹ For the other three streams it was more than 20%. This suggests that the impact of other sources of WEEE is material and may affect the incentives for market participants.
- A2.59 In addition, a change to the guidance on the classification of WEEE in 2015 meant that there was additional WEEE in some streams which qualified as household despite being collected from businesses.²⁰ Businesses generating such dual use WEEE often pay for its collection. As a result, the price for evidence arising from such arrangements may be artificially low because it need not cover the underlying cost of collection and treatment.
- A2.60 PCSs have an economic incentive to meet their collection target by collecting or making arrangements to obtain WEEE with the lowest cost, irrespective of the source. WEEE from sources other than LA-DCFs is typically lower cost. Hence, an adjustment was proposed to reflect the source of WEEE for each PCS, as some PCSs might obtain WEEE primarily from sources which are lower cost.
- A2.61 We considered that the Fee should also reflect the sources of the WEEE used by a PCS to fulfil its collection target. One way to achieve this was to set the Fee according to the national proportion of WEEE collected from LA-DCFs, such that PCSs which obtained a greater proportion of WEEE from lower cost (i.e. non LA-DCF) sources paid a higher Fee.
- A2.62 Data from PCSs acting as advisers to the JTA on the direct costs of collections showed that:
- there is considerable variation in the costs of collection from different sources;
 - the costs of collections from LA-DCFs are higher than other sources for all WEEE streams; and

¹⁹ Environment Agency, "WEEE collected in the UK". Source: <https://www.gov.uk/government/statistical-data-sets/waste-electrical-and-electronic-equipment-weee-in-the-uk>.

²⁰ On 23 February 2015, BIS issued Guidance entitled "Business to consumer (B2C) and business to business (B2B) EEE and WEEE: how to correctly identify". Available at: <https://www.gov.uk/guidance/business-to-consumer-b2c-and-business-to-business-b2b-eee-and-weee-how-to-correctly-identify>

- the average cost of collections from LA-DCFs is over double the cost of collecting from other sources for most streams for which data are available.

A2.63 The adjustment we proposed was not symmetrical. That is, PCSs which collected less than the average share of their WEEE from LA-DCFs paid a higher Fee but, for those that collected more than the average share did not receive a downward adjustment.

A2.64 This factor increased the Fee for PCSs which undertook a lower proportion of collections from LA-DCFs, compared to the national average for the relevant WEEE stream.

A2.65 The WEEE source adjustment premium (p_n) is calculated as follows:²¹

$$p_n = d * \left(a - \frac{l_n + s_n}{t_n} \right)$$

Where:

d is the percentage amount by which the cost per tonne of LA-DCF collections exceeds the cost per tonne of other WEEE sources, expressed as a ratio.

a is the average share of collections from LA-DCFs, as a proportion of all household collections in that WEEE stream, expressed as a ratio.

l_n is the actual volume of collections from LA-DCFs, made by the PCS itself, in tonnes.

s_n is that PCS's shortfall, in tonnes.

t_n is the PCS's target for the WEEE stream, in tonnes.

A2.66 This adjustment fulfilled the criteria discussed in Section 2. First, it reduced the cost advantage of obtaining WEEE from other sources and therefore incentivised PCSs to collect from LA-DCFs. This supported Defra's objective of incentivising collections from LA-DCFs as far as possible and hence increased the effectiveness of the Fee.

A2.67 Second, this calculation took into account the amount of a PCS's shortfall, which is appropriate given that the Fee paid on the shortfall reflects the cost of collection from LA-DCFs. This ensures that the Fee remains cost reflective and is not unduly punitive.

²¹ We propose that the precise mathematical formula would be:

$$p_n = d * \max \left(a - \frac{l_n + s_n}{c_n}, 0 \right).$$

- A2.68 The WEEE source adjustment premium was incorporated into the calculation by FTI in the compliance period methodology from 2017 onwards as follows (this example is for the Normal Escalator):

$$f_n = (t_n - c_n) \times \left[k_n \times \left(1 + \left(\frac{t_n - c_n}{t_n} \right)^2 + u_n + p_n \right) + v_n \right]$$

Where p_n is the WEEE source adjustment premium for that WEEE stream.²²

²² The 2016 and 2017 compliance year Fees included a flat-rate overhead cost of £3.50 per tonne for all WEEE streams. For completeness, u_n was the Non-PBS Participant Uplift, which is no longer required.

Appendix 3

Fee calculation examples

- A3.1 We provide fee calculation examples below.
- A3.2 Below, we calculate the Fee that would be payable for an example WEEE stream. The calculations show the impact of each element of the proposed fee methodology.
- A3.3 The calculations are based on the following assumptions:
- (1) PCS's own collection target: 5,000 tonnes
 - (2) Share of WEEE collected from LA-DCFs by all PCSs: 70%
 - (3) PCS's total evidence collected: 3,000 tonnes
 - (4) PCS's own collections from LA-DCFs: 2,500 tonnes
 - (5) Weighted average cost per tonne of LA-DCF collections for all PCSs submitting data: £50
 - (6) Weighted average cost per tonne of all other collections for all PCSs submitting data: £30
 - (7) Overhead cost per tonne: £3.50
 - (8) National target: 20,000 tonnes
 - (9) WEEE reused by all PCSs: 900 tonnes
 - (10) PCS's own WEEE reused: 180 tonnes

National shortfall (Normal escalator)

- A3.4 Assuming UK collections were 18,000 tonnes, and the PCS has collected sufficient WEEE from LA-DCFs to not be subject to a WEEE source adjustment premium or a WEEE Reuse Adjustment Premium (see A3.6 & A3.12 below), the Fee per tonne payable by this PCS in this stream under the Normal escalator would be £61.50 per tonne:

$$£50 \times \left(1 + \left(\frac{5,000 - 3,000}{5,000} \right)^2 + 0 \right) + £3.50 = \textbf{£61.50/tonne}$$

- A3.5 The size of the PCS's obligation does not impact the Fee; rather it is the PCS's shortfall that is important. A PCS with a shortfall of 40%, no matter the size of that PCS's obligation, would always pay the same fee.

National surplus (Surplus Escalator)

- A3.6 Assuming UK collections are 22,000 tonnes, so above the national target, the Fee per tonne payable by this PCS in this stream under the Surplus Escalator would be £74.50 per tonne:

$$£50 \times \left(\frac{22,000}{20,000} + 2 \times \left(\frac{5,000 - 3,000}{5,000} \right)^2 + 0 \right) + £3.50 = £74.50/\text{tonne}$$

- A3.7 Again, the size of the PCS's obligation does not impact the Fee; rather it is the PCS's shortfall that is important. A PCS with a shortfall of 40%, no matter the size of that PCS's obligation, would always pay the same fee.

WEEE source adjustment premium

- A3.8 The WEEE source adjustment premium for this example PCS using the parameters above would be zero. This is because the total of the PCS's LA-DCF collections and the tonnes for which it pays a fee exceed the national average share of PCS collections from LA-DCFs:

$$\frac{(2,500 + 2,000)}{5,000} = 0.90 = 90\% > 70\%$$

- A3.9 Whereas, if the PCS's own LA-DCF collections were only 1,000 tonnes (and its total collections remained 3,000 tonnes), the WEEE source adjustment premium would apply. In this case, an additional uplift to the Fee per tonne would apply, calculated as follows:

$$\left(\frac{50}{30} - 1 \right) \times \left(0.70 - \frac{(1,000 + 2,000)}{5,000} \right) = 0.07 = 7\%$$

Revised Normal Escalator calculation including a WEEE source adjustment premium

- A3.10 The Fee payable by this PCS in this stream under the Normal Escalator, using the revised assumptions in A3.6, would be £65.00 per tonne:

$$£50 \times \left(1 + \left(\frac{5,000 - 3,000}{5,000} \right)^2 + 0.07 \right) + £3.50 = £65.00/\text{tonne}$$

Revised Surplus Escalator calculation including a WEEE source adjustment premium

- A3.11 The Fee payable by this PCS in this stream under the Surplus Escalator, using the revised assumptions in A3.6, would be £78.00 per tonne:

$$£50 \times \left(\frac{22,000}{20,000} + 2 \times \left(\frac{5,000 - 3,000}{5,000} \right)^2 + 0.07 \right) + £3.50 = \text{£78.00/tonne}$$

Reuse adjustment premium

- A3.12 The reuse adjustment premium for this example PCS using the parameters above would be zero. This is because the PCS has reused sufficient WEEE (i.e. 180 tonnes) to exceed its target compared to the national average of reused WEEE for this stream:²³

$$1 \times \left(\frac{900}{18,000} - \frac{180}{3,000} \right) = -0.010 = -1.0\%$$

- A3.13 Whereas, if the PCS only reused 120 tonnes, a reuse adjustment premium would be applied using both the national shortfall and surplus parameters.
- A3.14 In a national shortfall, using the parameters above (i.e. 18,000 tonnes of UK collections) and 120 tonnes of reuse evidence, the reuse adjustment premium would be 1%, calculated as follows:²⁴

$$1 \times \left(\frac{900}{18,000} - \frac{120}{3,000} \right) = 0.010 = 1.0\%$$

- A3.15 In a national surplus, using the parameters above (i.e. 22,000 tonnes of UK collections rather than 18,000 tonnes), and including a proportionate increase in the total WEEE reused by all PSCs in the stream (i.e. from 900 tonnes to 1,100 tonnes),²⁵ would also be 1%, calculated as follows:

$$1 \times \left(\frac{1,100}{22,000} - \frac{120}{3,000} \right) = 0.010 = 1.0\%$$

Revised Normal Escalator calculation including a reuse adjustment premium

- A3.16 The Fee payable by this PCS in this stream under the Normal Escalator would be £62.00 per tonne:

$$£50 \times \left(1 + \left(\frac{5,000 - 3,000}{5,000} \right)^2 + 0.01 \right) + £3.50 = \text{£62.00/tonne}$$

²³ This PCS does not receive a downward adjustment for reusing more than the average share (see paragraph 4.5)

²⁴ If the PCS had reused 150 tonnes (or more), the reuse adjustment premium would be zero.

²⁵ The increase in total WEEE collections in the national surplus is 22,000/18,000 - 1 = 22%, so we have also increased total WEEE reused by 22% (1,100/900 - 1 = 22%).

Revised Surplus Escalator including a reuse adjustment premium

A3.17 The Fee payable by this PCS in this stream under the Surplus Escalator would be £75.00 per tonne:

$$£50 \times \left(\frac{22,000}{20,000} + 2 \times \left(\frac{5,000 - 3,000}{5,000} \right)^2 + 0.01 \right) + £3.50 = \textbf{£75.00/tonne}$$