Strategic approaches to minimising emissions trading scheme costs for waste producers

Executive summary

ceres Waste Renewables Environment

suez

Background

Emissions from the resources and waste sector (excluding energy-from-waste) equate to 5-6% of total UK CO_2 emissions, with the bulk of these generated by landfills. Energy-from-waste facilities also emit significant volumes of CO_2 and are included within the energy supply sector in the UK greenhouse gas emissions statistics. Each tonne of residual waste treated typically releases around 0.5 tonnes of fossil CO_2e, contributing to atmospheric CO_2 levels and to climate change.

The UK Government has made clear its intention to extend the UK Emissions Trading Scheme (ETS) to energy-from-waste (EfW) facilities in the UK from 2026 and has recently concluded its consultation on this proposal†. The Scheme is an important part of the Government's policy 'toolbox' to reduce fossil carbon emissions with the aim of achieving Net Zero in 2050.

Including energy-from-waste in ETS would require energy-from-waste operators to obtain sufficient ETS Allowances for each tonne of fossil carbon that is emitted. The price of allowances will be set by market demand and is expected to increase over time as the number of allowances available reduces as the cap is aligned to achieving Net Zero by 2050.

The uplift in gate fees is expected to be around £48/t at the start of the ETS for energy-from-waste and, in accordance with the 'polluter pays principle' (where 97% of emissions arise from the waste delivered to the energy-from-waste facility), operators will expect to pass through these costs to those feedstock suppliers, potentially increasing gate fees by around 50%.

Waste producers are concerned about the potentially significant increase in the cost of managing residual waste. Local authorities are currently the largest customer group for energy-from-waste facilities in the UK, supplying around 75% of total feedstock processed. With extremely tight budgets and practical challenges, any increase in costs that cannot be mitigated could have significant consequences.

However, investments through the new Extended Producer Responsibility for Packaging (pEPR) are intended to revitalise recycling rates that have stalled in recent years and help mitigate the increasing cost of managing residual waste.

Further, a general increase in residual waste costs will create the business case to invest in interventions that will prevent waste or push it higher up the waste hierarchy.

† https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-scope-expansion-waste

Aims and methodology

SUEZ commissioned Ceres Waste Renewables & Environment to identify and evaluate potential interventions that waste producers, particularly local authorities, can make to reduce cost increases as a result of ETS, highlighting those that could have the greatest impact. The principles identified are also relevant to commercial and industrial waste producers.

The analysis uses a combination of publicly available data and information from the SUEZ 'Waste Data Book', a unique collection of granular data on waste arisings and composition that has been developed and used by SUEZ over many years to support policy development by Government, and to help customers understand the waste they produce to reduce cost and environmental impact.

The modelling is high-level and a number of assumptions have been made. Specifically, only the estimated cost of service change has been included. There may be additional costs for some authorities – for example, for new or changed infrastructure or for contractual changes etc. Authorities are advised to treat the results as indicative and to undertake their own modelling to confirm the business case for their own areas.

As part of the research, a small number of local authority officers responsible for the provision of waste and recycling services were interviewed.

Those interviewed represented authorities that ranged in size and circumstances, with the aim of collecting insights from authorities with differing levels of rurality and deprivation.

Questions were provided in advance and sought to understand the level of engagement and preparation for ETS, and the benefits and challenges that officers had identified.

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Findings

The analysis demonstrates that the carbon cost of ETS will significantly increase the cost of managing waste unless actions are taken.

Taking action to improve the recycling rates for fossil-based materials will reduce costs and help insulate against future price rises. The actions that will minimise the uplift in residual waste management costs due to ETS, do not require new technology or innovative approaches. Instead, they are effectively centred on improving the services that are already available, i.e. the separation of materials for recycling and activities that promote waste reduction and re-use. Design changes to products that become waste are another important element, but fall out of scope for this report.

To mitigate ETS costs, the focus should be on material streams with the greatest fossil carbon content – i.e. plastic items, plastic packaging, waste electrical and electronic equipment (WEEE), synthetic textiles and for their weight and fossil content, absorbent hygiene products (AHPs).

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Local authorities

The key insights that came out of the assessment for local authorities are:

1 It is not inevitable that the carbon cost of ETS will significantly increase the cost of managing waste. Taking action to improve the recycling rates for fossil carbon-based materials will reduce costs and help insulate an authority against future price rises. We do not consider it possible to mitigate all of the costs from ETS at this time.

2 ETS costs can be reduced by 37-56% through proven interventions to increase diversion rates of fossil carbon-based materials. Authorities with lower recycling rates have greater scope to improve capture rates and thus the potential to avoid a greater proportion of 'business as usual' ETS costs.

3 Local authorities would avoid ETS costs by improving waste minimisation, re-use and recycling rates. Based on the scale of avoided gate fees and ETS costs and assuming the price of allowances follows the expected trajectory, they could invest up to the following without increasing their overall service costs. If service improvements can be implemented at cost lower than this, net savings will be achieved:

+ ~£154 to prevent 1 tonne of waste through minimisation or re-use in 2028. This will increase to ~£175 in 2040 as the carbon price is expected to increase.
+ ~£102 to divert 1 tonne of waste to recycling in 2028. This will increase to £122 in 2040 as the carbon price is expected to increase.

Taking these insights, the key messages for local authorities are:

1 **Implement Simpler Recycling well with a focus on participation, capture rates and material quality to mitigate ETS costs and improve recycling rates**

By the time ETS payments are proposed to start in 2028, recycling rates for fossil-based materials should have increased because of Extended Producer Responsibility for Packaging, Deposit Return Schemes, Simpler Recycling and other devolved authority recycling programmes.

2 **Reduce residual waste to invest in recycling more fossil carbon intensive materials**

Reducing the access to residual waste bin capacity through either frequency of residual waste collections or bin/bag volume for those authorities that have not yet done so is an obvious next step. This could reduce the overall tonnage by up to 6%, saving not only ETS cost but also collection costs and gate fees.

3 **Early investment in service improvements and residual waste reduction is cost-effective in the short and long-term**

Acting early is crucial, as savings made early in the scheme could be invested in delivering further service improvements that will generate even more savings in later years.

4 **There are opportunities to reduce ETS costs beyond kerbside recycling**

Changing practices at household waste recycling centres to intercept recyclables in black bags is a cost-effective way to improve recycling rates at these sites.

5 **Secondary sorting** may be part of the solution for authorities with difficult catchments, but will not be as cost effective as investing in separation at the kerbside.

6 **Implementing separate collections** for fossil-carbon intensive materials such waste electrical and electronic equipment (WEEE) and absorbent hygiene products (AHPs) is not immediately cost effective, but will offer greater savings as ETS costs grow over time.

Local authorities can take the following steps to support their plan for a service change to mitigate ETS costs:

1 **Invest in a regular sampling programme** to understand the composition of their residual waste, key fossil-carbon containing materials and how it changes over time. This will inform proposals for service improvements and build the business case for change.

2 **Review local data** to calculate potential ETS exposure both in 2028 and as the scheme develops should 'business as usual continue'. This will provide the 'do nothing' baseline against which potential interventions to reduce fossil carbon in residual waste can be measured.

Other waste producers (e.g. businesses)

Although the modelled examples in this report are based on local authorities responsible for large-scale waste management services, a number of the insights and messages from the analysis are also applicable in principle to business and other waste producers:

1. Increases in waste management costs as a result of ETS can be significantly mitigated by **diverting fossil carbon plastics from residual waste through minimisation, re-use and recycling.**

2. Reducing the quantity of waste produced is the biggest driver of cost savings – **waste producers should therefore prioritise actions that reduce waste generation and increase re-use.**

3. Separating recycling at source is the most cost-effective way of reducing the fossil carbon intensity of residual waste. **Implementing the requirements of Simpler Recycling in a business will create the opportunity for segregation at the point of production.**

4. **Adopting or expanding sustainable procurement practice** will promote waste minimisation and advance the reduction of fossil carbon in residual waste.

5. **Maximising staff, customer and visitor participation** will deliver the greatest impact and mitigate future cost increases.

UK ETS Authority

Whilst waste producers and waste managers have an obvious role in ensuring ETS delivers carbon reductions, the scheme must be implemented in a way that will maximise environmental outcomes without unintended consequences.

Research and interviews undertaken as part of this report identified six key messages for the UK ETS Authority:

1. **Provide regulatory certainty around ETS as soon as possible**, particularly regarding the measurement of fossil carbon in residual waste.

2. **Zero rate wastes that must only go to energy-from-waste to protect the environment**, such as those containing persistent organic pollutants (POPs).

3. **Recognise that some local authorities cannot improve recycling rates significantly due to the nature of their areas** and ensure they are not disproportionately penalised by ETS.

4. **Support local authorities to invest in carbon reduction** by ensuring that extended producer responsibility funding and any other potential funding from ETS revenue is 'additional' beyond the first year of the scheme and leads to a real terms increase in waste management budgets that can be planned for.

5. **The Government should look at how both mechanical and chemical recycling markets can be supported and delivered to align with the introduction of ETS** – none of the improvements to divert fossil carbon materials from residual waste will be possible if there is not suitable and sufficient infrastructure to recycle it.

6. **Consider supply chain solutions for difficult-to-recycle fossil carbon materials.** This may include material substitution, a switch to non-fossil plastics and extended producer responsibility for a wider range of wastes, particularly synthetic textiles.

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