

## Call for Evidence: Review of the Role of Incineration in the Waste Hierarchy

### Overview

#### General Comments

### Detailed Response

#### Specific Comments

### Questions 1 to 6 – generic questions about respondents

<b>7</b>	<p><b>How much capacity do you think we need to build given the current waste produced, managed and disposed of in Scotland, as well as Scotland’s waste and recycling targets? What evidence do you have to support this?</b></p>
<p>The work commissioned by ClimateXChange to assess the capacity to treat Scotland’s residual waste appears to be based on landfilled waste quantities which will be diverted from this outlet once the ban on biodegradable waste is implemented.</p> <p>Scottish Water would like to highlight that incineration capacity may be required to treat wastes that are currently not landfilled and which might, therefore, not be included in the capacity gap assessment.</p> <p>For example, treated sewage (biosolids) is currently recycled to land and this is supported by Scottish Government policy<sup>1</sup>. At some point in the future, it is possible that recycling to land may no longer be viable for biosolids (and potentially other organic wastes) and alternative outlets, such as incineration, will need to be explored.</p> <p>Water UK has recently commissioned a UK-wide report to assess and evaluate the loss of the agricultural land outlet for biosolids. Initial findings suggest:</p> <ul style="list-style-type: none"><li>• The majority of existing municipal waste incinerators use moving grate technology which is not best suited to accepting small fraction or powder-like materials such as biosolids.</li><li>• There is likely to be operational challenges associated with co-incineration of biosolids with municipal wastes e.g. biosolids will probably need to be dewatered.</li><li>• Bespoke mono-incineration facilities for biosolids could address these operational challenges. To divert biosolids from land, it is estimated that 31 mono-incinerators would be required to meet UK requirements.</li></ul>	

<sup>1</sup> [Sludge review: final recommendations - gov.scot \(www.gov.scot\)](https://www.gov.scot/resources/documents/2021/04/Sludge-review-final-recommendations-2021.pdf)

In this Call for Evidence, the definition of incineration includes pyrolysis and gasification. Neither technology appears to be referenced in the capacity gap analysis. Pyrolysis of biosolids could be used to reduce the volume of material needing an outlet and it is a technology that SW has started to investigate as a potential treatment stage after anaerobic digestion to mitigate landbank risks. However, further work is needed to understand the market for the resultant biochar and the long-term effect of applying it to land. Also, the absence of any commercial biosolids pyrolysis plants across Europe indicates that this technology is unlikely to be available in the short and medium term.

**8 It is suggested that the development of incineration capacity could lead to a 'lock-in' effect which will prevent waste from moving further up the hierarchy to be reused or recycled. What evidence do you have about these valid concerns? How do we prevent this lock-in effect, if it is a real risk?**

As mentioned in our response to Q7, wastes that are currently recycled could be sent to incineration facilities if the existing land-based outlets are closed. Further research is required to investigate the emerging risks to ensure that any decisions to close land outlets for biosolids and other organic wastes are evidence-based.

**9 Are you aware of any evidence or data that could be used to improve the capacity analysis? It would be particularly helpful if you could provide us with data on:**

- HH and C&I waste composition.
- C&I waste arisings, recycling and treatment.
- The potential developments of future RDF export markets.
- composition and biodegradability of sorting residues from HH, C&I and C&D waste.

The wastes that Scottish Water currently sends to landfill are not categorised as biodegradable municipal waste and it is not yet clear if they would be classed as biodegradable non-municipal waste. If they are to be subject to a future extended landfill ban, then we can provide data related to these wastes on request.

**10 What treatment options for residual waste should Scotland consider?**

Scottish Water has no comment.

**11 What emerging technologies are there for small scale residual waste treatment to support remote and island communities?**

Scottish Water has no comment on emerging technologies for residual waste treatment in rural and island communities.

We would note that existing regulations and policies do not support multi-waste feedstock treatment centres. In rural and island communities, where waste quantities are limited, this could affect the viability of a waste treatment facility. For example, if sewage sludge was imported to a PAS110 compliant AD plant, it would lose its certification and the operators would not be able to report data as being 'recycled'. Similarly, sewage sludge imports to AD facilities with dedicated feedstocks (e.g. distillery residues, farm wastes) would affect how the resultant digestate could be used. Given that all these materials are currently recycled to land, a holistic approach



to the associated regulations and policies could be beneficial to the approaches taken to manage waste in rural and island communities.

12

**What data can you share with the Review on the costs of operating any options for managing residual waste in Scotland, especially costs based on real experience?**

Scottish Water has no comment.

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**What data can you share with the Review on the wider costs associated with options for managing residual waste in Scotland, especially where those costs have materialised?**

Scottish Water has no comment.

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**Do you have any evidence that the Review should consider in comparing the carbon impacts of options for residual waste treatment? E.g. compositional analyses of waste streams, case studies, or reports on carbon impact.**

Scottish Water has no comment.

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**What other aspects should the Review consider when assessing the environmental impacts of residual waste treatment options?**

Scottish Water has no comment.

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**Do you have any evidence that the Review should consider in comparing the other (non-climate) environmental risks of options for residual waste treatment in Scotland?**

Scottish Water has no comment.

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**Do you have evidence or experience of the community impacts (positive and negative) of different residual waste treatment options, e.g. landfilling compared to incineration, that you could share?**

Scottish Water has no comment.

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**Do you have evidence (reports, studies, data) that could help to inform consideration of the public health implications of different treatment options?**

Scottish Water has no comment.

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**What are the main considerations in deciding where capacity should be located, and in what form?**

Scottish Water has no comment.

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**Do you have evidence to support consideration of options to decarbonise the current residual waste treatment infrastructure in Scotland?**

Scottish Water has no comment.

21	<b>Do you have evidence of the main barriers and drivers of decarbonisation of this infrastructure?</b>
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Scottish Water has no comment.

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