Scottish Water Consultation Response

Reducing Landfilling of Biodegradable and Other Wastes Call for Evidence

June 2025

8.	**Do you agree with the list of non-municipal waste that are likely to be biodegradable and may be biodegradable wastes?** **Are there other wastes you consider biodegradable and do you have evidence on the biodegradability of any of these wastes that you can share?**

Yes

Scottish Water produces the following wastes that are listed in Tables 6.2.1:

Table 6.2.1 (likely to be biodegradable wastes)
19 08 01 Screenings
19 08 05 Sludges from the treatment of urban wastewater
19 09 02 Sludges from water clarification
20 03 06 Waste from sewage cleaning

We would also suggest that grit extracted from our wastewater treatment works (WwTW) could be added to Table 6.2.1 (EWC code 19 08 02).

We do not routinely test[1] the above wastes for biodegradability. However, we do have some total organic carbon (TOC) data for some of our wastes and can share this data directly with the Scottish Government on request. For example, as part of a recent trial to investigate the suitability of WwTW grit as an input to aggregate recycling facilities, we analysed a small sample for TOC. The results were:

- Minimum 2.5%
- Average 5.5%
- Maximum 11.6%

We do not produce any of the wastes that are listed in Table 6.2.2 (may be biodegradable wastes).

[1] – 'Biodegradable' is defined in the Landfill (Scotland) Regulations 2003, as amended by the Waste (Scotland) Regulations 2012, as waste with

- A total organic carbon content of 5% or more (incinerated wastes only), or
- Respiration activity, after a static respiration test, or 10mgO_2/gram of dry material or more (treated waste), or
- Dynamic respiration over one hour of 1000mgO_2/kg of volatile solids or more (treated waste).

9.	**Are there biodegradable wastes, from Tables 6.2.1 (pg.11) and 6.2.2 (pg.12) or otherwise, that you think will need to be landfilled in the future?**

Scottish Water currently landfills the following materials:

- Screenings
- Grit
- Sludges from wastewater treatment works (Shetland only)
- Sludges from water treatment works (a very small number of rural/island locations)

Scottish Water aims to recover or recycle as much of our waste as possible. However, in some remote locations, the only suitable, available outlet at the moment is landfill. Similarly, landfill is the only option for some materials that are perceived as having no/low market value, perhaps because of contaminant levels. We recognise the need to minimise, or stop, the use of this outlet and as part of our Beyond Net Zero ambition, we are actively researching alternatives for these materials. This may include deployment of different treatment technologies and/or development of new markets. Both may take time to mature and investment will be required. It is, therefore, difficult to predict when the landfill outlet may no longer be required. It is possible that even with new treatment processes, some of our material may still need to be disposed in landfills in the future.

10.	**Our Circular Economy and Waste Route Map noted an intention to identify priority waste streams to mitigate environmental impacts.** **Which waste streams would you consider to be the priority waste streams to divert from landfill?**

Scottish Water is investigating alternative outlets/markets for all the materials listed in the response to Qu.9 that are currently sent to landfill. We consider these materials to be potential resources, rather than wastes, and want to maximise their value by identifying how they can be usefully recovered, instead of disposed. Our current priorities for further research are grit and screenings.

11.	**Are there treatment options available for biodegradable wastes, from Tables 6.2.1 (pg.11) and 6.2.2 (pg.12) or otherwise?** **Do you have evidence or thoughts on why these materials continue to be landfilled?**

Scottish Water is researching treatment options for our wastes (those listed in Table 6.2.1, as well as others). It is important to recognise, that alternative markets need to be developed in parallel with new technology.

Alternative outlets do not currently exist, at scale, for many of these wastes. New markets will need to be identified, and their requirements will need to be well understood to inform selection of appropriate technology that can consistently meet the relevant specifications. These markets must be developed so that they are capable of reliably accepting our material on a long-term basis; new market outlets must be seen to be safe, both environmentally and for longer-term viability.

Currently, technology is either not yet proven or not yet available at scale to produce material for alternative outlets (where the required quality standards are known). Technological advances are required and the supply chain needs to grow to be able to reliably support the whole UK waste industry. The technological realities of scaling

up from laboratory scale to small scale to large scale must be explored, including engagement with regulators to address any licensing hurdles.

12.	**What are the potential positive and negative impacts of not including soil in an extended landfill ban?**

Scottish Water understands from the consultation document that the purpose of extending the ban to include non-municipal biodegradable wastes is to reduce generation and emission of methane from landfill. The proposal to exclude soils from the extended ban is based on the assumption that they lead to lower greenhouse gas emissions than other landfilled wastes. Also, there are other planned government interventions (set out in the Circular Economy & Waste Route Map) to investigate and promote ways to reduce soil volumes going to landfill.

A possible negative impact of excluding soils from the ban, and relying instead on the Route Map interventions, is that there will be no legislative framework to encourage, support and, ultimately, enforce the diversion of these materials from landfill.

13.	**Do you have any views and/or evidence on the suitability of TOC (Total Organic Carbon), AT4, Dynamic Respiration or loss on ignition tests to determine the biodegradability of non-municipal wastes?**

Scottish Water does not routinely analyse our wastes for biodegradability and so cannot comment on the suitability of the listed tests for this purpose. We have tested some of our wastes for TOC to improve our understanding of the waste characterisation. Where we have this data, we can make it available if requested.

Note that our response to Qu.14 is 'No' on the basis that we do not routinely carry out biodegradability tests. We do have some data from research activities, and this can be shared on request.

14.	**Do you currently carry out biodegradability testing of non-municipal wastes and if so, are you able to share any evidence or information on the testing that you carry out?**

No

18.	**What other policies should be considered to encourage the continued diversion of waste, particularly biodegradable waste, away from landfill?**

A potential alternative outlet for biodegradable waste is anaerobic digestion. However, Government policy can hinder uptake of this outlet for some wastes. Guidance[1] on the application of the waste hierarchy states that only material that is compliant with PAS110 (or PAS100) can be considered as 'high quality' and therefore counted as 'recycling'. Where the PAS standards are not met, material can only be considered as 'acceptable' and can only be 'recovered' (a lower level on the waste hierarchy). This means that Local Authorities are reluctant to accept wastes that would risk the PAS status of their waste treatment facilities (e.g. sewage sludge). In areas where there are limited outlets (e.g. remote/rural locations), it would be

beneficial if digestion of all biodegradable wastes could be considered as 'recycling', provided certain quality standards are achieved. This could provide the necessary economies of scale to enable alternative treatment technologies to be deployed which could open alternative outlets.

The Government could also consider implementing policies to develop market demand for secondary materials e.g. mandatory inclusion of recycled materials in manufactured products. As noted in response to Qu.11, alternative markets need to be developed in parallel with new treatment technologies. Their requirements / specifications will inform selection of the most appropriate treatment options.

Other policy considerations could include:

- Mandatory recovery of nutrients,
- Whole life carbon assessment and reporting for products and processes, including disposal

[1] – Guidance on Applying the Waste Hierarchy, Scottish Government, November 2017

20.	**Are there changes to the Scottish Landfill Tax, or other fiscal leavers such as the forthcoming Scottish Aggregates Tax, that could incentivise the diversion of wastes away from landfill, particularly biodegradable wastes that will not fall under the landfill ban?**

As mentioned in response to Qu.11, it is important to recognise that market demand for secondary materials needs to be developed in parallel with investment in alternative treatment technologies. The Scottish Government needs to consider incentivising investment for both.

21.	**If further waste streams were to be included in the landfill ban, what timescale for implementing the ban would allow for industry preparations?**

As mentioned in our response to Qu.11, it will take time for technology and alternative markets to develop and mature to a level that can reliably sustain a move away from landfill. Additionally, deploying the necessary technology changes will require significant investment, not just for operators but also in the supply chain.

A timescale that would be sufficient to allow for industry preparations is, therefore, difficult to predict and may differ depending on the type of waste, with some finding alternative outlets quicker/easier than others.

For Scottish Water, it is likely to be at least ten years before the necessary technologies are proven and available at scale, with reliable alternative outlets. Additionally, investment will need to be identified and agreed.

22.	**Are you able to share information about the potential costs associated with diverting waste to alternative treatment options for the wastes detailed here (including for example costs of testing)? (Please provide details and impacts if possible)**

Scottish Water is currently researching options for alternative treatment to divert wastes away from landfill. Potential costs are not available yet.

23.	**Do you have any evidence of other, unintended consequences of diverting waste, particularly biodegradable wastes, away from landfill (such as flytipping)? (Please provide details and impacts if possible)**

Scottish Water does suffer from fly tipping on our land. Since 01 January 2024, we have recorded 19 incidents (these are the ones we are aware of; it is possible that more have occurred and are yet to be found). The estimated clean-up cost associated with these incidents is £18,200.

We do not currently record information on the type of wastes that have been fly tipped and, therefore, do not know the biodegradable proportion. Typically, the wastes that are fly tipped on our land are building materials, tyres and bulk garden waste.

Wastes are also left by visitors at our reservoir beauty spots. This could be classed as fly tipping too. Since Easter 2025, 16 incidents of 'dirty camping' have been recorded at three of our sites. These are instances where tents have been left in-situ, often containing soiled belongings and litter. Additionally, at least 80 full black bin bags of rubbish have been cleared. No costs are available for this work.

It is difficult to know if fly tipping at our sites is an unintended consequence of actions to divert waste from landfill. At the moment, pre-BMW ban, the main driver for the larger fly tipping incidents is probably avoidance of landfill fees. Proximity to landfill sites may also be a factor i.e. a fly tipping site may be quicker / easier to access. Littering/fly tipping by the general public during recreational visits to our sites is a behavioural issue that is probably not directly linked to any activities promoting diversion of waste from landfill.

Based on our current methods of recording fly tipping incidents, it would be difficult to attribute any increase after December 2025 directly to the BMW ban.

24.	**Do you have any other comments or evidence that you would like to share on the potential expansion of the ban on landfilling biodegradable municipal waste?**

Scottish Water is broadly supportive of extending the 'landfill ban' to biodegradable municipal waste. It aligns with our Beyond Net Zero ambitions.

We would suggest that developing a reliable market demand for secondary materials, in addition to investment in new treatment technologies, is critical to the success of any extended ban.

We would also note that there may be biodegradable materials that cannot be diverted from landfill, regardless of any further treatment options. Any future ban needs to allow these materials to continue to use this disposal route.

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