

██████████
Business and Finance Manager
foi@environmentalstandards.scot
0808 1964000

██████████ [@foe.scot](mailto:foe.scot)

17 March 2026

Dear ██████████

Information request – partial disclosure

I am writing in response to your email of 20 January 2026, requesting information under the Environmental Information (Scotland) Regulations 2004 (EIRs). You asked for all of the information held by ESS relating to its investigation into incineration overcapacity, including but not limited to:

- copies of all correspondence between the Scottish Government and ESS in respect of the investigation
- copies of all notes from meetings between the Scottish Government and ESS in respect of the investigation
- copies of all notes of telephone calls between the Scottish Government and ESS in respect of the investigation

Response: The information you have requested consists of internal ESS correspondence and correspondence between ESS and the Scottish Government, the Scottish Environment Protection Agency, Friends of the Earth Scotland and the environmental charity which submitted the representation to ESS. I enclose the information listed in the attached Schedules of Information relating to each of these organisations.

The EIRs allow a public authority to withhold information in response to a request, where one or more exceptions listed in the EIRs applies. While our aim is to provide information whenever possible, in this instance we are unable to provide some of the information you have requested because exceptions under regulations 11(2) and 10(4)(e) of the EIRs apply to that information. These are explained further below.

To provide you with as much information as we can, where possible the documents have been redacted to remove exempt information, while leaving the rest of the information in place. Wherever information has been removed, this is marked in the text, along with reference to the exception we are applying. Where information has been withheld in its entirety, this has been marked as 'withheld' in column four of the relevant Schedule.

Regulation 11(2)(a) – personal data

An exception under regulation 11(2)(a) of the EIRs (personal data) applies to some of the information requested because it is personal data of a third party and disclosing it would contravene the data protection principles in Article 5(1) of the UK General Data Protection Regulation. This exception is not subject to the 'public interest test', so we are not required to consider if the public interest in disclosing the information outweighs the public interest in applying the exception.

Regulation 10(4)(e) – internal communications

Regulation 10(4)(e) allows authorities to refuse to disclose internal communications. This is a class-based exception, meaning that there is no need to consider whether disclosure of the communication would cause harm before applying the exception. Provided the information is an internal communication, the exception will apply. This exception has been applied to ESS' notes of its meetings with the Scottish Government.

Public interest test

The exception in regulation 10(4)(e) is subject to the public interest test in section 2(1)(b) of regulation 10(1)(b) of the EIRs. This means that ESS can only withhold the information if the public interest in maintaining the exemption/exception outweighs the public interest in giving you the information. Therefore, taking account of all the circumstances of this case, we have considered if the public interest in disclosing the information outweighs the public interest in applying the exception. We have found that, on balance, the public interest lies in favour of upholding the exception for some of these documents. We recognise that there is some public interest in the release of documents relating to this subject. However, for the documents that have been withheld, this is outweighed by the public interest in ensuring that information disclosed is accurate and not misleading, and ensuring the maintenance of a safe space for discussion.

Right to seek a review

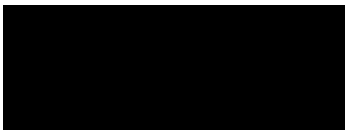
If you are unhappy with this response to your request under [FOISA/EIRs], you may ask us to carry out an internal review of the response by writing to:

Chief Executive Officer
Environmental Standards Scotland
Thistle House
91 Haymarket Terrace Edinburgh
EH12 5HD
Email foi@environmentalstandards.scot

Your review request should explain why you are dissatisfied with this response and should be made within 40 working days from the date when you received this letter. We will complete the review and tell you the result within 20 working days from the date when we receive your review request.

If you are not satisfied with the result of the review, you then have the right to appeal to the Scottish Information Commissioner. More detailed information on your appeal rights is available on the Commissioner's website at: <https://www.foi.scot/appeal>

Yours sincerely

A large black rectangular redaction box covering the signature of the Business and Finance Manager.A smaller black rectangular redaction box covering the name of the Business and Finance Manager.

Business and Finance Manager
Environmental Standards Scotland

1

From: 1 1 ercs.scot>
Sent: 18 June 2024 09:17
To: ESS Representations
Subject: Representation - incineration overcapacity (05.0623)
Attachments: ESS-REPRESENTATION-FORM (05.0623).docx; ESS representation - paper apart (05.0623).pdf; 1. Letter to Minister - 26-9-23.pdf; 2. Letter from Minister - 30-10-23.pdf; 3. UK Govt Direction to EA - 4-4-24.pdf; 4. UK Govt letter to EA - 4-4-24.pdf; 5. Letter to LS MSP - 19 April 2024.pdf; 6. Letter from minister - 3 May 2024.pdf; 7. UKWIN response to Incineration Review.pdf; 8. FOES response to Incineration Review.pdf

Dear ESS,

**Representation
Incineration overcapacity
Our reference: 05.0623**

We would like to make a representation regarding incineration overcapacity.

Please find attached:

- A completed representation form.
- A paper apart which explains the background to the representation and the outcome sought.
- Eight background documents.

I would be grateful if you could confirm receipt and outline your next steps for handling this representation.

Kind regards,

1

In-house solicitor



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ERCS is committed to maintaining your data privacy. We promise to keep your details safe and will never sell them on to third parties. To find out more about how we use your information please read our [Privacy Policy](#).

ENVIRONMENTAL Standards Scotland Ìrean Àrainneachdail na h-Alba

Representation Form

The purpose of this form

We can accept and will consider (free of charge) any representation which includes any instance of concern from anyone about how public authorities discharge their environmental law responsibilities or the effectiveness of environmental law itself.

The purpose of this form is to enable you to set out your representation in a structured way so that we can carry out an initial assessment and consider what steps, if any, should or can be taken. We may also wish to contact you to discuss your representation or seek further information from you. If you have any difficulties in using or completing this form, our staff are more than happy to assist and can be contacted at Representations@environmentalstandards.scot.

Please use this form to contact us if you have specific concerns:

- that a public authority isn't complying with an environmental law;
- that an environmental law isn't being implemented or applied properly; or
- that an environmental law isn't effective in protecting the environment.

In this context a public authority means a person carrying out any function of a public nature and environmental law means any law which is mainly about the environment.

Compliance relates to whether a public authority is failing to take proper account of environmental law when exercising its functions or is acting in a way that is contrary to (or incompatible with) environmental law.

Environmental law means any law which includes provisions mainly about the environment and environmental protection, with environmental protection including:

- (a) protecting, maintaining, restoring or improving the quality of the environment,
- (b) preventing, mitigating, minimising or remedying environmental harm caused by human activities; and
- (c) monitoring, considering, assessing, recording, reporting on or managing data on anything relating to paragraphs (a) and (b).

In practical terms, the effectiveness of environmental law relates to whether the law is achieving its intended effect in protecting the environment and contributing to our international obligations relating to environmental protections.

Next steps

It is important to explain that, before considering what action should be taken, we normally expect that you will have given the relevant public authority the opportunity to respond to the issue or that you have tried to resolve your concerns through other available mechanisms. Whatever action we do take, we will write to you setting out the reasons for this and provide as much further assistance as we can.

It is also important to understand that we are not an appeal or complaints body for individual decisions taken by public authorities in the exercise of their regulatory functions in relation to a particular person or case (for example, a decision on an application for a licence or a decision on regulatory enforcement in a specific case).

The '[How to raise a concern](#)' and '[Frequently Asked Questions](#)' pages on our website provide further information on our role and may assist you in completing this form.

By submitting this form you agree to our [Data Privacy Notice](#). ESS may use the information you provide but we will not share your personal information without obtaining prior consent from you. You may tell us at any time if you wish to withdraw your representation.

When you have completed this form, please send it to Representations@environmentalstandards.scot.

Section 1 – Your representation

1. Please tell us below the name of the public authority you are contacting us about.

Scottish Ministers

2. What area of the environment does your representation relate to? (for example, air quality/pollution, water quality/pollution, contaminated land, nature conservation, protected sites, protected species, climate change environmental assessment and monitoring).

Waste

3. Have you already contacted the public authority about the matter?

Yes No

Have you received a response?

Yes No

If the answer to either of the above questions is 'no', please tell us in the box below why this is the case.

n/a

4. Does your representation relate to:

- A public authority not complying with an environmental law?

Yes No Don't know

- Environmental law not being implemented or applied properly?

Yes No Don't know

- An environmental law isn't effective in protecting the environment?

Yes No Don't know

5. If the answer to the above questions is 'no', ESS may not be able to help you. If you have answered 'yes' or 'don't know' to any of the questions above, please tell us in the box below what the background to your representation is, including the key dates when decisions/actions were taken, and specifically what you feel has gone wrong. If possible, please include below the details of the environmental law(s) your concerns relate to and, whether there any related public authority policies, guidance and/or decisions.

It would also be of assistance if you could also provide copies of the public authority's response to you and any supporting information you have.

See enclosed paper apart.

6. What outcome are you seeking through bringing your representation to ESS?

See enclosed paper apart.

7. How did you hear about ESS?

Previous representations.

Section 2 – Your details

The person who identified the problem should normally fill in this form. If you are acting on behalf of someone else, please check and confirm that they are content for you to do so.

First Name	1
Last Name	1
Your Organisation's name (if applicable)	Environmental Rights Centre for Scotland
Telephone Number	1
Email address	1@ercs.scot
Address Line 1	Environmental Rights Centre for Scotland
Address Line 2	c/o Scottish Environment LINK
Town/City	Edinburgh
Post Code	EH1 1QW
Preferred contact method	email

To investigate your concerns, or make further enquiries, we normally need to contact the public authority to confirm that you have tried to

resolve your concerns with them first. We may also need to discuss with the public authority the nature of your concerns. This means that we may need to share with the public authority personal information related to your case.

Diversity Monitoring

ESS would appreciate if you could assist us to ensure we are reaching as many people as possible and preventing barriers from using our service. To support this, we have an [Equality and Diversity Monitoring Form](#) available to all who submit a representation.

We understand that this information is particularly personal and sensitive, and you may not want to share it with us. So whilst we would encourage you to share your details, please note filling in this form is voluntary and will not affect our investigation of your representation.

All information shared will be confidentially held in a secure database, separate from your representation.

Declaration

By completing and signing this form, I confirm that the information given is accurate and that I provide my consent for ESS to share information about me with the public authority/authorities subject to the representation **(if you have any concerns about us sharing your information with the public authority please contact us to discuss)**.

I also understand that ESS may access and review information about my concerns held by the public authority and that, depending on the nature of the representation, this may include sensitive personal information. I also understand that my personal information will be retained by ESS as set out in our privacy notice.

Signature

(Click image to add a digital signature file)



Date

18 June 2024

Section 3 – Checklist

- Have you fully completed all sections of the form that apply to you?

Yes No

- Have you included copies of all your supporting paperwork (in particular any response you have received from the public authority)?

Yes No

- Please do not send us original documents. To help protect your information we do not hold original documents on our files. Any original documents you send will be returned. Also, when our involvement with your representation comes to an end, the documents we hold on our files will be destroyed in line with our records retention policy.
- If you plan to send us large amounts of documents, please put your documents in date order, putting the most recent document at the front and oldest at the back.

Representation to ESS
Incineration overcapacity
Paper apart – Sections 1(5) and 1(6)
18 June 2024

1. The purpose of this representation is to request ESS to investigate and prepare an improvement report on incineration overcapacity.
2. We ask that ESS' improvement report makes recommendations to immediately stop incineration overcapacity from worsening and to set a cap on incineration capacity which is progressively reduced.

Background to this representation

3. In 2021, Dr Colin Church was appointed by the Scottish Ministers to chair a review of the role of incineration in the waste hierarchy in Scotland ('the Review'). One of the purposes of the Review was to consider national capacity requirements for incineration.
4. The report of the Review - 'Stop, Sort, Burn, Bury? Independent Review of the Role of Incineration in the Waste Hierarchy in Scotland' - was published in May 2022 alongside four supporting documents.¹
5. The Review considered what capacity would be required to treat 'residual waste' (waste that cannot be recycled) in Scotland to 2050. The Review was informed by an April 2022 'capacity analysis' carried out by Ricardo.²
6. The Review found that there is likely to be incineration 'overcapacity' from 2027, and potentially from as early as 2025.³ Overcapacity refers to the existence of a greater capacity to incinerate waste than is required.
7. The Review referred to the risk of overcapacity resulting in 'lock-in'. Lock-in refers to the detrimental effects that incineration overcapacity has in limiting the treatment of waste further up the 'waste hierarchy' (such as the prevention of waste or recycling).⁴ Lock-in is discussed at paragraph 23 below.

¹ The report and the supporting documents can be accessed at <https://www.gov.scot/publications/stop-sort-burn-bury-independent-review-role-incineration-waste-hierarchy-scotland/documents/>.

² Ricardo, 'Incineration Review: Capacity Analysis' (2022).

³ 'Stop, Sort, Burn, Bury?' at page 22.

⁴ Ibid, pages 26-27.

8. The Review explained that, “Given the risks of overcapacity, Scottish Government should limit the amount of national capacity that is developed”.⁵
9. The Review contained three recommendations to address overcapacity (recommendations 4 to 6 of the Review). Recommendation 5 states as follows:

...As part of an overall strategic approach to planning and deploying waste management capacity (see Recommendation 11), the Scottish Government should develop an indicative cap that declines over time for the amount of residual waste treatment needed as Scotland transitions towards a fully circular economy...
10. In their response to the Review, the Scottish Ministers accepted recommendation 5 in full.⁶ However, the Scottish Ministers have not implemented recommendation 5.
11. Incineration capacity is increasing in Scotland as a result of two factors. First, incineration capacity is increasing from the expansion of capacity at incinerators which are currently in operation. For example, on 28 July 2023, SEPA varied the permit held by Viridor Dunbar Waste Services Limited to increase the annual capacity at the Dunbar incinerator from 325,000 to 390,000 tonnes per year.⁷
12. Second, incineration capacity is at risk of increasing further from incinerators which already have planning permission but have not yet been built or started operating. This refers to incinerators for which planning permission was granted prior to June 2022, when the Scottish Government announced that a notification direction would remain in place (effectively resulting in a moratorium on granting planning permission for new incinerators).⁸
13. The trend towards increasing incineration capacity is reflected in the most recent waste data for Scotland which shows an 8.3% increase in waste being incinerated between 2021 and 2022.⁹

⁵ Ibid, page 28.

⁶ Scottish Government, ‘Scottish Government Response to: Stop, Sort, Burn, Bury? The Independent Review of the Role of Incineration in the Waste Hierarchy in Scotland’ (2024), paragraph 48.

⁷ The permit variation application documents and the variation itself are available at <https://consultation.sepa.org.uk/permits/ppc-a-1032878-viridor-dunbar-erf-ppc-variation/>.

⁸ See Scottish Government, ‘Putting limits on incineration capacity’ (2022) and Scottish Government, ‘Chief Planner letter and Notification Direction - Energy from Waste (Incineration and Advanced Thermal Treatment) Facilities’ (2021).

⁹ SEPA, ‘Scottish Waste From All Sources Generated and Managed – 2022’ (2024), page 2.

The Scottish Ministers' refusal to address overcapacity

14. The Scottish Ministers have legal powers which could be used to stop the incineration overcapacity problem from worsening. They have refused to exercise their powers. They have given no cogent reasons to justify their refusal.
15. The permits required to operate incinerators are issued under The Pollution Prevention and Control (Scotland) Regulations 2012 ('the 2012 Regulations'). They are known as 'PPC permits'.
16. Regulation 60 of 2012 Regulations gives the Scottish Ministers the power to issue directions to SEPA. This power could be used to require SEPA to refuse any new PPC permits to incinerators and any variations of an existing permit which would increase incineration capacity.
17. On 4 April 2024 the UK Government directed the Environment Agency to pause the determination of waste incineration environmental permits (enclosure 3). The legal powers under which that direction was made are similar to those which apply in Scotland. The letter which accompanied that direction explains that it was made in the context of concerns over England's expanding waste incineration capacity (enclosure 4).
18. ERCS, Friends of the Earth Scotland ('FOES') and the UK Without Incineration Network ('UKWIN') have twice written to the Scottish Ministers to ask that they direct SEPA as indicated above (enclosures 1 and 5). The Scottish Ministers have refused to exercise their power (enclosures 2 and 6).

ESS' powers to prepare an improvement report vis-à-vis incineration overcapacity

19. Section 26(1) of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021 ('the 2021 Act') sets out that ESS "may prepare an improvement report if it considers that, in exercising its functions (including regulatory functions), a public authority has failed to... (b) make effective environmental law".
20. Section 44(7) of the 2021 Act defines references to the effectiveness of environmental law as follows:

...references to the effectiveness of environmental law, or any particular aspect of it—

(a) in achieving its intended effect by reference to its contribution to—

(i) environmental protection, and

(ii) improving the health and wellbeing of Scotland's people, and achieving sustainable economic growth, so far as consistent with environmental protection, and

(b) in contributing to the implementation of any international obligation of the United Kingdom relating to environmental protection,

21. The Scottish Ministers have failed to make effective environmental law as a result of their failure to halt the worsening problem of incineration overcapacity. Environmental law currently allows incineration capacity to increase without any limit.
22. Incineration overcapacity is harmful to environmental protection due to its association with lock-in and disincentivising the treatment of waste further up the 'waste hierarchy'.
23. The connection between incineration overcapacity and lock-in is evidenced and discussed in detail in the responses of UKWIN and FOES to the Review's call for evidence (enclosures 7 & 8).¹⁰ This was acknowledged in the Review which concluded that, "...given the risks that incineration poses to human health and the environment, and the risk of lock-in, Scotland should not construct more capacity than it needs and only some of the currently planned capacity should be built".¹¹
24. Incineration overcapacity is also contrary to environmental protection due to its contribution to climate change. Incineration releases greenhouse gases directly into the atmosphere by burning waste. A 2021 report by the UK Climate Change Committee noted the detrimental impacts of unchecked usage of incineration on national climate targets.¹² The climate impacts of incineration are evidenced and discussed in detail in the responses of UKWIN and FOES to the Review's call for evidence (enclosures 7 & 8).¹³
25. The Scottish Government has recognised that reducing incineration would create many environmental benefits including the reduction of air pollution, the reduction of

¹⁰ See pages 17-28 of UKWIN's response and pages 9-12 of FOES' response.

¹¹ Stop, Sort, Burn, Bury?', at page 3.

¹² UK CCC, 'Progress in reducing emissions 2021: Report to Parliament' (2021), page 129.

¹³ See pages 42-60 of UKWIN's response and pages 12-14 of FOES' response.

soil pollution, the reduction of water use and water pollution and the more sustainable use of materials.¹⁴

Outcome sought from this representation

26. We request that ESS investigates the Scottish Ministers' failure to make effective environmental law vis-à-vis incineration overcapacity, and that ESS issues an improvement report with recommendations to immediately stop incineration overcapacity from worsening and set a cap on incineration capacity which is progressively reduced.

Documents enclosed with this representation

1. Letter to Minister for Green Jobs, Circular Economy and Biodiversity dated 26 September 2023.
2. Letter from Minister for Green Jobs, Circular Economy and Biodiversity dated 30 October 2023.
3. DEFRA direction to Environment Agency dated 4 April 2024.
4. DEFRA letter to Environment Agency dated 4 April 2024.
5. Letter to Minister for Green Jobs, Circular Economy and Biodiversity dated 19 April 2024.
6. Letter from Cabinet Secretary for Wellbeing Economy, Net Zero and Energy dated 3 May 2024.
7. UKWIN submission to the Scottish incineration review, dated February 2022.
8. FOES response to the Scottish Government's call for evidence on the incineration review, dated February 2022.

¹⁴ See Scottish Government, '[Scotland's Circular Economy and Waste Route Map to 2030 - Strategic Environmental Assessment Environmental Report](#)' (2024), at pages 41, 45, 47 and 52.

[REDACTED]
Friends of the Earth Scotland
Thorn House, 5 Rose Street,
Edinburgh EH2 2PR

[REDACTED]
Environmental Rights Centre for Scotland
c/o Scottish Environment LINK
Dolphin House
4 Hunter Square
Edinburgh, EH1 1QW

Thursday, 26th September 2023

Lorna Slater, Minister for Green Jobs, Circular Economy and Biodiversity,
Scottish Government,
St. Andrew's House,
Regent Road,
Edinburgh EH1 3DG

Dear Minister,

**Request for SEPA direction to refuse PPC permits for new incinerators
The Pollution Prevention and Control (Scotland) Regulations 2012**

We are writing to you on behalf the local communities and environmental groups listed below to request that the Scottish Government uses its powers under the Pollution Prevention and Control (Scotland) Regulations 2012 ('the PPC Regulations') to direct the Scottish Environment Protection Agency ('SEPA') to refuse permits to new incineration plants in Scotland.

In this letter we set out the rationale for this request. Incineration overcapacity poses a serious risk to the Scottish Government's climate and circular economy agendas. Allowing unnecessary incineration capacity to develop is counterproductive. Incineration plants operate for many years, so the Scottish Government's decisions today will have social and environmental consequences in Scotland for decades to come.

Over a year ago, the Scottish Government fully accepted a recommendation from its independent review 'Stop, Sort, Burn, Bury - incineration in the waste hierarchy' to "ensure adequate time and resource is dedicated to local and community engagement" (Recommendation 8). Since then, very little engagement with communities has been initiated by the Scottish Government. We urge the Scottish Government to act now, before it is too late, on the concerns raised by the overlooked communities represented in the letter to immediately limit overcapacity of incineration in Scotland.

Scotland's incinerator overcapacity problem

The independent review on the role of incineration in the waste hierarchy, conducted for the Scottish Government, found "a risk of long-term overcapacity beginning from 2026 or 2027, if all

or most of the incineration capacity in the pipeline is built” and that “given the risks of overcapacity, Scottish Government should limit the amount of national capacity that is developed.” (p28).

These conclusions led to Recommendations 4 and 5 in the review: no further planning permission should be granted for new incineration structures and the Scottish Government should develop an indicative cap that declines over time for the amount of residual waste treatment capacity needed as Scotland transitions towards a fully circular economy.

The Scottish Government accepted these recommendations in full, in June 2022. Since then, it has acted to stop new incinerators entering the planning system. However, reversing overcapacity of planned plants has not been acted on so decisively. This means there is still a risk of incineration overcapacity by 2027.

The Scottish Government indicates that the Waste Route Map, due to be published in 2024, will set out the required strategic direction for waste management in Scotland. However, this will be too late for many communities as developers continue to progress and invest in their plans across Scotland. For example, the NESS incinerator in Aberdeen, which was at the construction phase when the review was published, has moved from construction to hot-commissioning and construction has begun on the Oldhall incinerator in Irvine.

Urgent action must be taken to prevent the predictions of overcapacity in the review becoming a reality.

Using the PPC Regulations to refuse new incineration permits

The PPC Regulations are used to environmentally regulate some industrial activities. Operators of installations that fall under the PPC regulations must have a permit, granted by SEPA, in order to operate. If regulatory requirements are satisfied, it would be unusual for SEPA to refuse a permit on wider environmental grounds.

Regulation 60 gives Scottish Ministers the power to give ‘directions’ to SEPA with respect to the carrying out of SEPA’s functions under the PPC Regulations. Regulation 60 is phrased very broadly, and clearly gives the Scottish Ministers the power to direct SEPA to refuse PPC permits for all new incinerators. According to Regulation 60(5), SEPA must comply with any directions from Scottish Ministers.

We therefore call on the Scottish Government to prevent overcapacity of incineration in Scotland by directing SEPA to refuse PPC permits to projects for new incinerators.¹ In the event that the Scottish Government intends to allow SEPA to issue any new incinerator permits, this must be done in a strategic fashion.

While we do not believe any new incineration capacity is justified, if the Scottish Government believes that a small amount of new capacity should be allowed then, in line with the findings of

¹ Our understanding is that the incinerator plants which have obtained planning permission prior to the ban but have not yet begun construction or obtained a permit are Avondale Energy from Waste in Falkirk, Inverurie in Aberdeenshire, and Levensheat 2 in South Lanarkshire. The Glenfarg incinerator in Perthshire and Oldhall incinerator in North Ayrshire are believed to be in the early construction stages and do not have permits.

the incineration review, strategic decisions would need to be made based on factors such as a proposed facility's location and impacts. For example, the Scottish Government should, if they allow any new incineration capacity at all, at the very least, require that any new plant must be connected to a district heating scheme.

The direction should delay awarding any environmental permits until the Scottish Government has set the cap that will provide certainty to how much capacity is needed and how fast this is expected to reduce over time. Only at this point will it be clear how much capacity is needed.

Conclusion

We call on the Scottish Government to prevent overcapacity of incineration in Scotland by directing SEPA to refuse PPC permits to projects for new incinerators.

According to the PPC Regulations, only Scottish Ministers have the power to direct SEPA in this way. This action is the simplest way of preventing an overcapacity of incineration. It is important that the Scottish Government act as soon as possible because every additional investment that developers make into incineration infrastructure makes lock-in to a polluting and harmful waste management system more likely.

We would welcome a meeting to discuss these points with you in more detail. We look forward to your reply.

Yours,

1 ██████████ Friends of the Earth Scotland
1 ██████████ Environmental Rights Centre for Scotland

On behalf of the following organisations and individuals
Ayrshire Against Incineration Group
Badenoch & Strathspey Conservation Group
Dovesdale Action Group
Friends of the Earth Falkirk
Friends of the Earth Inverness and Ross
Irvine Without Incinerators

1 ██████████ coordinator of local action against a proposed incinerator in Clydebank
Dr 1 ██████████ local activist concerned about the planned incinerator in Inverurie

With the support of
1 ██████████ UK Without Incineration Network (UKWIN)

Minister for Green Skills, Circular Economy and Biodiversity
Ministear airson Sgilean Uaine, Eaconamaidh Chuirteach is Bith-iomadachd
Lorna Slater MSP/BPA



Scottish Government
Riaghaltas na h-Alba
gov.scot

T : 0300 244 4000
E : scottish.ministers@gov.scot

1
1 [redacted]@foe.scot

Our Reference: 202300378771
Your Reference: Incineration

30 October 2023

Dear 1 [redacted]

Thank you for your letter of 26 September on environmental (Pollution, Prevention and Control (PPC)) permits for new incinerators.

I welcome your comments and share your concerns about the potential for overcapacity in Scotland. Please be assured that we have a shared goal in mitigating the risks of overcapacity.

It is essential that we have only the capacity we need to treat our residual waste in Scotland. The independent review of incineration in the waste hierarchy highlighted the importance of appropriate incineration capacity, finding both a long-term risk of overcapacity, if all incineration facilities currently in the pipeline were built, but also a risk of under-capacity in the short-term, when considering the upcoming ban on landfilling biodegradable municipal waste.

The key policy levers available to Scottish Ministers to manage capacity are in planning. As you note, we responded to the Review's recommendation, that no further planning permission for incineration facilities beyond what was already in place should be granted. This was addressed in National Planning Framework 4, which is clear that Scottish Government will not support development proposals for energy-from-waste facilities except under very limited circumstances.

This policy, alongside the development of an indicative cap for the amount of residual waste treatment needed, will serve to limit and gradually reduce Scotland's incineration capacity. This approach will ensure we have an appropriate treatment capacity to manage our waste today, and that this treatment capacity declines as we move towards our circular economy and carbon reduction goals.

Scottish Ministers, special advisers and the Permanent Secretary are covered by the terms of the Lobbying (Scotland) Act 2016. See www.lobbying.scot

Tha Ministearanna h-Alba, an luchd-comhairleachaidh sònraichte agus Rùnaire Maireannach fo chumhachan Achd Coiteachaidh (Alba) 2016. Faicibh www.lobbying.scot

St Andrew's House, Regent Road, Edinburgh EH1
3DG
www.gov.scot



INVESTORS IN PEOPLE
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That is why, with support from Zero Waste Scotland, my officials continue to closely monitor the development of facilities and capacity in Scotland, and we continue to review the measures we have in place to reduce the risk of overcapacity. In addition, we continue to encourage developers of those incineration facilities that already have planning permission to ensure they understand the Review's findings on capacity.

I trust this response is helpful in clarifying Scottish Government's approach to ensuring that Scotland only has the incineration capacity needed to manage unavoidable, unrecyclable waste. I will, of course, be happy to continue to listen to your valuable perspectives on this important issue.

Kind Regards



LORNA SLATER

Scottish Ministers, special advisers and the Permanent Secretary are covered by the terms of the Lobbying (Scotland) Act 2016. See www.lobbying.scot

Tha Ministearanna h-Alba, an luchd-comhairleachaidh sònraichte agus Rùnaire Maireannach fo chumhachan Achd Coiteachaidh (Alba) 2016. Faicibh www.lobbying.scot

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Redaction Key:
1 = Redacted - R.11(2)
2 = Redacted - out of scope

The Environmental Permitting (England and Wales) Regulations 2016

The Environmental Permitting (England) (Pause on the Determination of Waste Incineration Permit Applications) Direction 2024

The Secretary of State, in exercise of powers conferred on him by regulation 62(1) and (2) of the Environmental Permitting (England and Wales) Regulations 2016¹ gives the following Direction—

1. Citation, commencement and application

(1) This Direction may be cited as the Environmental Permitting (England) (Pause on the Determination of Waste Incineration Permit Applications) Direction 2024.

(2) This Direction comes into force on 5 April 2024 and applies until 24 May 2024.

(3) This Direction applies to England only.

2. Interpretation

In this Direction—

“the 2016 Regulations” means the Environmental Permitting (England and Wales) Regulations 2016;

“environmental permit” has the same meaning as in regulation 2 of the 2016 Regulations;

“small waste incineration plant” has the same meaning as in regulation 2 of the 2016 Regulations;

“waste incineration environmental permit” means an environmental permit authorising a waste incineration plant;

“waste incineration plant” has the same meaning as in regulation 2 of the 2016 Regulations.

3. Pause on the determination of waste incineration environmental permits

During the period set out in paragraph 1(2), the Environment Agency is directed to refrain from—

(a) granting or refusing an application for a waste incineration environmental permit for an application received on or before 4 April 2024; and

(b) determining whether an application for a waste incineration environmental permit received after 4 April 2024 has been duly made.

¹ S.I. 2016/1154.

4. Exceptions

(1) Paragraph 3 does not apply to an environmental permit application for authorisation of—

(a) a waste incineration plant whose principal purpose is—

(i) the incineration of—

(aa) hazardous waste; or

(bb) clinical waste and offensive waste;

(ii) the recycling of waste;

(b) a small waste incineration plant; or

(c) carbon capture and storage at a waste incineration plant, where there is already a waste incineration environmental permit in place at that facility.

(2) For the purposes of sub-paragraph (1)—

(a) “hazardous waste” has the same meaning as in regulation 6 of the Hazardous Waste (England and Wales) Regulations 2005²;

(b) “clinical waste” and “offensive waste” have the same meanings as in paragraph 1 of the Schedule to the Controlled Waste (England and Wales) Regulations 2012³; and

(c) “recycling” means the reprocessing of waste into products, materials or substances, including the reprocessing of organic material but excluding—

(i) energy recovery; and

(ii) reprocessing materials that are to be used as fuels.

(3) This Direction is without prejudice to the carrying out of the Environment Agency’s other functions in relation to the grant, variation, transfer or surrender of environmental permits under the 2016 Regulations (including the variation, transfer, or surrender of waste incineration environmental permits).

Mark Spencer

Minister of State

Department for Environment, Food and Rural Affairs

4 April 2024

² S.I. 2005/894.

³ S.I. 2012/811.



**Department
for Environment
Food & Rural Affairs**

The Rt. Hon. Sir Mark Spencer MP
Minister of State for Food, Farming and Fisheries

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Philip Duffy, Chief Executive
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2 Marsham Street
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SW1P 4DF

04 April 2024

RE: Consultation: Environmental Permits and Waste Incineration Facilities

Dear Philip,

As the Minister responsible for waste incineration, I am writing to you regarding environmental permitting and waste incineration facilities.

Thank you for your letter dated 28 March 2024. Your response to my letter (dated 22 March 2024) was clear and constructive.

On reflection of your response and my concerns set out previously with regard to further expanding England's waste incineration capacity, and the risks this poses to our objectives and environmental obligations, I am writing to inform you that I am issuing a Direction to the Environment Agency, under regulation 62 of the Environmental Permitting (England and Wales) Regulations 2016, to temporarily pause the determination of environmental permits for new waste incineration facilities, including Energy from Waste and Advanced Thermal Treatment. This applies to proposed developments that do not yet hold an environmental permit for waste incineration, regardless of whether they hold planning permission from the relevant planning authority.

As per our correspondence, this does not apply to permits for hazardous or clinical waste incineration facilities, small waste incineration plants, incinerators seeking a permit variation for an existing environmental permit, significant permit variations for incinerators seeking to develop carbon capture and storage provision, or facilities whose primary purpose is the recycling of materials (i.e. the reprocessing of waste materials into products, materials or substances). The intention of this Direction is to cover facilities with the primary purpose of energy recovery, either directly through power, gasification, or conversion of residual wastes to a fuel.

I am issuing this direction for a short period lasting until 24 May 2024, but this could be withdrawn earlier. This will allow a short period for Defra officials to lead a piece of work considering the role of waste incineration in the management of residual wastes in England. I have attached a copy of the Direction which I understand has been agreed between our officials. I welcome and thank you for this collaborative approach.



I am happy to discuss this Direction further if this is helpful do so. I copy this letter to Tamara Finkelstein – Defra Permanent Secretary, David Hill – Director General Environment, and Emma Bourne – Director Resources & Waste.

Yours sincerely,

Rt. Hon. Sir Mark Spencer MP





Environmental Rights Centre for Scotland
c/o Scottish Environment Link
Dolphin House
4 Hunter Square
Edinburgh, EH1 1QW

Our ref: 05.0623

19 April 2024

Lorna Slater MSP
Minister for Green Skills, Circular Economy and Biodiversity
Scottish Government
St Andrew's House
Regent Road
Edinburgh
EH1 3DG

Sent by email only to: ministerforgsceb@gov.scot

Dear Ms Slater,

**Request for direction to SEPA to address incineration overcapacity
The Pollution Prevention and Control (Scotland) Regulations 2012**

We refer to the above, to the letter from Friends of the Earth Scotland to you dated 26 September 2023 and to your response by letter dated 30 October 2023. Copies of those letters are enclosed for ease of reference.

The letter of 26 September 2023 asked you to exercise the power under Regulation 60 of The Pollution Prevention and Control (Scotland) Regulations 2012 ('the 2012 Regulations') to direct SEPA to refuse PPC permits for new incinerators.

Your letter of 30 October 2023 did not directly respond to that request.

The purposes of this letter are twofold. First, we draw your attention to the worsening problem of incineration overcapacity. Second, we ask you to clearly confirm whether you are willing to exercise your power to direct SEPA to stop incineration overcapacity from increasing further.

Background – the incineration overcapacity problem

As explained in the letter of 26 September 2023, the independent review of the Role of Incineration in the Waste Hierarchy in Scotland 'Stop, Sort, Burn, Bury?' found that if all or most of the planned incineration capacity is built there is a risk of incineration overcapacity from 2026 or 2027.



The review found that the Scottish Ministers should limit further development of incineration capacity, and recommended the development of an indicative cap for the amount of residual waste treatment needed that declines over time.

Although the Scottish Ministers have acted to prevent new incinerators from being granted planning permission, that 'planning moratorium' is not sufficient by itself to prevent incineration capacity from increasing.

Incineration overcapacity is increasing from the expansion of capacity at incinerators which are currently in operation, and is at risk of increasing further from incinerators which already have planning permission but have not yet been built or started operating.

We understand that several incinerator projects have obtained planning permission but have not yet obtained PPC permits from SEPA and would together amount to an additional 956,000 tonnes per annum ('tpa') of incineration capacity:

- Avondale (176,000 tpa).
- Glenfarg (85,000 tpa).
- Oldhall (180,000 tpa).
- Inverurie (200,000 tpa).
- Levenseat 2 (315,000 tpa).

To illustrate the problem of the expanding capacity of existing incinerators, on 28 July 2023 SEPA granted a variation to PPC permit for the incinerator at Dunbar operated by Viridor Dunbar Waste Services Limited (PPC permit reference: PPC/A/1032878/CP01). The permit for that incinerator was varied to increase its annual capacity from 325,000 tpa to 390,000 tpa (i.e. by 65,000 tpa or ~22%).

We further note that, since the modelling work was carried out in April 2022 by Ricardo for the independent review, construction work has commenced on new incinerators at Oldhall, South Clyde and Drumgray.

This trend towards increasing incineration capacity is reflected in the most recent waste data for Scotland which shows a significant annual increase in waste being 'treated' by incineration. SEPA's March 2024, 'Scottish Waste From All Sources 2022' report states that, "The amount of Scottish



waste recovered or disposed of by incineration in 2022 was 1.40 million tonnes, an increase of 108,000 tonnes (8.3%) from 2021”.¹

The above demonstrates that the level of incineration capacity (both currently operational and planned) is already significantly higher than that which was considered by the independent review that warned of an overcapacity problem.

You will be aware that on 4 April 2024 the UK Government directed the Environment Agency to pause the determination of waste incineration environmental permits. The legal powers under which that direction was made are similar to those which apply in Scotland. The 4 April 2024 letter from DEFRA to the Environment Agency which accompanied the direction explains that it was made in the context of concerns over further expanding England’s waste incineration capacity. Copies of the direction and the letter are enclosed.

Without a similar intervention from you, it is very likely that SEPA will grant permits to new incinerators and will continue to vary existing permits. New permits and permit variations will worsen the incineration overcapacity problem. SEPA’s approach to incineration permitting is at odds with Scottish Government policy and requires ministerial intervention as a matter of urgency.

Request for direction to SEPA to address incineration overcapacity

It is imperative that you direct SEPA to stop exercising its powers under the 2012 Regulations in ways which increase incineration capacity. In particular, we ask that you direct SEPA to both refuse to grant PPC permits for new incinerators and to ensure that existing PPC permits cannot be varied to increase incineration capacity for any incinerators which are currently in operation or are already permitted.

The need for the direction to remain in place could be reviewed after the establishment of an indicative cap on residual waste treatment.

In your 19 December 2023 answer to a written parliamentary question from Mark Ruskell MSP, you accepted that the Scottish Ministers have the power to issue a direction to SEPA in the manner requested by Friends of the Earth Scotland.²

Your answer expressed a reluctance to intervene “in the absence of exceptional circumstances”. You will be aware that there is no legal basis in the 2012 Regulations for the proposition that exceptional circumstances are required in order for the Scottish Ministers to exercise the Regulation 60 power.

¹ SEPA, ‘[Scottish Waste From All Sources Generated and Managed – 2022](#)’ (2024), page 2.

² Question reference S6W-23750. The full text of the question and answer are available at <https://www.parliament.scot/chamber-and-committees/questions-and-answers/question?ref=S6W-23750> (accessed 12 March 2024).



In any event, our view is that the incineration overcapacity problem detailed in this letter amounts to exceptional circumstances which necessitate a direction.

We would be grateful if you could please confirm **by no later than Friday 3 May 2024** that you will direct SEPA in the terms requested above.

In the event that you are not minded to direct SEPA as requested, please provide reasons to explain your position.

Please note that if you refuse to direct SEPA as requested, we will refer this matter to Environmental Standards Scotland on the basis that the above represents an instance of environmental law which does not effectively protect human health or the environment. We will ask Environmental Standards Scotland to issue the Scottish Ministers with an improvement report using their powers under Section 26 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021. That process is likely to generate significant adverse publicity for the Scottish Ministers.

We look forward to hearing from you.

Yours sincerely,

1 [REDACTED] In-house solicitor, Environmental Rights Centre for Scotland

1 [REDACTED] National Coordinator, The UK Without Incineration Network

Cabinet Secretary for Wellbeing Economy, Net Zero and Energy

• Rùnaire a' Chaibneit airson Eaconamaidh do Mhath Dhaoine, Cothromachadh Carboin is Cumhachd

Mairi McAllan MSP/BPA



Scottish Government
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1
1 [redacted]@ercs.scot

Our Reference: 202400410114

Your Reference: Request for SEPA direction - incineration overcapacity (05.0623)

3 May 2024

Dear 1 and 1

Thank you for your letter of 19 April to the former Minister for Green Skills, Circular Economy and Biodiversity on a direction to SEPA address potential incineration overcapacity. As Cabinet Secretary for Wellbeing Economy, Net Zero and Energy, I have, for now, absorbed the responsibilities of the former minister in respect of the incineration of waste.

I share your concerns around incineration capacity. It is important that Scotland is able to manage our unavoidable and unrecyclable waste, particularly in light of the ban on landfilling biodegradable municipal waste in Scotland, which comes into force on 31 December 2025. As we move to a circular economy, we will produce less unavoidable and unrecyclable waste and it is important that we keep this in mind as we seek to ensure we have enough capacity to manage all of our own waste in Scotland.

This is why we have commissioned several capacity analyses over the past few years, notably the independent review of incineration, which highlighted the importance of appropriate incineration capacity, but recommended that the Scottish Government should ensure that no further planning permission (i.e. beyond that already in place) is granted to incineration infrastructure within the scope of this Review, with limited exceptions. In response, we addressed this in National Planning Framework 4, which is clear that Scottish Government will not support development proposals for energy from waste facilities except under very limited circumstances.

Scottish Ministers, special advisers and the Permanent Secretary are covered by the terms of the Lobbying (Scotland) Act 2016. See www.lobbying.scot

Tha Ministearanna h-Alba, an luchd-comhairleachaidh sònraichte agus Rùnaire Maireannach fo chumhachan Achd Coiteachaidh (Alba) 2016. Faicibh www.lobbying.scot

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Since the independent review of incineration completed, plans have changed in relation to several facilities that were in development. For that reason, an additional capacity analysis was commissioned, through Zero Waste Scotland, as part of work to consider delivery of the ban on landfilling biodegradable municipal wastes. The outputs and recommendations of this work are currently under consideration by the Scottish Government, and I will write to you again once this concludes.

Yours sincerely



MAIRI MCALLAN

Scottish Ministers, special advisers and the Permanent Secretary are covered by the terms of the Lobbying (Scotland) Act 2016. See www.lobbying.scot

Tha Ministearanna h-Alba, an luchd-comhairleachaidh sònraichte agus Rùnaire Maireannach fo chumhachan Achd Coiteachaidh (Alba) 2016. Faicibh www.lobbying.scot

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Call for Evidence Response

UKWIN SUBMISSION TO THE SCOTTISH INCINERATION REVIEW

Covering the following topics:

- ▶ Recommendations
- ▶ Capacity Analysis
- ▶ Management Options
- ▶ Economic, Environmental and Social Trade-offs
- ▶ Locational Considerations
- ▶ Improving Existing Facilities

FEBRUARY 2022

Principal authors: [REDACTED]



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About UKWIN

The United Kingdom Without Incineration Network (UKWIN) was founded in March 2007 to promote sustainable waste management. UKWIN works at a national level to make expertise available to those wishing to participate in environmental decisions relating to waste management, including providing support with accessing environmental information and pursuing justice in environmental matters.

UKWIN advocates for economic, policy and legislative drivers to support sustainability in general, and more specifically to support the move away from incineration and towards a sustainable low-carbon circular economy.

UKWIN also highlights social, environmental and economic issues associated with incineration, including through social media and our website, and by contributing to relevant public consultations, as well as through ongoing work with academics and journalists.

For more about UKWIN see our website at: <https://ukwin.org.uk/>

GLOSSARY OF TERMS USED

Term	Meaning
BEIS	Department for Business, Energy & Industrial Strategy, a part of the UK Government.

Biogenic carbon	Carbon from biogenic sources such as paper, card and food waste. When combusted, one tone of biogenic carbon results in the release of 3.667 tonnes of biogenic CO ₂ .
Biogenic CO₂	Carbon dioxide from biogenic sources such as paper, card and food waste. This is sometimes said to be part of a 'short cycle' of carbon emission and re-absorption through new growth.
CCGT	Combined Cycle Gas Turbine.
CH₄	Methane, a greenhouse gas.
CHP	Combined Heat and Power. Refers to incinerators exporting both heat and electricity.
CO₂	Carbon dioxide, a greenhouse gas.
CO₂e	Carbon dioxide equivalent. This includes CO ₂ as well as other greenhouse gasses expressed in relation to their equivalent level of GHG impact within a given timeframe.
Defra	The Department for Environment, Food & Rural Affairs, a part of the UK Government.
Energy from Waste (EFW)	This can mean thermal treatment (incineration, gasification, pyrolysis) or a wider class of technologies which could also include anaerobic digestion, energy generated from landfill gas capture, and/or the conversion of waste into fuels such as transport fuels.
EA	The Environment Agency, a UK Government agency.
ERF	Energy Recovery Facility, e.g. a waste incinerator that generates energy.
Fossil carbon	Carbon from fossil fuel sources (e.g. conventional plastics). When combusted, one tone of fossil carbon results in the release of 3.667 tonnes of fossil CO ₂ .
Fossil carbon percentage	Depending on the context, this can either be the percentage of material which is fossil carbon or the proportion of the carbon which is fossil rather than biogenic carbon.
Fossil CO₂	This primarily refers to carbon dioxide from fossil fuel sources (e.g. conventional plastics). However, it is also used to refer to other greenhouse gases, such as methane, which are not considered to form part of the 'short cycle' of biogenic CO ₂ .
GHG	Greenhouse gas(es). A gas such as carbon dioxide (CO ₂), methane (CH ₄) or nitrous oxide (N ₂ O) that contributes to global warming.
ktpa	Kilotonnes per annum (1,000 tonnes per year)
kWh	Kilowatt hour
MBT	Mechanical and Biological Treatment. Involves recycling and/or composting with residues going to incineration or landfill. Can be focussed more on RDF production than on maximising recycling.
MRBT	Material Recovery and Biological Treatment. A form of MBT focussed on maximising recyclate recovery, generally involving bio-stabilised residues going to a controlled landfill rather than to incineration.
MW	Megawatt
N₂O	Nitrous oxide, a greenhouse gas
RDF	Refuse derived fuels. A form of processed waste feedstock.
SG	Scottish Government.
SRF	Solid recovered fuels. Refuse derived fuel produced to a detailed specification, e.g. to be burned at cement kilns.
tpa	Tonnes per annum (year)
tCO₂e	Tonnes of CO ₂ e (often expressed per annum / year)
UK	The United Kingdom of Great Britain and Northern Ireland
UKWIN	The United Kingdom Without Incineration Network, founded in March 2007 to promote sustainable waste management. See: https://ukwin.org.uk/
ZWS	Zero Waste Scotland

RECOMMENDATIONS

UKWIN suggests the following recommendations, supported by the evidence set out in this submission, be made to the Scottish Government as part of the Incineration Review to inform Scottish Ministers on future policy around incineration in Scotland:

- The Scottish Government [SG] should immediately introduce an indefinite moratorium on new waste incineration capacity in Scotland. Such a moratorium should ensure that no new or expanded planning permission for waste incineration capacity will be consented. Modifications of planning permissions for existing capacity should be strictly controlled.
- The SG should move quickly to consulting on an 'Incineration exit strategy for Scotland', including setting a clear target date for ending incineration in Scotland.
- The SG should introduce a middle band of landfill tax (or a 'sliding scale') to encourage biostabilisation prior to landfill as part of revising the approach to the landfill ban to focus on reducing the harmful impacts of landfill rather than merely reducing the proportion of waste sent to landfill. Furthermore, the Scottish Government should fund an exemplar biostabilisation pilot, with detailed results to be made public. This can help inform consideration of future projects, as well as any changes to respiratory test criteria and associated standards.
- The SG should follow the Committee on Climate Change's (CCC's) recommendation that landfill diversion should be achieved through reduction, reuse, and recycling, and not through incineration. The Scottish Government should also follow the CCC's recommendation to set new ambitious recycling and waste prevention targets for 2030.
- Mandatory compositional analysis should be required of all existing incinerators in Scotland to determine how much of the materials currently being used as incinerator feedstock could have been collected for recycling, composting, reuse, or substituted with more recyclable materials (with the results made public).
- Incineration should be moved to its own category in Scotland's GHG inventory reporting, with figures based on real world monitoring, and with the level of biogenic CO₂ clearly reported, alongside fossil CO₂ emissions.

-
- Storage of biogenic carbon in landfill should be monitored and included in GHG inventory reporting in line with US Environmental Protection Agency's approach.¹
 - The SG should, as a matter of urgency, require SEPA to make information available online, including information about existing incineration facilities that are required to be part of their public register, e.g. all Annual Environmental Performance Reports, all quarterly returns and similar reporting forms, etc.
-

¹ See <https://ukwin.org.uk/files/pdf/UKWIN-2021-Good-Practice-Guidance-for-Assessing-the-GHG-Impacts-of-Waste%20Incineration.pdf> pages 36-38

- The SG should commit to the principle that no public funding (including public service pension funds) should be made available for incineration, including for either carbon capture or district heating schemes, in order to prevent adding new barriers to the transition to the circular economy.
- The SG should impose an incineration tax on existing waste incinerators, set at a meaningful rate that reflects the CO₂ emissions and encourages recycling and the move towards a circular economy. Where costs incurred through this tax relate to hard-to-recycle materials this cost should be passed on to producers through Scotland's Extended Producer Responsibility (EPR) scheme. Funds raised through the incineration tax should be spent on the top tiers of the waste hierarchy, in particular on waste prevention and reuse.
- The SG should require SEPA to ensure that, when reviewing existing incinerator permits or when considering permit applications for those incinerators that have been granted planning permission prior to the imposition of the moratorium, permits include strict conditions for operators to apply higher standards of Best Available Technique (BAT) and for operators to carry out more monitoring of emissions and their associated adverse impacts.
- Greenwashing terms such as 'low carbon' or 'renewable electricity' when applied to energy generated by waste incinerators should be declared 'false advertising', and incinerator operators and Government departments should be advised to refer to incinerators as 'incinerators' rather than euphemisms such as 'Energy from Waste' (a term that can also be used to describe non-incineration sources of energy, such as anaerobic digestion and landfill gas capture).
- To increase recyclate capture, the SG should investigate the feasibility and desirability of adopting collection and sorting systems whereby citizens can put all potentially recyclable dry materials (such as all grades of clean plastics) into their recycling bins, which can then be further sorted to determine the optimal treatment option for that material (as this would greatly increase capture rates for recyclable material while addressing problems associated with 'contamination').
- There should be monitoring of the prevalence of hard-to-recycle products to facilitate dialogue with the producers and designers of those products. This could also support the publication of 'league tables' showing which brands are the 'worst offenders' and which are 'most improved', etc. as part of an education drive to engage consumers in better (i.e. more prudent) resource management.
- Assessments of the impacts of the climate impacts of waste incineration when compared to landfill should be carried out in line with UKWIN's GHG Good Practice Guidance.²

² Available at <https://ukwin.org.uk/files/pdf/UKWIN-2021-Good-Practice-Guidance-for-Assessing-the-GHG-Impacts-of-Waste%20Incineration.pdf>

- In circumstances where a Council’s existing long-term waste contract is proving to be a barrier to improved recycling and waste prevention (e.g. due to put-or-pay clauses relating to incineration) then the Scottish Government should support them to renegotiate or exit that contract.

ABOUT UKWIN

Q1. What is your name?

[Redacted]

Q2. What is your email address?

[Redacted]

Q3. Which category in the following list best describes you? vii.

Environmental group

Q4. If you are replying on behalf of a business or representative organisation, please provide the name of the organisation/sector you represent, where your business is located, and an approximate size/number of staff (where applicable).

Name of organisation: The United Kingdom Without Incineration Network (UKWIN)

Registered office: [REDACTED]

Phone number: [REDACTED]

Organisation size: UKWIN has no employees and is instead made up of hundreds of volunteers and several paid consultants located across the UK.

Q5. We confirm that we have read the privacy policy and that we consent to the data UKWIN has provided being used as set out in the policy. For the avoidance of doubt there are no elements of UKWIN’s response that need to remain confidential.

Q6. The Review Team have permission to contact UKWIN about our response.

TOPIC 1: CAPACITY ANALYSIS

Estimate of Scotland’s residual waste treatment overcapacity

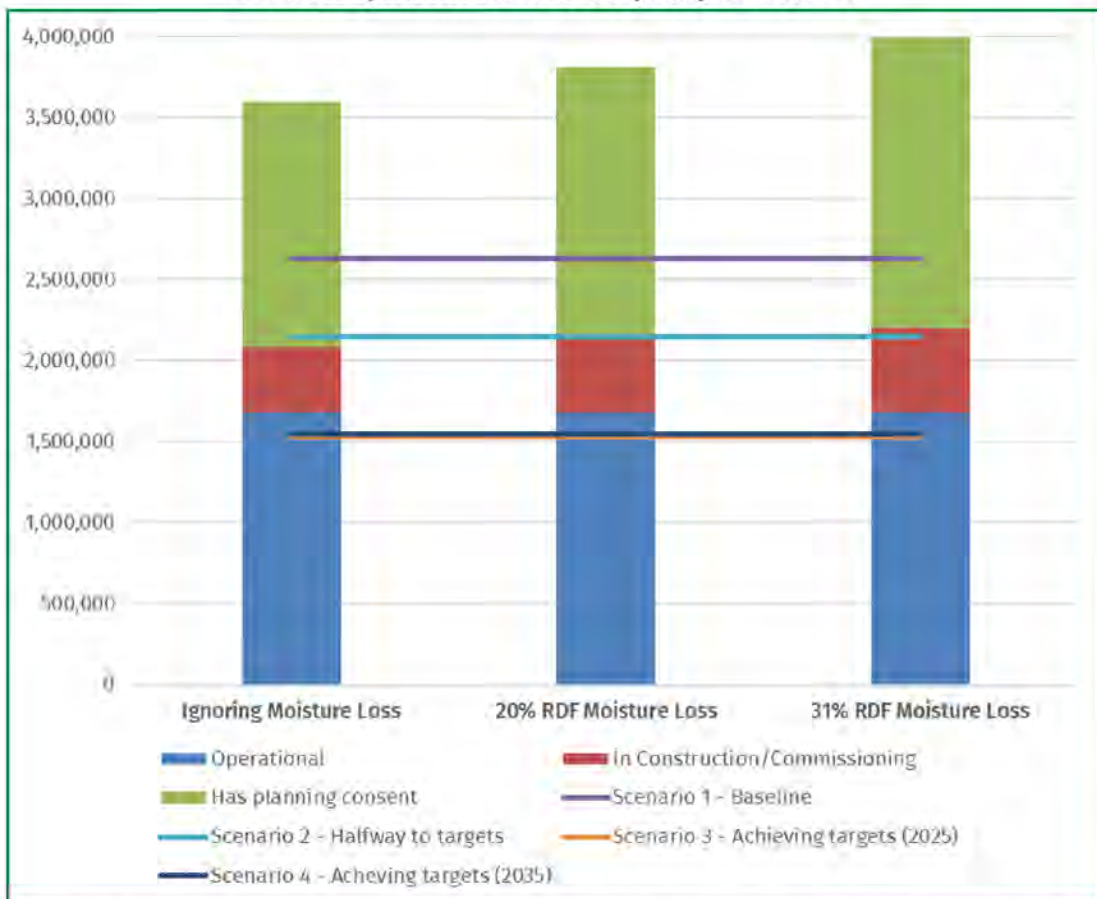
The level of incineration and other residual waste treatment capacity in Scotland that is already built, under construction or consented currently exceeds the anticipated future levels of residual waste arising that would be available for use as incinerator feedstock. As such, Scotland clearly already has incineration overcapacity (see chart below, and description of the four scenarios further below).

Assuming Scotland’s recycling and waste prevention targets are met (**Scenarios 3 and 4**), waste arisings exceed residual waste treatment capacity that is currently either operational or under construction by between around 530ktpa and 670ktpa. If the

1.5m – 1.8m tonnes of consented capacity is taken into account, then the level of overcapacity rises to between around 2m – 2.5m tonnes per annum.

Even if Scotland’s recycling targets are not achieved (**Scenarios 1 and 2**), there remains an overcapacity of between around 960ktpa and 1,840ktpa when capacity which has been granted planning consent is taken into account.

Estimate of Incineration Overcapacity in Scotland



As set out further (below), because some of the residual waste treatment facilities are designed to process RDF, sensitivity analysis has been provided for the pipeline capacity to show the impact of assuming 20%–31% moisture loss for this RDF.

The Call for Evidence document provided three estimates for residual waste arisings in 2025:

- **Scenario 1 – Baseline / ‘Business as usual’** – 2.63 Mt
- **Scenario 2 – Approaching targets (‘Halfway to targets’)** – 2.15 Mt
- **Scenario 3 – Achieving targets (2025)** – 1.53 Mt

While all scenarios have been considered for this submission, we see **Scenario 3** as the only reasonable basis for capacity analysis amongst the three scenarios proposed, as **Scenario 3** is the only scenario that is premised on actually meeting the Government’s

targets. **Scenario 1** does not take into account any of the policy measures currently in place, and **Scenario 2** is only halfway towards the targets compared to the baseline and so is not actually ‘approaching’ the targets as its title suggests.

The Call for Evidence projections do not go beyond 2025, but it is reasonable to assume for the purpose of the capacity analysis that **Scenario 3**’s 1.53 Mt arisings figure for 2025 would remain stable, with increases in population and/or economic activity being offset by increased recycling and per-capita waste prevention.

This assumption would provide a figure which is broadly in line with the figures in the Waste Market Study Full Report published by the Scottish Government in April 2019.³ That report included a scenario “in which Scotland meets planned and likely recycling and waste prevention targets through to 2035” with residual waste arisings at the end of that period of around 1.55 Mt. For the purpose of this submission, we refer to this as **Scenario 4 – Achieving targets (2035)**.

Principles

When it comes to residual waste treatment capacity analysis, we propose that the following principles be adopted:

1. It is desirable to avoid or limit incineration overcapacity, and this means that if current capacity exceeds future demand then this should be considered to constitute ‘overcapacity’. Incinerators can last for several decades, and so the construction of new incineration capacity cannot reasonably be justified on the basis of short-term residual waste treatment capacity gaps.
2. Any assessment of current capacity ought to include all capacity that is operational, under construction or consented. Consented capacity is included because it would be difficult or costly to prevent facilities with planning permission from obtaining a permit and being built (e.g. compensation may have to be paid to would-be

³ <https://www.gov.scot/publications/waste-markets-study-full-report/>

operators in the event the Scottish Government decided to revoke permission or otherwise prevent a consented facility from being built and operated in accordance with its planning permission).

3. The production of 1 tonne of Refuse Derived Fuel (RDF) requires more than 1 tonne of waste, meaning that the capacity of incinerators designed to process RDF feedstock can be assumed to be higher than the headline RDF incineration capacity figure.
4. When determining future demand for incineration capacity, assessments should be made on the basis that national recycling and waste prevention targets will be met, because otherwise there is the real danger of a 'self-fulfilling prophecy' whereby incineration overcapacity prevents recycling and prevention targets from being met. Account should be taken not only of current recycling and waste prevention targets, but also of the desirability of achieving even higher levels in the future.

Moisture Loss from MBT processes

A number of the existing and emerging incinerators in Scotland are designed to process RDF, which means the feedstock would first have been treated (e.g. dewatered) at a Mechanical and Biological Treatment (MBT) facility.

According to Guidance for Local Authorities from Natural Scotland and SEPA: "Some unsorted waste processes such as MBT and MHT dry the waste as part of the preparation of a refuse derived fuel" which will cause a "reduction in mass".⁴

Tolvik has estimated moisture loss (reduction of mass) at MBT facilities in the UK to be on average around 20%, meaning incinerators in effect require around 1.25 times the quantity of source ('raw') waste⁵ relative to the headline incineration capacity (excluding material loss through recycling).⁵

⁴ Zero Waste Plan – Guidance for Local Authorities. Use of Data to Support the Zero Waste Plan – Local Authority Recycling Targets, Landfill Diversion and the Landfill Allowance Scheme. March 2011. Available from:

https://www.wastedataflow.org/documents/guidancenotes/Scotland/zero_waste_plan_recycling_guidance1.pdf ⁵

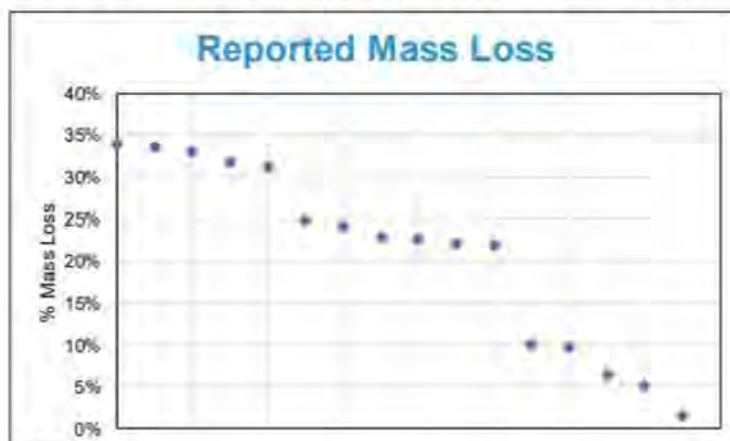
The multiplication factor is based on the formula $100 \div (100-N)$ where N is the mass loss due to moisture loss. For example $100 \div (100-20) = 100 \div 80 = 1.25$

⁵ Briefing Report: Mechanical Biological Treatment – 15 Years of UK Experience. Tolvik, September 2017. Available from:

<https://www.tolvik.com/wp-content/uploads/2017/09/Tolvik-2017-Briefing-Report-Mechanical-Biological-Treatment.pdf> ⁷

8,500 hours is considered a reasonable figure to take into account the high levels of availability which can be achieved, the potential for lower calorific values from the removal of plastics to increase the effective capacity of plants, and to take into account how if there is a moratorium on new incineration capacity this can be expected to encourage operators to maximise the availability of their plants. If fossil CO₂ emissions are taxed or included in the emissions trading scheme then this would provide an added incentive to remove plastics.

Reported Mass Loss as % of input Tonnage for UK MBTs (Tolvik 2017)



For example, by way of illustration, the Fortum Glasgow South Clyde facility's is able to process 374,000tpa of feedstock (comprising RDF) based on the operator's assumption that the plant can treat 44 tonnes of waste per hour with the operator's expected NCV multiplied by an assumed 8,500 hours of operation.⁷ If the facility treated 374,000tpa of RDF then it would in effect require around 467,000tpa of waste based on a 20% moisture loss (374,400 x 1.25) or around 542,300tpa of waste based on a 31% moisture loss (374,000 x 1.45).

The 20% moisture loss assumption is lower than the figure used by some sources. Historic WasteDataFlow guidance from the Environment Agency advised a default adjustment factor of 1.33 "to take account of moisture loss from an MBT or similar process", which implies 25% moisture loss as being typical, and this higher figure was accepted as reasonable during the Call for Evidence workshop on incineration capacity attended by UKWIN.

In terms of data from Scotland, it was reported by Dumfries and Galloway Council that moisture loss represented 31% of the input of their MBT plant in 2018, based on a moisture loss of 15,800 tonnes for a total input tonnage of 51,000.⁶

Depending on the moisture loss assumptions used, taking moisture loss into account increases the effective capacity that is in construction/commissioning and with a live planning consent by between around 217ktpa and 392ktpa.⁷ **Cement Kiln / Co-incineration capacity**

The CxC analysis does not explicitly reference any SRF capacity and only refers to RDF capacity. Residual waste is increasingly being converted into Solid Recovered Fuels (SRF) for use as feedstock to provide heat for cement kilns as an alternative to the conventional use of fossil fuels. To account for this trend, it is assumed that 100,000

⁶ https://www.publiccontractsscotland.gov.uk/Search/show/Search_View.aspx?ID=MAY353279 with 15,800 ÷ 51,000 = 0.3098 = 31%

⁷ Further details of these calculations are available upon request.

tonnes of waste per annum of additional waste will be converted into SRF for use in cement kilns in Scotland.⁸

Methodology for calculating existing/pipeline capacity

Operational Capacity

Facility	Type	Capacity (tpa)	Basis
East Lothian / Dunbar ERF	EfW	387,770	Based on PPC/A/1032878/CP01/VN02 capacity of 22.81 tonnes per hour per line for 2 lines.
Dundee (including Line 3)	EfW	286,450	Based on per-line capacities with 2 lines at 10 tonnes per hour and 1 line at 13.7 tonnes per hour specified in permit PPC/A/1003157.
Shetland Islands / Lerwick	EfW	23,749	95% of CxC modelled capacity
Edinburgh Millerhill Energy	EfW	204,000	Based on 24 tonnes per hour in permit for 8,500 hours (section 4.2.2 of permit PPC/A/1136072)
Glasgow GRREC	ATT	149,000	Based on Tolvik (May 2021) estimated treatment in 2020
Levenseat	ATT	109,650	Based on 12.9 tonnes per hour nominal design capacity in permit PPC/A/1150156.

⁸This estimate was derived on the basis of Eunomia's prediction of 1.0m tonnes of UK cement kiln feedstock from residual waste by 2030 combined with an assumption that 10% of this will be from waste arising in Scotland. See: <http://www.eunomia.co.uk/reports-tools/residual-waste-infrastructure-review-12th-issue/>

Levenseat (Forth by Lanark)	MBT/RDF	250,000	CxC modelled capacity
Eco Deco Dumfries	MBT/RDF	70,000	CxC modelled capacity
Avondale	MBT/RDF	70,000	CxC modelled capacity
Dalinlongart Compost	MBT/Bio	10,000	CxC modelled capacity
Moleigh, Kilmore	MBT/Bio	10,000	CxC modelled capacity
Lingerton Compost	MBT/Bio	10,000	CxC modelled capacity
Co-incineration	Cement Kilns	100,000	See above
Sub-Total		1,680,619	

Pipeline – In Construction

Facility	Type	Capacity (tpa)	Basis	RDF Uplift (20% Moisture)	RDF Uplift (31% Moisture)
Earls Gate Energy Centre	EfW	260,300	95% of CxC modelled capacity. Lower than theoretical maximum for 31.8 tph for 8,500 hrs (270,300 tpa)	+ 65,075	+ 117,135
Aberdeen Recycling & Energy Recovery (NESS)	EfW	142,500	95% of CxC modelled capacity.		
Sub-Total		402,800		+ 65,075	+ 117,135

Pipeline – Has planning consent (with/without permit)

Facility	Type	Capacity (tpa)	Basis	RDF Uplift (20% Moisture)	RDF Uplift (31% Moisture)
Drumgray (FCC)	EfW	260,300	Based on nominal design capacity of 37.5 tonnes per hour in permit application		
South Clyde (Fortum Glasgow)	EfW	318,750	Based on 44 tonnes per hour based on expected NCV in permit application PPC/A/11683564	+ 93,500	+ 168,300

Westfield, Fife (Hargreaves)	EfW	374,000	95% of CxC modelled capacity (although permit application refers to potential for 34.223 tph for lower NCV which would be 290,896 for 8,500 hours)	+ 59,375	+ 106,875
Old Hall, Irvine (Doveyard)	EfW	237,500	95% of CxC modelled capacity		
Binn Farm (Binn Group)	EfW	171,000	95% of CxC modelled capacity		
Avondale (NPL Group)	EfW	79,800	95% of CxC modelled capacity		
Inverurie (Agile Energy)	EfW	142,500	95% of CxC modelled capacity		
Sub-Total		1,513,550		+ 152,875	+ 275,175

It should be noted that we have not included all capacity with extant planning consent in our 'existing/pipeline capacity' figures. For example, we have omitted the consented capacities associated with Barr Killoch and Drumshangie as these are subject to variation applications that have yet to be determined. Depending on the framing of any moratorium, it is possible that the originally consented capacity (or a variation of it) would still be allowed to go ahead. All extant planning consents should be included within sensitivity analysis carried out for the incineration review.

Basis for Government intervention to address overcapacity issue through a moratorium on new capacity

The Scottish Government should intervene to prevent the exacerbation of incineration overcapacity through the immediate introduction of an indefinite moratorium on new waste incineration capacity in Scotland.

Reasons for this intervention include:

- The high level of residual waste treatment capacity operational, in construction / commissioning and which has planning consent compared to how much waste can be anticipated once recycling and waste prevention targets are met;
- The threat to recycling and the top tiers of the waste hierarchy posed by incineration overcapacity; and
- The presence of market failures which encourage new (surplus) incineration capacity to be built even if it would be undermining or competing with recycling and waste prevention.

These matters are set out within this section, either above for the first point or below for the second and third. However, there are also reasons not to support additional (new) incineration capacity – even if a residual waste treatment gap were identified – which are set out elsewhere in this submission, including because:

- Other residual waste treatment options are available which are less expensive, which can be implemented more quickly, and which do not give rise to the same issues in terms of feedstock lock-in;
- Incineration creates pollution and harms air quality;
- Incinerators can be bad neighbours;
- Incineration exacerbates climate change, and can result in a net increase in climate change emissions compared to other residual waste treatment options; and
- Material incinerated is lost to the circular economy of materials and nutrients, raising further sustainability and climate change concerns.

The recyclability of the 'residual waste' stream

One of the reasons incineration competes with recycling is because much of the material used as incinerator feedstock could otherwise have been reused or recycled. It would be reasonable to assume that the level of recyclability of Scotland's waste is comparable to that of England and Wales.

Defra's August 2020 'Resources and Waste Strategy Monitoring and Evaluation Report' found that only 8% of England's residual waste from household sources was "Difficult to Recycle or Substitute", concluding that the majority of the residual waste was readily recyclable.⁹

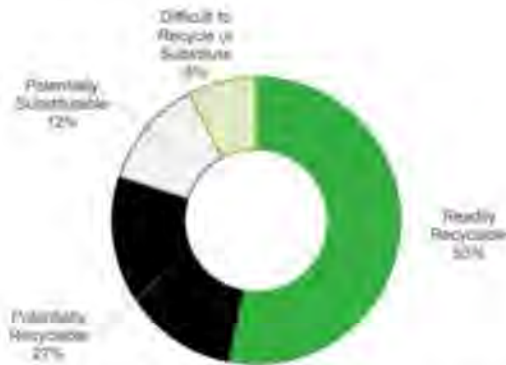
According to Defra's Report: "The large amount of avoidable residual waste and avoidable residual plastic waste generated by household sources each year suggests there remains substantial opportunity for increased recycling...The message from this assessment is that a substantial quantity of material appears to be going into the residual waste stream, where it could have at least been recycled or dealt with higher up the waste hierarchy".

The Report goes on to explain how: "Of total residual waste from household sources in England in 2017, an estimated 53% could be categorised as readily recyclable, 27%

⁹ <https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england-monitoring-and-evaluation>

as potentially recyclable, 12% as potentially substitutable and 8% as difficult to either recycle or substitute”.

Chart 13 from Defra's 2020 Resources and waste strategy monitoring report showing avoidable residual waste from households in England



A WRAP Cymru study entitled 'Composition analysis of Commercial and Industrial waste in Wales' was published in January 2020.¹⁰ According to WRAP Cymru: "This study was conducted to provide Welsh Government and WRAP Cymru up-to-date data on the composition of mixed residual commercial and industrial (C&I) waste in Wales. The main objective was to estimate the proportion of the residual waste produced in Wales which could be avoided through recycling or composting". The study found that the majority (74.5%) of the residual waste analysed could have potentially been recycled.

Table 3 from WRAP Cymru commercial & industrial (C&I) waste study showing the recyclability and biodegradability of 'residual' C&I waste in Wales

		Average	STDEV.S	C.I. 95%
Commercial	Recyclability	74.0%	13.8%	3.4%
	Biodegradability	60.5%	10.7%	2.6%
Industrial	Recyclability	80.5%	10.9%	8.7%
	Biodegradability	48.7%	11.0%	8.8%

Examples of market failures

It is not safe to assume that market forces will prevent the exacerbation of incineration capacity.

According to an opinion piece by Adrian Judge (Director of waste consultancy Tolvik) published on 19th August 2020 on the *letsrecycle.com* website¹¹; "...it increasingly appears that there is one critical skill necessary for a successful project which is being overlooked: 'understanding'...Above all, understanding is the thoughtful application of common sense...Tolvik is regularly asked to assess the future balance between Residual Waste supply and EfW capacity. To date we have assumed that the checks and balances of

¹⁰ <https://wrapcymru.org.uk/resources/report/composition-analysis-commercial-and-industrial-waste-wales>

¹¹ <https://www.letsrecycle.com/news/latest-news/understanding-risk-efw-overcapacity/>

rational investors, particularly where external project finance is required, will ensure that, unlike northern Europe, the risk of EfW over-capacity in the UK is very low. However, increasingly, project developers seem willing to ignore the need for 'understanding' if it is going to give them the wrong answer".

Elaborating upon this point, Judge adds: "We see this with our market due diligence reports. As the market tightens, if our analysis is not favourable then we are increasingly being asked to change our assumptions. Most often this is a variant of 'can't you just increase the size of the modelled Catchment Area?' Having engaged experienced independent consultants, this appears to be a deliberate decision to redefine 'understanding'...But ignoring this need for 'understanding', when repeated across multiple projects, is starting to lead us to question whether the risk of EfW over-capacity is as low as we had previously assumed".

One reason that the market cannot be expected to prevent incineration overcapacity is that the adverse impacts of this overcapacity are not fully felt by the companies creating the overcapacity. For example, even if an incinerator harms recycling it can still be profitable for the operator because they can profit from selling capacity and electricity without having to pay for the CO₂ released¹² or the harm caused due to virgin materials being used to remake a product that has been destroyed.

Based on BEIS's central price of fossil carbon for 2027 of £268/tonne, the unpaid cost for unabated incineration for 2027 is expected to be around £210m for Scottish incineration capacity that is currently operational and under construction. This would rise to around £420m if the currently consented capacity was built, and to more than £560m if all the incineration capacity announced for Scotland were also built.

Given that incineration results in a range of unpaid environmental externalities and market failures (such as the cost to society of incineration, e.g. with respect to fossil CO₂ emissions, not being reflected in the cost of treatment), and given that sending material for incineration can come at the expense of reduction, re-use and recycling, it should not be left to the vagaries of market forces to 'manage' incineration overcapacity.

Instead of relying on market forces to control the level of incineration capacity in Scotland, the Scottish Government should introduce a moratorium on new incineration capacity, thereby sending a clear signal to councils and operators about the need to make better use of existing residual waste treatment capacity and the importance of

¹² As set out at <https://ukwin.org.uk/facts/#unpaidcost> the unpaid cost to society from fossil CO₂ released from UK incinerators in 2020 amounted to more than £1.5bn.

focussing investment higher up the Waste Hierarchy. **UKWIN response to Call for Evidence questions**

Q7 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?

As explained above, there is no need for any new incineration capacity to be built in Scotland. Allowing additional (new) incineration capacity to be built in Scotland would result in exacerbating the harm associated with incineration overcapacity and the associated 'lock-in' that could prevent Scotland from reaching its current recycling and waste prevention targets and from adopting more ambitious targets in line with advice from the Committee on Climate Change (CCC).

One of the CCC's Recommendations for the SG set out in their December 2021 Report to Parliament ('Progress in reducing emissions in Scotland') is to: "Work with the waste sector and local authorities to set out a route-map detailing the policy and support needed to ensure the 2025 waste prevention and recycling targets (including the 70% recycling target) are delivered, and setting new ambitious targets for 2030".

Instead of planning for new incineration capacity, there is an urgent need to develop an Incineration Exit Strategy for Scotland that considers how best to strategically reduce and eliminate the incineration of municipal solid waste in Scotland.

Such an exit strategy is necessary for Scotland to transition promptly and smoothly towards a circular economy of materials and nutrients by doing away with this harmful leakage.

If there is to be any new 'transitional' residual waste treatment capacity built in Scotland then this should be in the form of MRBT or MBT – i.e. facilities to biostabilise material prior to landfill – to reduce the impact of landfilling waste and to avoid the lock-in associated with incineration capacity.

Q8 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 set out above, much of what is currently being incinerated is material which could be recycled, and in any case Scotland has incineration overcapacity if it is to meet its current recycling and waste minimisation targets. The most reliable way to avoid the exacerbation of further incineration lock-in is to not allow new incinerators to be built.

According to a 2019 report by Eunomia for the Scottish Government: "It would be wise to limit development of new thermal treatment capacity to that required once any targets have been met to avoid creating overcapacity as recycling increases".¹³

Zero Waste Scotland has also warned against incinerator lock-in, for example stating in July 2021 that: "Residual waste treatment, whether landfill, or incineration, is the last port of call for waste. Our position is that we can make a lot more from the materials we have before EfW or landfill becomes the choice of disposal. If we are going to address the climate crisis, we must reuse products far more than we do just now. All our efforts need to go into keeping materials in use and in the system for as long as possible. Incineration and landfill are reserved for residual waste once all other, less environmentally damaging options, such as prevention, reuse and recycling, have been exhausted. The development of waste management technologies must consider the national climate change strategy to ensure Scotland is not locked into management routes which are higher carbon than necessary".¹⁴

The Committee on Climate Change (CCC) warned in June 2021 that: "If EfW usage is left to grow unchecked, EfW emissions will quickly exceed those of the CCC pathway while undermining recycling and re-use efforts".¹⁵ [emphasis added]

The CCC also warned in December 2020 as part of their Sixth Carbon Budget reports that: "Banning biodegradable waste from landfill...should be achieved via prevention, reuse and recycling, not via more energy-from-waste...An expansion in Scottish EfW capacity occurred ahead of their original 2021 biodegradable municipal waste ban date, and a repeat of this should be avoided (across the UK), due to the risk of locking-in increased EfW fossil emissions".¹⁶

In the UK, incineration capacity is accompanied by artificially low marginal costs because the majority of the true costs of waste incineration are not allocated to a per-tonne gate fee.

For non-merchant incinerators, once incineration capacity is paid for (or is committed to being paid for) then the amount charged per tonne is artificially lowered, meaning that the amount saved through avoiding incineration is artificially lowered, e.g. due to put-or-pay clauses in the long-term waste contracts.

¹³ Source: Waste markets study: full report (Page 23). Scottish Government, 23 April 2019. Available from: <https://www.gov.scot/publications/waste-markets-study-full-report/>

¹⁴ 'The climate change impact of burning municipal waste in Scotland' (report webpage). <https://www.zerowastescotland.org.uk/content/climate-change-impact-burning-municipal-waste-scotland>

¹⁵ <https://www.theccc.org.uk/publication/2021-progress-report-to-parliament/>

¹⁶ 'Policies for the Sixth Carbon Budget and Net Zero' (9th December 2020). Available from: <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

Furthermore, there are unpaid environmental externalities such as that recognised by Defra with respect to the greenhouse gasses produced when burning plastics.¹⁷

In essence, this means that, for both household waste and business waste, the ‘incentives hierarchy’ does not always currently match the waste management hierarchy, and therefore environmentally harmful activities are improperly encouraged and the incentive to invest in recycling and waste education is undermined. It is UKWIN’s experience that this has impeded recycling across the UK.

A selection of relevant quotes is provided below, followed by examples of specific instances where incineration (and associated waste management contracts) was cited by councils as a barrier to improved recycling and composting in a local area. The specific examples are mostly about England, but the lessons learned should be applied to Scotland.

Eunomia Managing Director Mike Brown noted in September 2012 that: “Most local authorities that started incinerator projects, often with government PFI support, did so with a clear commitment to burn only what couldn’t be recycled, but then found themselves tempted by a business case that stacked up better for a big plant than for a small one. Once the incinerator is built, they have to keep it supplied and rapidly the economic logic of return on investment trumps concerns about recycling”.²⁰

Defra's November 2012 statistical release noted: “At Local Authority level, individual recycling rates ranged from 14 per cent to 69 per cent...lower rates could result from an authority focusing on avoiding landfill by investing in incineration and targeting its waste management policies on that treatment solution, rather than poor recycling awareness or initiatives”.¹⁸

According to Professor Nicky Gregson of Durham University’s 2019 evidence to EFRACOM: “...there is a distinct trade-off. The areas with higher levels of incineration have the lowest recycling rates”.¹⁹

This is borne out for example in English Regional Local Authority Collected Waste

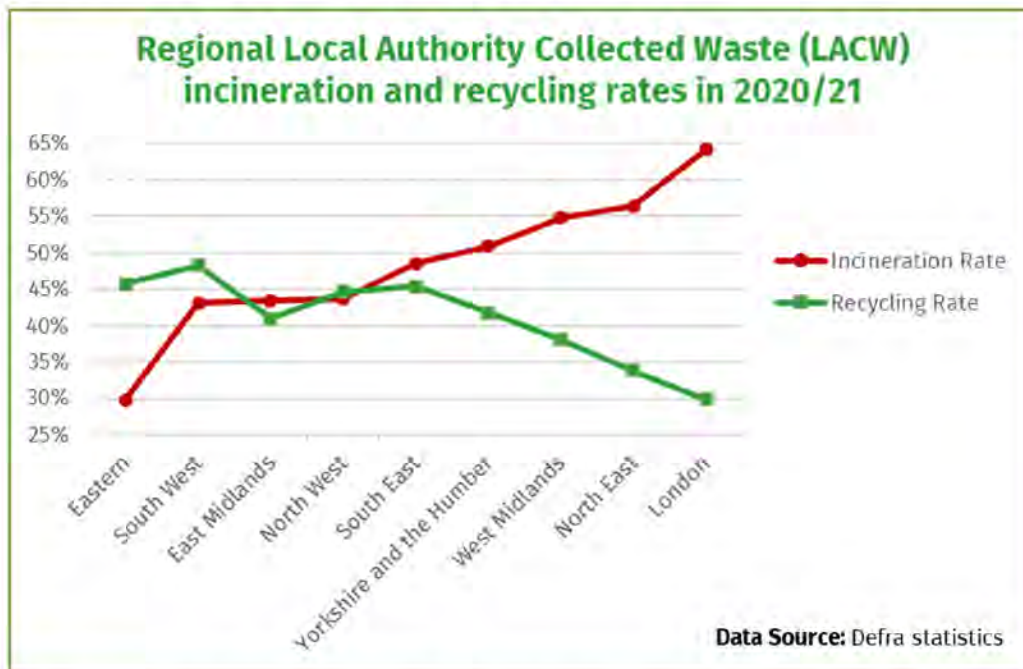
¹⁷ The Economics of Waste and Waste Policy. Waste Economics Team Environment and Growth Economics, Defra (June 2011). Available from: <http://www.defra.gov.uk/publications/files/pb13548-economic-principles-wr110613.pdf>

²⁰ The tax that dare not speak its name. Mike Brown, September 2012. Available from: <http://www.isonomia.co.uk/?p=1250>

¹⁸ Statistical Release: Local Authority Collected Waste Management Statistics for England – Final Annual Results 2011/12. Defra, November 2012. Available from: https://webarchive.nationalarchives.gov.uk/20130222092708/http://www.defra.gov.uk/statistics/files/mwb201112_stats_release.pdf

¹⁹ Source: Oral evidence; Implications of Waste Strategy for Local Authorities, HC 2071. EFRACOM, 20 May 2019. Available from: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/housing-communities-and-local-government-committee/implications-of-the-waste-strategy-for-local-authorities/oral/102483.pdf>

(LACW) incineration and recycling rates in 2020/21:²⁰



In terms of incineration competing with recycling, there are important lessons that Scotland can learn from Wales. For example, the Welsh Government observed in March 2021 that: "We have also seen innovation around Wales in tackling hard to recycle products including mattresses and nappies. But we know half of the household residual waste remaining in our black bags can still be recycled, with half of this being food waste. Three quarters of our residual commercial and industrial waste is also easily recyclable material. We therefore need to capture this material and stop sending recyclable waste to landfill or energy from waste plants and recycle it instead".²⁴

The Green Alliance argued in November 2020 that: "Policy should...seek to dramatically reduce residual waste and support better product design, reuse, remanufacturing and high value recycling. Yet, over investment in EFW infrastructure

²⁰ Table 2a of local authority collected waste generation from April 2000 to March 2021 (England and regions) and local authority data April 2020 to March 2021 (Defra, January 2022). Available from: <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables> ²⁴ 'Beyond Recycling: A Strategy to make the circular economy in Wales a reality' (2nd March 2021). Available from: <https://gov.wales/beyond-recycling-0>

risks locking the country into producing enough material to feed it, as has already happened in Scandinavian countries".²¹

Similarly, Greenpeace called in June 2020 for the UK to "End approvals for new incineration (also called energy-from-waste) facilities and prevent the replacement or upgrade of old plants that are near retirement, in order to support an overall reduction in incineration. This would send a market signal to support more sustainable solutions for resource use, including reduction of material use, reuse, repair and recycling".²²

The European Commission's Communication on 'The role of waste-to-energy in the circular economy' from 26th January 2017 explains that incineration can pose a barrier to higher rates of recycling, stating: "...the statistics show that some individual Member States are excessively reliant on incineration of municipal waste...such high rates of incineration are inconsistent with more ambitious recycling targets".²³

This warning is in line with other similar warnings from Continental Europe, where countries that once embraced incineration are now implementing their own incineration strategies after discovering that high rates of incineration are incompatible with high rates of recycling.

For example, Denmark's current resources and waste strategy, is appropriately subtitled "Recycle more - Incinerate less" (November 2013).²⁴ At the heart of Denmark's resource management strategy is the acknowledgement that incineration has come at the expense of recycling, and that the only way for Denmark to increase recycling is by reducing incineration.

To quote from Denmark's Resource Strategy ('Denmark Without Waste'): "We incinerate an enormous amount of waste in Denmark; waste which we could get much more out of by more recycling and better recycling..." (from Foreword on Page 7); and: "...the Government has a vision that Denmark will protect its resources and materials, and recycle more household waste, while incinerating less. This will entail more materials being sent back into the economic cycle with benefits for the environment..." (Page 9); "...far too many of the valuable materials today end in waste incineration plants..." (Page 11).

Denmark Without Waste also says that: "...By recycling more, we can ensure that many materials which could otherwise be exploited are not just wasted. Recycling a number of ordinary materials such as paper, cardboard, plastic, glass and food from households has not really moved forward for the past ten years...The Resources

²¹ 'Getting the building blocks right: Infrastructure priorities for a green recovery' (November 2020). Available from: https://green-alliance.org.uk/resources/Getting_the_building_blocks_right.pdf

²² <https://www.greenpeace.org.uk/wp-content/uploads/2020/06/A-green-recovery-how-we-get-there-Greenpeace-UK.pdf>

²³ <http://ec.europa.eu/environment/waste/waste-to-energy.pdf>

²⁴ Available from: http://mfvm.dk/fileadmin/user_upload/MFVM/Miljoe/Ressourcestrategi_UK_web.pdf

Strategy therefore anticipates that over the years to come more household waste will be separated and recycled rather than being incinerated at waste incineration plants..." (Page 23).

On the 16th of June 2020 the Government of Denmark agreed to a controlled decommissioning of incineration capacity in Denmark, requiring incineration plants to be shut down be drawn up and compensation be paid to municipalities for the costs of these stranded assets.

According to an article published in the Danish media, this process was intended to involve the creation of a 'death list' of incineration plants to reduce Denmark's incinerator capacity from 3.95 million tonnes to 2.6 million tonnes by 2030.²⁵

The problem of incinerator lock-in is widely recognised, including by the C40 Knowledge Hub and by the European Parliament.

According to the C40 Cities Climate Leadership Group (2019) 'Why solid waste incineration is not the answer to your city's waste problem': "incineration is among the worst approaches cities can take to achieve both waste reduction and energy goals. It is expensive, inefficient, and creates environmental risks. It locks cities into high-carbon pathways by requiring them to continue producing lots of waste to feed the incinerator, undermining efforts to reduce waste generation or increase recycling rates..."²⁶

The European Parliament argues that there is a need to minimise incineration "**and to avoid building overcapacity of waste incineration at the EU level that could cause lock-in effects and hamper the development of the circular economy...**"²⁷ (**emphasis added**).

Prohibiting the construction of new incineration capacity and preventing the extension of existing capacity would reduce the cost of Scotland's move away from incineration.

The UK Government's then Resource Minister Thérèse Coffey gave oral evidence to the Environmental Audit Committee on 12th September 2018. As the official transcript²⁸ (excerpts included below) demonstrates, in her evidence Dr Coffey characterised the European Commission's position as one of incineration scepticism rather than one of unqualified support:

"Dr Thérèse Coffey: ...the [European] Commission itself is very concerned about the explosion, if you like, of incineration around the European Union. It does

²⁵ <https://www.thelocal.dk/20200617/danes-to-sort-trash-into-ten-types-under-new-green-deal-2/>

²⁶ https://www.c40knowledgehub.org/s/article/Why-solid-waste-incineration-is-not-the-answer-to-your-city-s-waste-problem?language=en_US

²⁷ European Parliament (2021) 'Report on the New Circular Economy Action Plan'. Available at: https://www.europarl.europa.eu/doceo/document/A-9-2021-0008_EN.html

²⁸ Oral evidence: The National Audit Office Report on Packaging Recycling Obligations, HC 1548. Available from: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environmental-auditcommittee/national-audit-offices-report-on-packaging-recyclingobligations/oral/90137.pdf>

not want to massively encourage it in the future...I am not convinced that in respecting the waste hierarchy, we want to massively increase the amount of incineration that we are doing..." (Q93)

"Dr Thérèse Coffey: I think, actually, there is sufficient capacity out there for incineration. Often what happens with policies is that they come out with unintended consequences. The general view I get from the [European] Commission in the report they did is that we now have too much incineration across the European Union, and we need to do more to refocus on recycling..." (Q94)

According to Christian Schaible, Policy Manager for Industrial Production at the European Environmental Bureau (EEB): "...There is no place for waste incineration in a circular economy...Ultimately, Europe must prevent waste and stop burning precious resources. To embrace the zero pollution strategy, we need to replace waste incineration with clean heating alternatives".²⁹

Professor Sir Ian Boyd, Chief Scientific Adviser, Department for Environment, Food and Rural Affairs told EFRACOM in January 2018 that: "...If there is one way of quickly extinguishing the value in a material, it is to stick it in an incinerator and burn it. It may give you energy out at the end of the day, but some of those materials, even if they are plastics, with a little ingenuity, can be given more positive value. One thing that worries me is that we are taking these materials, we are putting them in incinerators, we are losing them forever and we are creating carbon dioxide out of them, which is not a great thing. We could be long-term storing them until we have the innovative technologies to reuse them and turn them into something that is more positively valued..."

Sir Ian continued, saying: "It is a personal view, but I think that incineration is not a good direction to go in. If you are investing many tens of millions, probably hundreds of millions, in urban waste incineration plants, and those plants are going to have a 30-year to 40-year lifespan, you have to have the waste streams to keep them supplied. That it is a market pull on waste. It encourages the production of waste. It encourages the production of residual waste. It encourages people to think that we can throw what could be valuable materials, if we were to think about them innovatively, into a furnace and burn them..."³⁰

²⁹ Source: Burning questions about the new EU waste incineration standards. European Environmental Bureau, 9 January 2020. Available from: <https://meta.eeb.org/2020/01/09/burning-questions-about-the-new-eu-waste-incinerationstandards/>

³⁰ Oral Evidence: The Work of Defra's Chief Scientific Adviser, HC 775. Available from: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environment-food-and-ruralaffairs-committee/work-of-the-chief-scientific-adviser-defra/oral/78127.html> ³⁵ Channel 4 Dispatches: 'Dirty

Professor Boyd subsequently told Channel 4 Dispatches there is a risk that allowing new incinerators can undermine waste reduction efforts, stating: "There are a lot of people who are highly incentivised to incinerate waste. Because of the investments we make in waste power plants, we end up a lot of the time creating a market for waste, and therefore trying to generate more waste in order to generate the inputs for the power plants that we've made such large investments in. My feeling is that we've got to use the capacity we have rather than create more capacity, because if you create more capacity you create more demand for materials, and that is simply cranking up the amount of material that comes into the system, and the very last thing we should be doing is, when we throw it away, is putting it in an incinerator".³⁵

The London Assembly noted in February 2018 that: "Investing in more EfW can negatively affect long term recycling rates. This investment needs to be paid for by an assured income stream, usually through contracts with local authorities to pay the EfW operator to take waste. Contracts are often lengthy – the majority are over 20 years".

"The terms of contracts, such as minimum annual payments, or a low fee per tonne of waste, can undermine the financial viability for the local authority of reducing waste, or sending it to other destinations such as recycling".³⁶

UKWIN offers a number of case studies demonstrating the way that incineration competes with recycling for 'feedstock'. Many of these case studies involve responses provided by waste authorities to letters written by then Resource Minister Dr Thérèse Coffey MP who contacted all underperforming councils asking for an explanation of why their recycling rates were so low.³⁷

Brighton and Hove (2017 and 2018)

It was reported in January 2019 that: "Brighton and Hove has a recycling rate of 30%. The council is restricted to collecting plastic bottles from householders for recycling as a result of its contract with Veolia; many other UK councils collect trays and other plastic recyclate along with bottles. [Caroline] Lucas said: 'Brighton and Hove council have a 30-year PFI contract with Veolia. They are refusing to change the contract so that a wide range of plastics can be recycled. The council doesn't have the £1m for the required machinery at the Veolia plant to enable a wide range of plastic to be recycled.'³¹

Truth About Your Rubbish' (8th March 2021). <https://www.channel4.com/programmes/dirty-truth-about-your-rubbish-dispatches> ³⁶ London Assembly Environment Committee. Energy from Waste report (February 2018). https://www.london.gov.uk/sites/default/files/waste-energy_from_waste_feb15.pdf ³⁷

<https://www.gov.uk/government/publications/local-authority-letters-on-recycling-rates>

³¹ <https://www.theguardian.com/environment/2019/jan/08/caroline-lucas-calls-for-action-in-brighton-recycling-row>

To quote Brighton & Hove City Council's letter to Dr Thérèse Coffey MP on Brighton & Hove City Council Recycling Rates: "...in terms of contractual status, in partnership with East Sussex County Council, boroughs and Districts, Brighton & Hove City Council is contracted to Veolia as part of the 30 year PFI contact that was awarded in 2003. There are therefore 17 years of this contact remaining. Veolia will only take limited types of materials as they state they cannot find a guaranteed end market for products that can be recycled, such as certain types of plastics. Whilst other Councils can and do recycle these kinds of materials, the B&HCC is contractually obliged under the terms of the PFI agreement to provide all waste materials, whether residual or recyclable to Veolia. We have raised this anomaly with Veolia on a number of occasions, but they are not willing to change their position on this."³²

Derby (2016)

Letsrecycle reported in April 2016 that: "In 2014/15, Derby recorded the largest fall in recycling among collection authorities in England - dropping from 42% to 32% in the course of 12 months"³³

Local anti-incineration campaigners believe cuts in recycling services (and the introduction of charges for some remaining services) which so drastically harmed recycling in Derby could be attributed to the incinerator contract.

In addition to the standard financial calculations which can push recyclable / compostable material to incineration, Schedule 17 ('Waste Reception Protocol') of the Derby waste contract includes specific provisions in relation to the composition of waste which could encourage the incineration of recyclable / compostable material to meet the specification. Table 17.1 states: "Minimum Organic Content: 21%. Maximum Moisture Content: 60%. Minimum Net Calorific Value: See Table 17.2. Maximum Net Calorific Value: 18 MJ/kg".³⁴

Stoke-on-Trent City Council (2010)

Stoke City Council faced the prospect of a £645,000 fine resulting from a failure to meet minimum contracted waste tonnage levels at their local incinerator.

It was reported by Letsrecycle in October 2010 that: "...Stoke-on-Trent city council could be forced to pay its energy-from-waste contractor hundreds of thousands of pounds after failing to deliver the minimum contracted tonnage for the facility in 2009/10...The issue was acknowledged in minutes from a transformation and services overview scrutiny committee meeting...The minutes state: 'Additional ongoing costs in respect of backdated claims from the Waste to Energy Plant made late in 2009/10

³² <https://www.gov.uk/government/publications/local-authority-letters-on-recycling-rates>

³³ <https://www.letsrecycle.com/news/latest-news/derby-defends-decision-to-remove-recycling-points/>

³⁴ <http://www.derby.gov.uk/media/opa/opa/governance/q2-001.17-schedule-17-waste-reception-protocol.pdf>

(£60,000) were also an unexpected pressure. A claim was received in June in respect of the city council failing to achieve minimum tonnage levels in 2009/10 for £645,000.³⁵ The minutes indicate that the actual cost of the claim is likely to be around £329,000, once a rebate of £316,000 is taking into account".³⁵

Kent County Council (2008)

Regarding the Allington incinerator contract, the Kent Messenger reported that: "...what was initially seen as a cash-saving opportunity has quickly turned into a money pit, as the council is forced to send increasingly valuable recyclable material to the incinerator in order to meet its annual quota".³⁶

East London Waste Authority (2017)

The London Borough of Newham's letter to Dr Thérèse Coffey MP in response to her request for an explanation of their low recycling rate states: "...we are tied into an expensive and inflexible waste disposal PFI contract until 2027 that limits our ability to improve recycling performance. Agreed in 2002 by the East London Waste Authority (ELWA), this arrangement was encouraged and incentivised by central government when PFI credits represented the main source of funding available for such projects. In line with government policy goals at the time, it was designed with the primary aim of diverting waste from landfill rather than increasing recycling...the contract presents a major obstacle when it comes to recycling performance due to restrictions on what materials can be collected separately, the overall cost of the waste levy, and the lack of any financial incentives for the council to invest in achieving higher recycling rates".

The London Borough of Newham's letter goes on to explain how: "Newham is tied to ELWA by statute, and must deliver all its waste to that authority. Having been encouraged to adopt this approach by central government, we are now caught in an expensive PFI contract where we lack the choice, flexibility, and savings opportunities through recycling solutions that many other authorities are able to exercise."

"The ELWA PFI contract with Renewi is a major obstacle, both in terms of technical restrictions put on what materials can be collected separately, but also on the costs of disposing of waste and the lack of financial incentives for achieving higher recycling rates."

³⁵ <https://www.letsrecycle.com/news/latest-news/stoke-faces-bill-for-sending-less-waste-to-efw/>

³⁶ <https://www.kentonline.co.uk/kent/news/kents-waste-contract-could-be-m-a42292/>

"At present Newham is only permitted to collect a restricted range of materials for recycling, comprising paper, cardboard, tins, cans and plastic bottles. All other materials must go into the general refuse, and although some materials are subsequently recovered for recycling, the yields and quality do not match what other local authorities can achieve."

"The structure of the PFI contract essentially means that Renewi retains any financial benefits from recycling, rather than there being a notably reduced gate fee or any revenue-sharing for the boroughs. As such, the ELWA levy continues to be structured as per the basic model set out in The Joint Waste Disposal Authorities (Levies) (England) Regulations 2006, with no variation in prices for waste disposal according to the material being delivered. In short, Newham pays the same amount to dispose of a tonne of waste whether it is refuse or recycling, and as such the financial incentive to recycle that has driven most other local authorities to invest in collection services and achieve higher performance simply does not exist for us."³⁷

Shropshire

As set out in UKWIN's response to Defra's Call for Evidence to inform the UK Government's Review of Waste Policies in October 2010: "Schedule 7a of the Shropshire waste PFI contract contains details showing the annual utility payment for the incinerator before the effect of adding inflation. It shows a £10.8 million fixed charge each year.

It also shows the rebate for landfilling or burning less waste which is £63.10 per tonne before the incinerator is operational and £12 per tonne saving should the incinerator become operational. Unused incinerator capacity is in effect charged at £108 per tonne while used capacity costs £120 per tonne.

"The payment mechanism shows that Shropshire will receive a royalty payment of 80% of the third party income that Veolia generates from selling spare capacity. For example if the plant had 10,000 tonnes of spare capacity, of which 80% was used for third party waste, then the royalty would appear to be £512,000. That capacity would have cost the council taxpayer £1.2 million. It can therefore be concluded that the PFI incinerator contract is based on a massive fixed charge and a very low marginal charge. For Shropshire the fixed cost is 10 times the marginal cost for capacity that is not used, meaning every extra tonne recycled may only save the council £12 as the council has to pay £108 for the unused incinerator capacity in any case".³⁸

Hampshire (2017)

Portsmouth's letter to Dr Coffey MP in response to her request for an explanation of their low recycling rate included the following: "There are challenges in adding

³⁷ <https://www.gov.uk/government/publications/local-authority-letters-on-recycling-rates>

³⁸ http://www.ukwin.org.uk/files/pdf/UKWIN_DEFRA_Submission_4_October_2010.pdf

materials into the recycling stream - Portsmouth is part of a Hampshire wide disposal contract...Hampshire wide contract [is an obstacle outside of our control that affects the recycling rate] - long term contracts (waste disposal contract ends 2030) requiring massive investment at the outset - difficult to make changes as markets and technology change".³⁹

According to Southampton's Letter: "What can be recycled is currently constrained by disposal infrastructure and any changes to this would require significant financial investment.

The waste disposal authorities in Hampshire, including Southampton have a long term integrated waste disposal contract which currently handles the disposal of residual waste and the processing of collected recyclables..."

Similar comments to those made by Southampton have been made by Basingstoke, Gosport and New Forest Councils in their respective response letters.⁴⁰

Q9 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.**

Relevant documents on waste composition and recyclability include:

- WRAP's National Household Waste composition 2017, which includes data for Scotland which indicates that there is a significant proportion of the Scottish residual waste stream which is recyclable⁴¹.
- The Zero Waste Scotland report entitled 'Methodology - The composition of household waste at the kerbside in 2021 – 2024' which is accompanied by a standard methodology for household sampling.⁴²
- The analysis of the impacts of changing waste composition and biodegradability within UKWIN's Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration.⁴³

³⁹ <https://www.gov.uk/government/publications/local-authority-letters-on-recycling-rates>

⁴⁰ <https://www.gov.uk/government/publications/local-authority-letters-on-recycling-rates>

⁴¹ <https://wrap.org.uk/sites/default/files/2021-10/WRAP-national-household-waste-comparison-2017.pdf>

⁴² <https://www.zerowastescotland.org.uk/content/waste-composition-analysis-programme-2021-2024>

⁴³ <https://ukwin.org.uk/files/pdf/UKWIN-2021-Good-Practice-Guidance-for-Assessing-the-GHG-Impacts-ofWaste%20Incineration.pdf>

- The aforementioned research for England and Wales which indicates that a significant proportion of the residual waste stream is recyclable.⁴⁴

⁴⁴ <https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england-monitoring-and-evaluation> and <https://wrapcymru.org.uk/resources/report/composition-analysis-commercial-and-industrial-waste-wales>

TOPIC 2: MANAGEMENT OPTIONS

Q10 What treatment options for residual waste should Scotland consider?

For the reasons set out in this submission, additional incineration capacity should not be considered as a valid option for Scotland to consider. Allowing more incineration (and the lock-in and other issues it generates) is incompatible with Scotland's recycling, waste prevention, circular economy and climate change ambitions.

If there is a need for short-term 'transitional' capacity on the road to a circular economy, then this should be through biostabilisation of waste to reduce the methane impacts, whether as a standalone option or as part of a wider Material Recovery and Biological Treatment system. Evidence that supports biostabilisation as a viable waste management option which is preferable to incineration includes:

- Building a bridge for residual waste: Material Recovery and Biological Treatment to manage residual waste within a circular economy (Zero Waste Europe, January 2021)⁴⁵
- Greenhouse Gas and Air Quality Impacts of Incineration and Landfill (ClientEarth, December 2020)⁴⁶
- Report for the EC Directorate-General for Environment entitled 'Development of a Modelling Tool on Waste Generation and Management - Appendix 6: Environmental Modelling' which was used in the Impact Assessment of the European Circular Economy package (Eunomia and the Copenhagen Resource Institute, 2014)⁴⁷
- Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration (UKWIN, July 2021)⁴⁸
- The climate change impact of burning municipal waste in Scotland (Zero Waste Scotland, July 2021)⁴⁹
- Holistic Resource systems white paper (TOMRA, June 2021)⁴⁹
- The Ultimate Guide to Mixed Waste Sorting (TOMRA, October 2021)⁵⁰
- What is the best disposal option for the "Leftovers" on the way to Zero Waste?

⁴⁵ https://zerowasteurope.eu/wp-content/uploads/2020/06/zero_waste_europe_policy-briefing_MRBT_en_withannex.pdf

⁴⁶ <https://www.eunomia.co.uk/reports-tools/greenhouse-gas-and-air-quality-impacts-of-incineration-and-landfill/>

⁵⁴ <https://web.archive.org/web/20150105033641/https://ec.europa.eu/environment/waste/pdf/waste-generationmanagement-model.zip>

⁴⁷ <https://ukwin.org.uk/files/pdf/UKWIN-2021-Good-Practice-Guidance-for-Assessing-the-GHG-Impacts-ofWaste%20Incineration.pdf>

⁴⁸ <https://www.zerowastescotland.org.uk/content/climate-change-impact-burning-municipal-waste-scotland>

⁴⁹ <https://solutions.tomra.com/hrs-whitepaper-download>

⁵⁰ <https://solutions.tomra.com/mws-white-paper>

(Dr. Jeffrey Morris, Dr. Enzo Favoino, Eric Lombardi and Kate Bailey, May 2013)⁵¹

- Landfill Bans: Feasibility Research (WRAP, November 2012)⁵²
- The Economics of Waste and Waste Policy (Defra, June 2011)⁶¹

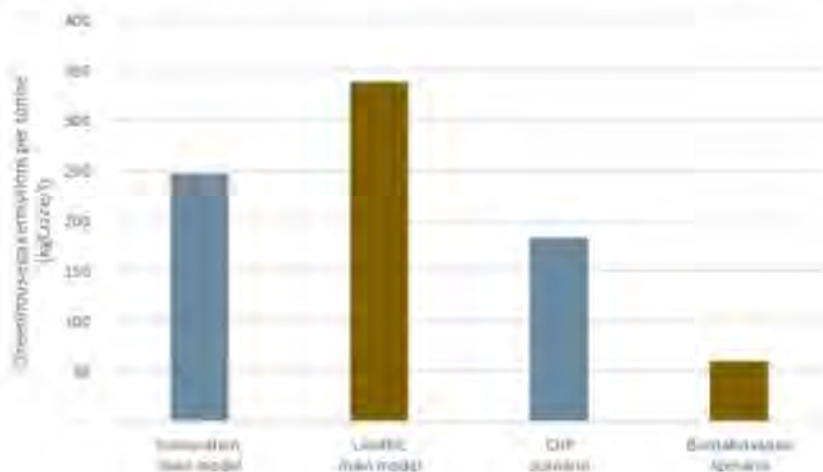
While removing food waste from the waste stream will reduce the proportion of biowaste that would degrade if sent directly to landfill, there is still a need to consider how these emissions could be minimised if biowaste is sent to landfill (e.g. as part of a 'transitional' strategy to treat residual waste as recycling rates improve while avoiding the 'lock-in' of waste incineration).

Even if there are potential challenges associated with the immediate use of biostabilisation, the potential savings from such approaches are very relevant when considering lower-cost medium-term residual waste treatment options that could allow for further increases in recycling and composting. This is especially relevant when considering whether or not to allow more waste incineration capacity which could lock in the use of that capacity for decades to come as the expense of the top tiers of the Waste Hierarchy.

The potential emissions savings from bio-stabilisation prior to landfill was considered in the July 2021 report from Zero Waste Scotland. The technical report summarises its findings in the following figure:

Extract from Zero Waste Scotland's July 2021 technical report

Figure 16. Converting to CHP or biostabilisation technologies lowers the GHG emissions of waste management facilities



⁵¹ <https://www.ecocycle.org/specialreports/leftovers>

⁵² <https://www.nswai.org/docs/Landfill%20Bans%20Feasibility%20Research%20Final%20Report%20Updated.pdf> ⁶¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69500/pb13548economic-principles-wr110613.pdf

The supporting text below the figure explains: "Figure 16 also shows a comparison to the potential savings from reducing biodegradable material to landfill. This could be achieved using biostabilisation. If levels of biogenic carbon can be reduced from 15% to 5% of residual municipal waste, landfill impacts would fall from 337 kgCO₂e/t to 59 kgCO₂e/t."

Providing further detail, the report also notes: "The estimated greenhouse gas emissions from biostabilisation in this study are in line with estimates from such plants operating in Europe. The biostabilisation scenario in this study is illustrative only and further, more detailed research is required to understand the environmental impacts of this scenario in a Scottish context more fully."

"Biostabilisation as described in this report³, refers to a specific type of technology where waste is pre-treated before landfill to reduce its biodegradable content, in accordance with the respiratory test criteria described in the section 4.2.b.i of the Waste (Scotland) Regulations 2012. Biostabilisation is a proven technology with plants operating across Europe, although there are no such plants in Scotland or the rest of the UK."

Footnote 3 states: "For example, J. de Araújo Morais et al. (2008) Mass balance to assess the efficiency of a mechanical–biological treatment, Waste Management, Volume 28, Issue 10 found that biochemical methane potential of residual municipal waste was reduced by over 80% after treatment."

According to the conclusions of the report: "The large potential savings from biostabilisation indicate this option warrants further consideration."

It is explained within the 'frequently asked questions' section of the report's webpage that: "...for residual waste which cannot be recycled, Biostabilisation technologies could offer a low carbon solution to landfill..."

'Mechanical and Biological Treatment' (MBT) and 'Material Recovery and Biological Treatment' (MRBT) processes can extract recyclates for recycling and then biostabilise any residues prior to landfill.

Assessments have found that MBT-Landfill/MRBT approaches can result in significantly lower CO₂e emissions than sending the same waste to incineration, especially when the benefits of the biogenic carbon sink in landfill and the impact of the decarbonisation of the electricity supply are taken into account.

MBT/MRBT systems are much cheaper to establish than incineration, thus MBT/MRBT systems provide greater flexibility than incinerators, as they are more able to accommodate future improvements in waste prevention and recycling.

This means MBT/MRBT avoids the environmentally harmful impacts of feedstock 'lock-in' associated with residual waste treatment facilities such as incinerators⁵³ which cost hundreds of millions of pounds to build.⁵⁴

Defra noted the potential benefits of MBT-landfill back in 2011, stating: "MBT (mechanical biological treatment)-landfill provides the best emissions performance in terms of the treatment/disposal of residual waste. It essentially involves landfilling somewhat stabilised wastes with some material recovery. The magnitude of the environmental impact depends on the extent to which the waste is stabilised".⁵⁵

This issue was considered further by Eunomia and the Copenhagen Resource Institute (CRI) in 2014 in a report for Directorate-General for Environment at the European Commission entitled 'Development of a Modelling Tool on Waste Generation and Management - Appendix 6: Environmental Modelling' which was used in the Impact Assessment of the European Circular Economy package.⁵⁶

According to the European Waste Model document: "The central aim of aerobic stabilisation processes is to produce an output which has a reduced biodegradability, thereby decreasing the environmental impacts associated with landfilling this material, although in some Member States such as France the stabilised output is applied to land. The pre-treatment process also typically removes metals and plastics for recycling".

"The approach for modelling the impacts of stabilisation processes draws upon work by Eunomia on behalf of WRAP, which was based upon a raft of published research. The body of research included work by Baky and Eriksson, Sonneson, and Komilis and Ham, all of whom investigated the link between the biochemical composition of the waste and the release of CO₂ within composting processes. This research, together with data sourced from technology suppliers, was used to model the degradation of carbon fractions within our model and the subsequent release of biogenic CO₂ from the process."

⁵³ <https://ukwin.org.uk/files/pdf/UKWIN-Examples-of-incineration-harming-recycling-July-2019.pdf>

⁵⁴

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/221036/pb13889incineration-municipal-waste.pdf

⁵⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69500/pb13548economic-principles-wr110613.pdf

⁵⁶ <https://web.archive.org/web/20150105033641/https://ec.europa.eu/environment/waste/pdf/waste-generationmanagement-model.zip>

Zero Waste Europe published a briefing note in January 2021 which includes information about the recyclate recovery performance of existing MRBT plants. The report explores MRBT's potential use as part of a 'bridge strategy' for managing residual waste within the context of the transition to a more circular economy.⁵⁷

The report found that MRBT was the lowest-carbon option considered, with lower emissions even than incineration with plastics removed (referred to as 'MWS plus incineration' with MWS meaning 'municipal waste sorting').

According to the Zero Waste Europe report: "...a MRBT system that combines biological treatment and sorting equipment allows us to 'stabilise' the organics that are included in residual waste, so as to minimise their impact once buried in a landfill, while also helping to recover materials such as metals, plastics, paper that are still included in residual waste after separate collection...with ongoing decarbonisation of energy, and factoring the GHG savings from aerobic degradation, prior to landfilling, of biodegradable materials included in waste, MRBT becomes the most climate-friendly option, both whether biogenic CO₂ is considered or not."

"...replacing the RDF-production units in MBT plants with equipment to sort residual waste and recover the materials which are worth recovering...[This] could help ensure the:

1. Reduction of the negative impacts at landfills, due to the biological treatment of the dirty organics;
2. Sufficient diversion of materials from landfills, due to process losses from biological stabilisation and the recovery of some of the other materials;
3. Flexibility of the operational lay-out, given that the sorting systems may similarly be used with materials from kerbside programmes for further separation of different metals, different polymers and different paper grades after separate collection, to help enhance the effectiveness of collection and subsequent recycling systems.

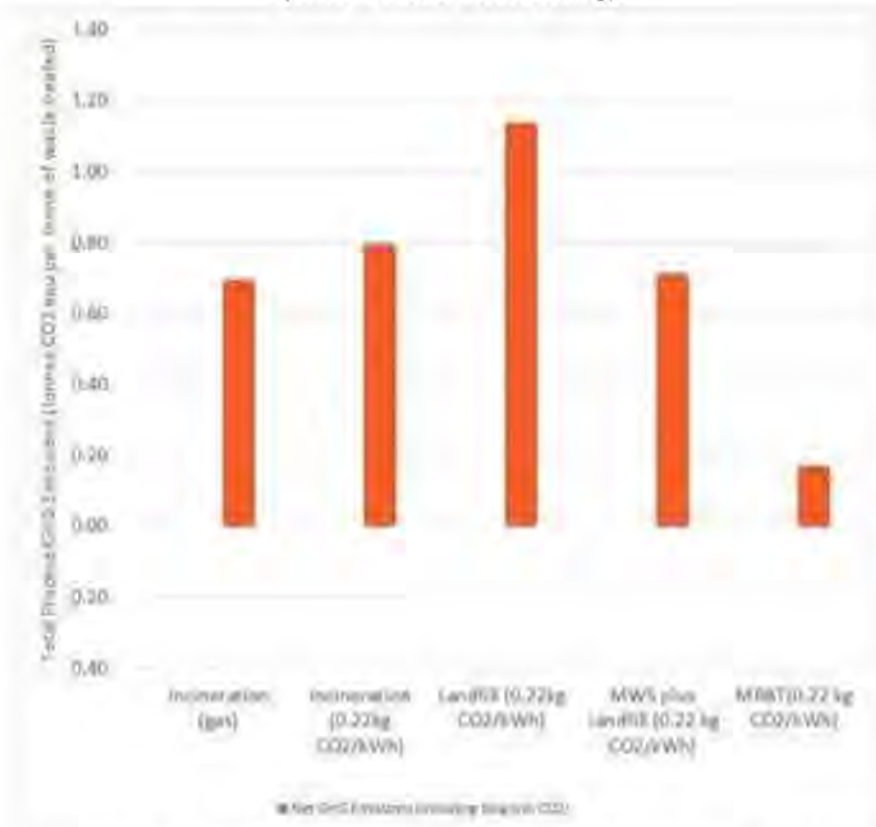
The combination of these operational goals can be described as...MRBT. This is key as it distinguishes [MRBT] from old-fashioned MBT to emphasise the intended goal of

⁵⁷ <https://zerowasteurope.eu/library/building-a-bridge-strategy-for-residual-waste/>

merging...recovery of some waste materials and biological stabilisation of fermentable materials before landfilling".

Extract from January 2021 Zero Waste Europe Report

Figure 12: GHG emissions from treating 1 tonne of residual waste through different treatments assuming different carbon intensities of energy being avoided (0.22kg CO₂/kWh) (MWS = mixed waste sorting).



* Modified for clarity to show only the Net GHG Emissions (including biogenic CO₂) and to exclude MWS plus incineration and incineration/landfill with a coal counterfactual

More recently, the potential for increased aerobic biological stabilisation prior to landfill as part of a system that includes increased sorting prior to landfill was explored in the ClientEarth report 'Greenhouse Gas and Air Quality Impacts of Incineration and Landfill'.⁵⁸

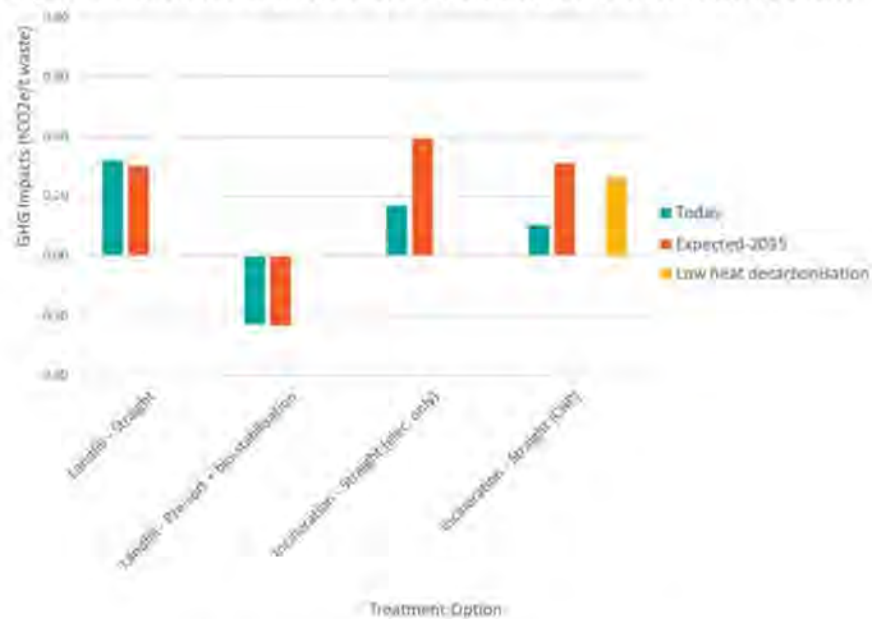
According to the ClientEarth report: "The bio-stabilisation process allows the aerobic degradation of organic material in the residual stream to take place under controlled conditions, releasing biogenic carbon dioxide. This reduces the biogenic carbon content of the stream sent to landfill, thereby reducing methane emissions from the waste once in landfill."

⁵⁸ <https://www.clientearth.org/latest/documents/greenhouse-gas-and-air-quality-impacts-of-incineration-and-landfill/>

The report found that landfill with pre-sorting and bio-stabilisation was roughly on par with incineration with plastics removed and recycled (what it calls 'incineration - pre-treatment') but significantly better than incineration of a mixed waste feedstock that includes plastic (what it calls 'incineration straight') even with combined heat and power (CHP).

Extract from December 2020 ClientEarth report

Figure 2-1 The GHG impacts of the treatment options under each scenario



* Modified for clarity to exclude GWP20 sensitivity analysis and incineration with 100% plastic removal/recycling

TOPIC 3: ECONOMIC, ENVIRONMENTAL & SOCIAL TRADE-OFFS

The relevant section of the Call for Evidence document opens with the statement that: “Identifying the appropriate options for the treatment of residual waste will require consideration of a range of trade-offs between several factors including feasibility, cost, environmental impact and societal impact”.

Whilst UKWIN appreciates the implicit recognition that residual waste treatment capacity is associated with a range of disamenities for local residents and for society as a whole, the adoption of UKWIN recommendations would bring benefits across the board, extending the range of non-thermal treatments that would be feasible (because these approaches would no longer have to compete with ever-increasing incineration capacity), while providing value for money, environmental gains (including with respect to the nutrient cycle), and delivering beneficial societal impacts (e.g. promoting more prudent resource use and greater sufficiency, as well as job creation, within the context of the circular economy).

Information on MBT and biostabilisation is set out in our response to Q10 in Topic 2.

Q12 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?

When taking costs into account, it is important to consider not just the financial costs to the operator, waste authority, or waste producer, but to also consider the wider costs to the environment and to society.

When local authorities pay the landfill tax this is a type of ‘transfer payment’ rather than a cost as such, because the money remains within the public purse. When businesses pay the landfill tax it increases the money in the public purse.

To quote the Inspector in the Battlefield incinerator decision: “Landfill tax savings were claimed as a benefit of the appeal scheme in the appellant’s presentation to EH [English Heritage]. In financial analysis terms such tax payments would be a cost. However, in an economic analysis it seems to me that it would be more of a transfer payment, and so not a cost to society as a whole. Landfill tax is a device to divert waste away from landfill with consequential climate change benefits. To factor in an additional benefit of landfill tax savings would, to my mind, introduce an element of double counting”.⁵⁹

This stands in stark contrast to any public funding that would be diverted to pay for carbon capture facilities at incinerators or to help fund combined heat and power schemes, which would reduce the money in the public purse.

At present the landfill tax system does not adequately distinguish between sending waste untreated to landfill and sending biostabilised waste to landfill. Furthermore, the CO₂ released from incineration is not currently taxed, and nor is the harm caused by incinerator lock-in reflected in the costs.

These deficiencies and market failures can, and we argue should, be rectified. These adjustments would allow for the cost of treatment to more closely match the environmental impacts of those options, with benefits suitably rewarded and disbenefits appropriately penalised.

However, in the meantime, it is important to consider that the overall costs of sending biostabilised waste to landfill is far less than the costs of building new incineration capacity, and it is the wider society who would be picking up the tab if the latter were allowed to proliferate at the expense of the transition to a more circular economy.

With regard to direct financial costs associated with residual waste treatment options, UKWIN notes the following, taken from page 19 of ‘Building a bridge: Strategy for residual waste’⁶⁰: “Sites designed to operate through biological stabilisation and

⁵⁹ <https://ukwin.org.uk/library/204-PlanningConsent-2012.pdf>

⁶⁰ Available at: https://zerowasteurope.eu/wp-content/uploads/2020/06/zero_waste_europe_policy_briefing_MRBT_en.pdf

material recovery, are markedly **cost competitive** with incineration. Capital expenditure (capex) at a BAT level may be in the range of EUR 200-400 per t/year of installed capacity⁶¹, while BAT incinerators typically are around EUR 1000 per t/year and more. This implies a lower use of financial resources for residual waste management, and a larger part of the budget may be dedicated to separate collection, reuse and recycling". [**emphasis in original**]

A focus on just biostabilisation (e.g. through aerobic digestion) could significantly decrease biological stabilisation costs. Furthermore, for some materials the cost of extracting them could be significantly less than the revenue generated from their sale.

Turning to evidence that is UK-based, UKWIN notes the May 2020 'Energy from Waste Plants with Carbon Capture' report from Energy Systems Catapult Limited⁶² which provides an illustrative example of the capex associated with a 350,000 tpa incinerator with and without carbon capture as follows: £220m without carbon capture (£629 per tonne), and £320m with carbon capture (£914 per tonne). These cost estimates were based on historic data (from business cases, etc. published between 2014 – 2017), meaning the costs can be expected to have risen since then due to inflation and other economic factors (e.g. Brexit).⁶³

For data associated with Scotland we turn to the November 2015 'Addendum to Energy from Waste Business Case' produced by Amec Foster Wheeler Environment & Infrastructure UK Limited for Aberdeen City Council⁶⁴. This provides a Total EfW EPC Cost Estimate (capex) of £870 per tonne/year capacity which is stated to be valid for projects between 50 and 120ktpa, and a Total Final Capex Estimate of £902 per tonne/year capacity for projects exceeding 120ktpa. It is stated that these figures have an accuracy of +/- 50% and do not include contingency margins.

As above, economic circumstances have changed since 2015 which could be expected to have increased the Capex (capital expenditure) costs of incineration in Scotland.

A report entitled 'Approach to appraising the options for the long-term management of residual waste'⁶⁵ presented to the Highland Council's 12th May 2021 Communities and Place Committee considered the costs of a range of residual waste treatment options, including cost estimates for the construction of an 88ktpa incinerator in Inverness.

⁶¹ See: Arcadis et al: Assessment of The Options to Improve the Management of Bio-waste in the European Union, Final Report, Annex E, Approach to estimating costs available at:

https://ec.europa.eu/environment/pdf/waste/compost/ia_biowaste%20-%20ANNEX%20E%20-%20%20approach%20to%20costs.pdf

⁶² Available via: <https://es.catapult.org.uk/report/energy-from-waste-plants-uk-with-carbon-capture/>

⁶³ See 'Recommendations for a Value for Money (VfM) review of the NLWA's Edmonton incinerator replacement project' at: <https://ukwin.org.uk/files/pdf/UKWIN-2020-Edmonton-VfM.pdf> for more about cost increases

⁶⁴ Available at: <https://committees.aberdeencity.gov.uk/mgConvert2PDF.aspx?ID=61677>

⁶⁵ Available at:

https://www.highland.gov.uk/download/meetings/id/78147/15_approach_to_appraising_the_options_for_the_longterm_management_of_residual_waste

The Committee Report states: “The [2020 SLR⁶⁶] report identified that the capex for developing a technically feasible EfW facility at the Longman site, capable of processing 88,000 tonnes of residual waste per annum, is likely to be a base cost of £95m, excluding any internal Council costs, uplifts for risk, optimism bias and funding. When incorporating adjustments for risk, optimism bias, cost escalation allowance for inflation post 2019/20 and interest during construction, the report forecasts the total Option 2 funding requirement at £185m”.

The presentation of key findings from the 2020 SLR report includes the following costs table:

WtE Capital costs £98-124M (2019 costs and excluding risk, OB, funding)

Capex £	Option	1	2	3
		Longman 72ktpa EfW plant	Longman 88ktpa EfW plant	Longman 128ktpa EfW plant
	Site acquisition	0	0	0
Civil works - buildings, ground works etc.	Civil & Buildings	22,505,951	23,332,064	29,815,322
	Mobile Plant	761,000	761,000	761,000
	Contingency (on Civils + Other)	2,250,590	2,333,200	2,981,532
	Fees	6,071,431	6,269,700	7,885,677
	EPC Contractor Margin	2,813,245	2,916,510	3,726,915
	Civil works total	34,402,232	36,612,503	45,170,447
M & E costs - process plant, utilities etc.	M&E	58,853,350	61,813,603	71,994,160
	Contingency (on M&E)	5,130,393	5,390,641	6,280,870
	M&E total	63,983,743	67,204,203	78,275,030
	DH CAPEX	0	0	0
	MT and EfW CAPEX total	98,385,976	102,816,806	123,455,686

Thus, whereas Capex figures from 2015 ranged between £870 - £902 per tonne/year capacity, figures from 2020 ranged between £892 - £1,264 per tonne/year capacity (including some M&E costs but excluding contingency, risk, off-balance sheet items, and funding costs, as well as excluding all operational expenditure).

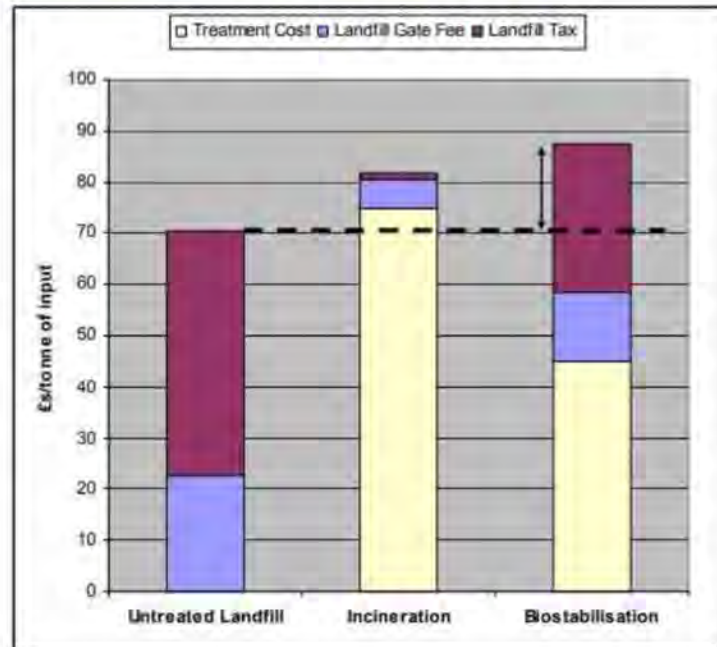
Eunomia’s January 2008 ‘Biostabilisation of Wastes: Making the Case for a Differential Rate of Landfill Tax’⁶⁷ report proves further evidence that biostabilisation is significantly less expensive per tonne than incineration, once the taxation issue has

⁶⁶ See: https://www.highland.gov.uk/download/meetings/id/76905/item_8i_waste_projects_update for presentation of key findings

⁶⁷ Available at: http://www.organics-recycling.org.uk/dmdocuments/Eunomia_Jan_2008_report.pdf

been resolved. Figure 3 from that report, reproduced overleaf, estimates that the per-tonne treatment cost of biostabilisation is around half the per-tonne cost of incineration.

Figure 3: Estimated total cost of selected residual C&I waste management options in 2010/11



According to a 2009 report by Arcadis and Eunomia for the European Commission⁶⁸: “Stabilisation technologies are low capital cost treatments for residual waste. We have used a figure of €230 per tonne [of capacity], and an operating cost of €19 per tonne before disposal costs. A French study into the cost of MBT found that a 30,000 tpa stabilisation system with residues to landfill will cost €4.5 million in 2005 prices. This suggests a cost of €150 per tonne [of capacity]. This is considered to be quite a low cost. In the UK an examination of various MBT configurations from 2005 has suggested that for a stabilisation facility of this nature would incur a capital cost of €201 per tonne [of capacity]. These costs are similar to those for in-vessel composting, reflecting similarities in technology, though scale will usually be larger, and there are costs of residue disposal to be considered...”

⁶⁸ Arcadis et al: Assessment of The Options to Improve the Management of Bio-waste in the European Union, Final Report, Annex E, Approach to estimating costs available at: https://ec.europa.eu/environment/pdf/waste/compost/ia_biowaste%20-%20ANNEX%20E%20%20%20approach%20to%20costs.pdf

13 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?

In terms of wider financial costs, it is important to consider environmental externalities. In 2011 Defra identified three key market failures, none of which have been satisfactorily addressed in Scotland (or indeed in England):

- “On the whole, those treatment options which reduce embedded emissions by reducing energy associated with extraction, primary production etc., such as reuse and recycling, do not have their full external benefits reflected in the price of disposal.”
- “The emissions from waste combustion of non-biogenic material (via any technology including mass-burn incineration) are also not comprehensively reflected in the price of disposal. Unless the installation in question is in the ETS (municipal solid waste incinerators are excluded) a negative externality persists – such installations are creating GHG emissions without paying the relevant price.”
- “Subject to proving its environmental performance, MBT-landfill does not have its environmental benefits reflected in the price of disposal.”

Incinerators emit around a tonne of CO₂ per tonne of waste incinerated, with around half of this being fossil CO₂. However, at present nothing is paid for the cost to society of this CO₂.

BEIS’s central carbon values in £2020 prices per tonne of CO₂ rise from £241/tonne for 2020 to £280/tonne in 2030 and £378/tonne in 2050. However, this is not reflected in the price of incineration, nor is the impact of the material being lost to society which results in virgin materials from being used at significant carbon cost.

On the other hand, the cost of landfilling waste is around £100/tonne, with no discount for the impacts being reduced due to lower levels of food waste or waste being mostly biostabilised prior to landfill.

As such, there are currently perverse financial incentives to incinerate waste which would have lower impacts if they were biostabilised and sent to landfill, and recycling is having to compete with what is in effect a subsidised incineration market.

As noted in the Environment, Climate Change and Land Reform Committee’s November 2020 report on the Green Recovery Inquiry, “a robust carbon pricing regime” is needed in Scotland.⁶⁹

Addressing these market failures should result in lower overall emissions, especially if money raised from an incineration tax is invested in waste prevention efforts.

⁶⁹ https://archive2021.parliament.scot/S5_Environment/Reports/ECCLRS0520R12.pdf

The introduction of an incineration tax would be consistent with the Zero Carbon Commission's September 2020 report on 'Helping Britain Achieve Net Zero by 2050'⁷⁰ which advocated for "a new carbon tax on incineration and other energy from waste schemes (i.e. Advanced Conversion Technologies)".

According to the Commission: "There is a good case for carbon taxation on incineration, which produces substantial emissions...a tax on incineration would increase incentives to recycle and/or generate less waste...".

Q14 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.

This Call for Evidence question invites consultees to provide evidence such as compositional analysis. UKWIN's website⁷¹ includes links to eight examples of compositional analysis (some of which are mentioned above, alongside references to WRAP data on recycling opportunities, etc.) covering a range of waste streams (e.g. Commercial and Industrial (C&I), household residual, municipal, landfilled C&I, etc.) undertaken at regional and national levels.

These studies demonstrate that much of what is incinerated is not genuinely residual waste, but rather valuable material that could and should have been recycled or composted. Compositional analysis studies show that there are many instances where the majority (i.e. over 50%) of 'waste' collected at the kerbside could have been recycled or composted had it been put into the correct bin. And not all of these studies take account of the opportunities for Councils to extend the range of materials they accept for recycling at the kerbside.

The vast majority of incinerators in the UK have no facility to remove recyclable material prior to incineration, and so all of the recyclable and compostable material delivered to these facilities ends up in the incinerator. Difficult-to-recycle materials are increasingly being redesigned or phased out, meaning incinerators are becoming increasingly reliant upon burning recyclable and compostable material.

The more that citizens and businesses are confident that material collected for recycling or composting is in fact recycled or composted the more likely it will be that these materials end up in the recycling stream rather than the residual waste stream. The easier it is for consumers to recycle, e.g. through extending the range of plastics collected for recycling and allowing all dry materials to be collected for potential recycling, the greater the reduction in the quantity of material that makes up the residual waste stream. Much of what is left in the residual waste stream, e.g. ceramics and cat litter, are not combustible.

⁷⁰ <https://zerocarbon.publicfirst.co.uk/>

⁷¹ At <https://ukwin.org.uk/facts/#recyclability>

Responding to the Call for Evidence’s invitation to provide case studies and carbon reports, UKWIN draws attention to both our ‘Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration’ and our ‘Evaluation of the climate change impacts of waste incineration in the United Kingdom’, as well as to Zero Waste Scotland’s ‘The climate change impact of burning municipal waste in Scotland’ and Eunomia’s report for ClientEarth entitled ‘Greenhouse Gas and Air Quality Impacts of Incineration and Landfill’.

As set out below, UKWIN has also carried out bespoke analysis for the Scottish Incineration Review’s Call for Evidence regarding the real world carbon performance of incinerators in England and Scotland, and the unpaid CO₂ cost of Scottish incineration capacity.

Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration (UKWIN, July 2021)

When considering the impacts of incineration, it is necessary to take into account the recommendations made by UKWIN within our July 2021 Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration and the associated evidence base.⁷² The report’s recommendations are outlined below.

TRANSPARENCY AND OPENNESS TO SCRUTINY

1. Methodology and modelling assumptions, including underlying data and how it was derived, should be transparent and verifiable. Scrutiny of environmental claims made to support waste incineration should be facilitated rather than frustrated.

IMPACT OF WASTE COMPOSITION AND TECHNOLOGY ON ENERGY AND GHG OUTPUTS

2. Key outputs such as power export and greenhouse gas (GHG) emissions are dependent on waste composition and the processes used. When modelling future emissions it is necessary to ensure that outputs are internally consistent with inputs.

3. GHG impacts can be highly sensitive to waste composition. Waste composition assumptions should be justified and sensitivity analysis should be used to show the impacts of future changes such as increased food and biowaste collection.

4. While heat export, carbon capture, and pre-treatment to remove plastics can potentially reduce overall GHG impacts of incineration, there are also uncertainties regarding deliverability and/or overall impacts. Sensitivity and

⁷² <https://ukwin.org.uk/files/pdf/UKWIN-2021-Good-Practice-Guidance-for-Assessing-the-GHG-Impacts-ofWaste%20Incineration.pdf>

lifecycle analysis can be used to explore a range of possibilities and to reflect relevant uncertainties.

THE ROLE OF LANDFILL AS A BIOGENIC CARBON SINK

5. To produce a valid comparison when comparing waste treatment options such as landfill and incineration that release different quantities of biogenic CO₂ it is necessary to account for these differences, especially the impact of the biogenic carbon sink in landfill.

DISCREPANCIES BETWEEN THEORETICAL AND REAL WORLD PERFORMANCE

6. The carbon performance of modern waste incinerators is often significantly worse than was predicted through modelling at the planning and permitting stages. This discrepancy between predicted and actual carbon performance needs to be taken into account when modelling, and robust sensitivity analysis is needed to ensure that CO₂e emissions from incineration are not significantly underestimated.

7. Power export underperformance, e.g. due to turbine or generator failure or during commissioning, is a realistic prospect for modern waste incinerators that needs to be taken into account when modelling anticipated power output and associated climate impacts.

DISPLACEMENT OF OTHER SOURCES OF ELECTRICITY AND/OR HEAT

8. When considering the carbon intensity of displaced energy, it is necessary to take account of the progressive decarbonisation of the energy supply rather than simply assuming that a new energy source would displace fossil fuels. The carbon intensity of electricity displaced by a new incinerator can be estimated using the average BEIS Long-Run Marginal Emissions Factor (MEF) over the lifetime of the plant.

WASTE TREATMENT COMPARATORS/COUNTERFACTUALS

9. When considering how waste would be treated if it were not sent to an incinerator, account should be taken of the prospect that it might otherwise have been reduced, reused, recycled or composted. Account should also be made of how landfilled waste could be bio-stabilised to reduce methane emissions.

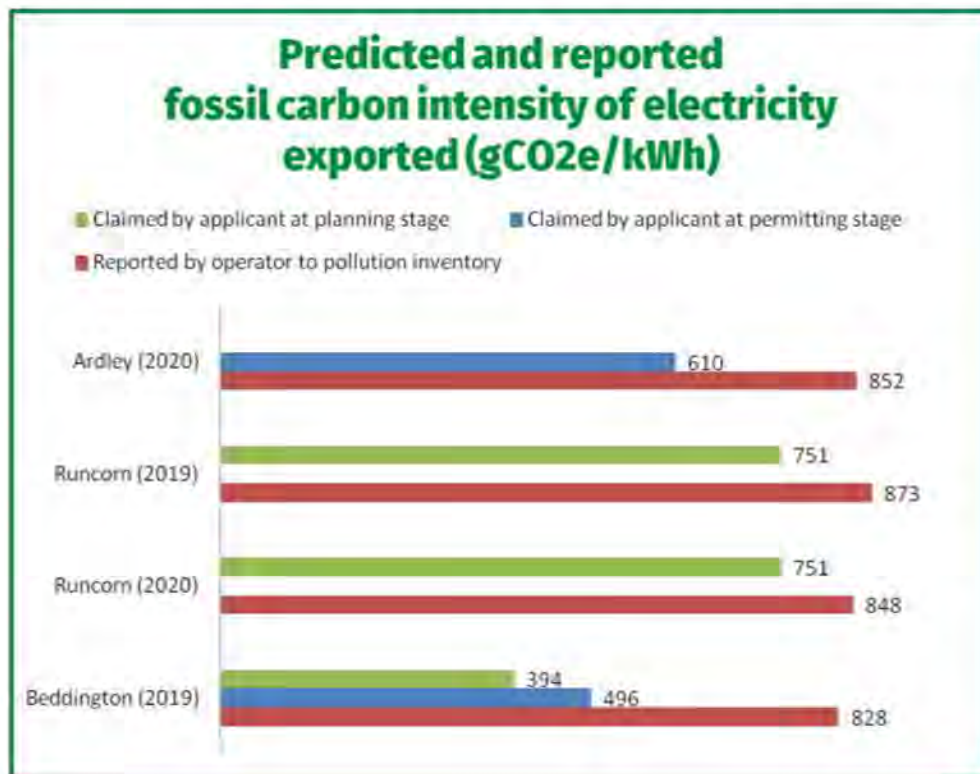
LOW CARBON CLAIMS

10. Energy from mixed waste incineration should not be described as 'low carbon'. Incineration involves the direct release of significant quantities of CO₂.

The analysis that informed Recommendations #6 and #7 found that, for the incinerators studied, on average:

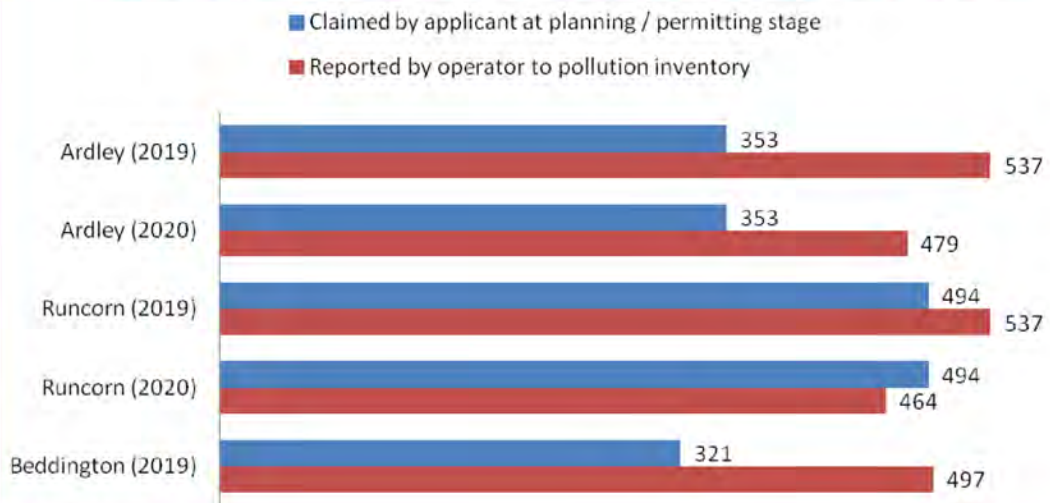
- a. The proportion of CO₂ that was fossil CO₂ was 13 percentage points higher than predicted at the planning or permitting stage.
- b. The fossil carbon intensity of electricity exported to the grid was around 49% higher than predicted by the applicant at the planning or permitting stage
- c. Reported fossil CO₂ released per tonne of waste feedstock incinerated was around 20% higher than that predicted at the planning or permitting stage.
- d. Electricity generated by incinerators was 15% lower than implied by the claimed headline megawatt (MW) generation figure, i.e. an incinerator advertised as being capable of generating 10MW of electricity typically only generated 8.5MW.
- e. Electricity exported was around 28% lower headline MW generation figures.

Figures from the report and associated presentation⁷³ included the following:



⁷³ <https://ukwin.org.uk/files/pdf/UKWIN-Incinerator-GHG-Good-Practice-Guide-Presentation.pdf>

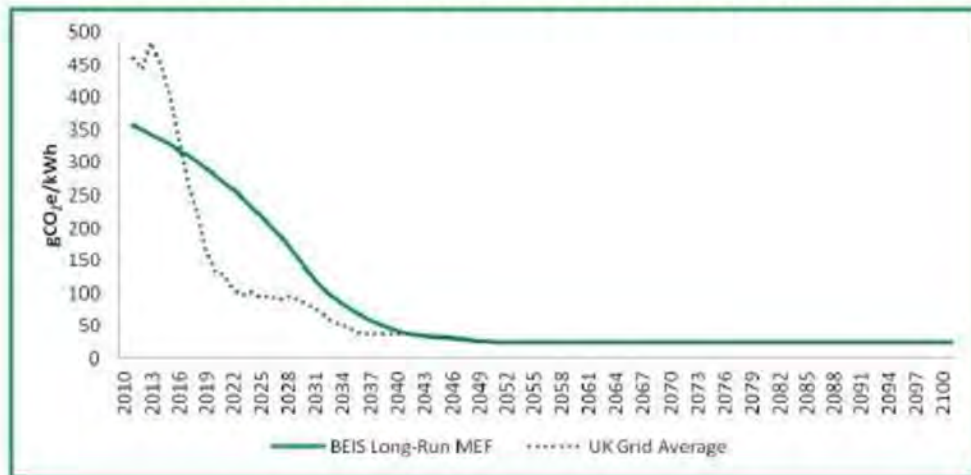
Predicted and reported kg of fossil CO2 per tonne of waste feedstock incinerated



Performance of a 10 MW incinerator based on 2020 average performance



**GRAPH BASED ON BEIS DATA TABLE 1: 'ELECTRICITY EMISSIONS FACTORS TO 2100'
FIGURES FOR GENERATION-BASED ELECTRICITY GENERATION**



Reports and methodologies that take account of the role of landfill as a biogenic carbon sink

ENVIRONMENTAL GROUPS

- UKWIN
- ZERO WASTE EUROPE
- ClientEarth^B

GOVERNMENTS

- Environment Commission
- GREATER LONDON AUTHORITY
- EPA
- US EPA Waste Reduction Model (WARM)

INCINERATION COMPANIES

- uni per
- NORTH LINCOLNSHIRE GREEN ENERGY PARK

ACADEMICS

- DTU Technical University of Denmark
- DTU's EASEWASTE Model

ipcc

Further evidence on real world carbon performance for UK incinerators

UKWIN’s Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration compared figures advanced by Viridor at the planning application and environmental permit application stages with the real world performance reported to England’s incineration industry regulator, the Environment Agency, by Viridor.

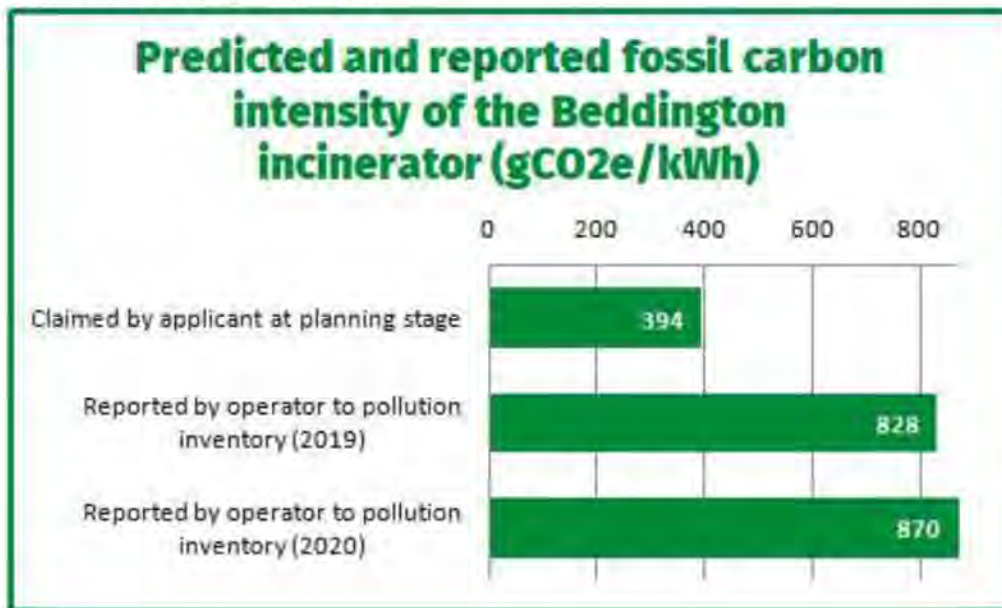
This showed that real world performance was significantly worse than anticipated performance.

Beyond the values in the report's main findings, the report itself includes the data used to calculate the results.

These calculations relied on knowing the fossil/biogenic fraction of the waste.⁷⁴

Subsequent to the release of the Good Practice Guidance UKWIN managed to obtain Viridor's Beddington incinerator figures for 2020 from the Environment Agency.

The Beddington incinerator's fossil carbon performance for 2020 was slightly worse than that for 2019 (see overleaf):



This difference (i.e. the increase) can be attributed to the biogenic fraction of the waste falling from 50.6% in 2019 to 44.1% in 2020 (meaning that 55.9% of the carbon in the waste feedstock was fossil carbon).

With this information, it is now possible to produce updated figures for the carbon impacts of incineration facilities in England for 2019 and 2020 which includes the newly obtained 2020 Beddington figures (see overleaf).

⁷⁴ Note: while the report included data from Peterborough, Peterborough was excluded from the findings because the biogenic fraction reported for the Peterborough incinerator seemed to be based on an emissions factor rather than real world measurements. The Environment Agency subsequently confirmed with Viridor that Peterborough's biogenic fraction figures were not based on measurements. Evidence of this is available upon request.

Reported emissions for 2019 and 2020⁷⁵

Incineration Plant	Carbon percentage in feedstock	CO ₂ e per tonne processed (tonnes)	Biogenic Fraction of Carbon	Fossil CO ₂ e per tonne processed (tonnes)	Power Exported per tonne processed (kWh)	Fossil carbon intensity of energy exported (gCO ₂ /kWh)
Ardley (2019)	26.2%	1.005	48.7%	0.537		
Ardley (2020)	26.4%	1.013	55.2%	0.479	563	852
Runcorn (2019)	28.0%	1.033	48.2%	0.537	615	873
Runcorn (2020)	27.0%	0.992	53.3%	0.464	547	848
Beddington (2019)	25.7%	0.973	50.6%	0.497	600	828
Beddington (2020)	25.5%	0.971	44.1%	0.558	641	870
AVERAGE	26.5%	0.998	50.0%	0.512	593	854

This analysis of English carbon performance, as reported by Viridor to the Environment Agency, indicates that around 50% of the feedstock is considered biogenic, which means around 50% of the CO₂ is considered fossil CO₂. It also confirms that around 1 tonne of CO₂e is released per tonne of waste incinerated, and that energy exported by incinerators has a high carbon intensity.

Evidence on real world carbon performance of Scottish incinerators

By comparing CO₂ information provided by operators to SEPA's Scottish Pollutant Release Inventory for 2019⁸⁵ with information on the quantity of waste incinerated at those plants in 2019 stated in the operators' Annual Performance Reports⁷⁶, it can be estimated that incinerators in Scotland also release around 1 tonne of CO₂ per tonne of waste incinerated.

CO₂ reported per tonne of waste treated at Scotland's Municipal Waste Incinerators in 2019

Incineration Plant	Permit Number	Tonnes incinerated in 2019	Tonnes CO ₂ in 2019	CO ₂ emitted per tonne incinerated
Dunbar	PPC/A/1032878	250,729	274,260	1.09
Millerhill	PPC/A/1136072	142,489	131,860	0.93
Glasgow / Polmadie ACT	PPC/A/1110002	83,000	62,000	0.75
Baldovie	PPC/A/1003157	96,231	102,042	1.06

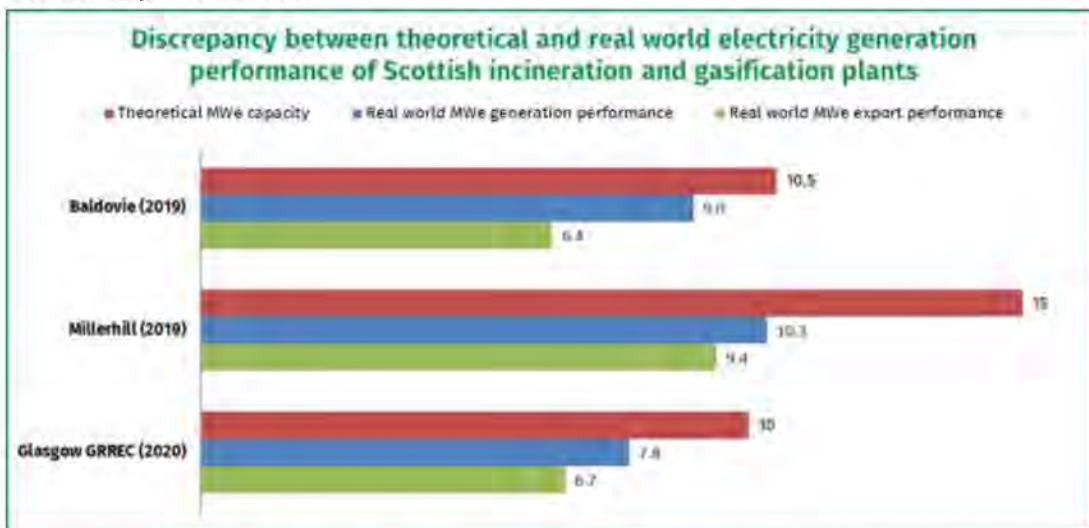
⁷⁵ As before, because N₂O figures were not reported for Peterborough it has been assumed to be zero. The Ardley values for power export and fossil carbon intensity are excluded as they relate to a period of prolonged generator non-availability which would dominate the results. ⁸⁵ <https://informatics.sepa.org.uk/SPRI/>

⁷⁶ https://www.tolvik.com/wp-content/uploads/2021/05/Tolvik-UK-EFW-Statistics-2020-Report_Published-May-2021.pdf for a summary. Individual reports available from <https://ukwin.org.uk/library/98-AnnualPerformanceReport-2019.pdf> (Dunbar), <https://ukwin.org.uk/library/99-AnnualPerformanceReport-2019.pdf> (Millerhill), and <https://ukwin.org.uk/library/97-AnnualPerformanceReport-2019.pdf> (Baldovie)

TOTAL		572,449	570,162	1.00
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We know from the operator’s annual report for Baldovie that the 102,042 tonnes⁷⁷ of CO₂ released in 2019 was based on CEMS measurements of CO₂ emissions. We do not have any evidence that any of the other Scottish emissions figures reported were based on CEMS monitoring, and so they are potentially less accurate than the figures for Baldovie.⁷⁸

The Annual Environmental Reports provided to SEPA by plant operators provide information on electricity generation and hours of operation which can be used to compare the theoretical maximum MWe capacity of incinerators in Scotland against real world performance.⁷⁹



This indicates that on average these incinerators – during their operational hours - operated at 78% of their electrical generation capacity, with real world export performance only 63% of the theoretical generation capacity. This is a measure of performance when the plants are operating, not of the ‘availability’ of the plants.

Operator reports for Millerhill and Baldovie include information on electricity exported in 2019. This can be combined with information on CO₂ released in 2019 to estimate the carbon intensity of exported electricity from those incinerators (see overleaf).⁹⁰

⁷⁷ This was reported as ‘kilograms’ but this is assumed to be a unit error, with the actual value being in tonnes. Such an interpretation would be consistent with the figures used for ‘the specific mass emission kg/tonnes waste’ in Figure 18 on the final page of the operator’s report.

⁷⁸ Lerwick was excluded because the facility treated significant quantities of clinical and fish/animal waste, and such material is not typical of incinerator feedstock elsewhere. Levensat was also excluded as we were unable to locate comparable CO₂ data for that facility.

⁷⁹ Calculated by dividing the MWh generated/net exported by the total hours of combustion to convert MWh to MW. Sources are as above, with the addition of the 2020 figure for the Glasgow GRREC which is available at https://www.whatdotheyknow.com/request/748716/response/1977006/attach/3/F0193795.zip?cookie_passthrough=1

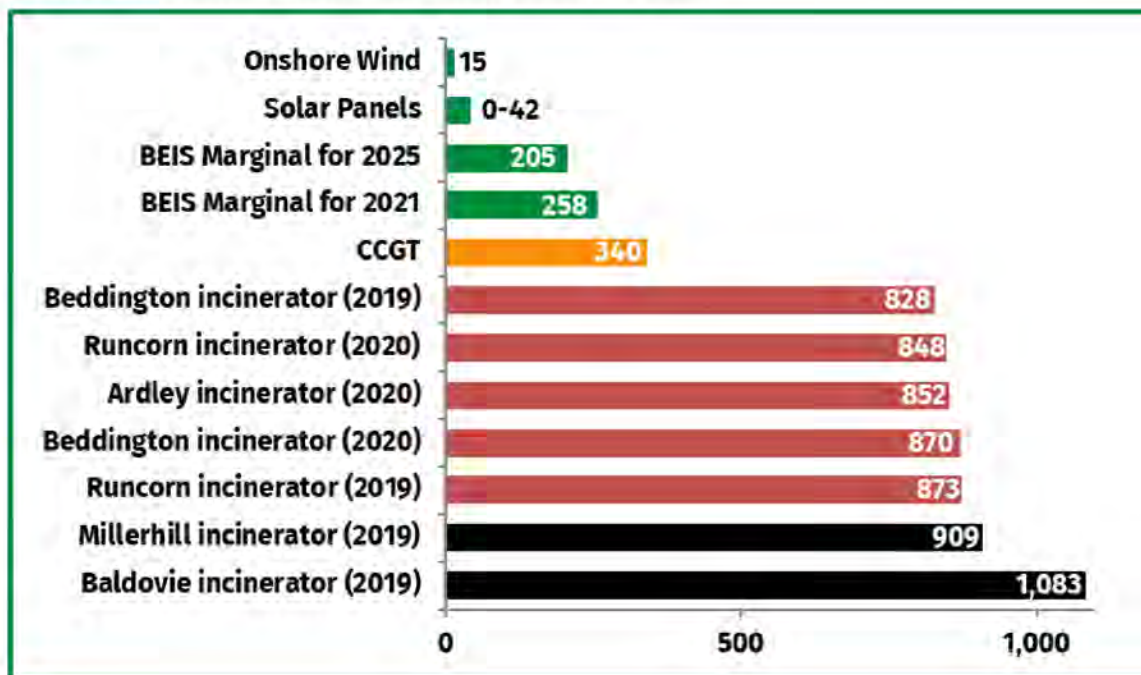
⁹⁰ The CO₂ figures reported by SEPA do not include estimates for the biogenic content of the waste feedstock, so it is assumed that 50% of the CO₂ is fossil and 50% is biogenic in line with the findings for the current biogenic fraction for England noted above. The precise figure will depend on the exact feedstock of the waste incinerated.

Carbon intensity of electricity exported at Scotland's MWI incinerators

Incineration Plant	Permit Number	Tonnes CO ₂ in 2019	MWh electricity exported in 2019	Power Exported per tonne processed (kWh)	Carbon Intensity (gCO ₂ /kWh)	Fossil Carbon Intensity (gCO ₂ /kWh)
Millerhill	PPC/A/1136072	131,860	72,521	509	1,818	909
Baldovie	PPC/A/1003157	102,042	47,112	490	2,166	1,083
TOTAL		233,902	119,633	501	1,992	996

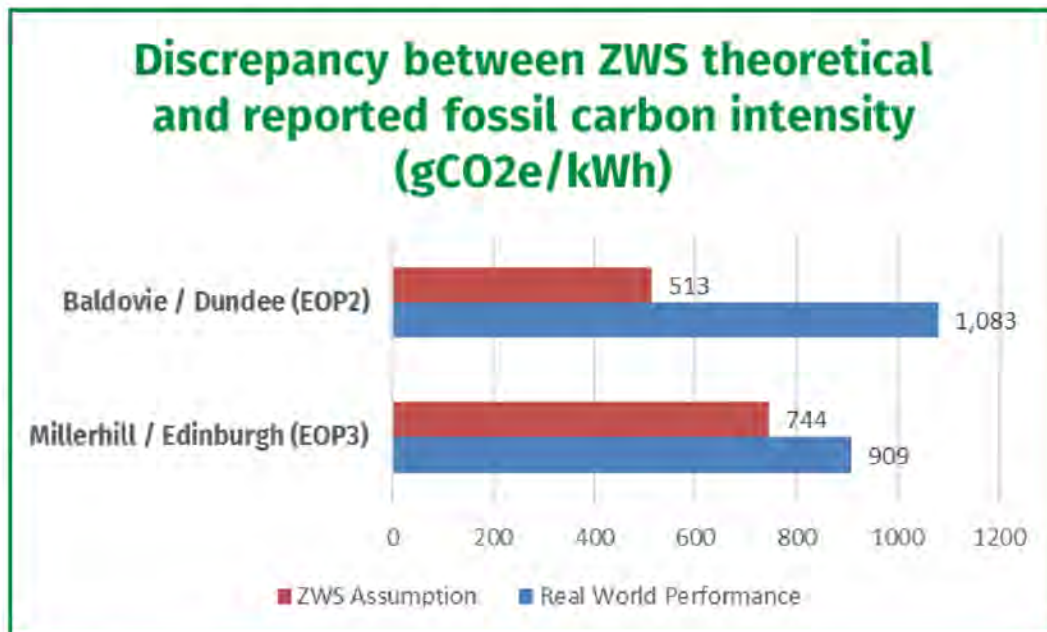
These figures indicate that the carbon intensity of these two Scottish incinerators was higher than the carbon intensity of all the incinerators studied in England.⁸⁰ As there is a similar level of CO₂ released per tonne processed this difference can largely be attributed to less electricity being exported per tonne processed for the facilities that reported CO₂ emissions.

To illustrate the performance of incineration plants relative to other forms of electricity generation, the figure from the UKWIN Good Practice Guide has been updated with Scottish incinerators shown below in black:



⁸⁰ This is only the direct CO₂ emissions and does not include other GHG emissions such as N₂O, meaning the actual impact could be slightly worse.

The performance for Baldovie and Millherhill is compared directly to the performance assumed for 2018 by Zero Waste Scotland in Table 3 of their technical report, where the plants appear to be referred to as EOP2 and EOP3 respectively (below).⁹²



For the facilities where carbon intensities can be calculated, the ZWS assumption as to the carbon intensity of the electricity is between 47% and 87% of the real world figure (i.e. an average of 65% of the real world value).

This provides evidence that real world performance of Scottish incinerators is significantly worse than the performance assumed by Zero Waste Scotland (ZWS) in 'The climate change impact of burning municipal waste in Scotland' (July 2021)⁹³ which used operator-provided data on projected performance to estimate a far more optimistic (but still high carbon) performance. These discrepancies cannot be explained away by minor differences in calculation methodology.

⁹² The identity of the plants is more clear in the October 2020 of the report available from <https://www.zerowastescotland.org.uk/sites/default/files/ZWS%20282020%29%20CC%20impacts%20of%20incineration%20TECHNICAL%20REPORT.pdf> but can be confirmed in the 2021 report by comparing the tonnes incinerated in Table 7 against the tonnes incinerated at those plants as report by Tolvik at

https://www.tolvik.com/wpcontent/uploads/2021/05/Tolvik-UK-Efw-Statistics-2020-Report_Published-May-2021.pdf

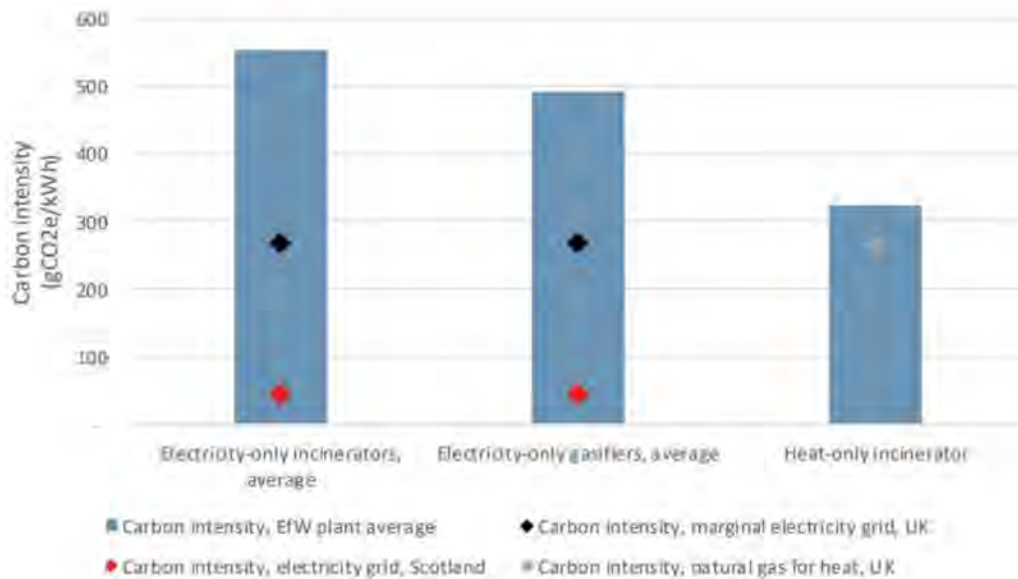
⁹³

<https://www.zerowastescotland.org.uk/sites/default/files/The%20climate%20change%20impact%20of%20burning%20municipal%20waste%20in%20Scotland%20Technical%20Report%20July%202021.pdf>

As shown below, the Zero Waste Scotland Report's average carbon intensity is similarly significantly below the carbon intensities observed in England and Scotland.

Estimate from 'The climate change impacts of burning municipal waste in Scotland' (Zero Waste Scotland, June 2021)

Figure 1. Average carbon intensity of EfW plant types in Scotland in 2018



Part of the reason for these discrepancies could be explained by the use of overly optimistic assumptions by ZWS regarding the efficiency of these incineration facilities based on theoretical generation capacities claimed by plant operators and applicants.

For example, the ZWS report assumed "Plant efficiency averaged 25% for the electricity-only plants" but in 2020 the Glasgow gasification plant reported a total electrical generation figure of just 17%.⁸¹

This evidence provides an additional indication that the current real world performance of incinerators in Scotland could be far worse than predicted by Zero Waste Scotland's modelling, thus calling into question the robustness of the ZWS report's conclusions regarding the current impacts of incineration compared to landfill.

Estimate of future unpaid CO₂ cost of Scottish incinerators

Based on the above information it is possible to provide an estimate that around 0.5 tonnes of fossil CO₂ would be released per tonne incinerated at Scottish incinerators.

⁸¹ As per Viridor's 2020 Incinerator Efficiency Report provided to SEPA. See: https://www.whatdotheyknow.com/request/748716/response/1977006/attach/3/F0193795.zip?cookie_passthrough=1

This can be combined with incineration capacity and BEIS' price estimates for carbon to provide an estimate of the future unpaid fossil CO₂ cost of Scotland's incinerators.

BEIS provides a 2027 central fossil CO₂ value of £268/tonne.⁹⁵ At 0.5 tonne of fossil CO₂ per tonne incinerated, the unpaid cost would be around £134 per tonne. Scotland currently has around 1.56mtpa of municipal waste incineration capacity, with a further 1.58mtpa under construction, and outstanding planning applications or announcements for around 1mtpa of additional capacity. This means that by 2027 incineration capacity in Scotland could be around 4.2mtpa even if no new projects are announced. $4.2m \times £134 = £562.8m$, i.e. more than £560m if all the incineration capacity announced for Scotland were also built. The operational and consented capacity is already set out above. The figures for capacity announced or in planning is as follows:

Scottish municipal waste incineration capacity which is in the planning system or has been announced as being under development or consideration

Plant	Capacity (tpa)	Status
Barr Killoch (Barr Environmental)	166,000	Live variation application (21/0369/PP) - Original approval in April 2017.
Drumshangie (AmeyCespa)	300,000	Granted planning permission in around 2013. Variation application submitted in October 2019 (19/01408/S42)
Overwood ERF (Viridor)	330,000	Scoping Opinion issued in May 2021 (P/21/0147). According to https://overwooderf.com/ a planning application will be submitted to South Lanarkshire Council in Spring/Summer 2021.
Inverness	80,000	Promoted by Highlands Council as per https://www.highland.gov.uk/meetings/meeting/4485/highland_council
Peterhead (Holistic)	100,000+	"mixed fuel gasification and biomass plant" of unknown capacity currently subject to a feasibility review. See https://ukwin.org.uk/incinerators/library/Aberdeenshire/276
Throsk	100,000+	Unknown capacity. See https://ukwin.org.uk/incinerators/library/Stirling/125
TOTAL	1,076,000+	Excludes substantial phase 2 expansion of Lvensat EFW because announcement reported by ENDS ⁹⁶ post-dated UKWIN's analysis.

⁹⁵ See <https://www.gov.uk/government/publications/valuing-greenhouse-gas-emissions-in-policy-appraisal/valuation-of-greenhouse-gas-emissions-for-policy-appraisal-and-evaluation> (values are in £2020).

⁹⁶ <https://www.endswasteandbioenergy.com/article/1747531/levenseat-reviewing-phase-two-efw-technology>

The climate change impact of burning municipal waste in Scotland (Zero Waste Scotland, July 2021)

While the call for evidence document states “In July 2021, Zero Waste Scotland published a report, the Climate Change Impacts of Burning Municipal Waste in Scotland. This suggested that incinerating municipal waste in Scotland resulted in 27% fewer emission than landfilling the same waste” this is not an accurate representation of the report’s findings.

In relation to the 27% figure, we note that:

- The 27% figure related to 2018 and not to present or anticipated future adverse climate impacts of incineration, and we further note that decarbonisation of the grid and removal of food waste would reduce the benefits of incineration.
- The 27% figure related to sending waste directly to landfill, and not to the biostabilisation scenario which indicated that landfill could have significantly lower impacts than incineration.
- Chapter 5 of the report acknowledges a number of data gaps, including with respect to the composition of residual municipal waste and the energy outputs of EfW incineration plants, and thus energy displacement.
- The impact of displaced electricity is assessed based on the UK grid, not the more-decarbonised Scottish grid.
- No account is made in the calculations for the fact that landfill releases less biogenic CO₂ than incineration, i.e. that landfill acts as a partial carbon sink for biogenic carbon.
- The report figures are based on incinerator applicants’ energy output estimates which, as per UKWIN’s analysis above, is often unrealistically optimistic, e.g. due to the failure to take into account anticipated turbine non-availability.

To quote from the Zero Waste Scotland (ZWS) report (**with emphasis added**):

- “Sending one tonne of waste to EfW emitted 246 kgCO₂e/t on average, which is 27% lower than the emissions from sending the same waste to landfill in Scotland **in 2018**. The emissions from both EfW and landfill are highly dependent on the composition of waste, which is **variable and changing over time. If the fossil carbon in waste increases, EfW emissions rise**. If the biogenic carbon in waste increases, landfill impacts rise.”

- “The **significance and variability of key parameters such as the composition of waste and the decarbonisation of the grid**, illustrate the importance of regularly updating the evidence base for this subject area.”
- “When biogenic carbon decreases (e.g. if the proportion of food and paper waste in municipal residual waste falls), landfill greenhouse gas emissions fall...Landfill and EfW impacts are equal when the proportion of food and paper waste in residual municipal waste falls from the main model assumptions by 10.4% from 43.1% to 32.7%.”

As such, the report itself acknowledges that looking back at assessments based on historic carbon intensities and waste composition (which is what the 27% figure does) results in an inaccurate assessment of the current and future impacts of incineration.

A number of limitations/deficiencies in the report raise doubts that the 27% was even accurate in 2018. These indicate that the report underestimated the carbon impacts of incineration and overestimated the impacts of landfill.

The ZWS report states that: “The EfW plants in this study are assumed to **displace UK marginal electricity grid**”. Figure 1 of the report seems to indicate that the carbon intensity of the Scottish incineration grid is significantly lower than the UK average.

The ZWS report states that: “Data on the energy outputs of EfW plants, and thus energy displacement, are based on PPC permits, rather than annualised energy data or NCV”.

As noted above, the evidence and analysis behind Recommendation #6 and #7 of UKWIN’s Good Practice Guidance indicates that the use of permit application data will tend to overestimate energy outputs, and this is supported by the above evidence from Scotland that both gasification and conventional incineration plants generate and export significantly less than the theoretical generation capacity, with observed efficiency being lower than predicted in the ZWS report.⁸²

The ZWS report states that “biogenic and fossil carbon are counted differently” in the assessment, but this improperly skews the analysis in favour of incineration. Ignoring biogenic CO₂ means that the comparison fails to take into account the fact the ~50% of biogenic carbon which is sequestered in landfill means it is acting as a ‘carbon sink’ for CO₂ which would be released if the waste were to be incinerated.

⁸² For more evidence on gasification under-performance see ‘Efficiency and Performance Assessment of Waste-to-Energy Melting Gasification in Relation to the EU Waste Framework Directive’ by Dr. Andrew Neil Rollinson, available at: https://www.vivis.de/wp-content/uploads/WM9/2019_WM_371-382_Rollinson.pdf

The modelling fails to account for this difference in biogenic CO₂ emissions despite significant evidence and logic that failing to do so results in invalid comparisons.

For example, a European Commission report has noted that: "...in comparative assessments between processes, it cannot be valid to ignore biogenic CO₂ if the different processes deal with biogenic CO₂ in different ways...".⁸³

For more details see Recommendation #5 of UKWIN's Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration.

Based on the above, it would be reasonable to conclude that if the Zero Waste Scotland report were to be updated to address all of the issues raised then it would find that not only is incineration currently worse than landfill in Scotland but that as the grid decarbonises and the amount of food waste in the feedstock decreases incineration is set to get progressively worse over the coming years.

However, it should be noted that these observations strengthen rather than weaken the important conclusion of the ZWS report that "EfW can no longer be considered a source of low carbon energy within a UK and Scottish context".

Evaluation of the climate change impacts of waste incineration in the United Kingdom (UKWIN, October 2018)

This report⁸⁴ found that:

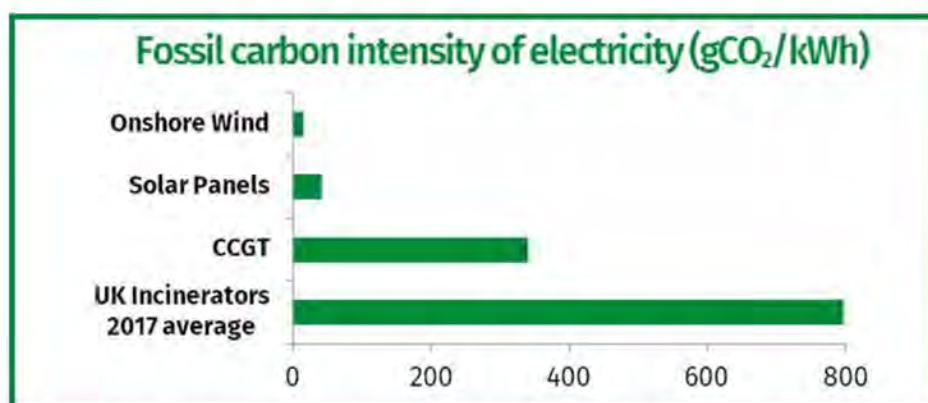
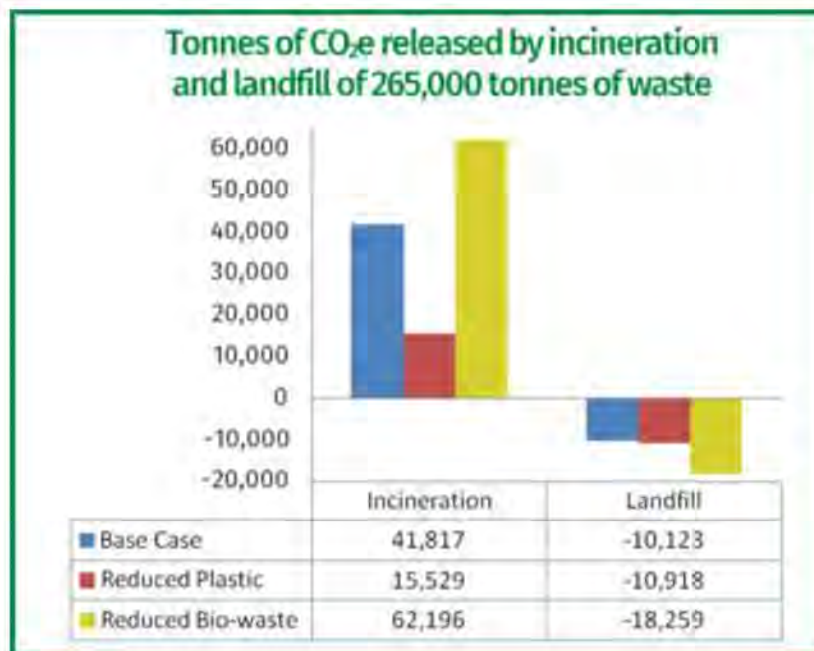
- Waste incinerators currently release an average of around 1 tonne of CO₂ for every tonne of waste incinerated.
- The release of CO₂ from incinerators makes climate change worse and comes with a cost to society that is not paid by those incinerating waste.
- In 2017 the UK's 42 incinerators released a combined total of nearly 11 million tonnes of CO₂, around 5m tonnes of which were from fossil sources such as plastic.
- Electricity generated by waste incineration has significantly higher adverse climate change impacts than electricity generated through the conventional use of fossil fuels such as gas.

⁸³ https://ec.europa.eu/environment/pdf/waste/compost/ia_biowaste%20-%20ANNEX%20F%20%20Environmental%20assumptions.pdf

⁸⁴ <https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf>

- The 'carbon intensity' of energy produced through waste incineration is more than 23 times greater than that for low carbon sources such as wind and solar; as such, incineration is clearly not a low carbon technology.
 - When waste is landfilled a large proportion of the carbon is stored underground, whereas when waste is burned at an incinerator the carbon is converted into CO₂ and immediately released into the atmosphere.
-
- Over its lifetime, a typical waste incinerator built in 2020 would release the equivalent of around 1.6 million tonnes of CO₂ more than sending the same waste to landfill. Even when electricity generation is taken into account, each tonne of plastic burned at that incinerator would result in the release of around 1.43 tonnes of fossil CO₂.
 - Due to the progressive decarbonisation of the electricity supply, incinerators built after 2020 would have a relatively greater adverse climate change impact.
 - Composition analysis indicates that much of what is currently used as incinerator feedstock could be recycled or composted, and this would result in carbon savings and other environmental benefits. Thus, incinerating waste comes with a significant 'opportunity cost'.

Figures from the report included:



Greenhouse Gas and Air Quality Impacts of Incineration and Landfill (ClientEarth, March 2021)

As noted in the previous section, this report was written by Eunomia for ClientEarth.⁸⁵ The report highlights how biostabilising waste prior to landfill can result in significantly lower impacts than sending waste directly to incineration. It also shows that sending waste straight to landfill results in lower emissions than sending waste to incineration in the 'expected-2035' scenario.

While the report includes reference to the potential for reductions in fossil CO₂ emissions from diverting all plastics to recycling (when it calls incineration with "pretreatment"), this scenario might be overestimating the potential for low-grade plastic to be recycled and the extent to which the benefits of this compensate for the biogenic CO₂ emissions from incineration.

⁸⁵ <https://www.eunomia.co.uk/reports-tools/greenhouse-gas-and-air-quality-impacts-of-incineration-and-landfill/>

Unfortunately, the underlying information regarding these assumptions is not available, and so it is difficult to fully assess these claims. What we would not want to see is material being diverted for 'plastic recycling' only to then be converted into a fossil fuel for combustion or subjected to environmentally harmful pyrolysis treatment.⁸⁶

Q15 What other aspects should the Review consider when assessing the environmental impacts of residual waste treatment options?

With respect to lock-in, the high Capex associated with building new incinerators, and the current level of existing incineration capacity in Scotland, mean that allowing new incinerators to be built would considerably increase the risk of lock-in. Furthermore, as recyclable and compostable material is progressively diverted from existing incinerators an increasing quantity of existing capacity is freed up.

As has already been mentioned, incineration destroys materials, meaning that nutrients and materials are lost to the circular economy. Even when incineration produces material outputs such as incinerator bottom ash aggregate a significant proportion of the value in the material has been lost, and it means that the original product/material would need to be replaced. If properly designed, landfill can allow for future mining of materials such as hard-to-recycle plastics once recycling technologies have improved or circumstances have changed.

This means that, from a circular economy perspective, landfill can be better than incineration both in terms of preserving materials for future use and in terms of avoiding lock-in that harms the transition to a more circular economy.

With respect to air quality, it must be said that the experience of Covid reinforces the urgency and importance of the need to improve air quality. Whilst the degree of harm caused to air quality by incinerators is a matter of debate, it is widely accepted that incinerators degrade air quality to some extent, moving in the wrong direction with respect to public health in this regard.

Furthermore, there are concerns that adverse health impacts of incinerators are being underestimated because of the emphasis on the mass of particulate matter released as distinct from the number of particles released.⁸⁷

Q17 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?

⁸⁶ See <https://www.no-burn.org/chemical-recycling-resources/> and https://www.no-burn.org/wpcontent/uploads/2021/11/CR-Technical-Assessment_June-2020_for-printing-1.pdf and <https://zerowasteurope.eu/library/el-dorado-of-chemical-recycling-state-of-play-and-policy-challenges/>

⁸⁷ For more about these concerns see: <https://ukwin.org.uk/particulates/>

Job creation can be considered a positive community impact, and in light of this it would be useful for the Review to consider evidence of how options other than incineration and landfill can result in the creation of far more by way of jobs (especially when account is taken of the land take associated with incineration facilities and landfill sites).

There are numerous studies showing that many employment opportunities could arise from a more circular economy. A small selection of recent studies include:

- 'Levelling up through circular economy jobs'⁸⁸ (August 2021) by Green Alliance, which shows how "Greater government ambition for an effective and expanded circular economy by 2035 would create hundreds of thousands of new jobs... we estimate that the government could help to create over 450,000 jobs in the circular economy by 2035".
- 'Effects of the Circular Economy on Jobs'¹⁰⁴ (November 2020) by the International Institute for Sustainable Development, which refers to many other studies.
- 'London's circular economy route map' (March 2021) by Circular London (ReLondon, formerly known as the London Waste and Recycling Board), which states: "By 2036, the circular economy could provide London with net benefits of at least £7bn every year. These benefits would be in the sectors of built environment, food, textiles, electricals and plastics. The circular economy could also generate 12,000 net new jobs in the areas of re-use, remanufacturing and materials innovation".

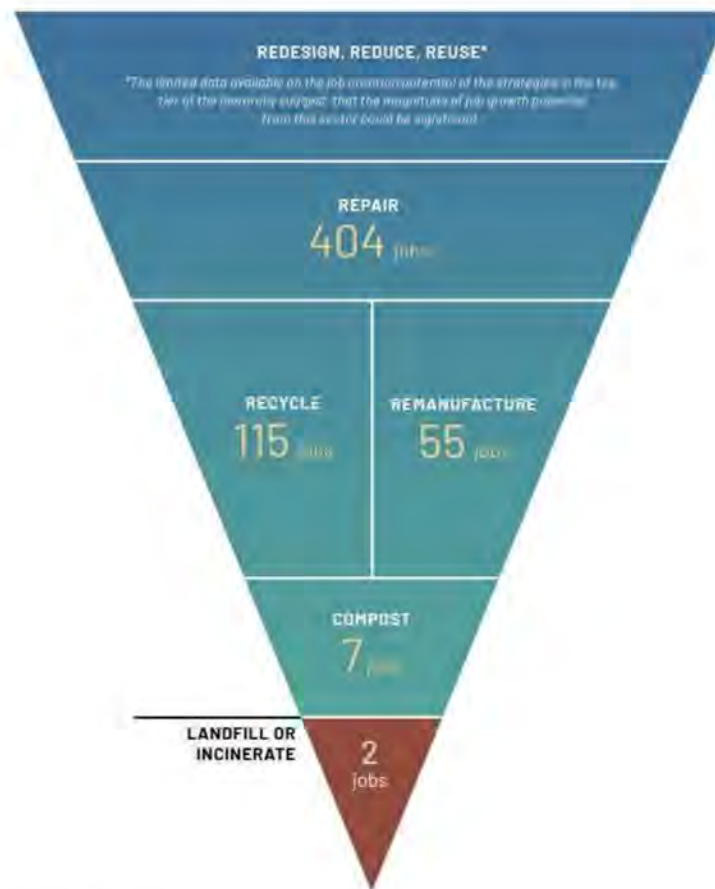
⁸⁸ https://green-alliance.org.uk/wp-content/uploads/2021/11/Levelling_up_through_circular_economy_jobs.pdf ¹⁰⁴ <https://www.iisd.org/system/files/2020-12/circular-economy-jobs.pdf>

• 'Zero waste and economic recovery: The Job Creation Potential of Zero Waste Solutions'⁸⁹ (February 2021) by GAIA similarly highlights the job creation potential of the circular economy and states: "...zero waste approaches create orders of magnitude more jobs than disposal-based systems that primarily burn or bury waste. Indeed, waste interventions can be ranked according to their job generation potential, and this ranking exactly matches the traditional waste hierarchy based on environmental impacts (Figure 1). These results demonstrate the compatibility of environmental and economic goals and position zero waste as an opportune social infrastructure in which investments can strengthen local and global economic resilience. This study also finds evidence for good job quality in zero waste systems. Multiple studies of zero waste systems cite higher wages and better working conditions than in comparable fields, and opportunities to develop and use varied skills, from equipment repair to public outreach." Figure 1 from the GAIA report is reproduced below:

⁸⁹ <https://zerowasteworld.org/wp-content/uploads/Jobs-Report-ENGLISH-2.pdf>

Figure 1: Waste Hierarchy with mean job generation figures per ten thousand tonnes of waste processed per year.

The data show that waste management approaches that have the best environmental outcomes also generate the most jobs.



Communities living near incinerators have many complaints that arise during construction, pre-operational testing (commissioning) and full operation, including:

Noise, vibration, plume, flies and odours – These disamenities are often downplayed by operators during the planning and permitting application stages, however when problems do occur some of these same operators dismiss the problems as inevitable or unavoidable. Press coverage reflecting some of these problems with incinerators include:

- In Runcorn, where waste is delivered by rail, it was reported that: “one resident said she faced daily noise from cargo trains en route to deliver the waste to be burned, well into the evening” and that: “It’s unbelievable – you can lie in bed at

- night and feel the vibration of the train as it goes past but it goes that slow it takes about two to three minutes to come past through the station.”⁹⁰
- It was also reported in Runcorn that: “Around 100 people attended a meeting...to protest over the noise, smell, steam and pollution from the plant.” quoting one resident saying: “I’ve been awake most of the night and I’m losing the will to live. Then wagons beeping their horns this morning followed by banging of containers”. The organiser of the meeting is quoted as stating: “People feel trapped. It’s gone from a place where they could sit in their garden to closing doors and windows because it stinks”. This report also quoted the local MP as follows: “People have been complaining about a droning noise disturbing their sleep. These are genuine concerns about the vapour, noise and smells.”⁹¹
- In Derby, one resident stated: “Where we are, the stench is really strong and smells like rotting food. We have been getting loads of flies around here as well. The summer has been horrendous, we have had to keep our windows closed in the hot weather because when we open them it is just awful.”⁹² It was also reported that: “Bad smells from the controversial Sinfin waste treatment plant are still plaguing residents almost a year after the stink first started. Last August, residents and businesses near to the plant complained to the Environment Agency about a compost-like smell shortly after waste arrived for pre-opening commissioning. They were told the smell would disappear and was due to waste being stored on the site ahead of testing. But the smell has continued to plague residents – especially during the recent warmer weather – despite earlier promises from the operators that there would be no smell off-site from the facility”.⁹³

In Derby, the operator stated: “we acknowledge...that some nuisance has been caused especially overnight when background noise levels are lower, and the warm weather leaves residents understandably wishing to have windows open”.⁹⁴

- In Gloucestershire, the operator stated in relation to hot commissioning that: “During this period, up until the facility is fully operational in summer 2019, there will be occasional loud noises, which sound similar to when you bleed a radiator,

⁹⁰ <https://www.liverpoolecho.co.uk/incoming/shadow-uks-biggest-incinerator-part-12406245>

⁹¹ <https://www.runcornandwidnesworld.co.uk/news/11753701.health-fears-over-runcorn-incinerator/>

⁹² <https://www.derbytelegraph.co.uk/news/derby-news/residents-slam-controversial-waste-plant-2021845>

⁹³ <https://www.derbytelegraph.co.uk/news/derby-news/smell-sinfin-derby-waste-plant-1641728>

⁹⁴ <https://www.derbytelegraph.co.uk/news/derby-news/furious-residents-hit-out-incinerator-1970834>

and plumes of steam as the first combustion gases are pushed through the ducting to test all systems".⁹⁵

- An incinerator in Plymouth has also generated numerous complaints from local residents, with one commenting to the Plymouth Herald that: "The summer was awful, all the flies, the rubbish, the smell. I am looking to move because we have had enough of it", and another stating: "It smells, it makes me feel sick". According to an ITV report: "Residents nearby have complained about the smell, the noise and flies in their homes. They say their worst fears have been realised".⁹⁶ It was also reported that: "A 'rotten smell' was frequently emitted when first constructed, and still occurs in the summer".⁹⁷

Light pollution – Bright lights are typically placed towards the top of the incinerator stack to reduce the risk of aircraft collision. This is a constant reminder of the incinerator and a source of distress to many residents. For example, it was reported in Runcorn that one resident: "said she now lives with her curtains drawn at night to block the lights from the site, which include a pair of red lights like eyes peering from the top of the main chimney stack, from shining into her home and bedroom, having previously enjoyed looking out at the trees behind her home and the site".⁹⁸

Visual impact of the chimney stack and building – Incinerators are often seen as a blot on the local landscape and a constant reminder of the pollution that they cause. For example, one local newspaper article about an incinerator in North Yorkshire described the Allerton plant as one which "dominates the skyline of the main road to the North" quoting a councillor as stating: "A lot of people do feel it is a blot on the landscape, I'm astonished that it can be seen from so many places".⁹⁹

Traffic – In addition to increases in the general volume of traffic and the pollution that this brings, some of those living near incinerators have observed HGVs ignoring planning conditions designed to control adverse impacts.

For example, lorries delivering feedstock sometimes travel along routes that are disallowed by planning conditions, despite assurances made at the planning

⁹⁵ <https://www.gloucestershirelive.co.uk/news/gloucester-news/residents-living-near-javelin-park-2918314>

⁹⁶ <http://www.itv.com/news/westcountry/2016-02-25/residents-to-discuss-upsetting-incinerator/>

⁹⁷ <https://www.plymouthherald.co.uk/news/plymouth-news/life-plymouths-sad-row-homes-4812015>

⁹⁸ <https://www.liverpoolecho.co.uk/incoming/shadow-uks-biggest-incinerator-part-12406245>

⁹⁹ <https://www.thenorthernecho.co.uk/news/15891865.plan-visitor-attraction-colossal-1-4bn-incinerator-beside-a1-mnorth-yorkshire/>

- application stage that this would not happen. In other instances, after planning permission is granted on the basis of strict controls over when and where the HGVs can travel, it is not unusual for operators to seek to change the arrangement to enable increases in the number of vehicles, extensions of the time these vehicles are permitted, and expansion of the routes that they are allowed to take. Such changes are often allowed under delegated powers without any community consultation, even in circumstances where the changes directly break promises made to the community about how traffic impacts will be strictly controlled.

Broken promises, misinformation and lack of transparency – In addition to the broken promises referred to above in relation to disamenities, there are various other instances where operators behave differently to how they said they would during consultations or where operators have not acted with full candour. For example:

- Operators routinely state that inverse pressure will be used in buildings to avoid noise and odour issues, with doors being mostly shut, but then too often the operators end up leaving doors open for operational reasons which results in disamenities to neighbours.
- Areas have faced real-world reductions in recycling rates despite assurances that the incineration plant would only be used for “non-recyclable” waste. In some cases, this is a result reduced recycling services once the incinerator is in place.
- Liaison groups set up with the stated purpose of engaging with the community are often not informed of forthcoming changes to planning permissions and environmental permits, e.g. proposals to increase capacity. Those who ask tough questions are often excluded from liaison groups, and applicants often use participation in the liaison group as evidence of ‘community support’ for the facility (even in circumstances where the operator promised that they would not do so). In many cases, liaison groups are given the promise of helping to design the proposal but end up having influence over the location, capacity and technology choices adopted by the operator.
- Operators often try to give the impression that all emissions are continuously monitored when in most cases emissions of concern, such as dioxins, are only monitored a few times a year.

Even in cases where operators have carried out compositional analysis of what they are burning, they often do not publish this information and will not release it to the public when this information is requested.

Inadequate responses to complaints – When communities face serious nuisance from an incinerator, residents who reach out to the operator are too often greeted with

denials that the problems are caused by the incinerator. Even when the operator is subsequently found to be at fault, these operators rarely apologise for having denied the issues were their responsibility. It is extremely rare for an operator to provide any compensation for the nuisances that they cause.

Property values – Whether or not the loss of property value is a material planning consideration, it is not unusual for houses prices to fall when there is a proposed or actual incinerator. There are numerous instances where residents have reported experiencing difficulty selling their property due to the threat of an incinerator. Operators do not tend to compensate residents who have suffered financially as a result of incinerators or incinerator proposals.

Problems with district heating schemes including:

- **Outages**, where residents are left in the cold due with no heating or hot water, e.g. because of an unplanned incinerator shut-down.
- **Costs**, where residents may be tied into paying above-market-rate prices for their heating. Residents often do not have alternative means of powering their heating system (e.g. they have no boiler), and they are contractually obliged to pay for the heating network.
- For an account of some of the problems associated with the Sutton Decentralised Energy Network (SDEN) associated with London's Beddington incinerator as conveyed by Elliot Colburn MP to Parliament on the 4th of February 2022 see the Hansard record.¹⁰⁰

Q18 Do you have evidence (reports, studies, data) that could help to inform consideration of the public health implications of different treatment options?

¹⁰⁰ <https://hansard.parliament.uk/Commons/2022-02-04/debates/02841671-B369-4CA1-B0D8AEA3E66978AD/SuttonDecentralisedEnergyNetwork>

- Incineration can be a significant source of air pollution in a local community, and as with the climate change impacts of incineration these costs are not reflected in the price of treatment and can therefore be considered ‘externalities’.

The March 2021 ClientEarth report¹⁰¹ provides evidence on quantifying the adverse health impacts of Municipal Waste Incineration and other waste treatment options based on values from Defra’s air quality appraisal damage costs toolkit.

While the ‘Central’ values from Table 2-5 are used for Figure 2-3 and Table 2-6 we suggest that the ‘high sensitivity’ values are likely to be more accurate, as the current evidence and historic precedent indicate that adverse impacts of air pollution have often been underestimated rather than over-estimated.

While the values for incineration are based on PM2.5, it is expected that a higher value would have been achieved if the calculation had been based on the adverse impacts of PM<1s which could be a large proportion of the particulates released from incineration as filter efficiency tends to be lowest in the 0.05 to 0.5 range.¹¹⁸

Table 2-5 Damage cost data – health impacts of air pollution

Pollutant	Damage cost for air pollution health impacts, £ / tonne of pollutant		
	Low Sensitivity	Central	High Sensitivity
NH ₃	£1,521	£7,923	£24,467
VOCs	£55	£102	£205
PM2.5	£15,799	£74,029	£216,443
SO _x	£2,893	£13,026	£37,611
NO _x	£663	£7,060	£26,837

Source: Defra Air Quality Appraisal Damage Costs Toolkit 2020

¹⁰¹ <https://www.clientearth.org/latest/documents/greenhouse-gas-and-air-quality-impacts-of-incineration-and-landfill/>

¹¹⁸ <https://ukwin.org.uk/particulates>

Figure 2-3 Air quality impacts of waste treatment systems (assuming typical performance of incineration facilities)

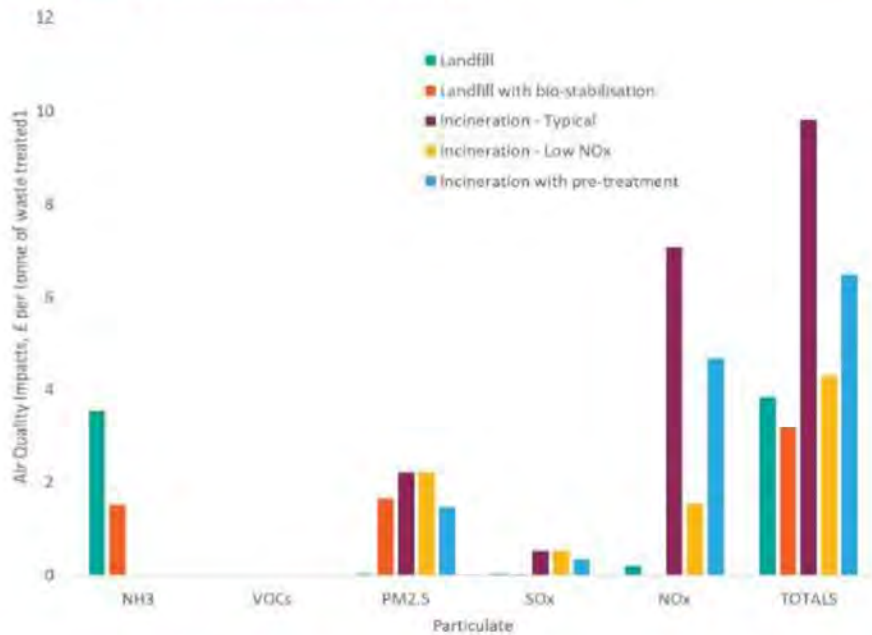


Table 2-6 Air quality impacts of waste treatment systems

	Air Quality Impacts, £ per tonne of waste treated ¹				
	Landfill	Landfill with bio-stabilisation	Incineration Typical	Incineration Low NO _x	Incineration with pre-treatment ²
NH ₃	£3.55	£1.52			
VOCs		£0.01	£0.01	£0.01	£0.00
PM2.5	£0.04	£1.65	£2.22	£2.22	£1.47
SO _x	£0.04	£0.02	£0.52	£0.52	£0.34
NO _x	£0.20		£7.06	£1.55	£4.67
TOTALS	£3.83	£3.19	£9.81	£4.30	£6.48

Other relevant sources of information on the adverse impacts of incineration include:

- The All Party Parliamentary Group on Air Pollution’s December 2021 report entitled ‘Pollution from Waste Incineration A Synopsis of Expert Presentations on Health and

Air Quality Impacts: A Synopsis of Expert Presentations on Health and Air Quality Impacts'¹⁰².

- 'The health impacts of waste incineration: a systematic review' (Tait, 2020).¹⁰³
- Health concerns about incineration expressed by NHS Ayrshire and Arran MCN (October 2021).¹⁰⁴
- Health concerns about incineration raised by doctors in London (June 2020).¹⁰⁵
- 'Toxic Fallout: Waste Incinerator Bottom Ash in a Circular Economy (GAIA / Zero Waste Europe, January 2022).¹⁰⁶
- 'The True Toxic Toll: Biomonitoring of incineration emissions' (Zero Waste Europe, January 2022).¹⁰⁷

As Aidan Farrow, a researcher at the Greenpeace International Science Unit, summarised the matter: "There's really strong evidence that even small increases in particulate pollution can have a measurable impact on health...Anything that is going to produce more air pollution in places where people are going to breathe it, there will be a health impact. It's effectively a political decision of how big you're willing that impact to be".¹⁰⁸

This conclusion is supported by statements on the harmfulness of pollutants relevant to incineration from Government and other leading sources. For example:

- According to Defra, Public Health England and Local Government Association: "...the latest epidemiology demonstrates that harm occurs at pollution levels below EU limit values, so if your area doesn't have an AQMA it doesn't mean there isn't a public health issue to consider... There is no safe level for particulate matter (PM10, PM2.5), while NO2 is associated with adverse health effects at concentrations at and below the legal limits".¹⁰⁹

¹⁰² <https://appgaq.wordpress.com/2021/12/14/report-pollution-from-waste-incineration/>

¹⁰³ <https://onlinelibrary.wiley.com/doi/full/10.1111/1753-6405.12939>

¹⁰⁴ <https://eplanning.east-ayrshire.gov.uk/online/applicationDetails.do?activeTab=summary&keyVal=QTAXJRGFG7L00>

¹⁰⁵ <https://www.nlwa.gov.uk/sites/default/files/2020-07/Supplementary%20Agenda%2025.06.2020.pdf>

¹⁰⁶ https://zerowasteurope.eu/wp-content/uploads/2022/01/zwe_Jan2022_toxic_fallout_research_report.pdf

¹⁰⁷ <https://zerowasteurope.eu/library/the-true-toxic-toll-biomonitoring-of-incineration-emissions/>

¹⁰⁸: 'Dirty white elephants: Incinerators were supposed to solve the UK's waste crisis. Are they making it worse?'

SourceMaterial in conjunction with The Telegraph, 4 February 2021. Available from:

<https://www.sourcematerial.org/blog/dirty-white-elephants>

¹⁰⁹ Air Quality: A Briefing for Directors of Public Health (Page 41 and 61). Defra, March 2017. Available from:

<https://laqm.defra.gov.uk/assets/63091defraairqualityguide9web.pdf>

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- According to European Parliament (Directorate General for Internal Policies): "Although WHO AQGs [World Health Organisation Air Quality Guidelines] are based on health considerations, exposure even below the guideline values may constitute health risks that cannot be excluded. This is especially true for pollutants such as PM [Particulate Matter] for which it has been found that there is no threshold level below which adverse effects can be excluded. Also, mixtures of pollutants might have additive effects; highly sensitive groups might also be affected when exposed to levels at or below the WHO AQG".¹¹⁰
 - According to World Health Organisation (WHO): "PM [Particulate Matter] is a widespread air pollutant, present wherever people live. The health effects of PM10 and PM2.5 are well documented. There is no evidence of a safe level of exposure or a threshold below which no adverse health effects occur. Since even at relatively low concentrations the burden of air pollution on health is significant, effective management of air quality aiming to achieve WHO AQG [World Health Organisation Air Quality Guidelines] levels is necessary to reduce health risks to a minimum".¹¹¹

¹¹⁰ EU Air Quality Policy and WHO Guideline Values for Health. Study for the ENVI Committee. European Parliament, October 2014. Available from:

[http://www.europarl.europa.eu/RegData/etudes/STUD/2014/536285/IPOL_STU\(2014\)536285_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2014/536285/IPOL_STU(2014)536285_EN.pdf)

¹¹¹ Health effects of particulate matter. Policy implications for countries in eastern Europe, Caucasus and central Asia. World Health Organisation / WHO, 2013. Available from: <http://www.euro.who.int/en/health-topics/environment-andhealth/air-quality/publications/2013/health-effects-of-particulate-matter.-policy-implications-for-countries-in-easterneurope,-caucasus-and-central-asia-2013>

TOPIC 4: LOCATIONAL CONSIDERATIONS

Q19 What are the main considerations in deciding where capacity should be located, and in what form?

The starting point for considering where incineration capacity should be located is to note where such capacity already exists. If Scotland is to implement an 'incineration exit strategy' as part of the transition to a circular economy, then consideration also needs to be given to the anticipated need to formulate a strategic approach to reducing incineration capacity, including the progressive closure of all existing municipal waste incinerators to prevent this leakage from the circular economy.

Other countries are already making progress in this respect. For example, the aforementioned 'death list' associated with Denmark's resources and waste strategy.

The first step in any incineration exit strategy would be to stop building new incineration capacity anywhere in Scotland. The next step would be to identify which existing incinerators would be the first to be decommissioned.

Such an assessment would need to take account of factors such as:

- current performance levels, including plant efficiency;
- proximity to other residual waste treatment facilities;

- the age of the incinerator and the need for refurbishment; and
- the potential for an area to significantly move away from incineration, e.g. by reducing residual waste arisings.

It follows that the first incinerators to be decommissioned would be those shown to be the least efficient, closest to alternative residual waste treatment facilities, in most need of refurbishment, and/or where their closure would have the greatest potential to make progress towards a more circular economy.

To inform such analysis it would be helpful if waste composition studies were undertaken at local authority level.

TOPIC 5: IMPROVING EXISTING FACILITIES

Q20 Do you have evidence to support consideration of options to decarbonise the current residual waste treatment infrastructure in Scotland?

Q21 Do you have evidence of the main barriers and drivers of decarbonisation of this infrastructure?

Waste incineration has come in for some heavy criticism associated with adverse climate impacts, not least because incinerators release an average of around 1 tonne of CO₂ for every tonne of waste incinerated.¹²⁹ The release of CO₂ from incinerators makes climate change worse and comes with a cost to society that is not paid by those incinerating waste¹³⁰. Electricity generated by waste incineration has significantly higher adverse climate change impacts than electricity generated through the conventional use of fossil fuels such as gas.¹³¹

Neither carbon capture nor combined heat and power (CHP) justify the expansion of waste incineration in Scotland, not least because these do not prevent incineration from being a leakage from the circular economy and because using carbon capture and CHP create and exacerbate problems such as incinerator lock-in.

One of the reasons that the circular economy is so important is that environmental harm (as well as social harm) is caused by the extraction of raw materials for the production of products to replace materials that have been incinerated (lost to the circular economy) - and neither carbon capture nor CHP address this aspect of incineration, nor do they stop the climate harm (and other harms) caused by the use of virgin materials to replace materials lost through incineration.

Describing incineration as a leakage from the circular economy is consistent with international thinking. As acknowledged in the United Nations Environment

Programme (UNEP) report from June 2019 entitled 'Waste to Energy: Considerations for Informed Decision-Making': "Incinerating materials, regardless of the amount of energy that may be recovered, constitutes a leakage from a circular economy".¹³²

¹²⁹ Neuwahl, F., et al (2019) 'Best Available Techniques (BAT) Reference Document for Waste Incineration'. Available at:

https://publications.jrc.ec.europa.eu/repository/bitstream/JRC118637/jrc118637_wi_bref_2019_published.pdf ¹³⁰

Vähk, J. & Schäg, E. (2021) 'The benefits of including municipal waste incinerators in the Emissions Trading System'.

Available at:

https://zerowasteurope.eu/wpcontent/uploads/2021/04/zwe_april_2021_policybriefing_benefits_MWI_in_EUETS.pdf ¹³¹

Vähk, J. (2019) 'The impact of Waste-to-Energy

incineration on climate'. Available at:

<https://zerowasteurope.eu/library/the-impact-of-waste-to-energy-incineration-on-climate/>

¹³² <https://www.unenvironment.org/ietc/resources/publication/waste-energy-considerations-informed-decision-making>

The Post Adoption Statement to Scotland's Zero Waste Plan, Safeguarding Scotland's Resources (SSR) and Making Things Last¹¹² provides an example of the Scottish government acknowledging how incineration is a leakage from the circular economy, as follows: "Both SSR and Making Things Last set out ambitions for moving Scotland towards becoming a circular economy, including reducing the 'leakage' of materials from the system (i.e. going to landfill, use as EfW)".

Carbon capture and the circular economy

Carbon Capture and Storage (CCS) is being explored in response to climate concerns. When considering CCS for incinerators, it should be kept in mind that the top rung of the carbon mitigation hierarchy is generally accepted to be the 'do not build' option, i.e. to "evaluate the basic need for the project and explore alternative approaches to achieve the desired outcome/s".¹³⁴

Following this principle, proponents of CCS typically seek to justify their carbon capture projects on the basis that there is no viable alternative approach to delivering a necessary good or service. As there are viable alternative approaches to both resource management and energy generation, such an argument cannot be applied to defend CCS for municipal waste incinerators (MWIs).

When it comes to CCS, one of the main concerns is that investment in this approach could draw finance away from supporting urgent systemic changes required to

¹¹² <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2016/02/making-things-lastcircular-economy-strategy-scotland/documents/00494866-pdf/00494866-pdf/govscot%3Adocument/00494866.pdf> ¹³⁴

Arup and IEMA (2017) 'Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance'. Available at: <https://www.iema.net/preview-document/assessing-greenhouse-gas-emissions-andevaluating-their-significance>

genuinely address the climate emergency.¹¹³ CCS has been criticised as being a distraction from the delivery of wind and solar energy, battery storage, and demandside measures such as better insulation.¹¹⁴

CCS has also been described as a distraction from increased resource efficiency and from the transition to a more circular economy.¹¹⁵ Furthermore, it is argued that CCS has a history of over-promising and under-delivering, and that CCS offers poor value for money.

Social costs associated with CCS include adverse impacts on local citizens, accompanied by anxieties that something could go wrong, with the transportation of captured carbon in particular giving rise to serious risks.¹¹⁶

CCS is often described as a technology intended for use with otherwise unavoidable emissions associated with industries that provide essential products deemed necessary to support the economy.^{117, 140}

CCS is most commonly associated with primary industries such as iron, steel, lime, fertilizer, cement, chemicals, and refining.¹¹⁸

The association between CCS and energy generation is increasingly being undermined by the rapid rise in renewables, which reflects the general approach of adopting lower carbon alternatives in preference to using high-carbon processes accompanied by CCS.¹¹⁹

¹¹³ Kennedy, S. (2020) 'No more gaslighting: Let's get real about carbon capture and storage'. Available at: <https://www.energyflux.news/p/no-more-gaslighting-lets-get-real>

¹¹⁴ Freites, S. G. & Jones, C. (2020) 'A Review of the Role of Fossil Fuel Based Carbon Capture and Storage in the Energy System'. Available at: https://foe.scot/wp-content/uploads/2021/01/CCS_REPORT_FINAL.pdf

¹¹⁵ Drugmand, D. & Muffett, C. (2021) 'Confronting the Myth of Carbon-Free Fossil Fuels: Why Carbon Capture Is Not a Climate Solution'. Available at: <https://www.ciel.org/wp-content/uploads/2021/07/Confronting-the-Myth-of-Carbon-Free-Fossil-Fuels.pdf>

¹¹⁶ Mahgerefteh, H., Denton, G. & Rykov, Y. (2008) 'Pressurised CO₂ Pipeline Rupture'. Available at: <https://www.icheme.org/media/9765/xx-paper-71.pdf>

¹¹⁷ Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2019) 'Climate Action Programme 2030'. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Pool/Broschueren/klimaschutzprogramm_2030_en_bf.pdf¹⁴⁰

IN4climate.NRW (2021) 'Carbon Capture'. Available at:

<https://www.in4climate.nrw/en/topics/technologies/carboncapture-capturing-co2-emissions/>

¹¹⁸ CCSA (2021) 'Capturing CO₂'. Available at: <https://www.ccsassociation.org/discover-ccus/explore-ccus/>

¹¹⁹ Greenpeace (2021) 'Net Expectations: Assessing the role of carbon dioxide removal in companies' climate plans'. Available at: <https://www.greenpeace.org.uk/wp-content/uploads/2021/01/Net-Expectations-Greenpeace-CDRbriefing.pdf>

In the words of the European Commission: "Carbon Capture and Storage (CCS) was originally viewed as a major decarbonisation option for electricity production. Today the potential need for it seems lower, due to the fall in the costs of renewables [and the emergence of] other options to reduce emissions in industrial sectors combined with the low social acceptability of CCS..."¹²⁰

Reliance on incineration is inferior to minimising and progressively eliminating residual waste. Changing waste management practices to ensure materials are continually cycling through the economy avoids leakages of materials into residual waste treatments and delivers significant climate change benefits.^{121, 122}

The concept that there will always need to be high levels of waste disposal through either incineration or landfill is premised on the long-term perpetuation of a linear 'take-make-dispose' economy that requires ever more resources to be extracted.

Governments and others increasingly acknowledge that this linear paradigm is both unsustainable and undesirable.

Assumptions that depend on growing, or even stable, quantities of residual waste arising run contrary to the European Commission's Circular Economy Action Plan commitment to halve residual waste generation by 2030.¹²³ Indeed, in their report on the Circular Economy Action Plan, the European Parliament has called for a residual waste target to be set.¹⁴⁷

The rejection of the linear approach is resulting in moves towards a circular economy that ensures products and materials are designed to last longer and to be reused or recycled rather than landfilled or incinerated.

Given that, as has already been outlined above, much of what is currently incinerated could be reused, repaired, recycled, or substituted, there are serious concerns that

¹²⁰ Directorate-General for Climate Action, European Commission (2019) 'Going climate-neutral by 2050'. Available at: <https://op.europa.eu/en/publication-detail/-/publication/92f6d5bc-76bc-11e9-9f05-01aa75ed71a1>

¹²¹ Hogg, D. & Ballinger, A. (2015) 'The Potential Contribution of Waste Management to a Low Carbon Economy'. Available at: http://zerowasteurope.eu/wp-content/uploads/2019/10/zero_waste_europe_report_The-potential-contribution-of-waste-management-to-a-low-carbon-economy_en.pdf

¹²² Ballinger, A., Chapman, L. & Fletcher, D. (2021) 'Waste in the Net-Zero Century: How Better Waste Management Practices Can Contribute to Reducing Global Carbon Emissions'. Available at: <https://www.eunomia.co.uk/reportstools/waste-in-the-net-zero-century-how-better-waste-management-practices-can-contribute-to-reducing-global-carbonemissions/>

¹²³ European Commission (2020) 'A new Circular Economy Action Plan For a cleaner and more competitive Europe'. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN> ¹⁴⁷ European Parliament (2021) 'Report on the New Circular Economy Action Plan'. Available at: https://www.europarl.europa.eu/doceo/document/A-9-2021-0008_EN.html

perpetuating incineration would be accompanied by an unacceptable opportunity cost through delaying or displacing these more desirable alternatives that could deliver significantly better climate change and environmental outcomes.

Concerns have been expressed by the EU Technical Expert Group on Sustainable Finance about the “large portion of waste currently incinerated that could be recycled, the reliance of some individual [EU] Member States on the incineration of municipal waste, and the risk that further increasing capacities risk overcapacity and could result in lock-in effects. This would in turn discourage more reuse and recycling, options higher in the waste hierarchy that could deliver higher climate mitigation benefits”.¹²⁴

CCS at MWIs could give rise to worse overall environmental outcomes by encouraging the construction of new incineration capacity or the continued use of existing capacity at the expense of options such as reduction, reuse, and recycling that result in lower environmental impacts as well as greater social and economic benefits.¹²⁵ These already-deliverable options are clearly preferable to CCS for a range of reasons, not least because of the nature of the risks and the costs associated with CCS.

In accordance with circular economy principles, as items that are repairable or reusable, and materials that are recyclable or compostable, are increasingly diverted from becoming incinerator feedstock, capacity will be freed-up at existing MWIs. This, in turn, gives rise to increasing opportunities to progress an incineration exit strategy through the prevention of new incineration capacity and through taxation and managed closure of existing facilities. Such an incineration exit strategy is simply a manifestation of the circular economy, which recognises incineration (‘energy recovery’) as a leakage - breaking the circle - to be minimised.¹²⁶

¹²⁴ EU Technical Expert Group on Sustainable Finance (2020) ‘Taxonomy Report: Technical Annex’. Available at: https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/200309sustainable-finance-teg-final-report-taxonomy-annexes_en.pdf

¹²⁵ Department for Business, Energy & Industrial Strategy (2021) ‘Carbon Capture, Usage and Storage: An update on the business model for Industrial Carbon Capture. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/984119/industrialcarbon-capture-icc.pdf

¹²⁶ Ellen MacArthur Foundation (2013) ‘Towards the Circular Economy (Volume 1)’. Available at: <https://emf.thirdlight.com/link/x8ay372a3r11-k6775n/@/preview/12o>

As incineration gives rise to adverse climate impacts^{127, 128, 129} it is easy to see how reducing the quantities of material, especially plastic, that is incinerated is an effective, efficient, low-cost, and ethical way of contributing to a low-carbon circular economy. Such an incineration exit strategy is incompatible with significant investment in carbon capture technologies for MWIs.

To align with the genius of the circular economy, any assessment of the impacts associated with the use of carbon capture at MWIs would have to extend beyond the CO₂ directly emitted by incinerators to include otherwise 'hidden' costs, such as the adverse impacts of replacing useful material lost through incineration. In stark contrast to an incineration exit strategy, CCS does nothing to address these adverse impacts. CCS exacerbates the many problems associated with overconsumption, resource inefficiency, and the linear economy that give rise to significant losses to the wider economy.¹³⁰

Municipal waste incinerators are expensive to build, and carbon capture technologies are expensive to add or retrofit. It is estimated that, for a 350,000 tonne per annum municipal waste incinerator, the use of CCS would increase capital expenditure by more than 45% - from £220m to £320m - and would increase operational expenditure by more than 33% - from £12m to £16m.¹³¹ As such, the introduction of CCS at MWIs raises 'value for money' concerns and gives rise to risks that investments and subsidies directed towards CCS at MWIs could displace support for the necessary systemic changes to resources and waste management.

Furthermore, the scale of the costs involved carry the risk of creating perverse incentives to maintain the status quo so as to avoid investments becoming 'stranded assets', i.e. the cost of CCS could result in increased incinerator lock-in (as set out above).

Scotland's commitment to reducing residual waste arisings, amplified by the growing citizen opposition to waste incineration, makes the potential prospect of incinerators

¹²⁷ Downen, J. (2018) 'Evaluation of the climate change impacts of waste incineration in the United Kingdom'. Available at: <https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf>

¹²⁸ Downen, J. (2021) 'Good Practice Guidance for Assessing the GHG Impacts of Waste Incineration'. Available at: <https://ukwin.org.uk/files/pdf/UKWIN-2021-Incinerator-GHG-Guide.pdf>

¹²⁹ UKWIN (2021) 'Fossil CO₂ released per tonne of plastic incinerated'. Available at: <https://ukwin.org.uk/facts/#co2fromplastic>

¹³⁰ Fauset, C. (2008) 'Techno-fixes: a critical guide to climate change technologies'. Available at: <https://corporatewatch.org/wp-content/uploads/2017/09/Technofixes.pdf>

¹³¹ Gammer, D. & Elks, S. (2020) 'Energy from Waste Plants with Carbon Capture'. Available at: <https://es.catapult.org.uk/reports/energy-from-waste-plants-with-carbon-capture/>

becoming stranded assets increasingly likely, and this weighs heavily against supporting investment in expensive and experimental carbon capture technologies for municipal waste incinerators.

With respect to the public funding of CCS for MWIs, it should be noted that the EU is turning away from incineration “with major European financial institutions excluding it from financial support...The construction of new waste incinerators was presented as an example of non-compliance with the [‘do no significant harm’] DNSH principle [enshrined in the Recovery and Resilience Facility]...” Financial support for incineration is also excluded from the European Regional Development Fund and the Cohesion Fund, as well as from the Just Transition Fund and the EU Taxonomy Regulation.¹³²

Incinerator operators hoping to install carbon capture technologies at a MWI can expect to face competition both within the waste management sector and from other sectors, e.g. steel and cement industries. Governments may need to step in to resolve some of the problems associated with a ‘rush to CCS’, including shortages of components, expertise, lorry drivers, etc. In such circumstances, governments should be expected to adopt a ‘technology neutral’ approach to reducing GHG emissions across the economy.¹³³ This means that, instead of favouring incineration, priority would be given to those applications of CCS that would be hoped to mitigate the largest quantities of genuinely unavoidable CO₂ emissions arising from the provision of essential goods, such as building materials.

Beyond the use of captured gases to flush out oil (and/or gas) from existing oil wells (a process known as ‘enhanced oil recovery’ or EOR), it is difficult at present to see how CCS at MWI could deliver profitable financial returns on investment. It is, however, easy to see how increased competition for climate mitigation funding (government subsidies), combined with increased demands on carbon capture technology providers (e.g. for components and expertise), could drive up costs and/or cause delays.

In order to store carbon captured at MWIs that are not connected by some sort of pipeline to undersea storage ‘facilities’ such as saline aquifers, the gases would need to be transported and would therefore require liquefaction to enable transport. Subjecting gases to the pressure required to convert them to a liquid form would require substantial quantities of energy, over and above the energy that would be required to operate the carbon capture technology itself. These energy demands

¹³² Makavou, K. (2021) ‘The EU is clear: Waste-To-Energy incineration has no place in the sustainability agenda’. Available at: <https://zerowasteurope.eu/2021/05/wte-incineration-no-place-sustainability-agenda/>

¹³³ Gates, B. (2021) ‘How to avoid a climate disaster’. Available at: <https://www.penguin.co.uk/books/317/317490/how-to-avoid-a-climate-disaster/9780241448304.html>

would greatly increase the incinerator's parasitic load (the energy used by the incinerator).

Indeed, according to industry sources, "...the net electricity production [of MWIs fitted with carbon capture technology] would be almost halved due to the carbon capture energy requirement".¹³⁴

In circumstances where CCS technologies are applied to MWIs, there is a need to measure the real-world impacts of this application in order to understand how this contributes or inhibits net decarbonisation.

There are a number of criteria that could be applied to measure the success, or otherwise, of the transformation to a low-carbon circular economy through the decarbonisation of the resources and the waste management sector.

Criteria could include:

- measures of achievement of carbon reductions against both the current baseline and carbon reduction targets (efficacy);
- measures of actual costs alongside assessments of benefits and opportunity costs (efficiency);
- measures of contribution towards achieving a low-carbon economy (effectiveness); and,
- measures of (beneficial and detrimental) impacts on the local and global population and on future generations (ethicality).

The ability to measure some of these outcomes would depend on the degree of transparency required of CCS operators. Such honesty would be in the public interest and would be consistent with the need for transparency in environmental matters recognised by the Aarhus Convention. The Aarhus Convention includes the right of access to environmental information held by public authorities - and this includes information about CO₂ emissions - which would be expected to override commercial confidentiality.

Very high degrees of transparency and accountability, including the imposition of regulatory requirements to report promptly into the public domain, should be

¹³⁴International Energy Agency (IEA) Technology Collaboration Programme (2020) 'IEAGHG Technical Report: CCS on Waste to Energy'. Available at: <https://www.club-co2.fr/files/2021/01/2020-06-CCS-on-Waste-to-Energy.pdf>

mandatory conditions of any permission to experiment with CCS for MWIs, e.g. in the event demonstrator funding is made available for CCS at an incinerator.

Analysis shows that CCS is not a suitable approach to be applied to incinerators, not least because CO₂ emissions from municipal waste incinerators are avoidable through the diversion of material away from incineration; and because the benefits of such diversion contrast with the many shortcomings associated with CCS for MWIs.

Diverting material from incineration would deliver lower carbon outcomes for much less money, and with much less risk, than through the use of carbon capture technology. CCS for municipal waste incinerators would come with significant opportunity costs, undermining more systemic change to resource and waste management, as well as creating perverse incentives to incinerate material that should otherwise be reduced, reused or recycled.

Investing in CCS for incinerators would create an additional barrier to the achievement of a low-carbon circular economy, for example by exacerbating the lock-in effect of incinerators, and would come at the expense of the significant environmental, economic and social benefits that such a transition would deliver.

In summary:

- CCS is expensive - both financially and environmentally - and the huge financial cost of installing CCS at existing incinerators (which could well equate to several hundred million pounds per plant) comes with opportunity costs, i.e. if money is spent on CCS that same money is not available for other ways to reduce the climate impacts of resource management, including public education, the promotion of reuse and waste minimisation, etc.
- CCS significantly increases the lock-in of incineration, as funders will look for a return on their investment. If - by way of illustration - £500m is spent on retrofitting CCS to an incinerator, the funder may expect / require that incinerator to continue to operate for at least an additional 25+ years to help defray their costs - so instead of phasing out incineration we would be facing another generation of refurbished incinerators and all the harm that would bring.
- Even if CCS could be made to work, it would take many years before we could expect to see CO₂ from incinerators actually being captured and stored, which is not good enough as we need to rapidly move away from incineration.
- Much of what is promoted as 'carbon capture' misses out the storage dimension, and so amounts to simply delaying rather than preventing the release of CO₂.

- When storing CO₂ is part of an operation to flush out fossil fuels it results in a net increase of CO₂ emissions.
- The quickest and cheapest way to rapidly reduce GHG emissions from waste management is to biostabilise waste that is not being composted and sent that stable material to landfill (although not an ideal solution, it does not lock-in the infrastructure in the way incineration does, because it is so much less expensive to build and because it does not 'need' feedstock to be constantly fed in).

We strongly recommend that those who support CCS for incineration make clear that their support depends on CCS installation being part of a well-managed rapid incineration exit strategy that entails the progressive decommissioning of existing incineration capacity. Under no circumstances should CCS be used to justify further exacerbating incineration overcapacity in Scotland.

Combined Heat and Power (CHP)

The energy generation potential of incineration is becoming increasingly less valuable as the grid decarbonises. Even with heat export, incineration is a poor investment for energy generation. Indeed, problems at existing heat networks designed around incinerators raise concerns regarding their desirability¹³⁵, and issues regarding how to deal with the lifespan of the houses exceeding the lifespan of the incinerator have yet to be resolved.

CHP can be accompanied by a host of adverse unintended consequences, including:

- the lock-in of incineration capacity (to continue to serve buildings that can be expected to outlive incinerators, necessitating refurbishment of incinerators that would otherwise be decommissioned);
- the unreliable supply of heat to customers with little or no viable alternative sources of heat;
- high costs for heat users (which could exacerbate fuel poverty); and
- the adverse environmental impacts of installing pipes and retrofitting buildings.

¹³⁵ Hansard (2021) 'Statements by Elliot Colburn MP for Carshalton and Wallington as part of the Westminster Hall Debate on District Heat Networks that took place on Wednesday 28 April 2021'. Available at: <https://hansard.parliament.uk/Commons/2021-04-28/debates/B969ABB2-D6F3-48A9-AF71-AC077E64F1CC/details> ¹⁶⁰
See: <https://hansard.parliament.uk/Commons/2021-04-28/debates/B969ABB2-D6F3-48A9-AF71-AC077E64F1CC/details>

A number of these issues regarding the heat network associated with the Beddington incinerator were highlighted by Elliot Colburn MP in Parliament on 28th April 2021¹⁶⁰ and on 4th February 2022.¹³⁶

It should also be noted that where heat is diverted from use with turbines the level of electricity export is also reduced. As the use of heat pumps increases the heating sector progressively decarbonises, reducing any potential benefit of CHP.

This is recognised by the Committee on Climate Change, who explain how, even without heat pumps, incineration is not particularly a 'low-carbon' method for heating: "Heat produced by unabated EfW plants (i.e. without CCS) is not particularly low-carbon – burning Municipal Solid Waste releases ~335gCO₂/kWh of input (of which ~163gCO₂/kWh is fossil CO₂), compared to burning natural gas at ~184gCO₂/kWh of input (all fossil CO₂), so EfW can be worse in terms of fossil emissions once lower EfW generation efficiencies are accounted for compared to a gas boiler (although there are also upstream gas emissions as well). This will already be the case for EfW electricity generation compared to gas-fired generation".¹³⁷

Another factor to consider is that heat networks require density (a large heat demand), and as such a potential unintended consequence of subsidising CHP for any currently un-built incinerators would be to encourage the siting of new incineration capacity in more densely populated areas, where a greater number of people would experience the associated air pollution.

¹³⁶ <https://hansard.parliament.uk/Commons/2022-02-04/debates/02841671-B369-4CA1-B0D8AEA3E66978AD/SuttonDecentralisedEnergyNetwork>

¹³⁷ <https://www.theccc.org.uk/publication/sixth-carbon-budget/>



Friends of the Earth Scotland's response to the Scottish Government's Call for Evidence on the Incineration Review

February 2022

Summary

Friends of the Earth Scotland believes that incineration of waste is incompatible with Scotland's climate goals including its Net Zero targets, circular economy aims and wider climate justice concerns. Scotland's waste policies aim to reduce the environmental impact of waste. Current policies have failed to do so, in large part because incineration has been given an unfair advantage over recycling and waste prevention activities. Unless large-scale change of the entire Scottish waste management system is affected immediately, the opportunity to create a circular economy in time to support climate goals will be lost. New policies to end incineration are a fundamental part of this change.

We have concerns that the timing of the review, its scope and some issues around data create a pro-incineration bias which, if unchecked, is likely to affect its conclusions. For example, the Call for Evidence cites total incineration capacity to be "approximately 1.32 Mt" when later communication to a limited group of stakeholders revealed the review team estimate capacity in 2020 to be 1.625 Mt. The Call for Evidence document was not publicly corrected, despite requests. It is difficult to see how the review recommendations are to be accepted by all stakeholders when the evidence used to justify positions is so unclearly presented.

Our key recommendations and messages in this response are:

1. Evidence on current and future incineration capacity and waste arisings make it clear **an exit strategy from incineration in Scotland is required**. The review should state this evidence and lay out key milestones and dates for the exit strategy. This should include:
 - o Immediately extending the moratorium on new and current incineration applications to become an indefinite ban;
 - o A ban on sending plastics to incineration; and
 - o The rapid phasing out existing incineration plants.
2. Conversion of existing incinerators to combined Heat and Power Plants should not be at the public's expense. However, all existing plants should be held to their promises in planning applications to create CHP systems.
3. Financial mechanisms, such as a tax on incineration or inclusion in the UK ETS, would not be as effective as bans in driving the required change rapidly enough.

Scotland needs the right decisions about infrastructure now, if it is to reach its waste and climate goals by 2045.

4. Carbon Capture and Storage is a completely unsuitable solution for incineration. It is technically challenging, extremely expensive and leads to unnecessary lock in to unsustainable waste management practices. The review should send a strong, clear message that CCS will not be part of incineration's future in Scotland. Government plans to mitigate incineration emissions with CCS are unrealistic and reckless.
5. An improved data collection and reporting strategy is required to support better policy decisions. Changes should include:
 - Disaggregation of incineration with energy recovery from energy supply GHG emissions as reported in the Scottish Climate Change Plan;
 - Annual, public reporting of energy efficiency and carbon intensity of each incinerator; and
 - Mandatory waste composition reports for waste arriving at the incineration gate and at the point of burning.
6. Citizens and communities across Scotland have been affected and concerned by the rise in incinerators. Their views must be at the centre of this review and considered in any recommendations. Health concerns should be revisited in light of new evidence suggesting current air pollution limits are harmful to human health. As a minimum, the current moratorium should be extended until these concerns are fully considered.

The rest of this responses covers the evidence, issues and recommendations surrounding incineration which most concern Friends of the Earth Scotland. It begins with a detailed description of our concerns about the review itself and thereafter is structured using the questions set out by the call for evidence document.

About Friends of the Earth Scotland

Friends of the Earth Scotland exists to campaign, with partners here and across the globe, for a just transition to a sustainable society. We work in Scotland for socially just solutions to environmental problems and to create a green economy; we campaign to end the degradation of our environment and to create a society which cherishes and protects the natural world on which we depend; we think globally and act locally, enabling people to take individual and collective action.

We are part of Friends of the Earth International - the world's largest grassroots environmental network, uniting 75 national member groups, over 2 million members and 5,000 local activist groups around the world. We are an independent Scottish charity with a network of thousands of supporters and active local groups across Scotland. Friends of the Earth Scotland's vision is of a world where everyone can enjoy a healthy environment without exceeding their fair share of the planet's resources, now and in the future.

Detailed response and recommendations

1. Concern about the review scope

The incineration review's scope and timings limit its effectiveness as a decision-making tool for policy makers and others attempting to create a circular economy in Scotland.

Concerns about scope

The scope of the review, as set out in the Call for Evidence and stakeholder meetings, was too narrow. It was mainly limited to considering the technical differences between existing treatment technology and gathering data on incineration activity which should have been provided by SEPA. Mitigation options such as extending the moratorium on new incineration applications, creating a carbon tax on waste or a ban on burning plastics were not suggested as potential mechanisms for controlling incineration. This is despite the existing real-world applications of some of these options (e.g. the current moratorium on incinerators in Wales).

Concerns about timings

The Scottish Government announced the independent review into incineration on 30th September 2021. The review was set up quickly and a Call for Evidence document published on 20th December. Those wishing to respond have been given two months, to 21st February 2022, to do so. A period which includes the end of year holiday break.

More time would have allowed a more robust evidence-based approach and for stakeholders to respond. The views of communities directly affected by incineration was not properly considered in the initial review stages. Such stakeholders may need longer than others to respond, as they usually have to do so outside of working hours and other commitments. As a consequence, the views of such local stakeholders, so important in understanding the impacts of incineration, are unlikely to be fully captured by the review.

Data concerns

The Call of Evidence document presented a limited selection of waste data and evidence, which creates a partial and biased picture of the waste system and incineration's current role in Scotland today. However, with the exception of the CXC modelling data, this is presented as solid fact. Some specific data concerns include:

- Mis-use of a key finding from a [Zero Waste Scotland study](#), stating: "incinerating municipal waste in Scotland resulted in 27% fewer greenhouse gas (GHG) emissions than landfilling the same waste." This is an over-generalisation of the report, which states this figure only in relation to a historic situation (circa 2018) and is caveated in the report by acknowledging the energy output and waste composition uncertainties. A more up to date and accurate data would be expected to eliminate this gap between the emissions from incineration and landfill. This figure is misused in the same way by the Scottish Government in its response to [Parliamentary Question](#)

[ref. S6W-05517](#). The review should seek to update the ZWS figure with the latest data available to SEPA.

- The reviewers state they are working with SEPA, who have access to the full range of waste data for Scotland (although recent media coverage suggests this is not the case¹). Yet, the data presented in the Call for Evidence covers “all waste” rather than the household and commercial and industrial waste streams which are the stated subject of the review. Given the higher than average recycling rates of the construction and demolition waste stream, it is likely this over-estimates recycling of the waste within the review scope. It would have been more informative to present data which reflected the scope of the review.
- The Call for Evidence cites total incineration capacity to be “approximately 1.32 Mt” when later communication to a limited group of stakeholders revealed the review team estimate capacity in 2020 to be 1.625 Mt (see Section 2.4 below). The Call for Evidence document was not publicly corrected, despite requests.
- The CXC model only considers capacity until 2025. However, as shown in later communications to some stakeholders, existing capacity was underestimated by 0.3Mt and there are plants with live planning expected to come online after 2025. Taking this information into account reverses the main conclusion of the CXC study as presented in the Call for Evidence. It shows, even under current conditions, Scotland will soon have over-capacity of incineration by 2026.

The acknowledgement of these data concerns by reviewers but a lack of transparent communication of these updates affects the ability of all stakeholders to respond to the review.

It is likely that the review results will shape government thinking and any public consultation which follows. The inadequate attempts to reach individuals and communities means there is a risk that the democratic integrity of the whole process can be called into question. This is truly unfortunate given community groups have similar complaints about a lack of opportunity to raise concerns against the incinerator plants they are fighting across Scotland.

The nature of these issues indicates a pro-incineration bias in review's figure, which, if unchecked, is likely to affect its conclusions. In turn, this would call into question the ability of the review to act as a decision-making tool for policy makers. If these concerns are properly addressed, it is still possible for the review will become an important milestone in Scotland's pathway to a circular economy. Friends of the Earth Scotland have engaged in the review and responded to the Call for Evidence to highlight these issues and to support the much needed change in direction for waste policy and management in Scotland.

¹ The Ferret (2021) <https://www.thenational.scot/news/19902913.ferret-disaster-warning-sepa-admits-15-months-data-lost-cyber-attack/>

2. Given Scotland’s waste reduction and recycling targets, and current progress towards these, what capacity is required to manage residual waste in Scotland?

2.1. Policy focus on landfill to incineration has resulted in poor recycling performance

The stated aim of Scotland’s waste policies since the creation of the Zero Waste Plan² and the establishment of the landfill tax has been to reduce the environmental impact of Scottish waste. This aim has not been met: progress towards waste reduction and recycling of materials has been limited. Some of Scotland’s most important waste targets are unlikely to be met, including 70% recycling of all waste³ and sending no more than 5% of waste to landfill in 2025. Instead, the main fiscal and regulatory measures deployed by policy makers (the landfill tax and biodegradable municipal waste landfill ban) have shifted waste from landfill to incineration.

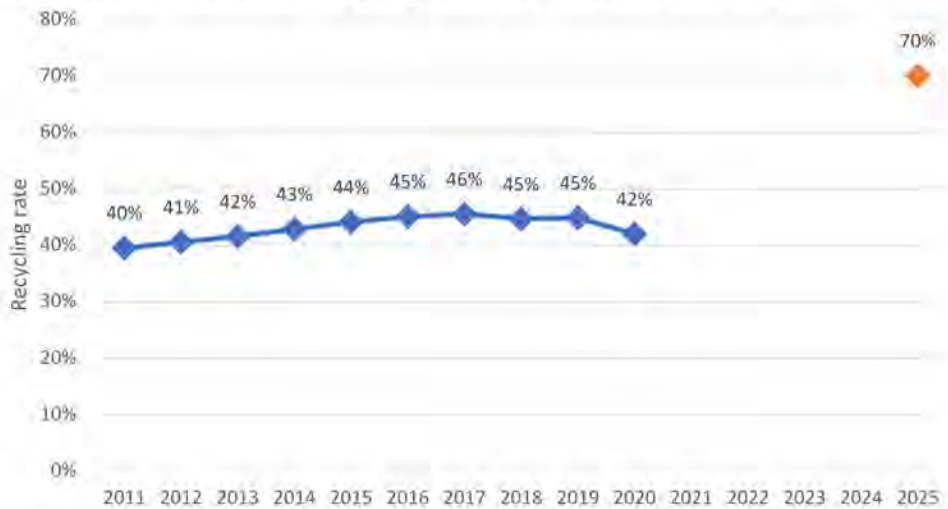
There is a lack of publicly available data on the waste streams of concern in this review: household (HH) and commercial and industrial (C&I) waste. It is worth noting that the latest recycling figure for “all waste” show that 55% of the total material managed comes from the two categories most commonly associated with construction and demolition (C&D) waste: “soil” and “mineral waste from C&D”⁴. This would suggest that poorer recycling rates for the HH and C&I streams are masked within the “all waste” dataset. Indeed, in the separately published household waste data, the latest figures should show poor progress. Figure 1 below shows household recycling rates have started to decline and are worryingly far from the 70% 2025 recycling target.

² Scottish Government (2010) [Zero Waste Plan](#)

³ Note that the Scottish Government’s Zero Waste Plan (2010) also includes a 70% recycling target for household waste “5.5 As a consequence, the domestic 40, 50, 60 and 70% Zero Waste recycling, composting and preparing for re-use, targets will now apply to waste collected from households”

⁴ SEPA (2020) [Waste from all sources](#)

Figure 1. Scottish household recycling rates 2011-20 and 2025 target⁵



Instead, waste policy in Scotland has driven a rapid increase in incineration. The landfill tax is the basis for the economy model on which the incineration industry is built⁶. Incineration gate fees are set just below landfill tax rates – median gate fees of in the UK in 2019 were £95/t for incineration and £116/t for landfill (including £91.35/t landfill tax). The biodegradable municipal waste landfill ban has created a panicked rush towards incineration from local authorities, who have had little national guidance on decisions.

The result of these policies, is now clearly evident in trends in waste data reported by SEPA, which shows a rapid rise in incineration. Between 2011 and 2020, overall incineration rates have tripled and incineration rates for household waste have risen eight-fold (see Figures 2 and 3). Landfilled household waste has reduced by 55% from 2011-2020 but diversion from landfill has increased by 508%.

⁵ Adapted from [SEPA \(2021\)](#)

⁶ From WRAP (2021) [Gate Fees Report](#): “The key influencing factor on [landfill] gate fees in 2019 was the diversion of material into other facilities such as EfW and AD facilities. Their ability to price below landfill gate fees (with Landfill Tax included) is one of the main reasons for less commercial material entering landfills.”

Figure 2. Landfill and incineration of all waste in Scotland, 2011-20 (tonnes)



Figure 3. Household waste management in Scotland, 2011-20 (tonnes)

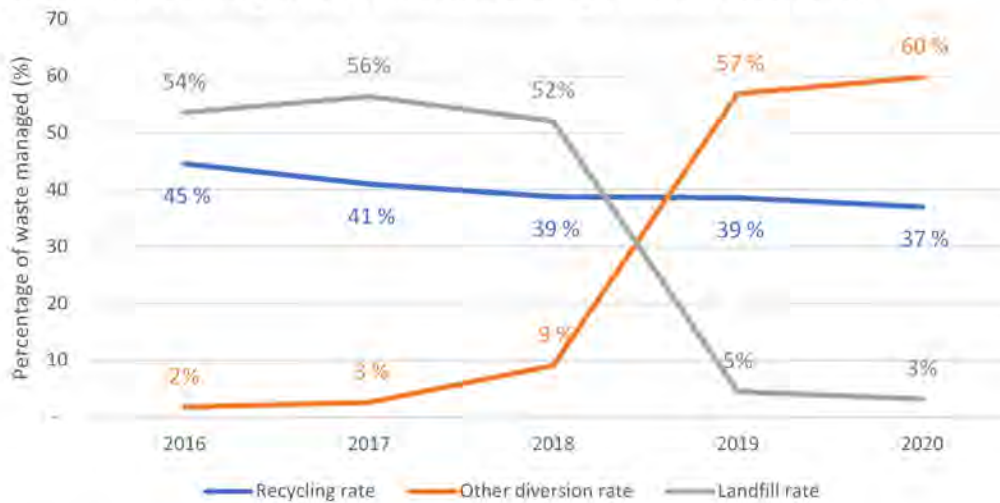


Progress towards the unambitious 15% reduction in waste prevention target from 2011 to 2025 is extremely variable (Figure 1 in the Call for Evidence). Lack of a clear downwards trend is worrying.

A local example of falling recycling rates in Edinburgh

These national level trends are reflected on a local scale. For example, Edinburgh Council have recently started sending residual household waste to the Millerhill incinerator in Midlothian. The incinerator started operating in 2018 and became fully operational in 2019. The graph below shows household recycling, other diversion (mainly through incineration) and landfill rates for Edinburgh (taken from SEPA 2020 household data).

Figure 4. Waste management trends for Edinburgh Council 2016-20 (%)



It is clear that there has been a diversion of waste from landfill to incineration. Over the same period, recycling rates have fallen.

Comparison with Wales

Wales have the same main recycling target as Scotland: 70% recycling by 2025. In Scotland there now seems to be an almost impossibly large gap to fill but in Wales steady progress has meant recycling has increased to a record high of 65.4% in 2020/21⁷ and they are close to meeting their 70% target. Some communities have already met it. Over the same period, waste generation has fallen to its lowest levels in Wales.

In Scotland, the pandemic was used as an excuse for a fall recycling rates, however, Wales has managed an increase even during the pandemic. In Wales, their circular economy strategy⁸ focuses on six key areas:

- Driving innovation in materials use
- Upscaling prevention and re-use
- Building on Wales's recycling record
- Investing in infrastructure
- Enabling community and business action
- Aligning government levers

In Wales focus has been driven up the waste hierarchy to prevention and recycling measures. The people of Wales have been empowered through support for local communities and businesses. The Minister for Climate Change, Julie James said "Ultimately this achievement has been down to people recycling at home in every part of Wales". A moratorium on incineration is also a key part of the Welsh waste strategy.

⁷ <https://www.letsrecycle.com/news/wales-recycling-rate-hits-record-65-4/>

⁸ <https://gov.wales/sites/default/files/publications/2021-03/beyond-recycling-strategy-document.pdf>

In Scotland, rather than moving activity as high as possible up the waste hierarchy to recycling and prevent measures, current waste policies have simply incentivised the next rung on the ladder – incineration. Recycling rates have struggled to rise because there has been a failure to create a demand for such activity compared to incineration – recycling is more expensive and complicated.

2.2. Incineration conflicts with circular economy

Minimising material consumption is a vital step in mitigating climate change and creating a circular economy is a necessary part of Scotland's ambitious climate change plans. Today, our economy is based on a linear consumption of materials: production, consumption and disposal. The value of the materials is lost, often after a single use, and new resources must be exploited for further consumption. A circular economy reduces the amount of raw materials required by society by making better use of materials which enter the economy. Products, business models and consumption patterns are revised to ensure materials are used for longer. In a circular economy, the production of waste is minimised. Any residual waste, created after all reuse and recycling options have been exhausted, must be managed in a way that meets climate change goals.

Managing residual waste currently involves either recovery or disposal technologies, such as incineration and landfill. Recovery plants are built to operate for 20-30 years so plants built today will still be operational when most long-term climate change targets are expected to be met. Building waste management facilities means committing to a certain level of annual waste input. If a rapid transition to a circular economy is successful, our waste will be very different, in quantity and composition, to today's waste. So, policy makers and planners must shape a nation's residual management around, not only the needs of our society today, but also those of the future.

Incineration is fundamentally a linear technology. Once material is burnt, opportunities to return it to the economy are lost. Efforts to minimise this loss (through recycling bottom ash to aggregate, metal recovery and energy offset) are only meaningful if every effort has been made to prevent and recycle waste first. This is clearly not happening in at the household recycling rates Scotland currently has. Incineration also creates lock-in to high levels of waste generation. So, to develop a circular economy, it is necessary (but not sufficient) to limit and reduce incineration as much as possible.

Incineration Lock-in

Lock-in is an established fact in infrastructure understanding and practice. For example, Corvellec et al. (2013)⁹ examines four different types of lock-in (institutional, technical, cultural and material) related to a waste incinerator in Sweden.

Incineration can harm progress towards a circular economy by creating lock in to an unsustainable waste management system. Evidence for this is clear in countries with

⁹ Corvellec et al. (2013) [Infrastructures, lock-in, and sustainable urban development: the case of waste incineration in the Göteborg Metropolitan Area](#)

high incineration rates, such as Denmark¹⁰ and Germany¹¹. Such countries typically have high waste arisings per capita and struggle to raise recycling rates. Their approaches to waste management have changed as it becomes clear that incineration is preventing them reaching both net zero and recycling targets. The 2020 Policy Connect report¹² was criticised for recommending that a move towards a Scandinavian style approach to residual waste by the Green Alliance¹³ and others. Across Scandinavia, incineration is now recognised as a problem that needs to be fixed¹⁴.

The rapid rise in incineration in Scotland since the introduction of the landfill tax and Biodegradable Municipal Waste ban to landfill and the stagnation of recycling rates strongly indicate that lock in has already started to occur. SEPA's waste data publications¹⁵ show that landfill rates have fallen and incineration rates have risen since 2011, for all waste and household waste. Most of Scotland's incinerators are new plants, which began operating around 2018. Scotland will have a large incineration capacity for at least the next 20 years.

In the 2013 Göteborg study, Corvellec writes "It is not easy to break a lock-in. The coalitions that benefit from it are likely to resist any change; it is difficult to challenge established standards, and few wish to abandon the comfort of increasing returns. Yet, escaping lock-ins is possible." The study goes on to state "un-locking technology systems requires a combination of systematic efforts to promote alternatives, a critical mass or social and political recognition of a need for social action, and a focusing event that acts as a catalyst for concerns and initiatives." The importance of policy makers in un-locking systems is also considered: "The policies, laws, plans, and programs that aim at unlocking infrastructure need to acknowledge the local practices and the local lock-ins that hamper sustainability."

As a first step, lock-in can be limited by not building any more incineration plants in Scotland.

An example of lock-in to incineration in Aberdeen

Run by ACCIONA in partnership with Indaver, the NESS Energy project is expected to start operating later in 2022.¹⁶ The plant will serve three local authorities: Aberdeen City Council, Aberdeenshire and Moray Councils. Aberdeen City Council, the lead Authority, granted planning permission on 10th October 2016.¹⁷ The

¹⁰ ZWE (2019) [A Danish Fiasco](#)

¹¹ NABU (2020) [The future of waste incineration in a modern CE](#)

¹² Policy Connect (2020) [No time to waste](#)

¹³ Green Alliance (2020) [Scandinavians call their waste incineration "crazy", so why copy them?](#)

¹⁴ For example, [Peter Høngaard Andersen, Director of Innovation Fund Denmark](#): "Denmark is very, very bad (regarding) reusable plastic, and that is because, for many years, we have burned our waste using incinerator plants".

¹⁵ SEPA (2021) [Waste data for Scotland](#)

¹⁶ <https://www.indaver.com/ie-en/installations-and-processes/project-development-click-here-to-see-map/ness/>

¹⁷ Aberdeen City Council (2016) [Decision Notice for Planning Permission for EfW facility at Greenbank Crescent](#)

construction costs of the plant of £365M are being financed by the three partner councils.¹⁸

The Environmental Statement for the project, written in 2016 and available on the Aberdeen city website states:

“Anticipated waste arisings from each council which would feed into the Energy from Waste (EfW) plant are:

- Aberdeen City Council 60,000 tonnes;
- Aberdeenshire Council 70,000 tonnes; and
- Moray Council 20,000 tonnes.

The Proposed Development has therefore been sized to accept 150,000 tonnes p.a. of residual municipal waste.”¹⁹

There are no pre-treatment or significant storage onsite. The plans also show the plant is expected to be operational for 20 years. However, SEPA household waste data indicates that already, before the plant has even opened, there will not be enough waste to feed the plant as expected (Table 1 below).

Table 1. Household waste generated in 2020 from the three local authorities contractually obliged to supply residual waste to NESS Energy, tonnes

Local authority	Waste generated	Waste recycled	Residual waste	Contracted waste supply to NESS facility in 2022	Difference
Aberdeen City	95,919	43,778	52,140	60,000	-7,860
Aberdeenshire	114,951	46,942	68,009	70,000	-1,991
Moray	41,520	22,792	18,729	20,000	-1,271
Total	252,390	113,513	138,878	150,000	-11,222

The Environmental Statement suggests that a deficit in household waste to supply the plant could be met with commercial waste instead:

“Should the Councils efforts to recycle result in less residual municipal waste, the remainder can be sourced from local commercial/trade waste with a similar composition to household waste.” Paragraph 2.2.3

However, the contract is clearly based on household waste estimates. This may be because the suitability of commercial waste for incineration is less certain. Business waste is not published by SEPA²⁰ at the same level of detail as household waste. The latest figures available are for 2018, not 2020 and do not include estimates of how much waste was sent to recycling. These figures indicate that 753,542 tonnes of

¹⁸ Public Contracts Scotland (2020) In section II.2.4) “The construction costs are being financed by the Partner Councils.” https://www.publiccontractscotland.gov.uk/search/show/search_view.aspx?ID=NOV399697

¹⁹ AMEC Foster Wheeler Environment & Infrastructure UK Limited (2016) [East Tullis Energy from waste Environmental statement, volume 1](#) The document states that “should the Councils efforts to recycle result in less residual municipal waste, the remainder can be sourced from local commercial/trade waste with a similar composition to household waste.” However, no figures are given on the scale of commercial waste available.

²⁰ <https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/business-waste-data/>

business waste were generated by the three local authorities in 2018. It is unclear how much of this is recyclable or recycled and how much of the remaining was suitable for burning. For example, 55% (414,750 tonnes) of this waste is food and garden waste, which should be managed using a biological treatment method, such as anaerobic digestion, rather than incineration if a low carbon solution is sought²¹.

The excessive incineration contracts mean that there is little incentive or scope for local authorities to improve their waste prevention and recycling activities, as these would reduce the supply of waste for incineration below the contract amount even further. Councils would end up paying for waste treatment twice – once to incinerate it and again to prevent or recycle the waste. Whilst some of these costs may be offset by electricity sales, it will not cover the capital costs and gate fees councils must now pay.

In conclusion, Aberdeen City, Aberdeenshire and Moray Council have opted for an expensive and high-carbon waste management solution which they are locked into for 20 years. The lock-in to incineration has already begun and will mean that these local authorities are very much less able to develop the new initiatives for waste prevention and recycling which are required to reach a circular economy for the lifetime of their contracts with the plant.

2.3. Incineration makes climate goals harder to reach

As well as limiting progress to a circular economy, incineration can harm efforts to mitigate climate change and reach climate change goals.

Evidence for the impacts of anthropogenic climate change is most comprehensively detailed in the Intergovernmental Panel on Climate Change assessment reports²². The Paris Agreement is an international treaty to limit global warming to 1.5 degrees as soon as possible. The UN²³, the World Resources Institute²⁴ and the Ellen MacArthur Foundation²⁵ have all set out the vital role that moving to a circular economy plays in achieving our climate goals. The economic case for mitigating climate change and the biodiversity crisis can be reviewed in the Stern²⁶ report. The Scottish²⁷ and UK governments²⁸ were amongst the first policy makers to recognise the importance of achieving a circular economy, developing strategies to reduce our material consumption. The evidence of the economic and environmental imperatives of mitigating the climate change and biodiversity crises and the vital role that the circular economy plays in this process are clear.

Incineration contributes directly to climate change by releasing carbon directly into the atmosphere from burnt material. These emissions contribute to climate change.

²¹ As set out in the Food waste hierarchy published in the Scottish Government (2019) Food waste reduction action plan <https://www.gov.scot/publications/food-waste-reduction-action-plan/documents/>

²² [IPCC reports](#)

²³ UN (2021) [Shifting to a CE essential to achieving Paris Agreement goals](#)

²⁴ WRI (2021) [How the CE can help nations achieve their climate goals](#)

²⁵ EMF [How the CE tackles climate change](#)

²⁶ LSE (2006) [The economics of Climate Change: the Stern Review](#)

²⁷ Scottish Government (2016) [Making things last](#)

²⁸ UK Government (2020) [CE Package policy statement](#)

Scotland's main climate change target, to achieve Net Zero by 2045, cannot be met without reducing or counteracting these emissions from incineration in some way. Emissions from incineration are included in the energy sector, rather than the waste sector. However, in their latest progress report to Parliament the Climate Change Committee asked that emissions from incineration are reported separately from the rest of the power sector "to make it easier to track EfW emissions"²⁹. This has helped to mask the climate impact of incinerators, as their impact are currently hidden within the general energy sector emissions. However, as the energy sector decarbonises, emissions from incineration will become clearer, given the high carbon intensity of waste incinerators compared to other energy generating technologies in a largely renewable system. The Scottish Government's climate change advisory body, the Committee on Climate Change estimates that incinerators now emit more carbon than coal in the UK³⁰.

Zero Waste Scotland estimated the carbon impact of sending one tonne of waste to incineration in Scotland in 2018 to be 246 kgCO₂e/t, which is 27% lower than the impact of sending the waste landfill³¹. However, this study excluded the storage of biogenic carbon in landfill. This conformed to traditional international reporting guidelines but is inappropriate for comparisons between technologies, used to aid policy decisions³². Policy choices must be made on the whole life carbon impacts of waste to be fair and this approach is more consistent with international best practice³³.

Figure 5 below, taken from the Zero Waste Scotland study, shows that about 53% of biogenic carbon is sequestered in landfill (along with 100% of fossil based carbon).

²⁹ CCC (2021) [Progress Report Scotland p131](#)

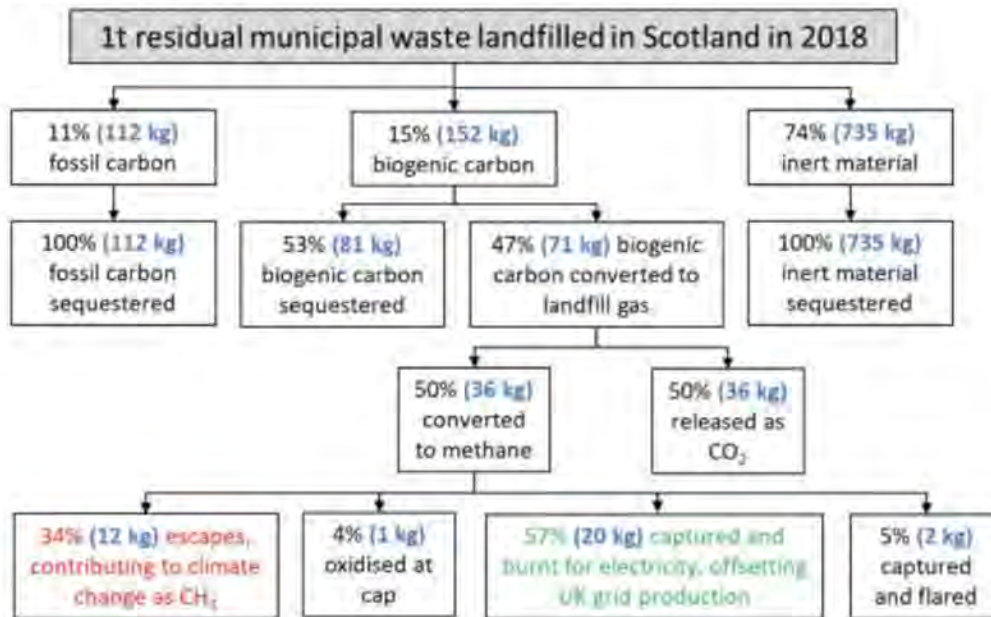
³⁰ <https://www.letsrecycle.com/news/waste-sector-not-a-priority-for-cop-26-webinar-hears/>

³¹ ZWS (2021) [Climate change impacts of burning municipal waste in Scotland](#)

³² UKWIN (2021) [Good Practice Guidance for assessing the GHG impacts of waste incineration](#)

³³ For example, US EPA [Warm model](#)

Figure 5. The fate of carbon in one tonne of residual municipal waste landfilled in Scotland in 2018



When biogenic carbon is included the emissions from incineration are comparable, or greater than landfill³⁴. UKWIN estimated that in 2017 in the UK, waste incinerators released 1 tonne of CO₂ for every tonne of waste incinerated on average. The release of CO₂ from incinerators makes climate change worse and comes with a cost to society that is not paid by those incinerating waste. The 5 million tonnes of fossil CO₂ released by UK incinerators in 2017 resulted in an unpaid cost to society of around £325 million.

Incineration also stands in the way of wider climate justice goals. Research³⁵ from RREUSE has shown that for 10,000 tonnes of waste can produce 1 job in incineration or 6 jobs in landfill versus 36 jobs if the waste is recycled or 296 jobs if waste is refurbished and reused. Jobs connected to incineration are also lower skilled than recycling and reuse jobs. The potential for a much more diverse and larger job market made possible by a more circular economy is being held back by a dependency on incineration.

2.4. Overcapacity of incineration will be a reality in Scotland by 2026

Incineration capacity and activity has grown rapidly in Scotland since 2011. A key driver in this increase is the 2025 biodegradable municipal waste landfill ban. The call for evidence cites the initial findings for the CXC study model which quantifies whether there will be a capacity gap when the landfill ban begins.

The Scottish Government's independent review on incineration was launched in December 2021. Stakeholders, including members of the public, have been given

³⁴ UKWIN (2018) [Climate change impacts of incineration in the UK](#)

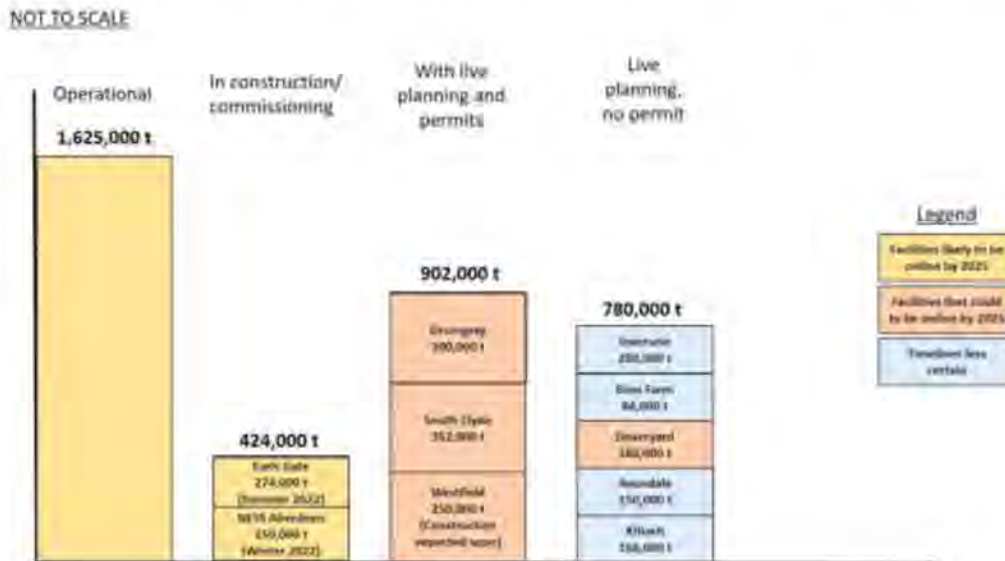
³⁵ RREUSE (2015) <https://rreuse.org/re-use-has-higher-employment-potential-than-recycling/>

two months to supply evidence to the reviewers, which includes Scottish Government civil servants and SEPA staff. A Call for Evidence document, written by the review team, set out the scope of the review, questions for responders to answer and presented evidence of the current situation.

Preliminary results from a model created by Ricardo for the ClimateXChange was also included. The model was based around three scenarios for how Scottish waste arisings and management capacity could change over time until 2025. This showed that, if recycling targets were reached it was likely there would be an over-capacity of waste treatment facilities (the majority of which are incinerators) in Scotland by 2025. However, if recycling targets are not reached and residual waste arisings do not fall, there will be a capacity gap of 0.86Mt by 2025.

After consultation with stakeholders, on 31st January 2022, a revised estimate of management capacity was created and sent to stakeholders via email, although the correction was not published more widely. The existing capacity was increased and consideration of plants expected to become operational after 2025 was included. The correction, presented in a graph and revised calculations on capacity (conducted by Friends of the Earth Scotland) is shown below.

Figure 6. Revised estimate of waste management capacity in Scotland, sent by the Incineration review team to stakeholders on 31st January 2022



The data in this graph can be combined with the CXC waste arising data and assumptions to create an estimate of the capacity gap in Scotland. This is shown in Table 2 below and the assumptions are listed below. These assumptions were mainly taken from the CXC study.

Table 2. Estimated waste management capacity and waste arisings for Scotland 2018-2030, millions of tonnes

Year	2018	2019	2020	2021	2022	2023	2024
Total operational capacity	1.54	1.54	1.54	1.54	1.76	1.95	1.95
Total waste arisings	2.52	2.58	2.45	2.47	2.56	2.58	2.60
Difference	0.98	1.04	0.91	0.93	0.80	0.63	0.65

Year	2025	2026	2027	2028	2029	2030
Total operational capacity	2.49	2.97	2.97	2.89	3.19	3.46
Total waste arisings	2.63	2.65	2.66	2.68	2.69	2.71
Difference	0.142	-0.329	-0.31	-0.21	-0.49	-0.748

Assumptions used to populate Table 2

- All new plants operate at 50% capacity in first year of operation (as per CXC model assumptions).
- All fully operational plants were taken at 95% capacity (as per CXC model assumption).
- Red plants (in the graph supplied by the reviewers) start operating in 2025
- White plant stops in 2028.
- Blue plants start operating in 2029.
- Waste arisings 2018-2025 taken from CXC study.
- Waste arisings 2026-2030 continue to increase in annual increments of 0.0157 Mt per year (based on annual change 2018-2025 as modelled by CXC).

This correction shows that, even if no progress is made towards recycling targets, Scotland will have a much smaller capacity gap of 0.142 Mt in 2025 and, by 2026, there will be over-capacity of treatment options. By 2030, it is likely, even with high waste arisings, there will be a large (0.748 Mt) over-capacity of treatment options.

If Scotland reaches its recycling targets, there will be management overcapacity by 2023. Even when the business as usual scenario and no plans which are currently live but which don't have permits (blue plants in Figure 6) become operational, there is still overcapacity by 2026.

Therefore, the data presented by the review itself indicates that there will be national overcapacity of waste management facilities in Scotland by 2026, under any scenario considered. It should be noted that the business as usual, (which is also the worst case) scenario is extremely unlikely to occur, given this ignores existing government interventions.

Recyclable waste is being burnt

It is widely acknowledged that much of what is burnt could have been recycled. Incineration is, by its nature, in conflict with recycling since the materials which burn

best – plastics, cardboard and paper – are some of the mostly easily recyclable. The most recent and complete composition analysis of residual waste in Scotland was conducted by Zero Waste Scotland in 2017. The study considered the composition of household waste at the kerbside in 2014-15 and found that: “Despite significant increases in the provision of kerbside recycling services in recent years, we estimate that approx. 670,000 tonnes, or 59% of the 1.13 million tonnes of residual waste is made up of waste types that are typically recycled at the kerbside in Scotland.”

Pre-sorting processes are conducted at some incinerators. The planning statement for the Millerhill Plant³⁶, owned by FCC Waste Service and which receives HH and C&I waste, has a pre-burn mechanical treatment to “recover recyclables, remove reject material and produce a Solid Recovered Fuel (SRF)”. However, the 2019 site return data published by SEPA shows that, apart from metals, no recyclable material was recovered. Using the Zero Waste Scotland finding that 59% of the residual waste could have been recycled³⁷, this would imply about 80,000t of recyclable waste may have been lost.

Table 3. Residual waste inputs and outputs from Millerhill plant in 2019

Input / Output	EWC Code	EWC Description	2019 tonnages
Waste Inputs	19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	5,438
	20 03 01	mixed municipal waste	137,043
	20 03 03	street-cleaning residues	7
Waste Outputs	19 01 07*	solid wastes from gas treatment	3,453
	19 01 12	bottom ash and slag other than those mentioned in 19 01 11	32,899
	19 12 02	ferrous metal	960
	19 12 03	non-ferrous metal	138

This example demonstrates that recyclable material in residual waste is being unnecessarily burnt. Not only is there an over-capacity of incineration but most of the waste currently being burnt could have been recycled. If this was recycled instead, there would be even less need for incineration capacity.

2.5. More focused targets and an exit strategy from incineration are needed

The evidence above demonstrates that current waste targets are not fit for purpose. The goal for a waste disposal target should be *to minimise the environmental impact of waste*. Even if the 5% to landfill target was reached, this goal is unlikely to be achieved because reducing landfill is not equivalent to minimising environmental impact from waste. The increase in incineration in Scotland shows this.

³⁶ FCC Waste Services (2015) [Planning statement](#)

³⁷ There will be differences between kerbside and incineration gate compositions so this figure should only be taken as an estimate of the scale of recyclable material being lost.

The 5% landfill target is not informed by science. A better target would be based around the scientifically justifiable understanding that, once all prevention and recycling measures have been exhausted, any remaining residual waste is treated in the lowest carbon way possible: landfill for inert and fossil material and stabilisation for biodegradable material. A policy of landfill is always the worst option is too simplistic and unscientific.

A more appropriate target would be to reduce the absolute, whole life carbon impact of waste. This means measuring that impact, this could be done by adapting an existing tool like the Scottish Carbon Metric³⁸ (e.g. kgCO₂e of waste generated per capita) and then setting a limit which would be compatible with global climate goals (no more than 1.5C warming by the end of the century or global net zero by 2050).

The evidence presented above demonstrates that Scotland is sleepwalking into over-capacity of incineration, which will threaten circular economy aims and climate change goals. A strategy to reverse this trend must now be applied immediately – the review should detail key milestones in this process.

The strategy should have two principals at its core:

1. A ban on new incineration; and
2. The rapid phasing out of existing plants.

Such an approach to incineration would be compatible with a waste disposal target based on reducing the absolute carbon impact of waste. This is because incineration is a wasteful and carbon-intensive practice compared to more circular activities, such as recycling and reuse.

2.6. Recommendations on targets and capacity

- The current moratorium on new and existing applications for incineration should be made permanent.
- The review should suggest milestones to phasing out existing incineration plants in Scotland as fast as possible.
- Waste targets should be revised to refocus policies on the circular economy. They should be absolute rather than relative targets. They should be carbon based and compatible with climate change goals.

³⁸ The [Scottish Carbon Metric](#) measures the whole life impacts of waste by material type and disposal route and has been published by Zero Waste Scotland since 2011.

3. What are the technically and commercially feasible options for managing residual waste in Scotland?

3.1. Extend moratorium on current and new applications

An immediate and indefinite ban on all new and existing incineration applications is required to meet circular economy aims in Scotland. Those plants which are already under construction but which have not received permits³⁹ should be halted immediately to avoid compounding overcapacity issues. The evidence presented in Section 1 details how incineration is incompatible with a circular economy and how there can be no justification for new plants as over-capacity of current demand is already a serious risk.

The planning mechanism used to enact the incineration moratorium in Scotland for the length of the review is similar to the initial approach used to ban fracking. This ban was extended to create an immediate and permanent ban on fracking and the same process could be used to immediately extend the incineration ban permanently. The fracking example demonstrates that Scotland has the legal means to extend the incineration moratorium.

A moratorium on large scale incineration was introduced recently in Wales⁴⁰ (where recycling rates are much higher than the rest of the UK). This ban is justified by the Welsh Government as part of its goal to create a circular economy. This precedent shows the economic feasibility of such an approach. Incineration bans have also been suggested recently in England, for example by the UK All-Party Parliamentary Group (APPG) on Air Pollution⁴¹.

Large-scale market intervention is already a reality for the waste sector

The landfill tax represents a government intervention in the market on a scale unlike any other – the waste market is entirely artificial. The increasing the cost of landfill, 5 or 6 times its market level, has driven the economics of the whole waste sector for decades. Pushing up the cost of landfill has made incineration more competitive and is the cornerstone on which the modern industry is based. Much of Scotland's waste could technically be recycled but is incinerated instead because the artificially created market conditions make it cheaper. Since the market is entirely contrived and our willingness to intervene on a massive scale has already been demonstrated, we should have no problem in doing so again. Arguments which rely on the competitiveness of the waste market ignore this fact, presenting the current situation as something resembling a free market. This is not true. A ban on new incinerators would be in line with scale of market interventions required to shape the waste sector for many years.

³⁹ This includes the Earls Gate Energy Centre, the Dundee EfW CHP Facility, South Clyde Energy Centre and the NESS EfW facility as listed on the SEPA website (correct on 20.01.21)

⁴⁰ <https://gov.wales/wales-takes-action-circular-economy-funding-upcoming-reforms-plastic-and-moratorium-large-scale>

⁴¹ APPG Air Pollution (2021) [Pollution from waste incineration](#)

3.2. A ban on burning plastics

A ban on burning plastic would dramatically reduce greenhouse gas emissions from existing incinerators. Burning plastics releases fossil carbon into the atmosphere directly contributing to climate change. There are two immediate technical consequences of a ban: firstly, an alternative disposal mechanism is required in the short term and secondly, plastic would need to be separated from the remaining residual waste streams. This section will address both these issues.

Creating a consistent approach for managing plastic

In 2021, the Green Alliance Circular Economy Task Force published a report that advises governments to move away from policies that address single issues and instead take “a more fundamental approach to how materials are used and managed”⁴².

A ban on burning plastic would bring waste policies in line with those designed to reduce the production of plastic. Scotland will introduce a Deposit Return Scheme in August 2023. This will remove large amounts of plastic from the waste stream. The recent ban on single use plastic items and planned for extended producer responsibility schemes also mean that the amount of plastic in the waste will reduce. By banning the burning of any remaining plastic waste, the Scottish government could create a consistent set of policies which act to reduce the plastic crisis at every stage of its life cycle. This would also limit any chance of any temporary increase in plastic to landfill compromising the 5% to landfill target (which is of limited environmental value, as explained above).

Alternative disposal mechanism

Landfill is an existing disposal mechanism which could be used (temporarily) for plastic waste until these longer-term measures come into effect. Plastic would be stored, rather than released to the atmosphere, lowering greenhouse gas emissions.

Separating plastics from residual waste

Separating plastic from the remaining residual waste stream is sometimes problematic. Existing mechanical pre-treatment processes can separate plastic from other wastes even if they are not 100% effective. In Belgium, the recently opened PreZero Recycling facilities sorts plastic packaging into 14 fractions⁴³. Some products are made from composite materials and it is difficult to separate such plastic from the other materials in the product, some of which should not be landfilled. Disposable cups, for example are often made of a mix of plastic and cardboard. The cardboard cannot be landfilled by 2025 (because it is biodegradable) and a ban on burning plastics would remove all traditional disposal options. This would mean the government need to drive the redesign of such products.

A staged ban would allow the proportion of plastic banned from incineration to increase in line with the introduction of other circular economy measures including extended producer responsibility schemes and DRS. Eventually, a full ban would help drive better source segregation and reduction in non-recyclable plastic products – both supportive measures to creating a circular economy and reducing climate

⁴² Green Alliance 2021 https://green-alliance.org.uk/wp-content/uploads/2021/11/Fixing_the_system.pdf

⁴³ <https://www.fostplus.be/en/blog/prezero-punctual-opening-of-sorting-facility-for-lightweight-packaging>

change emissions. In the case of disposable cups, the upcoming ban will largely remove these products from the waste stream.

The goal should be to remove all plastics from incineration input streams as soon as possible. It is clear that industry agree and recognise that plastic reduction is of paramount importance to reaching environmental targets. The Environmental Services Association's Annual report for 2020-21 states⁴⁴:

"Now that we have an ambitious Net-Zero strategy for the sector, we must start delivering on our commitments. In the first instance this means working with the government to remove plastics from the residual waste stream".

Ultimately, system changes to design out plastics from goods and products are required, particularly for packaging of fast-consumer goods. This will require action from producers and retailers and a co-ordinated effort along the whole supply chain. Such work would represent a true step forwards towards a circular economy.

Plastics, not fossil carbon should be the immediate focus

It has been suggested that all fossil carbon, not just plastic waste, should be removed from incineration. This would lower greenhouse gas emissions from incineration even further. However, a focus on plastic is a practical and realistic compromise to allow the majority of fossil carbon to be removed from incineration inputs. Table 4 below shows 70% of fossil carbon in waste is concentrated in plastic.

Table 4. Carbon content of one tonne of residual municipal waste in Scotland in 2018⁴⁵

Waste material	Mass of waste in residual municipal waste (kg/t)	Carbon content (%)	Proportion of carbon which is biogenic (%)	Proportion of carbon which is fossil (%)	Mass of fossil carbon in 1t waste (kg)
Animal & mixed food waste	272	14%	100%	0%	0
Discarded equipment (excl. discarded vehicles, batteries & accumulators waste)	23	0%	0%	0%	0
Glass waste	29	0%	0%	0%	0
Health care & biological waste	103	19%	79%	21%	4
Household & similar waste	72	45%	50%	50%	16
Metallic waste, mixed	26	0%	0%	0%	0
Mineral waste from C&D	36	7%	50%	50%	1
Paper and card waste	160	32%	100%	0%	0

⁴⁴ ESA (2021) [Annual report 2020-21](#)

⁴⁵ ZWS (2021) [The climate change impact of burning municipal waste in Scotland](#) Table 2

Plastic waste	150	52%	0%	100%	78
Rubber waste	0	0%	0%	100%	0
Textile waste	65	40%	50%	50%	13
Vegetal waste	59	24%	100%	0%	0
Wood waste	7	44%	100%	0%	0
Total	1,000	23.4%	N/A	N/A	112

As Table 4 shows, the remaining fossil plastic is held in a mix of materials which can contain non-carbon and biogenic carbon content as well. Rubber waste is the one exception to this, as it is made up of 100% fossil carbon. However, it is present in such small quantities than plastic, it can be reasonably ignored for now. Removing non-plastic fossil carbon would be more technically difficult and expensive than concentrating on plastic – the marginal return on the additional carbon saved would be small. It is therefore suggested that an economically and technically feasible strategy to removing as much fossil carbon from incineration inputs is to concentrate on removing plastic, rather than all fossil carbon material, from the waste incinerated.

A ban on burning plastic would drive different design and operating choices for incinerators (as the Net Calorific Value of the waste input would change). It would reduce the economic case for building new incinerators as well.

3.3. Combined Heat and Power

The energy generated as a by-product by incinerators can be converted into a number of useful forms. When both electricity and heat are exported from a plant, this is known as a Combined Heat and Power (CHP) system. CHPs operate more efficiently and with lower environmental impacts than electricity-only plants. No plants in Scotland operate as CHPs (see Table 5 below). Scotland's only heat-only incinerator has been operational in Lerwick, Shetland for many years and the district heating scheme provides heat for local homes and businesses⁴⁶.

Table 5. Operational incinerators in Scotland in 2021 which are permitted to take residual municipal waste

Incinerator	Operational since	Plant type
Dunbar Energy Recovery Facility, East Lothians	2018	Electricity-only
MVV, Baldovie Industrial Estate, Dundee (1)	1998	Electricity-only
MVV, Baldovie Industrial Estate, Dundee (2)	2021	Electricity-only
Millerhill Energy Recovery Centre, Midlothian	2018	Electricity-only
Glasgow Recycling and Renewable Energy Centre (GRREC), Glasgow	2018	Electricity-only
Levenseat Thermal Waste Treatment Plant	2018	Electricity-only
Lerwick Energy Recovery Plant, Lerwick, Shetland	2000	Heat only

⁴⁶ <https://sheap-ltd.co.uk/benefits>

Current planning applications and regulations are designed to encourage incinerator plants to be designed, built and operate in an efficient manner. SEPA have stated that “it is important for new developments to maximise the opportunities to use existing and proposed heat and energy sources”⁴⁷. As part of the planning application, all incineration plants must write a Heat and Power Plan which shows how, within seven years from cessation of commissioning, further energy can be recovered over and above the initial operational energy recovery. These plans should provide evidence of how the plant will achieve its relevant efficiency target (either 30% or 35%) and give an indication of anticipated progress for each year up to the end of the heat plan period. Not a single one of these plans has so far resulted in an incinerator exporting heat.

As with other parts of the waste management system, there is no economic incentive for incinerator plants to fulfil their obligations here. In fact, there are dis-incentives: developing local heat networks are expensive and reduce the efficiency of plants in generating electricity.

In 2020, 12 incinerators (22% of the total) across the UK exported heat⁴⁸. The existence of such plants across the UK and Europe demonstrates the commercial viability of such models. In Scotland, plants claim to be “CHP-ready” – a completely meaningless term when no progress is being made.

The financial burden of conversion to CHP should fall on the operators, not government or citizens. This is for three reasons:

1. It is already a requirement to convert to CHP within seven years of operations commencing. Therefore, this should have been factored into business plans from the start of such projects.
2. Existing CHP plants across the UK demonstrate the commercial viability of such models.
3. The environmental savings from conversion to CHP are limited (see Section 5.1 for details). So, public funding for climate change mitigation should not be used for converting incinerators to CHP over other opportunities which offer greater carbon savings (such as reuse and recycling projects).

Despite the clear requirements, there is evidence that CHP retro-fitting is already drawing resources away from genuine climate causes. The Millerhill incinerator which has been operating since 2018, has plans to supply heat to a nearby local development known as Shawfair. According to the developers own website, the heat network will cost £20m and save 2,000 tCO_{2e} per year⁴⁹. This is an extremely small carbon saving, represents a cost of £455 per tonne of carbon saved, which is eight times higher than the UK ETS price of carbon (£55/t in September 2021)⁵⁰. £7.3m of the district heating project will be funded from the Scottish Government’s Low

⁴⁷ SEPA (2014) [Thermal Treatment of Waste Guidelines](#)

⁴⁸ Tolvik (2021) [EfW statistics 2020](#)

⁴⁹ <https://www.shawfair.co.uk/faqs/#what-future-developments-projects-are-on-the-cards> (accessed on 15.12.21)

⁵⁰ <https://www.endsreport.com/article/1727833/uk-ets-price-hits-record-amid-energy-price-spike>

Carbon Infrastructure Transformation Programme⁵¹. Public funds meant to support low carbon infrastructure have been committed to a project which will save very little carbon for a very high price – this does not represent value for money.

Planning permission permits were submitted to Midlothian Council in October 2021. Even if plans to construct the District Heat Centre are approved, the details of how to retro-fit the network to houses are currently unanswered. It is unclear what residents will pay for their heat. Large backup boilers will be constructed on local woodland to supply heat to residents to cover failures at the Millerhill plant. It is clear the environmental and financial impacts of retro-fitting CHP to incinerators has not been thoroughly considered in Scotland. The example from Millerhill demonstrates that public funding for climate projects will be mis-directed towards prolonging the polluting practices of incineration.

3.4. Waste carbon tax

The landfill tax has shaped the economics of waste management in Scotland for many years. It has been successful in diverting waste from landfill. Given this success, some have argued that an incineration or a broader waste tax is now needed to continue to drive this diversion up the waste hierarchy. Friends of the Earth Scotland have a number of technical and economic concerns with this approach, which are laid out below.

Delayed impact

The landfill tax was introduced across the UK in 1996. The escalator meant that change was slow. An incineration tax would be equally slow to become effective, if a similar escalator was used. It is vital that any mechanism to change Scotland's waste management systems should act on the decisions taken today. It is these decisions, and their long-term consequences, which will affect whether we meet our climate and circular economy goals or not.

Root causes not addressed

Even if an incineration tax was introduced, the expected outcome would be that it would eventually drive waste one more step higher up the waste hierarchy towards recycling. An incineration tax does not alter the underlying problem of the production of waste.

A broader waste tax focused on residual waste management options (landfill, incineration and biostabilisation) still acts only on the very bottom of the waste hierarchy. If progress is to be made on reducing the amount of waste generated, policy makers must incentivise recycling and prevention as well.

A broader waste tax based on whole life carbon emissions per tonne of material managed and which includes recycling options which are not net carbon sinks, as well as residual treatment options would address this concern. However, it would be difficult to implement. How would carbon impacts per tonne be established for each

⁵¹ <https://www.edinburghnews.scotsman.com/news/people/ps20m-plans-for-green-heating-network-at-millerhill-3331775>

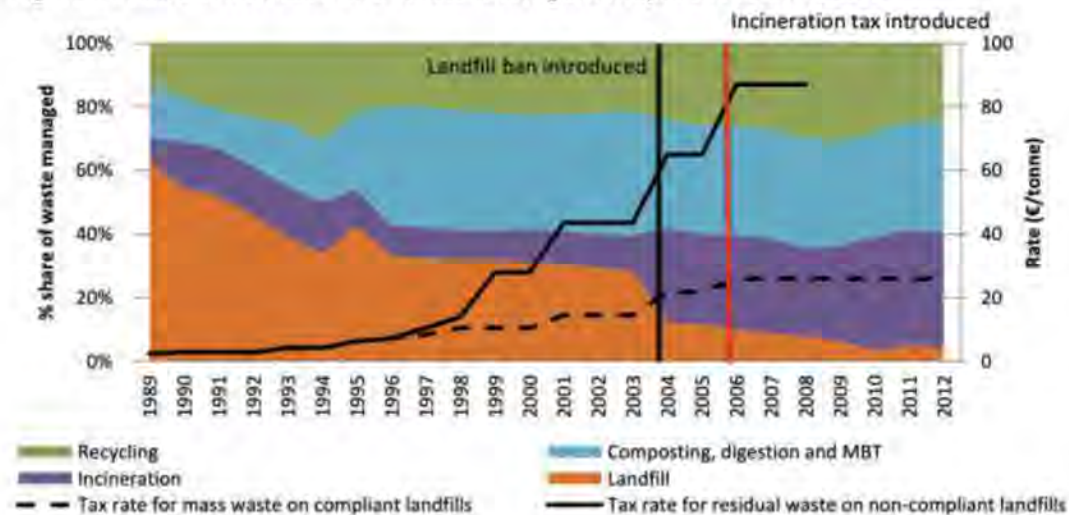
technology? How would they be applied to individual businesses? Would plastic buried in landfill be classed as a carbon sink?

No guarantee a tax will act as planned

A tax alone does not guarantee a desired outcome. The process is led by market forces and if no new management options emerge, local authorities may be forced to choose between two high-cost options, landfill and incineration. With no other regulation, there is no threshold for a maximum number of incinerators. The complexities and uncertainties of waste management mean that it is impossible to predict exactly what consequences an incineration tax would have.

Evidence of this can be seen in from Austria, which introduced a landfill tax (in 1989), a landfill ban (in 2004) and an incineration tax (in 2006). The figure below shows the changes in residual waste arisings and when each of these policy measures was introduced⁵².

Figure 7. Landfill tax rates and waste management practices in Austria



The biggest change in the graph happens in 2004 when the landfill ban was introduced was a diversion of waste from landfill to incineration and very little change in recycling. When the incineration tax is introduced in 2006, there is no significant change in the amount of waste managed by incineration. By 2012, incineration has increased. The latest evidence from Eurostat indicates incineration tonnages have remained level since 2012 until the latest available year for reporting (2020).

Burden of costs falls to LAs

As with the landfill tax, the cost of the system would fall on local authorities, rather than incinerator operators, who would pass on the cost. The introduction of the Dutch incineration tax in January 2020 and the Swedish incineration tax on the 1st April 2020 has driven gate fees at EFW facilities up⁵³.

⁵² Eunomia and IEEP (2016) [Landfill tax, incineration tax and landfill ban in Austria](#)

⁵³ WRAP (2021) [Gate fees report 2019/20](#)

Limits of devolved powers?

It is unclear if the Scottish Government have powers to introduce such a tax. Given the urgency of the climate crisis and the need to change trends in incineration as soon as possible, any delay in introducing a tax would be a significant disadvantage. Alternatives, such as including incineration in the UK Emissions Trading Scheme would also take a long time to set up.

Carbon-based tax options bring complexity

These objections can be partly overcome by creating a carbon, rather than a financial tax and introducing any tax at a high level immediately. A tax scaled to the average carbon impacts per tonne managed would be more aligned to Scotland's climate targets than a purely weight-based tax. Lower carbon management routes would be incentivised. However, with further complexity comes additional risks. Carbon accounting approaches vary in what should be included and excluded in factors⁵⁴. Setting up and administering such a system would require greater regulation than the current system.

Given these concerns, Friends of the Earth Scotland consider an incineration tax to be a poor mechanism for solving the incineration crisis in Scotland. If a tax is recommended, it should not sufficient to create a circular waste management system in Scotland. Any tax should be based on whole-life carbon impacts, measured by an independent body. Including incinerators in the UK ETS would be an alternative mechanism to such a carbon waste tax, although the need for change now in Scotland means this option is too slow to be an effective mechanism for change. It should also be noted that, even if incineration was included in a UK ETS it would still be priced 3-4 times lower than sending waste to landfill. If the object is to reduce carbon, a distorted carbon market is not fit for purpose – a single tax on the carbon emissions of waste would be required. This would encourage lowest carbon practices, whatever they may be.

3.5. Biostabilisation

Scotland does not require any new incineration plants. However, even if the case was made for more capacity, this should be rejected because there is a lower carbon alternative. Biostabilisation offers much lower carbon emissions per tonne of waste managed than incineration (see Figure 8 below, taken from ZWS (2021) study⁵⁵). Life Cycle Assessments indicate biostabilisation performs favourably compared to incineration⁵⁶.

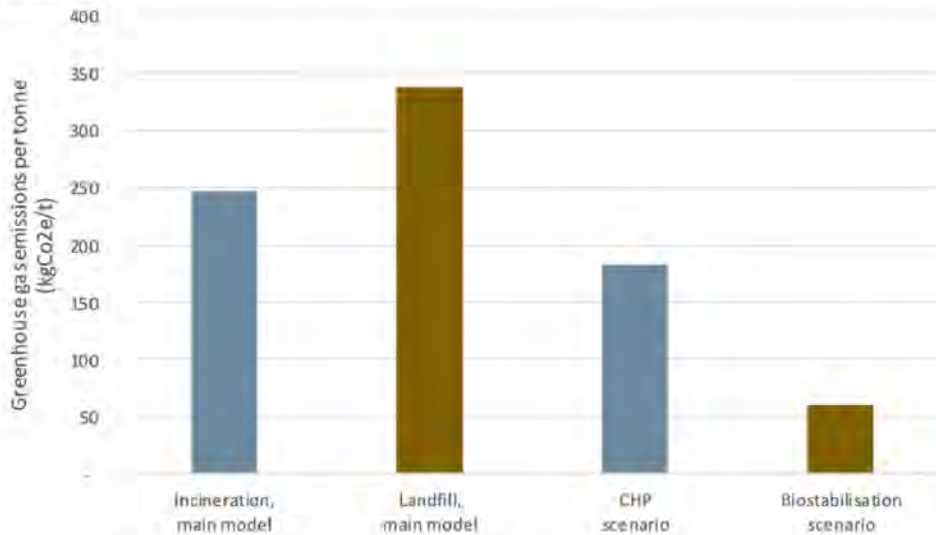
⁵⁴ For example, should storage of biogenic carbon in landfill be included in carbon assessments comparing landfill and incineration? International reporting guidelines have traditionally excluded such emissions but this is changing. A growing number of LCA experts consider comparisons between landfill and incineration without the inclusion of biogenic carbon stored in landfill to be unfair. The latest guidance from IPCC is that it can be included.

⁵⁵ ZWS (2021) [The climate change impact of burning municipal waste in Scotland](#) Figure 16

⁵⁶ For example, Zhangetal (2011) Environmental and economic assessment of combined biostabilization and landfill for municipal solid waste, *Journal of Environmental Management*, Volume 92, Issue 10. and Mondello et al. (2017) found that sending 1t food waste to AD had an impact of 66 kgCO₂e/t and incineration was more than an order of magnitude higher at 823 kgCO₂e/t.

Biostabilisation is a form of Mechanical and Biological treatment (MBT) of waste where the waste is treated to ensure biological material is degraded aerobically. The stabilised product can be landfilled. Whilst no examples of biostabilisation exist in Scotland currently, the practice is common in Europe and used as a low carbon alternative to incineration⁵⁷.

Figure 8. Retrofitting CHP or biostabilisation technologies lowers the GHG emissions of waste management facilities compared to current incineration and landfill practices



The Waste (Scotland) Regulations 2012⁵⁸ lists two alternatives to landfill of biodegradable waste: incineration and biostabilisation. It may be that biostabilisation has not been explored because of artificial economic barriers created by the landfill tax. Outputs from biostabilisation process must pay the higher landfill tax figure⁵⁹ (£96.70/t in 2021⁶⁰). Incineration Bottom Ash must also be sent to landfill but is exempt from this higher rate (so paid £3.10/t in 2021). The Zero Waste Scotland incineration study notes the "practical, legal and financial barriers to investing in this technology currently exist in Scotland".

The reason for IBA qualification for the lower rate of landfill tax is unclear given the environmental impacts of incineration⁶¹. This is one of many examples of unfair economic advantage given to incineration over other waste management practices⁶². Given the risk of over-capacity and the lower carbon alternatives, this should be amended. Biostabilised waste should pay the lower rate of landfill tax.

⁵⁷ <https://futureenviro.es/en/new-biostabilisation-plant-puts-ecoparque-gran-canaria-norte-at-the-forefront-of-european-waste-management/>

⁵⁸ [The Waste \(Scotland\) Regulations 2012](#)

⁵⁹ Scottish Parliament (2021) [Parliamentary Question ref. S6W-04116](#)

⁶⁰ Scottish Government (2021) [Scottish Landfill Tax](#)

⁶¹ ZWE (2019) [The hidden impacts of incinerator residues](#)

⁶² Another example is the exclusion of incineration from the EU ETS, despite its GHG emissions being 1.5 times higher than gas. <https://www.endseurope.com/article/1737413/ets-reform-rapporteur-proposes-efw-inclusion-carbon-leakage-protection>

3.6. Carbon capture and storage

This response notes the inclusion of a recommendation by the CCC to plan and fund a CCS retro-fitting project to all existing Scottish incinerators in its latest progress report to Parliament. It recommends the Scottish Government should:

"Work with the UK Government to develop a policy and funding framework to retrofit existing Energy from Waste plants with CCS from the mid-2020s, and ensure any new Energy from Waste plants are all built 'CCS-ready'."⁶³

Friends of the Earth Scotland strongly disagrees with this recommendation, which pre-empts the findings of the independent review. This proposal is unrealistic and reckless. Our technical, economic, environmental and social concerns are listed below.

Technical concerns

CCS has a history of over-promising and under-delivering. Much hope is being pinned on CSS but there is currently not a single operational CCS plant in the whole of the EU or the UK. The lack of scaled CCS projects, particularly examples of retro-fitted incinerators, creates risks and uncertainties which cannot be ignored. Deployment times for CCS plants would typically be 6-10 years meaning existing incinerator plants in Scotland could be half way through their expected lifespans before a single tonne of carbon is captured from any retro-fitting project. Retro-fitting CCS to incinerators bring additional concerns. Electricity output reduces by one-third for power-only plants and halves for combined heat-and-power plants⁶⁴. When coal and gas plants, of an order of magnitude larger than incineration plants, cannot make CCS a reality, then small-scale incinerators, not even subject to carbon pricing, are even less like to.

"CCS-ready" is a meaningless term, just as "CHP-ready" plants have proven to be. It requires almost no investment or planning, giving false reassurance that significant steps towards lowering carbon emissions has been taken whilst allowing business as usual to continue unbound.

Economic concerns

Economists and energy analysts commonly cite CCS as being "prohibitively expensive"⁶⁵. Retro-fitting adds to the construction and running costs of plants. The Oslo incinerator, held up as a successful example of a proposed CCS pilot, not due to be operational until 2025, costs €700m, including €300m funding from the EU, in addition to investments from the Norwegian government and the plant's joint owners, the Oslo municipality and utility company Fortum⁶⁶. The British Geological Survey states that CCS costs are increased when "applying the technology to pre-existing plants or plants far away from storage locations"⁶⁷.

⁶³ CCC (2021) [Progress Report to Scottish Parliament](#)

⁶⁴ Bisinella (2021) [Environmental Assessment of CCS as a post-treatment technology in waste incineration](#)

⁶⁵ For example [Institute for Energy Economics and Financial Analysis \(2019\)](#) and [Forbes \(2021\)](#)

⁶⁶ Guardian (2021) ["We have to pay the price"](#)

⁶⁷ BGS (2021) <https://www.bgs.ac.uk/discovering-geology/climate-change/carbon-capture-and-storage/>

Environmental concerns

CCS does not remove greenhouse gas emissions from the atmosphere. At best it prevents some emissions caused by the burning of carbon-based fuels from reaching the atmosphere. In practice, it's capacity to mitigate emissions is poor and CCS enables emissions from the underlying source, in this case, incineration, to be prolonged.

In the case of incineration, as well as allowing carbon emissions to be generated, CCS investment will allow a non-circular economy technology to persist, creating further distraction from recycling and waste prevention measures.

Social concerns

CCS brings unrecognised social costs. These include adverse impacts on local citizens, accompanied by anxieties that something could go wrong, with the transportation of captured carbon in particular giving rise to serious risks⁶⁸.

CCS should be avoided as a solution to incineration as it does not offer the same economic, environmental and social benefits of true circular economy solutions, such as waste prevention and reuse.

3.7. Expanding BMW ban

The Scottish Government's Climate Change Plan includes a recommendation to expand the Biodegradable Municipal Waste ban to landfill to cover non-municipal waste by 2025. Given the role the BMW ban has played in creating the current incineration crisis, and the economic inequalities created in the legislative framework used to create the ban, it is difficult to see how such a suggestion can be justified.

The intention of the ban is to reduce the environmental impacts of waste and the most effective way to do this is to prevent waste being produced in the first place. The BMW ban failed to do this (as evidenced by current household waste trends which show total household waste managed to have fallen only 7% between 2011 and 2020⁶⁹).

Instead, the BMW ban drove local authorities towards incineration. The residual municipal waste stream contains a mix of biodegradable and inert waste. Because it is not possible to completely sort biodegradable waste, the whole stream must be treated together. The ban means that local authorities had to find an alternative to landfill for all their municipal residual waste.

Two potential disposal routes which meet the ban criteria are outlined in the Waste (Scotland) Regulations: biostabilisation and incineration. As discussed above (Section 2.5), the artificial barriers to biostabilisation created by the same legislation means that, local authorities are left with only one economically viable option for managing all their residual municipal waste: incineration. Biostabilisation must pay the higher landfill tax rate, whereas incineration bottom ash is exempt. By driving all residual waste to incineration, much valuable material may be lost.

⁶⁸ ZWE (2021) [CCS for incinerators? An expensive distraction to a circular economy](#)

⁶⁹ SEPA (2021) [Household Waste Statistics 2020](#) Table 6

In this way, the BMW ban has exacerbated the rush to incineration. If the ban is expanded to cover non-municipal waste it will only increase demand for incineration when climate goals require Scotland to be moving away from the technology. Instead, strategies and resources should be focused on removing biodegradable material from the residual stream through waste prevention and recycling measures. Incineration, with higher carbon impacts than its alternative, biostabilisation, should not be given an unfair economic advantage of a lower landfill tax rate.

3.8. Recommendations on management options

- The current temporary ban on new and existing incineration applications should be extended immediately and indefinitely.
- A staged ban on plastics, rather than all fossil carbon waste, should be introduced immediately. The ban should be designed around existing sorting capabilities and increased in line with other circular economy measures until all plastics are banned from incineration.
- Existing and new incinerators should be required to convert to CHP systems as soon as possible to ensure they are operating efficiently. This cost should be borne by operators.
- A tax on incineration would not be as effective at reducing the environmental impacts of waste management as bans and restrictions.
- If a tax is introduced, it should be carbon-based and cover all waste disposal routes, not just incineration.
- Biostabilisation offers a lower carbon alternative to incineration of biodegradable municipal waste, and should be economically incentivised as such.
- Incinerator bottom ash should pay the higher rate of landfill tax.
- Carbon assessments comparing waste management schemes should be based on a whole life assessment, to allow decision makers to make a fair comparison. In particular, storage of biogenic carbon should be included.
- CCS should be avoided as a solution to incineration as it does not offer the same economic, environmental and social benefits of true circular economy solutions, such as waste prevention and reuse.
- The biodegradable municipal waste ban should not be expanded to non-municipal waste.

4. How do these options compare, in environmental, social and economic terms?

4.1. Comparison of options

Table 6 below summarises the environmental, social and economic considerations of each option considered in Section 2.

Table 6. Summary and comparison of environmental, social and economic factors for options to manage Scotland's waste

Option	Considerations			FoES Recommendation
	Environmental	Social	Economic	
1. Extend moratorium on applications	Absolute requirement to achieving a circular economy	Benefits of cleaner air, better waste service and lower long-term costs	Limited impact as current investment is minimal	Implement immediately
2. Ban on burning plastics	Fast, effective, high carbon savings possible	Fast, effective, clear public benefits	Affects industry energy output, composite products may be difficult to manage	Implement by 2025
3. CHP	Decreasingly small carbon savings possible	High costs likely to be passed on to local authorities	Affects industry energy outputs, high costs	Enforce strongly for all existing electricity only plants
4. Waste carbon tax	Focus on disposal, rather than reduction of waste	High costs likely to be passed on to local authorities	Risk market will not produce desired effect	Only apply if incineration is not phased out
5. Biostabilisation	Lower carbon alternative incineration	Likely to be almost as unpopular as incineration	Artificial barrier created by landfill tax rates	Unnecessary but preferable to new incineration plans if economic barrier is removed
6. CCS	Further lock in to a high carbon and wasteful practice	High costs likely to be passed on to public	Prohibitively expensive	Environmentally damaging, risky and expensive. "CCS-ready" a smokescreen for inaction.
7. Expanding BMW ban	Likely to increase incineration of non-municipal waste	Ineffective, no clear public benefits	Risk of loss of materials with economic value	Environmentally damaging, ineffective and a barrier to a circular economy

4.2. Recommendations

- Extending the moratorium of incineration applications and banning the burning of plastic have the potential to have greater environmental and social benefits than other interventions.
- CCS and expanding the BMW ban to non-municipal waste are likely to have negative environmental, social and economic consequences and should not be implemented as strategies to manage Scotland's waste.

5. How do we decide where capacity should be located, and in what form?

5.1. National strategy

A national study of waste arisings, incineration capacity and location projections is required urgently. The current spread and capacity of incineration facilities in Scotland are not part of an integrated system which balances waste generation and logistical requirements. An understanding of current and projected demand and supply is required to transform Scotland's current waste management system to one which ensures waste is minimised and managed in as low a carbon way as possible. Such an approach is needed if incineration capacity is to be reduced.

5.2. The role of data

The following data is required to create a full and ongoing understanding of incineration trends in Scotland:

- Annual reporting of national incineration capacity (for municipal and non-municipal waste), listing all existing plants;
- Projections of municipal and non-municipal waste arisings and landfill, incineration and recycling capacity from current time to 2045 (to allow decisions about waste management to align with climate targets);
- Composition studies of waste at both the incineration gate and of waste burnt;
- Annual updates on individual plant operating efficiencies including carbon intensity (GHG emissions per tonne of waste burnt) and energy efficiency (kWh generated per tonne of waste burnt).
- A league table of municipal incinerator plants by carbon intensity of operation should be published by SEPA annually. This should be benchmarked against the best performing international examples.

All reporting should be made publicly available in a timely manner to ensure regular, independent scrutiny of the system, enabling progress towards a more circular economy.

The Waste Data Strategy Board⁷⁰, consisting of Scottish waste data experts from the Scottish Government, SEPA and Zero Waste Scotland, should be tasked with leading the collection and analysis of this data.

5.3. Transport

The importance of transport of waste is often discussed. A whole life analysis of this life cycle stage is required to understand its true importance. The Scottish Carbon Metric 2018 factors show that transporting a tonne of inert material, such as glass, to landfill has an average impact of 4 kgCO₂e⁷¹. In comparison, producing one tonne of glass has an impact of 1,210 kgCO₂e and recycling a tonne of glass saves 755 kgCO₂e/t.

⁷⁰ SEPA (2020) [Waste Data Strategy](#)

⁷¹ ZWS (2020) Carbon factors overview 2018

Using the Scottish Carbon Metric's estimate of the average carbon impact of household and similar waste production emissions (3,208 kgCO₂e/t), transport emissions to residual waste management (4 kgCO₂e/t) are 800 times smaller than the production emissions.

These examples demonstrate that the transport of waste material is generally not nearly as significant as the process emissions involved in the domestic treatment of waste, regardless of waste treatment option. When waste is exported, transport emissions can become a larger proportion of the overall life cycle emissions. Nevertheless, full life cycle analysis is still required when comparing the environmental impacts of waste treatment options for waste which may be exported. Reduced transport, without full life cycle knowledge, should never be used as a reason for justifying additional incineration plants.

5.4. Recommendations on capacity location and form

- More resources are required to co-ordinate and implement a national strategy to reduce and minimise incineration in Scotland. The strategy should be led by the Waste Data Strategy Board and include annual, publicly available updates.
- More resources should be available to regulators to measure and report incineration activities.
- SEPA should report annual capacity updates, and capacity projections to 2045.
- There should be a mandatory requirement on incinerator operators to report the carbon intensity and energy efficiency of individual plants on an annual basis. This data should be publicly available as it does not affect the commercial operations of plants.
- There should be mandatory reporting of composition of waste at incinerator gates and at the point of incineration.
- SEPA should publicly publish an annual league table of municipal incinerators by carbon intensity.
- Life cycle analysis should be used to understand the importance of transport emissions relative to the overall life cycle of material consumption and waste treatment options.

6. What can be done to improve existing Energy from Waste facilities in terms of a) carbon performance and b) their societal impact?

6.1. Improving carbon performance

An exit strategy for incineration

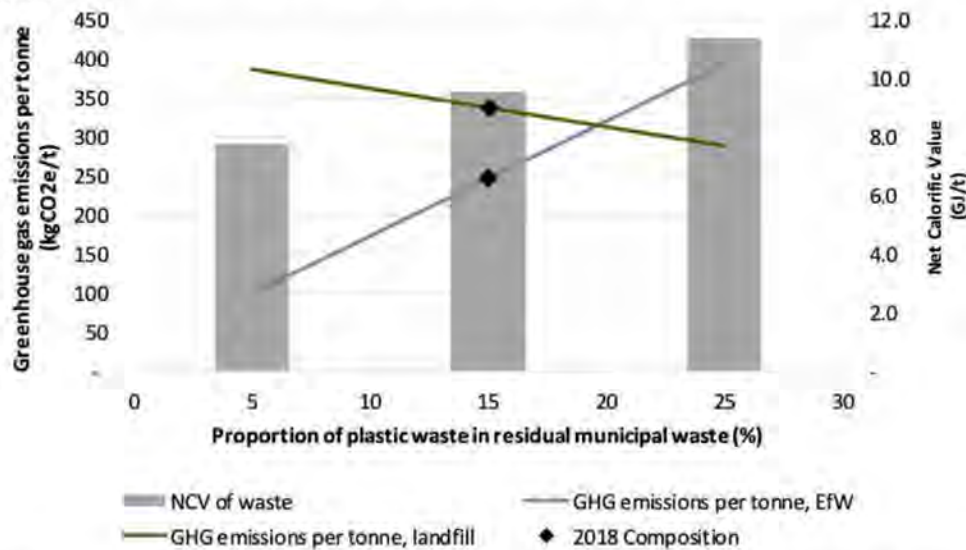
The simplest, surest way to reduce the carbon impact of incinerators is to stop burning waste as rapidly as possible. The immediacy of the climate crisis demands this option be considered seriously. Every tonne of greenhouse gas mitigated is progress towards a more sustainable future. Incineration is a polluting practice which generates carbon emissions both directly and indirectly. Apart from ending incineration, there are no technological or economic options which will reduce GHG emissions completely.

Friends of the Earth Scotland recommend that the Scottish Incineration Review sets out an exit strategy to end incineration in Scotland as quickly as possible. This is the only option which aligns with Scotland's climate change goals and would allow more circular solutions to replace incineration in the management of Scotland's waste.

Banning the burning of plastics

The emissions of residual municipal waste sent to incineration is highly dependent on the composition of that waste, which is varied and changes over time. The fossil content of waste burnt is the most significant factor affecting greenhouse gas emissions per tonne. Figure 9 below, taken from the ZWS (2021) study, shows the impact of varying the plastic content of residual waste on greenhouse gas emissions and net calorific value (NCV). The NCV is key to the economics of incineration operations – the higher the NCV, the more energy can be generated.

Figure 9. Varying the proportion of plastic waste in residual municipal waste changes the net calorific value (NCV) and greenhouse gas (GHG) emissions of EfW and landfill⁷²



In the main ZWS study, plastic wastes comprised 15% of residual municipal waste, has an NCV of 9.5 GJ/t and makes up 70% of its fossil carbon content. As shown in Figure 9, if the proportion of plastic in residual municipal waste increases, the greenhouse gas emissions of EfW rise. This is because more fossil carbon would be burnt and released into the atmosphere, contributing to climate change. NCV also rises because there is more carbon to burn and release energy from. Landfill emissions fall as plastic content rises, as all fossil carbon is stored in landfill⁷³.

If plastic waste can be reduced to 5% of residual waste composition, the GHG emissions from incineration are cut by 60% to 99 kgCO₂e/t. This evidence demonstrates that removing plastic is a fast and effective way of reducing the carbon emissions of existing incinerators.

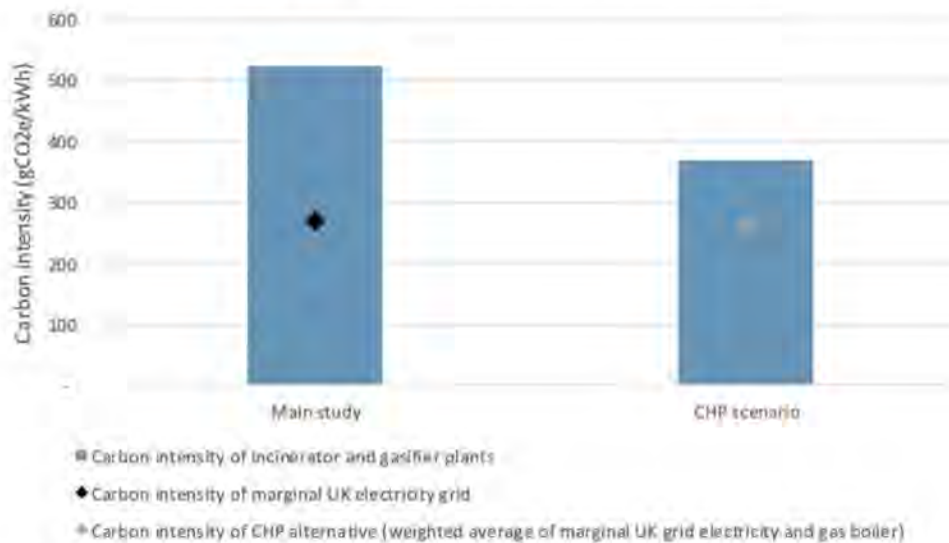
Combined Heat and Power

The ZWS (2021) study found that average carbon intensity of EfW plants was reduced by 30% from CHP conversion (Figure 10 below). This did not include the carbon impact of retrofitting the CHP network. Whilst the carbon intensity was reduced, it did not fall below the carbon intensity of alternatives. This means that every unit of energy supplied from CHP incinerators would emit more greenhouse gas emissions than the most likely alternative (for heat, this would be a gas boiler). The ZWS study concludes incineration "can no longer be considered a source of low carbon energy". As the UK electricity and heat networks continue to decarbonise, incineration will become an increasingly high carbon outlier.

⁷² ZWS (2021) [The Climate Change Impacts of burning municipal waste](#) Figure 13

⁷³ Note that this analysis does not include the carbon savings from storage of biogenic carbon in landfill so a comparison between EfW and landfill emissions is incomplete.

Figure 10. Converting to CHP systems lowers the carbon intensity of EfW plants



So, CHP can reduce the greenhouse gas emissions of incinerators but not to levels which align with Net Zero targets.

Investing in CHP for incinerators would have indirect carbon impacts, through the construction of heat networks and retrofitting the heat capture system to incinerators. In addition, the lock-in to a waste disposal route would ensure carbon emissions from waste remained high compared to lower carbon waste prevention and recycling alternatives. The EU Technical Expert Group on Sustainable Finance about the "large portion of waste currently incinerated that could be recycled, the reliance of some individual [EU] Member States on the incineration of municipal waste, and the risk that further increasing capacities risk overcapacity and could result in lock-in effects. This would in turn discourage more reuse and recycling, options higher in the waste hierarchy that could deliver higher climate mitigation benefits"⁷⁴.

Carbon Capture and Storage

CCS would not prevent the emission of greenhouse gases from incineration directly, but could capture a proportion of these before they are emitted to the atmosphere. Fossil fuel-based CCS is not capable of operating with zero emissions. Operational CCS have reported initial deployment capture rates of 65%, taking several years to reach 90% capture⁷⁵.

As with CHP, CCS would create lock in to a high waste and high carbon system which would have indirect impacts on greenhouse gas emissions. The construction of a CCS network would have carbon impacts and the reduction in waste prevention and recycling measures would mean emissions remained high. CCS exacerbates the many problems associated with overconsumption, resource inefficiency, and the linear economy that give rise to significant losses to the wider economy⁷⁶.

⁷⁴ EU Technical Expert Group on Sustainable Finance (2020) [Taxonomy Report: Technical Annex](#)

⁷⁵ FoES and Global Witness (2021) [CCS Briefing](#)

⁷⁶ Fauset, C. (2008) [Techno-fixes: a critical guide to climate change technologies](#)

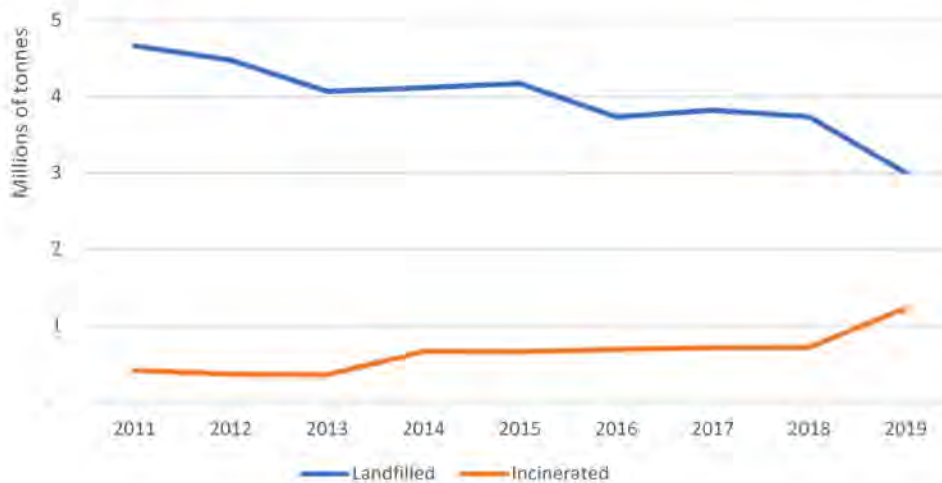
6.2. Improved reporting of the climate impacts of incineration

As noted in the call for evidence the Scottish Government's climate change plan excludes incineration with energy recovery emissions from what is termed "the waste sector". This is in line with domestic and international reporting requirements determined by the IPCC. However, this becomes extremely misleading when making statements about trends in waste sector emissions, which might be reasonably assumed to include incineration with energy recovery as part of this sector by a general audience.

In its climate change plan, the Government claims that "In 2018, waste and resources sector emissions were over 70% lower than in 1998." The biggest change in the sector has been the diversion of waste from landfill, and it is likely this emission reduction is associated with this change. Although it is not possible to verify this with the information available publicly, the reviewers should have access to more detailed information via the Scottish Government Environmental Statistics team.

Figure 11 shows that rather than this waste being reduced, waste diverted from landfill has instead been incinerated (data taken from SEPA⁷⁷). Because incineration is reported under a different sector, energy supply, it appears that the waste sector emissions in the climate change plan have reduced. This misleading reporting severely hampers our ability to measure true progress. It is not possible for policy makers to understand if policies are working as intended if emissions reporting is so unclear.

Figure 11. Waste landfilled and incinerated in Scotland, 2011-19, in millions of tonnes



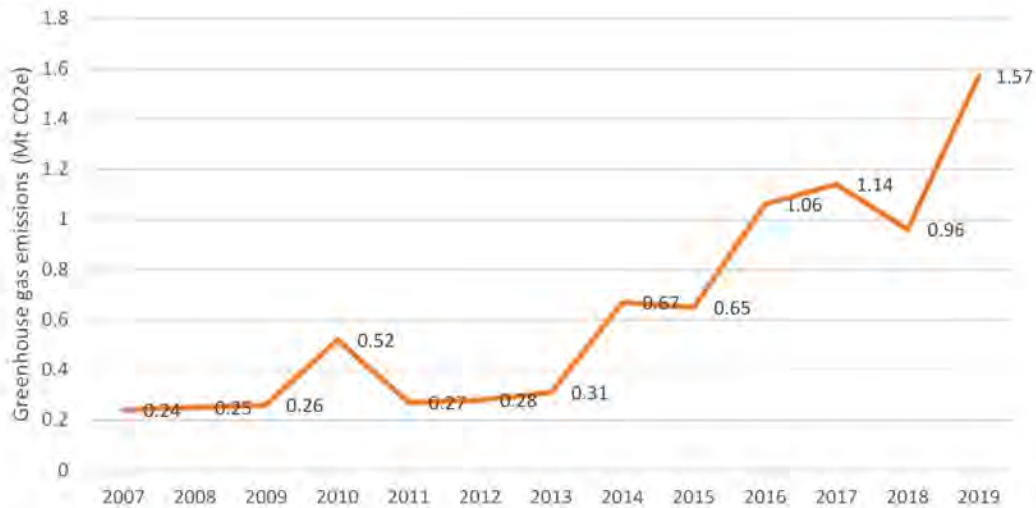
⁷⁷ SEPA (2021) <https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/>

It should also be noted that Figure 11 and the data which is used to create it stop at 2019. It is expected that the existing trends pictured here will only increase in 2020 and beyond, in line with known incineration capacity.

GHG emissions from the waste sector and incineration

Emissions data is usually reported on the SEPA website via the Scottish Pollution Release Inventory (SPRI). However, data which we would expect to be available from this service is currently limited and inconsistent due to the cyber-attack experienced by SEPA over a year ago. The emissions from Scottish incineration of all waste types, with and without energy recovery, was recently reported in Parliamentary Question S6W-05516⁷⁸ put to the Scottish Government. This data is shown in Figure 12 below and demonstrates a rise in emissions from incineration which aligns with the rise in tonnes of waste sent to incineration.

Figure 12. Greenhouse gas emissions from incineration of all waste in Scotland 2007-18



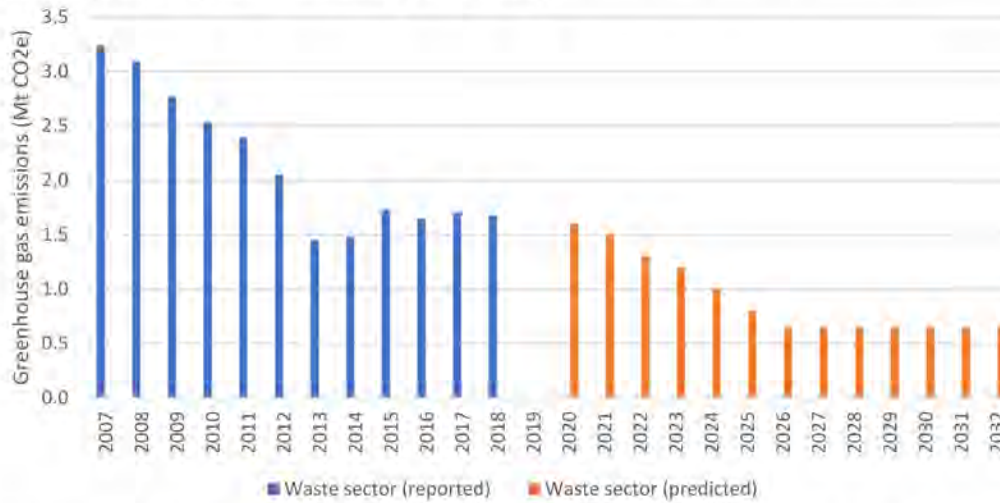
No information is given on what proportion of these emissions come from incineration with energy recovery. However, it is likely to be a large proportion as all household waste and some C&I and C&D waste is known to be incinerated in such plants.

The Scottish Government report GHG emissions by sector annually, although the most recent publication was in 2020 for the year 2018⁷⁹. More up to date data would be have been useful. This can be combined with the Climate Change Plan estimates of future emissions from the waste sector to produce Figure 13 below. This includes methane released from landfill but not incineration with energy recovery.

⁷⁸ <https://www.parliament.scot/chamber-and-committees/written-questions-and-answers/question?ref=S6W-05516>

⁷⁹ Scottish Government (2020) <https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2018/>

Figure 13. Greenhouse gas emissions from the waste sector (as defined by the Scottish Government and excluding waste incinerated with energy recovery), reported (2007-18) and predicted (2020-2032)

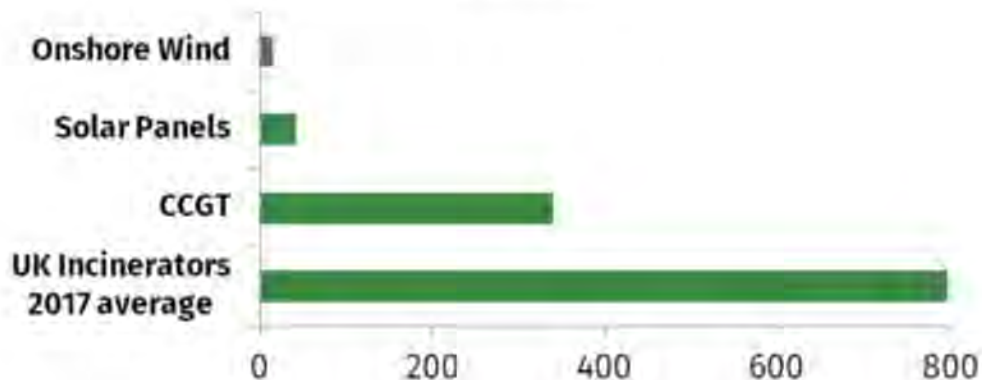


It is not possible to combine the data in Figures 12 and 13 because of differences in reporting boundaries. However, the trends presented in these figures show that a misleading picture of sector progress has been created by excluding emissions from waste managed by incineration with energy recovery.

The inclusion of incineration with energy recovery as part of the energy supply sector in the Scottish Government Climate Change Plan has masked the increase of these emissions within the rest of the emissions reported for this sector until now. However, it is likely that emissions from incineration will become more obvious as the rest of the energy supply sector rapidly decarbonises. The graph below, created by UKWIN⁸⁰, shows that incineration is a high carbon form of energy generation compared to other energy generation technologies: every kWh of energy produced with incineration is resulting in unnecessary GHG emissions being released into the atmosphere.

⁸⁰ UKWIN (2019) [Evaluation of the climate change impacts of waste incineration in the United Kingdom](#)

Figure 14. Fossil carbon intensity of electricity (gCO₂/kWh) of energy generation technologies including incinerators in the UK in 2017



The carbon intensity of energy produced through waste incineration is more than 23 times greater than that for low carbon sources such as wind and solar.

6.3. Societal impact

In addition to greenhouse gas emissions that exacerbate climate change, incinerators emit many toxins and pollutants that reduce local air quality. Emissions include dioxins, NO_x and ultrafine particulate matter that can be harmful to both human health and the natural environment. Incinerators are three times more likely to be in poorer areas in the UK⁸¹, whose residents already suffer worse health outcomes from disproportionately higher levels of air pollution and inequality.

Several recent studies have highlighted new concerns around the health hazards of incinerators on human health. Most recently, a synopsis of expert presentations on health and air quality impacts from waste incineration was published by the UK All-Party Parliamentary Group (APPG) on Air Pollution⁸². Evidence presented included:

- A study led by Ruggero Ridolfi, MD which found a prevalence of heavy metals in the toenails of children living near incinerators in Italy, including nickel, which is associated with acute childhood leukaemia;
- Kirsten Bouman's findings of the accumulation of dioxins in chicken eggs — and in grass and moss — up to 10 kilometres from incinerators imply that health risks decrease, but still exist, if waste incineration is further afield from urban populations; and
- Prof. Vyvyan Howard found that if incinerator filters are successful in stopping small particulates like PM_{2.5} but allow ultrafine particulates into the local environment at scale, then the resulting emissions are very damaging to human health.

The report recommended a moratorium on incinerators in England. Just as the UK APPG questions the rationale of consent for new incineration developments in

⁸¹ Greenpeace (2020) [Unearthed](#)

⁸² APPG Air Pollution (2021) [Pollution from waste incineration](#)

England, this evidence also calls into question the approval any new incineration applications. The NESS plant in Aberdeen, currently being consulted on by SEPA⁸³, is situated less than 1km from the local primary school.

Health concerns around incineration have also been raised recently in Scotland. The NHS Ayrshire & Arran Respiratory Managed Clinical Network (MCN) responded in 2021 to the proposed energy recovery facility in Ochiltree, submitted to East Ayrshire Council. The MCN stated "The proposed development has the potential to detrimentally impact upon our population's future long-term respiratory health; particularly children affected with asthma and those with other chronic respiratory diseases." The response cited several academic and medical studies⁸⁴ to back its claims and concluded: "We would oppose this development on the grounds that there is good scientific evidence that it will directly increase respiratory symptoms and hasten the deaths of our residents for decades to come."

Physical health concerns can be compounded by the mental health concerns of living close to incinerators⁸⁵. A recent scientific review⁸⁶ of the physical and mental health impacts of incinerators stated: "Older incinerator technology and infrequent maintenance schedules have been strongly linked with adverse health effects. More recent incinerators have fewer reported ill effects, perhaps because of inadequate time for adverse effects to emerge. A precautionary approach is required."

Dis-amenuities such as noise, increased traffic and odours are often downplayed by operators during the planning process. However, such problems do often arise and are then dismissed as inevitable. The NHS Ayrshire & Arran Respiratory MCN also stated the proposed facility was "likely have a negative impact on the quality of life of those living in and around this area." It also suggested that the proposed contradicted the ambitions of the Scottish Government's Public Health Priorities for Scotland which includes aspirations that people live in a vibrant, healthy and safe place.

The societal risks of CCS are rarely disclosed or discussed with the public. Especially when moved over long distances and/or through heavily populated areas, piping carbon dioxide poses several risks from land disturbance and water contamination to the danger of explosions and other accidents (Ceil, 2021). The IPCC recognizes that "carbon dioxide leaking from a pipeline forms a potential physiological hazard for humans and animals"⁸⁷.

A full scientific assessment of the societal impacts of incineration is required to determine safe levels of exposure. This is beyond the scope of this review response

⁸³ SEPA (2021) [NESS EfW facility application](#)

⁸⁴ These included the findings of the [ELAPSE study](#), published in the BMJ (2021) which concluded "Long term exposure to outdoor air pollution was positively associated with Mortality: even at levels well below the EU limit values, US Environmental Protection Agency national ambient air quality standards, and WHO air quality guidelines for fine particles and nitrogen dioxide".

⁸⁵ Lima (2004) On the influence of risk perception on mental health: living near an incinerator <https://www.sciencedirect.com/science/article/abs/pii/S0272494403000264>

⁸⁶ Tait et al (2019) The health impacts of waste incineration: a systematic review <https://onlinelibrary.wiley.com/doi/full/10.1111/1753-6405.12939>

⁸⁷ IPCC Special Report on Carbon Dioxide Capture and Storage Chapter 4, supra note 61, at 188

(and indeed the review itself). However, a precautionary approach which values people and the environment above commercial gain should be applied.

6.4. Recommendations on improving environmental and social impacts of existing incinerators

- The only way to sufficiently minimise environmental and societal impacts of incineration is to ending this polluting practice in Scotland as rapidly as possible.
- CHP and CCS will not address the hidden carbon costs of incinerating waste. A ban on burning plastics would be more effective at reducing carbon impacts of incineration.
- The reporting of the greenhouse gas emissions from waste must be more transparent. Incineration should be dis-aggregated from energy sector emissions and reported alongside waste sector emissions.
- Recent concerns raised by medical experts around the health impacts of incinerators justify an immediate review. ***No new incinerators in Scotland should be approved or given consent until this health review is complete.***

Conclusion

Friends of the Earth Scotland believe the environmental and social impacts of incineration to be unsustainable and in direct conflict with the future Scotland is aiming for. The evidence presented here shows the climate change, wider environmental impacts and health concerns surround incineration means that no level of waste incineration should be tolerated. Technical and commercially feasible alternatives exist. An immediate ban on new applications and the rapid phasing out of existing plants is required. For these reasons, the independent review on incineration in Scotland should recommend a comprehensive exit strategy for incineration in Scotland.

From: 1 [REDACTED] 1 [REDACTED]@ercs.scot>
Sent: Tuesday, June 18, 2024 9:17 AM
To: ESS Representations <representations@environmentalstandards.scot>
Subject: Representation - incineration overcapacity (05.0623)

Dear ESS,

Representation
Incineration overcapacity
Our reference: 05.0623

We would like to make a representation regarding incineration overcapacity.

Please find attached:

- A completed representation form.
- A paper apart which explains the background to the representation and the outcome sought.
- Eight background documents.

I would be grateful if you could confirm receipt and outline your next steps for handling this representation.

Kind regards,

1 [REDACTED]

In-house solicitor

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From: 1 [redacted] **On Behalf Of** ESS Representations
Sent: 18 June 2024 10:24
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: 20240618 Email Outgoing - Acknowledgement of representation received - IESS.24.046

Dear 1 [redacted]

Thank you for submitting your representation and supplementary documents to Environmental Standards Scotland (ESS).

I can confirm receipt, and advise that your representation has been assigned case reference - IESS.24.046

The case will be allocated to an investigations officer, who will be in touch in due course.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: Monday, June 24, 2024 10:01 AM
To: ESS Representations <Representations@environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: Further supporting information regarding representation IESS.24.046 (05.0623)

Hi 1 [redacted]

Further supporting information regarding representation IESS.24.046
Incineration overcapacity
Our reference: 05.0623

Following on from below, please find attached a spreadsheet which was sent from the Scottish Government to Friends of the Earth Scotland last week on electricity supply emissions.

This document was released in connection with the recent publication by the Scottish Government of the Scottish Greenhouse Gas Statistics 2022 - <https://www.gov.scot/publications/scottish-greenhouse-gas-statistics-2022/documents/>

The spreadsheet contains data for annual emissions relating to electricity supply from the incineration of waste. It shows that that greenhouse gas emissions from incineration have increased annually from 2017 onwards.

Annual emissions relating to electricity supply from the incineration of waste are shown in the row of the spreadsheet titled, 'Power stations - municipal solid waste'.

With respect to our representation, this supports our central claim that the Scottish Ministers have failed to make effective environmental law as a result of their failure to halt the worsening problem of incineration overcapacity. Greenhouse gas emissions from incineration are increasing as incineration capacity increases without any legal limits.

We would also draw ESS' attention to the comments made at paragraph 24 of the paper apart regarding the contribution of incineration to climate change.

Kind regards,

1 [redacted]

In-house solicitor

Environmental Rights Centre for Scotland (ERCS) | [Web](#) | [✉ @ERCScot](#) | [YouTube](#)

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 24 June 2024 15:08
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: RE: Further supporting information regarding representation IESS.24.046
(05.0623)

Afternoon 1 [redacted]

Thank you for your email and attached file. I have saved it into the case file for consideration.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1
Sent: 09 July 2024 14:16
To: 1 1 <@environmentalstandards.scot>
Subject: RE: 20240618 Email Outgoing - Acknowledgement of representation received - IESS.24.046

Dear 1

I hope you are well.

Following my email below, I can confirm I am the officer assigned to your recent case - IESS.24.046.

I will be back in touch once I have considered the information submitted.

Kind regards

1

1 (She/Her)
Senior Investigations Officer
1 <@environmentalstandards.scot>
1

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From: 1
Sent: 16 July 2024 14:15
To: 1 1 <@environmentalstandards.scot>
Subject: 20240716 Email Outgoing - Case accepted for pre-investigation - IESS.24.046

Dear 1

Thank you again for submitting your representation in respect of incineration overcapacity in Scotland.

I can confirm that ESS have decided to progress your case to our pre-investigation stage, the attached letter confirms this decision.

Following further enquires, I will be back in touch to provide an update on the progress of the case. In the meantime, should you have any questions regarding my letter, please do not hesitate to contact me.

Kind regards

1

1 (She/Her)
Senior Investigations Officer
1 [environmentalstandards.scot](mailto:enquiries@environmentalstandards.scot)
1

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Senior Investigation Officer
Environmental Standards Scotland
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1 environmentalstandards.scot

1
1 @ercs.scot

16 July 2024

Subject: Case Accepted for Further Consideration – Case Reference IESS.24.046

Dear 1

Thank you for the representation you submitted to Environmental Standards Scotland (ESS) dated 18 June 2024. I have reviewed the information provided and consider, on a preliminary basis, that the matter falls within our remit to investigate. I can confirm that I will be the senior investigations officer for your case and your main point of contact.

ESS will now carry out more detailed review of the information submitted, research the environmental framework surrounding your case, and undertake preliminary enquiries with relevant parties, where appropriate.

At the conclusion of this work, we will inform you of the outcome, which will be one of the following:

- Promoting the matter to full investigation;
- Working with the relevant public authorities on informal resolution of the matter; or
- Closing the case without further action – we would provide supporting details on our conclusion in this instance.

I look forward to reviewing this case further and appreciate you bringing the matter to the attention of ESS. If you have any questions or queries please do not hesitate to contact me at the above e-mail address.

Yours sincerely,

1

1
Senior Investigations Officer

Environmental Standards Scotland Enquiries
enquiries@environmentalstandards.scot
Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD
0808 1964000

Document 7

From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 16 July 2024 16:55
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20240716 Email Outgoing - Case accepted for pre-investigation - IESS.24.046

Thank you for the update 1 [redacted]

1 [redacted]

In-house solicitor

Environmental Rights Centre for Scotland (ERCS) | [Web](#) | [X](#) @ERCScot | [YouTube](#)

From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: Friday, August 30, 2024 10:45 AM
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20240716 Email Outgoing - Case accepted for pre-investigation - IESS.24.046

Hi 1 [redacted]

Could you please update me on the progress of this representation – and the timeline for any further steps planned by ESS?

Thanks,

1 [redacted]

In-house solicitor

Environmental Rights Centre for Scotland (ERCS)
[|Web](#) |[@ERCScot](#) |[YouTube](#) |[LinkedIn](#)

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 30 August 2024 10:59
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: RE: 20240716 Email Outgoing - Case accepted for pre-investigation - IESS.24.046

Hi 1 [redacted]

Thank you for your email, I can confirm Section 23 requests are about to be issued to both the Scottish Government and SEPA. Hopefully today but if not Monday. Once I have received and considered the response information, I will provide a further update.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted]
Sent: 25 September 2024 10:57
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: 20240925 Email Outgoing - Case update - IESS.24.046

Dear 1 [redacted]

I hope you are well.

Just a brief update to advise that ESS have now received both Section 23 responses from SEPA and the Scottish Government for your case.

Once I have considered the information and considered our next steps, I will provide a more detailed update.

As ever, should you have any questions, please do not hesitate to get in touch.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: Thursday, October 24, 2024 9:30 AM
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: IESS.24.046 - Zero Waste Scotland report

Hi 1 [redacted]

Last week Zero Waste Scotland published this 'Landfill Ban Assurance Study' report - <https://cdn.zerowastescotland.org.uk/managed-downloads/mf-w-p3jclx-1728634788d>

At page 33 it states that:

"Beyond 2028 there is the likelihood of significant EFW overcapacity (c.10-18% of total operating capacity) occurring, if all new EFW capacity is fully built and recycling performance improves from the current BAU level".

This finding is reflected in the graphs from page 13 of the report which I have copied below.

This report is further evidence of the incineration overcapacity problem which is the subject of our representation. We would be grateful if you could please consider this report as part of your handling of our representation.

Could you please also give me an indication as to when you will provide a more detailed update on ESS' consideration of this representation.

Kind regards,

1 [redacted]

In-house solicitor

Environmental Rights Centre for Scotland (ERCS)
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Landfill Ban Assurance Study

Figure 3-1: SLR Supply-Demand Forecast

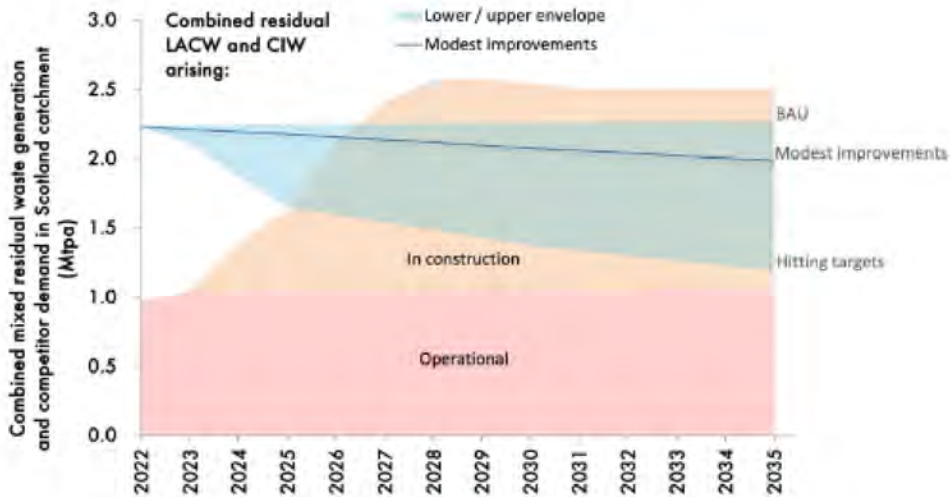


Figure 3-2: Ricardo Supply-Demand Forecast (full pipeline excl. C&D)

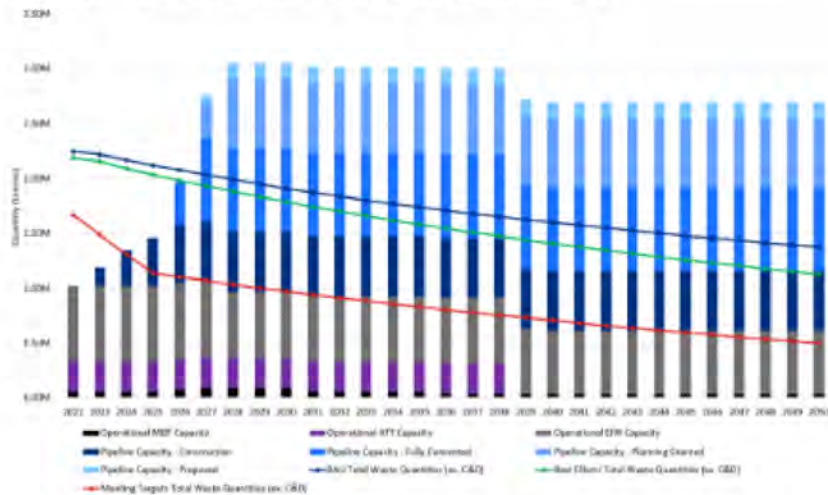


Figure 3-1 indicates that under the BAU and Modest Improvements projections (considered as the most likely outcome in the short-medium term), a capacity gap is anticipated in 2026, the first year of the landfill ban. This forecast gap is expected to transition towards a capacity surplus during 2027, as newly constructed facilities begin to ramp up their operations and throughputs.

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 24 October 2024 10:03
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: RE: IESS.24.046 - Zero Waste Scotland report

Good morning 1 [redacted]

Thank you for your email, and the link information provided. ESS was aware of this recently published report, and I can confirm that the findings will be considered when reaching our decision on your case.

I hope to be able to provide an update in the next week or so.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: Wednesday, October 30, 2024 4:01 PM
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: IESS.24.046 - new incineration statistics - Waste Incinerated in Scotland 2023

Hi 1 [redacted]

I have some more information regarding our incineration representation here.

Yesterday the Scottish Government published '[Waste Incinerated in Scotland 2023](#)', which showed that 216,000 tonnes more waste was incinerated in 2023 than in 2022. That is a 15.4% annual increase.

We would be grateful if ESS could please consider these new statistics in its handling of our representation.

Kind regards,

1 [redacted]

In-house solicitor

Environmental Rights Centre for Scotland (ERCS)
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From: 1 [redacted] environmentalstandards.scot
1 [redacted] environmentalstandards.scot>
Sent: 04 November 2024 09:22
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: RE: IESS.24.046 - new incineration statistics - Waste Incinerated in Scotland 2023

Hi 1 [redacted]

Thank you for your email, I can confirm this data will be considered by ESS.

Kind regards

1 [redacted]

From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 05 December 2024 10:08
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: IESS.24.046 - new incineration statistics - Waste Incinerated in Scotland 2023

Morning 1 [redacted]

You mentioned that you hoped to be able to give me an update in the next week or so on 24 October.

Can you please update me on ESS' consideration of this representation?

Thanks,

1 [redacted]

In-house solicitor

Environmental Rights Centre for Scotland (ERCS)
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From: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Sent: 05 December 2024 16:45
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: RE: IESS.24.046 - new incineration statistics - Waste Incinerated in Scotland 2023

Good afternoon 1 [redacted]

I hope you are well.

Apologies for the delay in providing an update as promised.

Unfortunately I had to take some time off work, however I can confirm that your case has been passed to the Head of Investigations, Standards and Compliance and we hope to be in a position to provide an update very soon.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 08 January 2025 11:03
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: IESS.24.046 - update request

Hi 1 [redacted]

Happy new year – I hope you had a decent break.

I haven't heard anything further from you or 1 [redacted] following on from your 5 December email.

Could you please confirm when we will receive a substantive update on this representation?

Thanks,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted] environmentalstandards.scot
1 [redacted] environmentalstandards.scot>
Sent: 08 January 2025 14:57
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: RE: IESS.24.046 - update request

Hi 1 [redacted]

Happy new year to you too, hope you had a good one.

I can confirm that this case is still with 1 [redacted] however we hope to be in a position to provide an update next week.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 27 February 2025 09:55
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: IESS.24.046 - update request

Hi 1 [redacted]

Could you please update me on this representation?

On 5 December you said that ESS hoped to be in a position to provide an update very soon.

On 8 January you said that ESS hoped to be in a position to provide an update the following week (i.e. the week beginning 13 January).

What is the reason for the delay here please?

Kind regards,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 28 February 2025 14:50
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: RE: IESS.24.046 - update request

Good afternoon 1 [redacted]

Thank you for your email and I must apologise for the delay in providing an update.

The reason for this delay is that I requested further information from the Scottish Government in respect of the concerns raised in your case.

I can confirm a response was received on 26 February, and as soon as I have considered this I will be back in touch.

Apologies again, hope you have a lovely weekend.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 30 April 2025 12:07
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: IESS.24.046 - update request

Hi 1 [redacted]

Could you please update me on this representation?

Thanks,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted] environmentalstandards.scot
1 [redacted] environmentalstandards.scot>
Sent: 30 May 2025 15:03
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: 20250530 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Good afternoon 1 [redacted]

Apologies for the delay in providing this update.

I can confirm that ESS has reached the position where we would like to invite the Scottish Government to work with ESS to informally resolve some issues we have identified during our consideration of your representation.

I can advise that a letter has been issued to the Scottish Government today to request this, and I am hoping to receive a response within 15 working days.

As soon as I have any further information to update you with, I will be in touch.

Should you have any further questions, please do not hesitate to contact me.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 02 June 2025 09:29
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20250530 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Hi 1 [redacted]

Thanks for the update.

What are the issues ESS has identified which will be the subject of the informal resolution process?

Kind regards,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted] environmentalstandards.scot
1 [redacted] environmentalstandards.scot>
Sent: 03 June 2025 18:36
To: 1 [redacted] 1 [redacted] ercs.scot>
Subject: 20250603 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Good afternoon 1 [redacted]

Thank you for your email.

Once I have received a response from the Scottish Government I will be in a position to provide further detail on the issues identified.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 04 June 2025 08:54
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20250603 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Hi 1 [redacted]

Your 30 May e-mail indicates that ESS identified there are issues arising from our representation to be resolved with the Scottish Government.

It is unclear to me why the Scottish Government's response affects the ability of ESS to inform us which issues it has identified.

Could you please explain why you cannot tell us which issues will be the subject of the informal resolution process until you receive a response from the Scottish Government?

Kind regards,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted] environmentalstandards.scot
Sent: 04 June 2025 13:24
To: 1 [redacted]
Subject: 20250604 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Good afternoon 1 [redacted]

Currently, this is still a live case which is under our consideration. At this stage, the Scottish Government have been invited to engage in informal resolution with ESS with a view to resolving the identified issues. However, ESS have not yet received a response from the SG to this invitation.

The issues which we have identified relate to the development of a residual waste management cap and the effectiveness of the regulatory mechanisms in place to consider and control incineration capacity.

As is standard practice, our findings of this case will be communicated upon successful resolution, and a comprehensive report will be prepared and published upon closure. I will be sure to share further information when available and keep you updated on the status of the case.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 05 June 2025 15:24
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20250604 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Thank you 1 [redacted]

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 07 August 2025 13:56
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20250604 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Hi 1 [redacted]

Could you please update me on the progress of this representation since your last email below?

Kind regards,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted]@environmentalstandards.scot
1 [redacted]@environmentalstandards.scot>
Sent: 07 August 2025 14:19
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: RE: 20250604 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Good afternoon 1 [redacted]

Apologies for the delay in providing you with an update.

I can confirm that the Scottish Government are willing to engage with ESS on this case. A meeting has been arranged to discuss the issues identified relating to development of a residual waste management cap and the effectiveness of existing regulatory mechanisms for assessing and controlling incineration capacity.

Once I am in a position to offer a more substantive update, I will get back to you.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 13 August 2025 16:36
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20250604 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Hi 1 [redacted]

Thanks for the update.

When will that meeting be held please?

Kind regards,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 14 August 2025 14:29
To: 1 [redacted] 1 [redacted] <[redacted]@ercs.scot>
Subject: RE: 20250604 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Hi 1 [redacted]

The meeting is scheduled for next Wednesday (20th August).

I will provide an update as soon as I can after this date.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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From: 1 [redacted]@environmentalstandards.scot
1 [redacted]@environmentalstandards.scot>
Sent: 28 August 2025 11:17
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: 20250828 Email Outgoing IW to ERCS Subject - Case update - IESS.24.046

Good morning 1 [redacted]

Further to my email below I can confirm that the Scottish Government is preparing a formal response to ESS on the concerns raised during our meeting.

They have intimated that due to resource issues within the waste team currently, that this response will be with ESS by the end of September, at the latest.

I will continue to keep you updated.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 01 September 2025 15:42
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20250828 Email Outgoing IW to ERCS Subject - Case update -
IESS.24.046

Thank you 1 [redacted]

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1
Sent: 06 October 2025 08:14
To: 1 1 <@ercs.scot>
Subject: 20251006 Email Outgoing IW to ERCS Subject - update on case - IESS.24.046

Good afternoon 1

I hope you are well.

Further to my email on 28 August I can confirm that ESS received a formal response from the Scottish Government last week.

We are currently considering the information and will provide a further update once we are in a position to do so.

Kind regards

1

1 (She/Her)
Senior Investigations Officer
1
1 environmentalstandards.scot

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 24 November 2025 12:34
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20251006 Email Outgoing IW to ERCS Subject - update on case - IESS.24.046

Hi 1 [redacted]

Could you please update me on this representation?

I understand that ESS received a response from the Scottish Government around the end of September/beginning of October.

When will ESS make a decision on how to progress with this representation?

Kind regards,

1 [redacted]

In-house solicitor

Mobile: 1 [redacted]

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From: 1 [redacted]@environmentalstandards.scot
1 [redacted]@environmentalstandards.scot>
Sent: 27 November 2025 15:25
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: 20251127 Email Outgoing IW to ERCS Subject - update on case - IESS.24.046

Afternoon 1 [redacted]

Thank you for your email, and apologies for the delay in providing this update.

I can confirm that ESS has now considered the response, and agreed the following actions with the Scottish Government:

- Publishing an updated capacity analysis and continuing to monitor infrastructure developments.
- Developing an indicative residual waste treatment cap as part of Scotland's Residual Waste Plan (scheduled for completion in 2027).
- Integrating the cap into SEPA's permitting regulations so that SEPA considers it when assessing all environmental authorisations.

We consider that these steps achieve informal resolution, as they will help reduce the risk of overcapacity and its associated environmental and health impacts, strengthen alignment with Scotland's climate targets and circular economy objectives, and improve transparency and accountability in decision-making.

Next steps will involve the Scottish Government providing a formal implementation plan with clear milestones and reporting mechanisms. ESS will monitor delivery and publish public updates on progress.

An informal resolution report is currently being prepared and is expected to be published next week. Once it has been finalised, I will share the link with you.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted] <[redacted]@ercs.scot>
Sent: 03 December 2025 11:42
To: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Subject: RE: 20251127 Email Outgoing IW to ERCS Subject - update on case - IESS.24.046

Hi 1 [redacted]

Thanks for the update and for all your work on this case.

I have discussed this FOES and UKWIN.

We are glad to read that ESS has identified the risk of overcapacity and its associated impacts.

However, we are concerned that the three actions outlined in your email will not resolve the overcapacity problem which we raised in our representation. We ask ESS to reconsider its position that an informal resolution has been achieved.

1. Our view on the actions agreed

With respect to the first action, a [landfill capacity assessment](#) was published by Zero Waste Scotland in June this year. It is not clear whether the 'updated capacity analysis' you mentioned will be any different to that.

It is also not clear what is meant by "continuing to monitor infrastructure developments".

The second action appears to repeat what is said at page 65 of the Scottish Government's December 2024 '[Scotland's Circular Economy and Waste Route Map to 2030](#)'. It is difficult to understand how ESS can be said to have agreed this action with the Scottish Government, because the Waste Route Map predates ESS's informal resolution by a year.

Our view is that 2027 is too late to set the indicative cap. Dr Colin Church's 2022 '[Stop, Sort, Burn, Bury?](#)' report found there is likely to be incineration overcapacity from 2027, and potentially from as early as 2025 (page 22).

Regarding the third action, our representation asked ESS to issue an improvement report with recommendations to immediately stop incineration overcapacity from worsening. Waiting for the development of an indicative residual waste treatment cap in 2027 before making any changes to the permitting regime will be too late.

It seems likely that the operators of incinerators will continue to seek new permits and varied permits to increase incineration capacity until this action is implemented.

2. Request for ESS to reconsider its position

Our view is that the three actions do not resolve the central issue raised in our representation, particularly with respect to the need to immediately stop incineration

overcapacity from worsening.

We would be grateful if ESS could reconsider its position that an informal resolution has been achieved.

3. Questions for ESS

If ESS's position remains that an informal resolution has been achieved, it would be helpful if you could please answer these questions to help us understand ESS's position:

1. How will the actions agreed reduce the risk of overcapacity and its associated impacts?
2. How are the actions agreed consistent with Scotland's climate targets and circular economy objectives?
3. In what ways will the actions agreed improve transparency and accountability in decision-making?

Happy to deal with any of this on the phone or online if you would prefer.

Kind regards,

1

Principal solicitor and legal director

Mobile: **1**

ERCS Legal Ltd at the Environmental Rights Centre for Scotland (ERCS)

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From: 1 [redacted]
Sent: 03 December 2025 15:40
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: 20251203 Email Outgoing IW to ERCS Subject - update on case - IESS.24.046

Hi 1 [redacted]

Thank you for your email. I can confirm that ESS will delay publication of our informal resolution report until we have had the opportunity to consider your comments and questions.

I will be in touch shortly.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 03 December 2025 16:08
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: 20251203 Email Outgoing IW to ERCS Subject - update on case - IESS.24.046

Thanks for the swift response 1 [redacted] and we'll wait to hear from you.

1 [redacted]

Principal solicitor and legal director

Mobile: 1 [redacted]

ERCS Legal Ltd at the Environmental Rights Centre for Scotland (ERCS)

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From: 1 [redacted]
Sent: 08 December 2025 16:41
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: 20251208 Email Outgoing IW to ERCS Subject - response from ESS and notification or IR report publication - IESS.24.046

Dear 1 [redacted]

Please find attached ESS' response to the points raised in your email of 3 December.

I can confirm that ESS will publish the informal resolution report on its website tomorrow.

Should you have any questions, please do not hesitate to get in touch.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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Senior Investigations Officer
Environmental Standards Scotland
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1
Environmental Rights Centre for Scotland
By email: 1@ercs.scot

8 December 2025

**Subject: Response to Concerns Regarding Informal Resolution – Incineration
Overcapacity (Case Reference: IESS.24.046)**

Dear 1

Thank you for your email dated 3 December in connection with my recent progress update. I have addressed below the specific points you raised.

Context

Since the publication of Dr Church's independent review, the situation has evolved in several respects, including:

Pipeline facility changes: The predicted overcapacity in 2027 identified by Dr Church's review assumed all facilities in the pipeline would be constructed, including six sites where construction had not begun. SEPA has confirmed to ESS that it does not anticipate all facilities with planning consent to progress to construction. For example, the applicant for the Killoch Energy Park facility announced in January 2024 that they would not proceed.

Landfill policy timing: The ban on biodegradable municipal waste to landfill has been delayed again, reducing immediate pressure to transition to incineration. However, incineration continues to be considered less environmentally polluting than landfill as a residual waste management method.

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0808 1964000

Latest capacity outlook: The Scottish Government has advised ESS that the most recent analysis by SEPA, based on the latest data and industry engagement, indicates that very little (if any) overcapacity is expected by 2027.

Permit activity: Since Dr Church's review, only one new permit has been issued, which relates to a facility that already had planning consent prior to National Planning Framework 4 (NPF4) (Oldhall, in November 2025). In addition, there has been only one variation granted to increase capacity, this relates to Viridor's Dunbar facility permit, in July 2023.

Specific Points on Agreed Actions

1. Purpose of updated capacity analysis and ongoing monitoring

The updated capacity analysis will ensure the latest forecast is published and publicly available, improving transparency around Scotland's residual waste treatment needs. ESS understands the Zero Waste Scotland landfill capacity report assessed engineered landfill capacity in preparation for the biodegradable municipal waste ban; it did not set out incineration capacity needs or requirements.

In parallel, the Scottish Government confirmed to ESS that it has committed to ongoing monitoring of pipeline capacity with SEPA, Zero Waste Scotland and local authorities to manage both undercapacity and overcapacity risks. ESS considers this monitoring important to ensure system changes in capacity and waste flows are considered within wider decision-making across the waste management system.

2. Agreement of indicative cap in 2027

Developing a robust, evidence-based indicative residual waste management cap requires high-quality data and modelling to ensure credible trajectories. The Scottish Government have indicated to ESS that this is particularly dependent on digital waste tracking and the need to consider all residual treatment routes. While we were aware that the cap was already a Scottish Government policy commitment in Scotland's Circular Economy and Waste Route Map to 2030, formal agreement with ESS as the independent scrutiny body provides greater accountability. ESS will monitor implementation and, where necessary, take the steps required to ensure delivery.

Environmental Standards Scotland Enquiries

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0808 1964000

ESS remains receptive to further evidence. Should new information indicate a worsening situation or significantly elevated risk of overcapacity or that agreed measures are not working as intended, ESS can reopen the case.

Questions Raised

1. How will the actions agreed reduce the risk of overcapacity and its associated impacts?

The indicative cap will provide certainty on national capacity needs and the pace of decline, establishing a clear benchmark for assessing individual capacity decisions. ESS identified gaps in the regulatory framework whereby capacity increases could occur without consideration of national needs. Integrating the indicative cap into SEPA's permitting regime will close this gap, making national capacity a material consideration in authorisation determinations. Together, these measures will reduce the risk of overcapacity and associated environmental impacts, including lock-in effects, increases in greenhouse gas emissions, and potential air quality and health concerns.

2. How are the actions agreed consistent with Scotland's climate targets and circular economy objectives?

By reducing the risk of excess capacity and lock-in, the actions promote alignment with the waste hierarchy, by ensuring that more preferable waste reduction, reuse, and recycling methods are not hampered. In addition, limiting excess incineration capacity reduces avoidable emissions, contributing to Scotland's carbon budgets and wider net-zero objectives. Strengthened oversight of residual waste management supports the transition to a zero-waste, circular economy.

3. In what ways will the actions agreed improve transparency and accountability in decision-making?

The updated capacity analysis and the indicative cap will be published and publicly available, improving transparency. Integration of the cap into SEPA's permitting regime will increase accountability, ensuring consistent application of national capacity considerations in individual decisions. ESS will monitor and report publicly on progress, providing independent oversight of delivery against the agreed actions.

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0808 1964000

ESS' position

ESS acknowledges your concern about the timing of the cap. As noted previously, the development of the cap requires robust data, including digital waste tracking, to ensure accuracy and credibility. To date, there has been very limited permit activity in relation to capacity changes since the review in 2022. Further, SEPA's latest analysis indicates that very little, if any, overcapacity is expected by 2027.

Thank you again for your engagement on this matter. Having carefully considered your comments; our position remains that informal resolution with the Scottish Government has been achieved, and our report on this will be published as intended. ESS will continue to monitor developments closely and will not hesitate to reopen the case if evidence indicates that the risk of overcapacity is increasing or agreed measures are not being delivered.

Yours sincerely,

1

1

Senior Investigations Officer

Environmental Standards Scotland Enquiries

enquiries@environmentalstandards.scot

Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD
0808 1964000

From: 1 [redacted] 1 [redacted]@ercs.scot>
Sent: 08 January 2026 09:32
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: Informal resolution report IESS.24.046 (05.0623)

Morning 1 [redacted]

Happy new year – I hope you had a restful festive break.

Thank you to you and your colleagues for all your work on this representation.

We have a few questions about your 8 December letter and ESS's informal resolution report.

With respect to the Scottish Government's commitment to publish an updated capacity analysis:

1. When will that be published?
2. What is the scope of the analysis (i.e. what will the analysis include)?
3. What methodology will be used to prepare the analysis?
4. Will there be any prior engagement (particularly with Friends of the Earth Scotland and the UK Without Incineration Network) or any other form of public consultation to inform the analysis?

In relation to the Scottish Government's commitment to integrate the cap into SEPA's permitting regulations so that SEPA considers it when assessing all environmental authorisations, there is limited information published on exactly what has been agreed here.

Could you please explain what changes will be made to the permitting regime in order to integrate the cap?

Kind regards,

1 [redacted]

Principal solicitor and legal director

Mobile: 1 [redacted]

ERCS Legal Ltd at the Environmental Rights Centre for Scotland (ERCS)
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From: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Sent: 12 January 2026 10:37
To: 1 [redacted] 1 [redacted]@ercs.scot>
Subject: RE: Informal resolution report IESS.24.046 (05.0623)

Morning 1 [redacted]

Happy new year wishes to you too.

Thank you for your email, I will provide a response to your questions as soon as I can.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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Schedule of Information

Case Reference Number: ESS.IR.029

Doc no.	Title	Attachment	Release – wholly or in part	Exemptions/ exceptions applied	Public interest test
1	20240618 Email Incoming ERCS to ESS Subject - Representation form and supplementary information - IESS.24.046	1.1 Representation Form 1.2 Paper Apart 1.3 Letter to Minister 26-9-23 1.4 Letter from Minister 30-10-23 1.5 UK Govt Direction to EA 1.6 UK Govt Letter to EA 1.7 Letter to LS MSP 1.8 Letter from Minister 3-5-24 1.9 UKWIN response 1.10 FOES response	In part In part In part In part Wholly In part In part In part In part In part	Reg 11(2)(a) Reg 11(2)(a) Reg 11(2)(a) Reg 11(2)(a) Reg 11(2)(a) Reg 11(2)(a) Reg 11(2)(a) Reg 11(2)(a) Reg 11(2)(a)	Not subject to public interest test Not subject to public interest test Not subject to public interest test Not subject to public interest test Not subject to public interest test Not subject to public interest test Not subject to public interest test Not subject to public interest test Not subject to public interest test

		1.11 Email to ESS	In part	Reg 11(2)(a)	Not subject to public interest test
2	20240618 Email Outgoing SIO to ERCS Subject - Acknowledgement of representation and documents received - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
3	20240624 Email Incoming ERCS to SIO Subject – Link to further supporting information - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
4	20240624 Email Outgoing SIO to ERCS Subject - Ack supporting information - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
5	20240709 Email outgoing SIO to ERCS Subject - Confirmation of assigned case officer - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
6	20240716 Email Outgoing SIO to ERCS Subject - Case accepted for pre-investigation - IESS.24.046	6.1 Case acceptance letter	In part	Reg 11(2)(a)	Not subject to public interest test
7	20240716 Email Incoming ERCS Subject - Ack case accepted for pre-investigation - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
8	20240830 Email Incoming ERCS to SIO Subject - Update requested - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
9	20240830 Email Outgoing SIO to ERCS Subject - Update on case - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test

10	20240925 Email Outgoing SIO to ERCS Subject - Case update provided - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
11	20241024 Email Incoming ERCS to SIO Subject - notification of ZWS report published - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
12	20241024 Email Outgoing SIO to ERCS Subject - Ack of update to ZWS report published - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
13	20241030 Email Incoming ERCS to SIO Subject - information on new incineration statistics - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
14	20241104 Email Outgoing SIO to ERCS Subject - ack of information received - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
15	20241205 Email Incoming ERCS to SIO Subject - case update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
16	20241205 Email Outgoing SIO to ERCS Subject - response to update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
17	20250108 Email Incoming ERCS to SIO Subject - case update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
18	20250108 Email Outgoing SIO to ERCS Subject - response to update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test

19	20250227 Email Incoming ERCS to SIO Subject - case update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
20	20250228 Email Outgoing SIO to ERCS Subject - response to update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
21	20250430 Email Incoming ERCS to SIO Subject - update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
22	20250430 Email Outgoing SIO to ERCS Subject – response to update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
23	20250602 Email Incoming ERCS to SIO Subject – Further detail requested - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
24	20250603 Email Outgoing SIO to ERCS Subject – response provided - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
25	20250602 Email Incoming ERCS to SIO Subject – Further clarification on update requested - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
26	20250604 Email Outgoing SIO to ERCS Subject – Further clarification provided - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
27	20250605 Email Incoming ERCS to SIO Subject - Ack of detail provided - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test

28	20250807 Email Incoming ERCS to SIO Subject - Case update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
29	20250807 Email Outgoing SIO to ERCS Subject – response to update request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
30	20250813 Email Incoming ERCS to SIO Subject – Confirmation requested on meeting with SG - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
31	20250814 Email Outgoing SIO to ERCS Subject - Confirmation provided - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
32	20250828 Email Outgoing SIO to ERCS Subject - Case update provided - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
33	20250901 Email Incoming ERCS to SIO Subject - Ack of Case update - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
34	20251006 Email Outgoing SIO to ERCS Subject - update on case - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
35	20251124 Email Incoming ERCS to SIO Subject - seeking update on case - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
36	20251127 Email Outgoing SIO to ERCS Subject - Update on IR process and pending report publication - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
37	20251203 Email Incoming ERCS to SIO Subject - response to case update and		In part	Reg 11(2)(a)	Not subject to public interest test

	request to reconsider publication - IESS.24.046				
38	20251203 Email Outgoing SIO to ERCS Subject - update on publication of IR report - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
39	20251203 Email Incoming ERCS to SIO Subject - response to delay of IR report publication - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
40	20251208 Email Outgoing SIO to ERCS Subject - response from ESS and notification or IR report publication - IESS.24.046	40.1 Response Letter to ERCS	In part	Reg 11(2)(a)	Not subject to public interest test
41	20260108 Email Incoming ERCS to SIO Subject - Clarification requested on Informal resolution report actions - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
42	20260112 Email Outgoing SIO to ERCS Subject – ack of questions raised - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test

Schedule of Information – ESS and Scottish Government (SG)

EIR Reference Number: ESS.IR.029

Doc no.	Title	Attachment	Release – wholly or in part	Exemptions/ exceptions applied	Public interest test
1	20240830 – Email from SIO to SG – Assistance request from ESS		In part	Reg 11(2)(a)	Not subject to public interest test
2	20240830 – Email from SG to SIO – Ack and response to Assistance request		In part	Reg 11(2)(a)	Not subject to public interest test
3	20240830 – Email from SIO to SG - Notification of pending section 23 request		In part	Reg 11(2)(a)	Not subject to public interest test
4	20240902 – Email from SIO to SG – Issue of section 23 request	4.1 Section 23 Letter	In part	Reg 11(2)(a)	Not subject to public interest test
5	20240905 – Email from SG to SIO – Ack of section 23 request		In part	Reg 11(2)(a)	Not subject to public interest test
6	20240905 – Email from SIO to SG – proposed dates for meeting		In part	Reg 11(2)(a)	Not subject to public interest test

7	20240905 – Email from SG to SIO – proposed agenda for meeting		In part	Reg 11(2)(a)	Not subject to public interest test
8	20240909 – Document meeting note - call with SG		WITHHELD	Reg 10(4)(e)	In favour of maintaining exemption
9	20240923 – Email from SG to SIO – response to section 23 request	9.1 Response Letter	In part	Reg 11(2)(a)	Not subject to public interest test
10	20240924 – Email from SIO to SG – Ack of section 23 response		In part	Reg 11(2)(a)	Not subject to public interest test
11	20241011 – Email from SG to SIO – update on Landfill Ban Assurance Study		In part	Reg 11(2)(a)	Not subject to public interest test
12	20250114 – Email from SG to SIO – seeking update		In part	Reg 11(2)(a)	Not subject to public interest test
13	20250115 – Email from SIO to SG – update provided		In part	Reg 11(2)(a)	Not subject to public interest test
14	20250115 – Email from SG to SIO – ack of update		In part	Reg 11(2)(a)	Not subject to public interest test
15	20250122 – Email from SIO to SG – seeking dates for meeting		In part	Reg 11(2)(a)	Not subject to public interest test

16	20250122 – Email from SG to SIO – ack of request		In part	Reg 11(2)(a)	Not subject to public interest test
17	20250122 – Email from SIO to SG – ack		In part	Reg 11(2)(a)	Not subject to public interest test
18	20250124 – Email from SG to SIO – setting out meeting dates		In part	Reg 11(2)(a)	Not subject to public interest test
19	20250124 – Email from SIO to SG – ack of meeting arrangements		In part	Reg 11(2)(a)	Not subject to public interest test
20	20250124 – Email from SG to SIO – proposed meeting dates		In part	Reg 11(2)(a)	Not subject to public interest test
21	20240206 – Note of meeting between ESS and SG		WITHHELD	Reg 10(4)(e)	In favour of maintaining exemption
22	20250206 – Email from SIO to SG – follow up e-mail to meeting with further enquiry		In part	Reg 11(2)(a)	Not subject to public interest test
23	20250225 – Email from SIO to SG – chase e-mail		In part	Reg 11(2)(a)	Not subject to public interest test
24	20250225 – Email from SG to SIO – ack of enquiry		In part	Reg 11(2)(a)	Not subject to public interest test

25	20250225 – Email from SIO to SG – ack of reply		In part	Reg 11(2)(a)	Not subject to public interest test
26	20250225 – Email from SG to SIO – response to enquiry		In part	Reg 11(2)(a)	Not subject to public interest test
27	20250226 – Email from SIO to SG – ack of response information		In part	Reg 11(2)(a)	Not subject to public interest test
28	20250530 – Email from SIO to SG – informal resolution invitation notification		In part	Reg 11(2)(a)	Not subject to public interest test
29	20250530 – Email from SIO to SG – invitation to informal resolution	29.1 Informal Resolution Letter	In part	Reg 11(2)(a)	Not subject to public interest test
30	20250610 – Email from SG to SIO – response to informal resolution invitation	30.1 Response letter	In part	Reg 11(2)(a)	Not subject to public interest test
31	20250611 – Email from SIO to SG – ack acceptance of invitation and request meeting		In part	Reg 11(2)(a)	Not subject to public interest test
32	20250626 – Email from SIO to SG – follow up meeting request		In part	Reg 11(2)(a)	Not subject to public interest test
33	20250716 – Email from SIO to SG – chase email for meeting		In part	Reg 11(2)(a)	Not subject to public interest test

34	20250716 – Email from SG to SIO – ack of request and proposed dates offered		In part	Reg 11(2)(a)	Not subject to public interest test
35	20250717 – Email from SIO to SG – ack and date suggested for meeting		In part	Reg 11(2)(a)	Not subject to public interest test
36	20250717 – Email from SG to SIO – ack and confirmation of meeting date		In part	Reg 11(2)(a)	Not subject to public interest test
37	20250807 – Email from SG to SIO – request to move meeting		In part	Reg 11(2)(a)	Not subject to public interest test
38	20250807 – Email from SIO to SG – ack of request		In part	Reg 11(2)(a)	Not subject to public interest test
39	20250820 – Note of meeting between ESS and SG		WITHHELD	Reg 10(4)(e)	In favour of maintaining exemption
40	20250822 – Email from SG to SIO – ack of meeting and confirmation of next steps		In part	Reg 11(2)(a)	Not subject to public interest test
41	20250828 – Email from SIO to SG – ack and request confirmation of response		In part	Reg 11(2)(a)	Not subject to public interest test
42	20250829 – Email from SG to SIO – ack and confirmation of response deadline		In part	Reg 11(2)(a)	Not subject to public interest test

43	20250930 – Email from SG to SIO – formal response to informal resolution letter	43.1 Response to Informal resolution Process	In part	Reg 11(2)(a)	Not subject to public interest test
44	20251003 – Email from SIO to SG – ack of response		In part	Reg 11(2)(a)	Not subject to public interest test
45	20251202 – Email from SIO to SG – response to SG formal response	45.1 Response from ESS	In part	Reg 11(2)(a)	Not subject to public interest test
46	20251202 – Email from SIO to SG – notification of publication of Informal resolution report		In part	Reg 11(2)(a)	Not subject to public interest test
47	20251202 – Email from SG to SIO – ack publication of Informal resolution report		In part	Reg 11(2)(a)	Not subject to public interest test
48	20251203 – Email from SIO to SG – informing of delay in publication of report		In part	Reg 11(2)(a)	Not subject to public interest test
49	20251208 – Email from SIO to SG – confirming publication of report	49.1 Informal Resolution Report	In part	Reg 11(2)(a)	Not subject to public interest test
50	20251209 – Email from SG to SIO – ack of improvement report		In part	Reg 11(2)(a)	Not subject to public interest test

From: 1
Sent: 30 August 2024 11:46
To: 1 1 gov.scot>
Subject: Assistance request from ESS

Good morning 1

Sorry to bother you, however I was hoping you might be able to advise as to who the best SG contact would be for a case relating to incineration overcapacity?

ESS have received a representation raising concerns in this area and I am looking to gather more information in respect of this.

Any assistance you are able to offer would be greatly appreciated.

Kind regards

1

1 (She/Her)
Senior Investigations Officer
1 environmentalstandards.scot
1

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0808 1964000 | www.environmentalstandards.scot
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Document 2

From: 1 [redacted]
Sent: Friday, August 30, 2024 1:00 PM
To: 1 [redacted]
Subject: RE: Assistance request from ESS

Hi 1 [redacted],

No problem at all.

Contacts are:

1 [redacted] - 1 [redacted] @gov.scot – Head of Recycling and Waste Management
1 [redacted] - 1 [redacted] @gov.scot – Team Leader in Waste Management

Thanks

1 [redacted]

From: 1 [REDACTED]
Sent: Friday, August 30, 2024 2:21 PM
To: 1 [REDACTED] 1 [REDACTED] <[REDACTED]@gov.scot>
Subject: 20240830 ESS Investigations - Notification of pending section 23 request - IESS.24.046

Dear 1 [REDACTED]

I hope you are well.

I am emailing in respect of a representation ESS have received over incineration overcapacity and we are looking to gather some information surrounding the concerns raised, a letter has been prepared for the Scottish Government.

I have been advised that you are the best person to contact in relation to this request, and wanted to ask if you, or a member of your team, would like a call before this letter is issued, or alternatively, I can issue and we can discuss once you have had the opportunity to consider the information requested.

Kind regards

1 [REDACTED]

Dr 1 [REDACTED] (She/Her)
Senior Investigations Officer
1 [REDACTED] <[REDACTED]@environmentalstandards.scot>
1 [REDACTED]

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Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: Monday, September 2, 2024 12:34 PM
To: 1 [redacted] 1 [redacted] gov.scot>
Subject: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Dear 1 [redacted]

Further to my previous email, please see attached our Section 23 request for information. 1 [redacted] referred me to you, however if there is a better placed person to action this request, please let me know and I can reissue to the relevant contact.

On considering the information sought, should you, or a colleague have any questions or queries regarding the questions raised, please do not hesitate to contact me. I would be happy to arrange a Teams call to discuss.

Please note, I have also attached a copy of the Scottish Government's internal guidance note on the role and remit of ESS, and the roles and responsibilities of the Scottish Government in this connection.

Kind regards

1 [redacted]

Dr 1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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1
Senior Investigations Officer
Environmental Standards Scotland
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1 environmentalstandards.scot

By e-mail:

1@gov.scot
Head of Recycling & Waste Management Unit
DIRECTOR-GENERAL NET ZERO

02 September 2024

**Subject: Provision of Information to Environmental Standards Scotland (ESS):
Incineration Overcapacity – Case Reference IESS.24.046**

Dear 1

I am writing to inform you that ESS has received a representation expressing concerns over incineration overcapacity in Scotland. The representation refers specifically to recommendation 5 of the 'Stop, Sort, Burn, Bury - incineration in the waste hierarchy: independent review' undertaken in 2022, and the development of an indicative cap in Scotland that declines over time.

One of ESS' roles is to consider Scottish public authorities' compliance with environmental law. I believe this matter is within ESS' remit, and I would appreciate your assistance to help me determine whether this is an issue that ESS should consider further. I am requesting your reasonable assistance under the public bodies co-operation duties as set out in section 23(1) of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021.

Following my preliminary review of the representation, and to provide background to my request, I note the summary points below:

- The representation outlines that to operate incinerators PPC permits are required, and these are issued by SEPA under The Pollution Prevention and Control (Scotland) Regulations 2012 ('the 2012 Regulations'). Under Regulation 60 of the 2012

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Regulations the Scottish Ministers have the power to issue directions to SEPA, for example to require SEPA to refuse PPC permits for new incinerators or variations to existing permits which would increase incineration capacity.

- Additional information provided within the representation infers incineration capacity is increasing as a result of two factors. Firstly, the expansion of capacity at existing incinerator sites for example the Dunbar incinerator in 2023¹. Secondly, from incinerators that already have planning permission (granted prior to June 2022) but are either not yet operating or been built.
- The referrer offers the view that following a direction issued recently (April 2024) to the Environment Agency by the UK Government, pausing the determination of waste incineration environmental permits, a similar action should occur in Scotland as the legal powers under which that direction was made are comparable. The referrer has contacted the Scottish Ministers on two occasions to request such an action be taken, along with the development of a cap to prevent incineration capacity from increasing without any limit.
- In response, Scottish Ministers confirmed that following the Review, no further planning permission for new incineration facilities beyond what was already in place should be granted. National Planning Framework 4, clearly illustrates the Scottish Government will not support development proposals for energy-from-waste facilities except under very limited or exceptional circumstances.
- Scottish Ministers also advised that with support from Zero Waste Scotland, the development of incineration facilities and capacity in Scotland will be closely monitored, and the measures currently in place to reduce the risk of overcapacity will continue to be reviewed. In addition, developers of those incineration facilities that already have planning permission will be encouraged to ensure they understand the Review's findings on capacity.
- Finally, the Scottish Ministers advised that several capacity studies have been commissioned (including the Review) and an additional capacity analysis has been commissioned through Zero Waste Scotland, as part of its work to consider delivery of the ban on landfilling biodegradable municipal wastes. The outputs and

¹ [PPC/A/1032878 - Viridor Dunbar Waste Services Limited: Dunbar Energy Recovery Facility, Oxwellmains, Dunbar, EH42 1SW - PPC Variation application - Scottish Environment Protection Agency - Citizen Space \(sepa.org.uk\)](#)

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recommendations of this work are currently under consideration by the Scottish Government.

- The outcome sought from the representation is for the Scottish Government to immediately stop incineration overcapacity from worsening and set a cap on incineration capacity which is progressively reduced over time.

So that I can determine what action, if any, should be taken by ESS, I would be grateful if the Scottish Government could provide me with the following information:

- The Scottish Government accepted recommendation 5 of the review, however to date no cap has been implemented. Please confirm what progress has made since the Review was published in 2022, along with timescales for satisfying this recommendation in full.
- Since the Review, Scottish Ministers have acted to stop new incinerators entering the planning system. However, it is unclear what actions or decisions have been taken to reduce the risk of overcapacity in respect of planned or existing plants. Please provide further details on relevant decision making processes or protocols in this connection.
- Further to the above, please clarify what changes, if any, have been made to existing plans relating to incineration facilities that were already in development prior to the Review.
- Please also provide details on the measures the Scottish Government currently has in place to reduce the risk of overcapacity, and clarification on the specific monitoring and reviewing processes undertaken in this context.
- In respect of the modelling work carried out in April 2022 by Ricardo for the Review, please confirm whether any work has commenced at any new incinerator site since this time. If so, please can you provide details.
- Additionally, please provide further detail on the rationale, timescales, outcomes and recommendations in respect of the recent additional capacity analysis undertaken by Zero Waste Scotland.
- Following the issuing of a direction by the UK Government for similar concerns and purpose as those sought in this case, please confirm if any Regulation 60 powers have been exercised on SEPA to refuse any PPC permit relating to either

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a new or existing incinerator plant which would further increase incineration capacity. If so, please can you provide details.

- Further to this point, please can you clarify what 'limited or exceptional circumstances' refers to, before exercising Regulation 60 powers.

Responses to the above queries should be submitted to representations@environmentalstandards.scot or by post. Please reference our case number (IESS.24.046) in your return correspondence.

I would be grateful if you could provide the requested assistance within 15 business days of the date of this letter. If you have any questions or queries, please do not hesitate to contact me at the above e-mail address.

Yours sincerely

1

1

Senior Investigations Officer

Environmental Standards Scotland Enquiries

enquiries@environmentalstandards.scot

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0808 1964000

Redaction Key:
1 = Redacted - R.11(2)
2 = Redacted - out of scope

From: 1 [redacted] gov.scot>
Sent: Thursday, September 5, 2024 10:17 AM
To: 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Good morning 1 [redacted]

We remain on track to provide you with a response to your letter by Monday 23 September, with 1 [redacted] and 1 [redacted] (copied here) working on this reply.

Should you find it helpful, we would be happy to chat with you in advance of our reply (to chat through any particular matters, concerns or wider context issues) and also to meet with you after we issue our reply.

Using MS Teams probably means we can do this more easily. So if you would like to meet in advance, we can offer Tuesday 17 Sept 1:30pm – 2:30pm and afterwards, we can offer Thursday 26 September 10am – 11am.

If a meeting is not required, or if those times do not suit, please let me know.

Best regards

1 [redacted]
SG EnFor – Head of Recycling and Waste Management
Area 3H South – VQ

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 05 September 2024 11:40
To: 1 [redacted] 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Good morning 1 [redacted]

Thank you for your email and the offer of a teams meeting with ESS. I am available on Tuesday 17th between the times proposed, and would welcome the opportunity to chat with you, and your colleagues.

I look forward to meeting you all then.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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Document 7

From: 1 [redacted] gov.scot>
Sent: Thursday, September 5, 2024 11:53 AM
To: 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Thanks 1 [redacted]

I've popped an hour in the diaries. Proposed outline agenda is below but we don't need to stick to this order or topics, we can be flexible on the day. No slides needed I'd suggest, it is more of a general discussion. Hopefully that works for you too but we can amend as required

1. Introductions – Roles (all)
2. Context to representation/letter 1 [redacted]
3. General points and policy context in relation to these matters (AR/NS)
4. Discussion and next steps for the response (all)
5. Overview of Investigation Process 1 [redacted]
6. Meeting end 11am

Regards

1 [redacted]
1 [redacted]

Document 8 - Document withheld regulation 10(4)(e)

From: 1 [redacted] gov.scot>
Sent: Monday, September 23, 2024 4:01 PM
To: 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] gov.scot>; 1 [redacted] gov.scot>; 1 [redacted] gov.scot>; 1 [redacted] gov.scot>
Subject: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Dear 1 [redacted]

Please find attached for your attention a reply to your letter of 2 September (also attached). Please note that this is only being issued via email. I would be happy to meet you to discuss any points you may wish to go over.

Regards

1 [redacted]
SG EnFor – Head of Recycling and Waste Management
Area 3H South – VQ
1 [redacted]

Environment and Forestry Directorate
Circular Economy Division



[REDACTED]
Head of Recycling & Waste Management
[REDACTED]@gov.scot

By e-mail:
[REDACTED][environmentalstandards.scot](mailto:[REDACTED]@environmentalstandards.scot)
Senior Investigations Officer
Environmental Standards Scotland

Your ref: IESS.24.046
23 September 2024

Provision of Information to Environmental Standards Scotland (ESS): Incineration Overcapacity – Case Reference IESS.24.046

Dear [REDACTED]

Thank you for your letter of 2 September on incineration overcapacity and the actions we are taking to mitigate against any associated risks. I have responded to your questions below. I have also included additional background details on capacity that are necessary to understand the context and risks associated with residual waste management capacity. I would be happy to meet with you should you have any further queries.

Context and Scottish Government Position

The Scottish Government is committed to accelerating the move towards a circular economy. As we do this, we will produce less residual waste i.e. unavoidable and unrecyclable waste. Our aim is to ensure that we manage the residual waste that we do produce in a way that minimises its environmental impacts.

Our draft Circular Economy and Waste Route Map proposes a set of measures to drive progress towards a circular economy and to minimise the impacts of disposing of any waste that is produced. As we make this transition and work towards minimising disposal and incineration, it is important however that we recognise that incineration continues to have a role to play in managing our unavoidable and unrecyclable waste as we move to a circular economy. This includes for certain waste streams such as those containing persistent organic pollutants.

Measures Taken and Wider Policy Interactions

Our ban on landfilling biodegradable municipal waste (the landfill ban), which comes into force on 31 December 2025, continues to contribute to the diversion of biodegradable waste away from landfill, reducing methane emissions. While we have seen an increase in recycling rates as we approach the ban, we have also seen an increase in incineration capacity (i.e. Energy from Waste (EfW)) to manage some of this residual waste.

We know it is important that we manage any unavoidable and unrecyclable waste in a way that minimises environmental impacts, and that we have an appropriate capacity to manage more of our own residual waste.

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That is why we commissioned the Independent Review of the Role of Incineration in Scotland's Waste Hierarchy (the "Review") that published two reports (May 2022 and February 2023), which included consideration of capacity requirements.

The Review concluded that incineration's current place within the waste hierarchy (where overall it is preferable to other residual waste treatment such as landfilling, but less desirable than reducing and recycling waste) is correct. The Review also undertook an analysis of municipal waste incineration capacity in Scotland and found that there is likely to be a short-term capacity gap in 2025, when the landfill ban comes into force. However, it also highlighted the risk of overcapacity of incineration in the longer-term if all facilities with planning permission at the time of the Review are built.

In light of these findings the Review recommended that no further planning permission be awarded to EfW facilities, beyond those for which planning permission had already been granted, except under certain circumstances (Recommendation 4).

In response to this recommendation, the National Planning Framework 4 (NPF4), which was formally adopted on 13 February 2023, makes it clear that development proposals for EfW facilities will not be supported except under limited circumstances (NPF4 policy 12(g)). In addition, a notification direction remains in place which requires planning authorities to notify Scottish Ministers when they receive a new application for an EfW development, and also if they intend to approve the application.

In the remainder of this letter, I will reply to each of the queries you have raised.

Please also provide...clarification on the specific monitoring and reviewing processes undertaken in this context.

Officials continue to work with the Scottish Environment Protection Agency (SEPA) and Zero Waste Scotland to monitor incineration infrastructure developments closely. This includes gathering information on the status of facilities in development through permitting processes as well as sector intelligence and direct discussion with developers. We have taken this approach as the Review noted that some facilities in development were needed to deliver the landfill ban, but it did not expect all facilities with planning permission to be developed. It recognised a number of related issues such as general market forces, investment decisions and availability of feedstock (i.e. waste sent to EfW for incineration).

We, therefore, also monitor the progress of local authorities in making preparations for the ban, as well as the availability of feedstock to monitor capacity-risks. We understand that currently, 28 of the 32 local authorities have contracts in place that comply with the ban, which covers around 95% of all local authority waste. Moreover, overall waste tonnages in 2021 and 2022 were 20% and 15% less than the 2011 baseline, respectively¹. This decline is driven by reductions in household, commercial and industrial waste which show general downward trends, whereas construction and demolition waste shows more year-to-year variability.

¹ SEPA's Waste from All Sources 2022 statistics - [Waste data for Scotland | Scottish Environment Protection Agency \(SEPA\)](#)

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Given the status of LA preparations and the decline in waste production, it seems reasonable to assume that some pipeline facilities will not go forward, although it is worth noting that some LA contracts are with facilities in development.

Please clarify what changes, if any, have been made to existing plans relating to incineration facilities that were already in development prior to the Review.

In respect of the modelling work carried out in April 2022 by Ricardo for the Review, please confirm whether any work has commenced at any new incinerator site since this time. If so, please can you provide details.

Additionally, please provide further detail on the rationale, timescales, outcomes and recommendations in respect of the recent additional capacity analysis undertaken by Zero Waste Scotland.

Aware that some proposed energy from waste developments amended their plans (see Table 1 in Annex A) since the publication of the Review, earlier this year we asked Zero Waste Scotland to commission a review of the risks associated with delivering the landfill ban, including EfW capacity-related risks.

The resulting report (the “Report”) drew similar conclusions to the Review. Zero Waste Scotland intends to publish the Report by mid-October 2024 and we will forward a copy to you on its release. With permission from Zero Waste Scotland, I have set out the conclusions and recommendations in **Annex B**.

Briefly, the Report noted a likely short-term capacity gap when the landfill ban comes into force on 31 December 2025, which will reduce as certain facilities in development come online during 2026 and 2027. However, the Report noted that the capacity gap would be extended if one or more of the larger ‘pipeline’ EfW projects fails to be fully implemented or is delayed. Scotland will, therefore, need some of the pipeline facilities identified by the Review to become operational to reduce a capacity gap. **Annex A** sets out an updated list of pipeline facilities and their status and reflects the uncertainty in the development of some facilities that would be required to close the temporary capacity gap. Given this uncertainty, the Report recommends that *“the Scottish Government closely monitors the progress of the development of the EfW projects that are scheduled for delivery in 2024-2027 for material changes in timing and/or scale, so that appropriate mitigation actions can be considered”*.

The Report also highlighted the risk of a EfW overcapacity (c. 10-18% of total operating capacity) occurring, if all new EfW capacity is fully built and recycling performance improves from the current levels. That said, the Report importantly notes that *‘there will never be a perfect equilibrium’* in the system, i.e. it will not be possible to perfectly balance waste generation and available capacity, and development progress will also be influenced by market forces and investment decisions for the developers.

There is, therefore, a trade-off in the risks of over and undercapacity. The Report noted that during the short-term capacity gap it seems reasonable to assume that waste could be managed through exports to England (for landfill or incineration) and Northern Europe (for incineration). However, this conclusion assumes the capacity gap closes relatively quickly.

Since the Review, Scottish Ministers have acted to stop new incinerators entering the planning system. However, it is unclear what actions or decisions have been taken to reduce the risk of overcapacity in respect of planned or existing plants. Please

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2 = Redacted - out of scope

provide further details on relevant decision-making processes or protocols in this connection.

The information above sets out some of the capacity-related processes and evidence on which decisions around capacity are taken. These decisions in particular try to balance the risks of under capacity, including ensuring Scotland has enough capacity to manage its waste following the implementation of the forthcoming landfill ban, as well as any risks associated with overcapacity.

There are also other factors to consider when making decisions on the future residual waste treatment capacity needs. It is important that decisions recognise that waste treatment systems are complex which creates inherent uncertainty in consideration of both national and regional capacity needs. For example, stakeholders have repeatedly raised the need for additional 'buffer' capacity when EfW facilities are offline for maintenance or unexpected issues.

Moreover, there is uncertainty in the tonnage of waste that may need to be incinerated in the future. While we are likely to produce less waste as we transition to a circular economy, there may be short or long term issues that require additional capacity, for example, managing specific waste streams during a pandemic, or ensuring the destruction of materials containing persistent organic pollutants (POPs) above a certain threshold to deliver our Stockholm Convention commitments.

The Scottish Government accepted recommendation 5 of the Review, however, to date no cap has been implemented. Please confirm what progress has made since the Review was published in 2022, along with timescales for satisfying this recommendation in full.

As you note, the Review also recommended that the Scottish Government should develop an indicative residual waste treatment capacity cap as part of an overall strategic approach to deploying waste management capacity and to support future infrastructure planning decisions.

We accepted this recommendation² and noted that it is important that any indicative cap is as robust as possible and that developing such a cap is a significant piece of work. For that reason, we are undertaking work to improve the quality of data on waste to support the development of an indicative cap. This includes working with other governments of the UK to implement mandatory Digital Waste Tracking from April 2025, which will provide a step-change in the quality and timeliness of Scottish waste data. We are also engaging with partners, including Zero Waste Scotland and SEPA, to draw together key waste composition, carbon and environmental impact data insights. Together, these initiatives will provide invaluable data to support the accurate forecasting of Scotland's waste infrastructure needs and the development of an indicative cap.

We are also finalising modelling of Scotland's projected waste arisings, as part of our joint work with all UK nations on considering the expansion of the UK Emissions Trading Scheme to include incineration. This modelling will provide us with an indication of residual waste infrastructure needs until an indicative cap is fully developed.

² [Independent review of the role of incineration in the waste hierarchy: Scottish Government response - gov.scot \(www.gov.scot\)](https://www.gov.scot/resources/documents/2022/06/Independent-review-of-the-role-of-incineration-in-the-waste-hierarchy-Scottish-Government-response-2022.pdf)

Please also provide details on the measures the Scottish Government currently has in place to reduce the risk of overcapacity...

As above, I have detailed NPF4 Policy 12 (g), the Notification Direction that remains in place, the monitoring infrastructure developments (including availability of feedstock) and the development of an indicative cap to inform planning and investment decisions. In addition to these measures, we have encouraged appropriate contracts between local authorities and EfW facilities.

The risk of a lock-in effect due to over capacity is often highlighted by stakeholders. This was also highlighted by the Review (see Recommendation 6³) and may occur whereby contractual clauses require local authorities to supply a minimum tonnage of waste to facility operators, with the risk of reducing the incentive for local authorities to capture more materials for recycling. Since 2020 and through Zero Waste Scotland, we have supported local authorities without contracts in place to manage their waste ahead of the landfill ban, to make arrangements. This has included encouraging local authorities to avoid minimum tonnage clauses in their contracts.

Stakeholders have also highlighted that the issuing of variations to permitted capacity could lead to overcapacity. We are aware of one variation to a permit that was issued by SEPA which resulted in increased capacity at an incineration facility. This variation did not, however, result in additional infrastructure investment. We understand the variation was due to a decrease in the calorific value of the waste, likely due to a reduction in the plastic content of the waste. As EfW facilities are designed to accept feedstock within a specific calorific value range, lowering the calorific value of waste has the effect of increasing the possible capacity of the plant, without the need for additional infrastructure. We are also monitoring this closely. While variations in permits of this kind could lead to a potential overcapacity, it may also reduce the need to develop new facilities and support endeavours to achieve an appropriate capacity in Scotland.

Following the issuing of a direction by the UK Government for similar concerns and purpose as those sought in this case, please confirm if any Regulation 60 powers have been exercised on SEPA to refuse any PPC permit relating to either a new or existing incinerator plant which would further increase incineration capacity. If so, please can you provide details.

Further to this point, please can you clarify what 'limited or exceptional circumstances' refers to, before exercising Regulation 60 powers.

Scottish Ministers have not used regulation 60 powers to direct SEPA to refuse a permit application for a new or existing EfW facility.

As you have noted, the UK Government issued a direction to the Environment Agency to pause the issuance of permits for EfW facilities to allow Defra to conduct a capacity analysis. The temporary pause on permit issuance ended on 24 May 2024 and with no subsequent action taken by UK Government, the Environment Agency has continued to issue permits.

³ Independent review of the role of incineration in the waste hierarchy: Scottish Government response - gov.scot (www.gov.scot)

As Scotland had already conducted the capacity analyses detailed above, and waste policy is largely devolved, there was no reason to use Regulation 60 powers at that time.

The Pollution Prevention and Control (Scotland) Regulations 2012 (“the PPC regulations”) provide a general direction-making power in regulation 60 to Scottish Ministers to direct SEPA with respect to the carrying out of its functions under the PPC regulations, as well as a separate “call in” power in paragraph 19 of schedule 4 of the PPC regulations which allows Ministers to direct SEPA that any individual application or class of applications for a permit be referred to them for determination.

These powers could allow Scottish Ministers to direct that SEPA to refuse a particular permit application, or all permit applications for new EfW facilities, or direct that all new applications for incineration permits be referred to them for determination. Whilst Scottish Ministers do have the ability to intervene in the PPC process, by way of a direction, they would only consider doing so in limited or exceptional circumstances given SEPA’s role as Scotland’s independent environmental regulator and its expertise in that regard. The determination of PPC applications falls squarely within SEPA’s everyday statutory functions as set out in the Environment Act 1995 and the PPC regulations, and Ministers would not interfere in this process unless it was appropriate to do so.

The circumstances for the use of the direction-making powers in the PPC regulations are not set out in the regulations. In deciding whether or not to use these powers in relation to incineration permits, Ministers would consider a range of factors, including but not limited to carbon reduction goals and capacity needs, and would also take into account SEPA’s role and expertise as Scotland’s independent environmental regulator.

Given the findings of the capacity analyses set out above, our assessment remains that the planning policy levers already in place remain appropriate at this time. The capacity analyses suggest that limiting capacity, for example, by directing SEPA to pause the issuing of PPC permits which would prevent several facilities coming forward, is likely to increase the risks to the delivery of the landfill ban, increased waste exports and could have legal and financial repercussions. That said, we will continue to keep our position under review.

Summary

I hope the information set out above reassures you that we share stakeholder concerns about the risks associated with EfW capacity and continue to take steps to monitor and where necessary, mitigate the associated risks.

Our current position is that the planning policy levers in place and monitoring of infrastructure developments remain the appropriate measures to mitigate and monitor capacity risks. This decision takes into account the details set out above, including the conclusions of the capacity analyses. Factors of particular relevance to this decision-making process are that: some of the facilities with planning permission that are not developed are required to support the delivery of the landfill ban and to ensure that Scotland can manage our own waste, the uncertainties around the development of these plants, and that the capacity requirements in the future remain uncertain.

Through the above-mentioned monitoring and engagement, we will continue to encourage those involved in the development of these facilities to consider and take account of how the facility and its location would fit within and support the wider context of taking a strategic approach to managing residual waste arisings.

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www.gov.scot



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1 = Redacted - R.11(2)
2 = Redacted - out of scope

We are happy to meet with you in the future to discuss the progression of matters raised in your letter and our response.

Your sincerely



1
Head of Recycling and Waste Management

Victoria Quay, Edinburgh EH6 6QQ
www.gov.scot



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Annex A

Table 1 – EfW facility status

Facility Name	Status (the Review - 2022)	Assumed Operational Date (Review – 2022)	Zero Waste Scotland (ZWS) Report Assessment (Current status)	PPC Permit
Earls Gate	In Construction	2023	Commissioning - due Feb 2024 (now operational)	Yes
Aberdeen Recycling & Energy Recovery (NESS)	In Construction	2022	Operational	Yes
Westfield	In Construction	2025	Advanced construction - due March 2025	
Glenfarg (Binn Group)	Planning Granted	2025	Early Construction - due March 2026	Live application
Oldhall (Doveryard)	Fully Consented	2026	Advanced Construction - due Oct 2025	Live application
South Clyde (Fortum)	Fully Consented	2026	Early Construction - due May 2026	Yes
Drumgray (FCC)	Fully Consented	2026	Early Construction – due July 2027	Yes
Inverurie (Agile Energy)	Planning Granted	2027	Construction not started	No permit and no announced operational date
Levenseat 2	Planning Granted	2027	Construction not started	No permit and no announced operational date

Annex B

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Key findings and conclusions on EfW capacity of the ZWS Report

Key Findings

1 **National Capacity Gap:-** The analysis indicates that an infrastructure capacity gap deficit will likely remain at the outset of the first year of the ban (2026), under worst case waste (BAU) projections and assuming that all Scottish BMW arisings are managed in Scotland. This deficit is forecast to be c.600kta⁴ at the start of 2026 but reduce to <200ktpa during 2026 and subsequently change to a small capacity surplus from 2027 onwards, provided that all of the new EfW infrastructure currently under construction is fully delivered within the planned 2024-2027 timescale.

Beyond 2028 there is the likelihood of significant EfW overcapacity (c.10-18% of total operating capacity) occurring, if all new EfW capacity is fully built and recycling performance improves from the current BAU level. The specific date of capacity gap closure in Scotland is also linked to progress with improving recycling rates and the level of RDF exports. However, even under worst case (BAU) waste arisings projections, Scotland's EfW capacity gap is expected to close, unless one or more of the larger 'pipeline' EfW projects fails to be fully implemented.

2 **External Markets:-** Scotland exports a total of c.70-100ktpa of waste to EfW facilities in neighbouring markets in England and mainland Europe (Sweden and Denmark). These appear to be stable and durable end-route markets in the near term at least (although subject to changing commercial and logistical arrangements) for a limited quantity of Scottish RDF. It is considered that these external markets have capacity for continuation and expansion in the short-medium term and also to mitigate the forecast short-term infrastructure capacity gap. However a substantial temporary increase in current RDF exports will be required by late 2025 in order to meet the forecast capacity deficit for the start of 2026, while taking account of the time required to secure the necessary contracts (and permits for exports to Europe) well in advance of Q4 2025.

3 **Landfill Capacity:-** forecast permitted landfill capacity for active non-hazardous waste in Scotland in the pre-ban years 2024 and 2025, far exceeds the forecast EfW capacity deficit in these years, i.e. c.1 million tonnes (2024) and c.600kt (2025). However, permitted LF capacity is not directly representative of engineered cell capacity, and this latter figure should be separately established, since many landfills in Scotland are in the process of closing down.

4 **Risks and Mitigations:-** the key risks to successful implementation of the landfill ban and associated mitigations are:

- **EfW Infrastructure Capacity Deficit 2026 Risk:-** It is probable that a substantial capacity gap of c.600kta will exist at the start of 2026. Although this is expected to be short-lived and reduce to <200kta during 2026, as new EfW capacity comes online, the current level of RDF exports from Scotland will need to substantially increase temporarily to meet this demand and ensure compliance with the ban. **Recommended mitigation:** *SG engage with relevant industry bodies and commercial operators during 2024*

⁴ c.24% of total planned operating capacity



(including SESA and RMAS), to highlight this issue and support the facilitation of timely securing of RDF export contracts in advance of late 2025.

- **EfW Infrastructure Capacity Gap Closure Risk:** Although the analysis forecasts closure of the current EfW infrastructure capacity gap by around 2027, under worst-case or BAU conditions, there is a significant risk that delivery of merchant EfW infrastructure capacity by 2028 is either delayed or significantly lower capacity than currently anticipated, due to unforeseen conditions. This would result in a longer period of national capacity deficit during the early years of the ban, and increase reliance on a combination of higher RDF exports, alternative management options for the non-municipal fractions and increased recycling. However, even under worst case (BAU) waste arisings projections, Scotland's EfW capacity gap is expected to close, unless one or more of the larger 'pipeline' EfW projects fails to be fully implemented. In addition, there is the likelihood of significant EfW overcapacity (c.10-18% of total operating capacity) occurring beyond 2028, if all new EfW capacity is fully built and recycling performance improves from the current BAU level.

Recommended mitigation:- SG closely monitors the progress of the development of the EfW projects that are scheduled for delivery in 2024-2027 for material changes in timing and/or scale, so that appropriate mitigation actions can be considered.

- **EfW Plant Outage Management Risk:-** Poor co-ordination of plant outages across the Scotland's network of EfW facilities may drive leakage of Scottish BMW to landfills in England, albeit on a temporary basis. Although EfW operators can be expected to fully comply with the terms of their existing contracts with respect to landfill ban-compliant contingency obligations, significant scope for BMW leakage exists from early contracts, 3rd party contracts, and during extended unplanned or emergency closures.

Recommended mitigation:- SG engages with the Scottish EfW industry and plant operators to support the development of suitable industry-wide measures and agreements (including reciprocal arrangements between EfW plants) that could be put in place over time to mitigate this risk.

ZWS Report Conclusions

- Scotland's current infrastructure capacity gap is forecast to close by around 2027, as new EfW plants currently under construction, and scheduled for completion become operational during the period to 2027, with an EfW capacity surplus possible from 2028 onwards.
- However an EfW infrastructure capacity deficit is forecast for the start of the first year of the ban (2026); filling this deficit will require a substantial increase in the current tonnage of RDF exported from Scotland via well-established RDF export routes to England, Sweden and Denmark, with increased export contracts for BMW waste from commercial sources required by late 2025. Scottish Government engagement with industry and commercial operators is recommended in 2024 in order to facilitate securing of the required new RDF export contracts to commence in 2025.
- Although Scotland's EfW capacity gap is expected to close, unless one or more of the larger 'pipeline' EfW projects fails to be fully implemented, unexpected delay or reduction in the delivery of planned new EfW capacity would extend the period of the national capacity deficit and require increased reliance on a combination of higher RDF exports, alternative management options for the non-municipal fractions and (over time) higher recycling rates.



Therefore, close monitoring of the new EfW infrastructure delivery progress by Scottish Government is recommended over the next 4 years as essential to tracking and responding to the development of Scotland's EfW capacity. Other interventions by Scottish Government are also recommended in the short term (in partnership with industry) with respect to the coordination of EfW plant outage management, confirmation of adequate engineered landfill capacity in 2025, and consideration of options for management of orphaned wastes. In the longer term SG should monitor the impacts of ETS implementation on increases in EfW gate fee (post 2028) and consider appropriate rates of Scottish Landfill Tax, once EfW gates fees increase significantly in response to ETS implementation.

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www.gov.scot



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1 = Redacted - R.11(2)
2 = Redacted - out of scope

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 24 September 2024 11:53
To: 1 [redacted] 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted] gov.scot>; 1 [redacted] gov.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Dear 1 [redacted]

Thank you for your email and attached response, this is greatly appreciated.

Should I need anything further, I will get back to you.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

ENVIRONMENTAL
Standards Scotland
Irean Àrainneachdail na h-Alba

General Enquiries | 1 [redacted] environmentalstandards.scot
0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted]
Sent: 11 October 2024 10:55
To: 1 [redacted]; 1 [redacted] <[redacted]@environmentalstandards.scot>
Cc: 1 [redacted]; 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Good morning 1 [redacted]

Please note that Zero Waste Scotland has now published its report on the "Landfill Ban Assurance Study" that was referenced in my response on 23 September.

The report can be found at the following link - [Landfill Ban Assurance Study | Zero Waste Scotland](#)

Regards

1 [redacted]
SG EnFor – Head of Recycling and Waste Management
Area 3H South – VQ
1 [redacted]

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 14 January 2025 14:03
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Hi 1 [redacted]

A very happy new year to you and I hope you managed to get a decent break over the holidays.

We were chatting earlier and wondered if there is anything to note from the ESS Review for us to be aware of, or any announcement imminent (or not needed)?

Many thanks

1 [redacted]

From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 15 January 2025 13:53
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

Hi 1 [redacted]

Thank you for your email and happy new year wishes to you too.

I can advise that this case is now with the head of investigation for consideration. We are hoping to be in a position to provide an update to you within the next week or so.

Should you have any further questions in the meantime, please get in touch.

Kind regards

1 [redacted]
1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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Standards Scotland
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General Enquiries | enquiries@environmentalstandards.scot
0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 15 January 2025 16:26
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Subject: RE: 20240902 Email Outgoing Subject -ESS Section 23 Request - IESS.24.046

1 [redacted] Many thanks

1 [redacted]

From: [redacted] [redacted] <[redacted]@environmentalstandards.scot>
Sent: Wednesday, January 22, 2025 9:10:58 AM
To: [redacted] [redacted] <[redacted]@gov.scot>
Subject: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Good morning [redacted]

Thank you again for your assistance in this case, I was wondering if you or a member of your team would be available for a quick follow up meeting?

I am free most days next week, apart from Tuesday 28th January.

Thanks again,

[redacted]

[redacted] (She/Her)
Senior Investigations Officer
[redacted] <[redacted]@environmentalstandards.scot>
[redacted]

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Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 22 January 2025 09:25
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Subject: Re: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

That won't be a problem at all. I'm on a train just now so will check times later if that's ok. I'm in Victoria Quay in Leith on Wednesday if an in person meeting suits you. But teams is fine too if preferred

Thanks

1 [redacted]

From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 22 January 2025 10:04
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

Thanks for getting back to me so quickly, I am very flexible so please just let me know when suits.

Best wishes,

1 [redacted]

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 24 January 2025 15:52
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>; 1 [redacted]
1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

1 [redacted] our B3 Incineration lead, is on leave next week, back the following week. Ideally I'd like to have 1 [redacted] attend but if more pressing, we can offer any time Thursday 30th between 0930-1300; Wed 29th any time 1400-1500, 1100-1130 or 1200-1230

Have a nice weekend

1 [redacted]

From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 24 January 2025 16:06
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

Thank you for getting back to me. I am more than happy to arrange our meeting for when 1 [redacted] is back.

If you can let me know a suitable date/time for you both, I will send an invite over.

Have a great weekend too.

Best wishes

1 [redacted]

From: [redacted] [redacted] gov.scot>
Sent: 24 January 2025 16:20
To: [redacted] [redacted] environmentalstandards.scot>; [redacted]
[redacted] [redacted] gov.scot>; [redacted]
[redacted] gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Thanks [redacted]

That's great and a few options are below. Feel free to choose whatever suits you best.

Wed 5 Feb, anytime 12-1pm

Thur 6 Feb 1pm – 1:30pm

Thanks

[redacted]

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 06 February 2025 17:44
To: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted] gov.scot>; 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

Thank you all again for your time today.

As discussed during our meeting, it would be greatly appreciated if your team, or colleagues could provide further information on the following point.

ESS notes that in both the Scottish Government's and SEPA's s23 responses that one EfW plant has significantly increased waste throughput due to changes in waste composition, and there is the potential this could happen elsewhere. In view of this, **what measures are currently in place to ensure that capacity changes (in terms of waste throughput) to existing plants are considered and controlled, with a view to ensuring that the realised capacity aligns with national demands/needs.**

Should you require any clarification on this, please let me know.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 25 February 2025 10:58
To: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted] gov.scot>; 1 [redacted] gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

Sorry to chase, I am emailing to ask if you are in a position to share information in respect of the below point. If not, can you please advise as to when I should receive this.

Thanks again for your assistance, it is greatly appreciated.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] gov.scot>
Sent: 25 February 2025 11:01
To: 1 [redacted] environmentalstandards.scot>; 1 [redacted]
1 [redacted] gov.scot>; 1 [redacted] gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

Apologies for the delay in replying to your query, we will be sending you our response by the end of this week at the latest.

Many thanks,

1 [redacted]

Waste Management
Zero Waste Unit
Scottish Government



From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 25 February 2025 11:07
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>; 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

Thank you for your prompt response, the end of this week is great.

Kind regards

1 [redacted]

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 25 February 2025 13:17
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] environmentalstandards.scot>; 1 [redacted]
1 [redacted] gov.scot>; 1 [redacted] 1 [redacted] gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting - IESS.24.046

Hi 1 [redacted]

Please see our response to the supplementary query on capacity variation below.

Happy to discuss any of the below.

Question

ESS notes that in both the Scottish Government's and SEPA's s23 responses that one EfW plant has significantly increased waste throughput due to changes in waste composition, and there is the potential this could happen elsewhere. In view of this, **what measures are currently in place to ensure that capacity changes (in terms of waste throughput) to existing plants are considered and controlled, with a view to ensuring that the realised capacity aligns with national demands/needs.**

Answer

Variation applications for capacity changes (in terms of waste throughput) to existing plants are considered and controlled through two layers of planning and permitting.

Planning Permission

Changes to the capacity of existing energy from waste (EfW) plants can be controlled through the planning system in certain specific circumstances. These are primarily where either (a) the change in capacity entails some actual 'development' (e.g. an extension) for which planning permission is required, or (b) the operator wishes to not comply with a planning condition that limits the capacity/throughput of the plant. In the case of (b), the operator may need to submit a so-called 'Section 42' application, for planning permission for a development with conditions different to those attached to a previous permission for that development. In either case, any resultant planning application would be for the relevant planning authority to consider and determine in the first instance.

As a matter of law, all planning applications must be determined in accordance with the statutory development plan, including NPF4, unless material considerations indicate otherwise. NPF4 policy 12 (g) sets out that development proposals for energy-from-waste facilities will not be supported except under very limited circumstances.

While NPF4 policy 12 (g) may not be directly applicable to proposals for the extension or alteration of existing energy from waste (EfW) plants, planning

authorities are encouraged to refer to the 'policy intent' for each of the NPF4 policies to support their interpretation in the circumstances of individual cases. Further, Ministers have general powers to require notification of any planning application and can also call in applications which have not been notified, if they become aware of the case by other means.

The effect of approving a 'Section 42' application is such that a new and separate planning permission would exist for the development. In instances where a planning authority is minded to grant permission for an energy from waste facility, the Energy from Waste [Direction](#) (2021) requires that Scottish Ministers are notified. This means that Scottish Ministers can decide to 'call-in' such applications for their own determination if they wish to.

PPC Regulations

As Scotland's environmental regulator, SEPA also consider the environmental operation and management of waste facilities.

When determining an application to vary a PPC permit to allow for a capacity increase, SEPA would need to ensure the requirements of the PPC Regulations are met, namely that the measures proposed by the operator represent Best Available Techniques (BAT) and that the change will not result in significant pollution. Emission limits for waste incinerators were recently tightened at European level, and the new limits are now in force at all operational facilities in Scotland.

To do that, we understand SEPA require air quality modelling, a revised BAT justification and other information as part of the application. SEPA would also consult with a range of bodies including the Local Authority and the regional health board. SEPA also seek views from the public on the application and their draft decision.

This is a duty independent of the Scottish Government.

Many thanks,

1

Waste Management
Zero Waste Unit
Scottish Government



From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 26 February 2025 08:57
To: 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] environmentalstandards.scot>; 1 [redacted]
1 [redacted] gov.scot>; 1 [redacted] 1 [redacted] gov.scot>
Subject: RE: 20250122 Email Outgoing Subject -ESS follow up meeting -
IESS.24.046

Good morning 1 [redacted]

Thank you for your email and response information, it is greatly appreciated.

Should I require any further clarification, I will be in touch.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

ENVIRONMENTAL
Standards Scotland
Irean Àraíneachdail na h-Alba

General Enquiries | enquiries@environmentalstandards.scot
0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [REDACTED]
Sent: 30 May 2025 10:35
To: 1 [REDACTED] 1 [REDACTED] gov.scot>
Subject: 20250530 Email Outgoing - Notification of next steps - IESS.24.046

Dear 1 [REDACTED]

I can confirm that ESS has reached the position where we would like to invite the Scottish Government to work with us to resolve some issues we have identified during our consideration of the representation received in respect of incineration overcapacity.

A letter has been prepared that sets out the reasoning for our decision, and it will be issued by the end of the day. I am happy to arrange a teams call with you before the issuing of this letter, or alternatively I can arrange a meeting once you have had sight and opportunity to consider the points raised, if this would be more beneficial.

If you have any questions or queries in the meantime, please don't hesitate to contact me.

Kind regards

1 [REDACTED]

1 [REDACTED] (She/Her)
Senior Investigations Officer
1 [REDACTED] environmentalstandards.scot
1 [REDACTED]

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0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 30 May 2025 14:45
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Subject: 20250530 Email Outgoing ESS to Scottish Government Subject - Invite to informal resolution - IESS.24.046

Dear 1 [redacted]

Further to my previous email, please find attached our informal resolution letter outlining the issues identified during our consideration of the incineration overcapacity case.

Should you have any questions, require clarification, or wish to arrange a teams call to discuss the content of this letter, please do not hesitate to contact me.

I have also attached a copy of the Scottish Government's internal guidance note on the role and remit of ESS, and the roles and responsibilities of the Scottish Government in this connection.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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1
Senior Investigations Officer
Environmental Standards Scotland
Ìrean Àrainneachdail na h-Alba

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1 environmentalstandards.scot

By e-mail

FAO 1
Head of Recycling and Waste Management
Scottish Government
By e-mail:
1@gov.scot

30 May 2025

Subject: Invitation to Informal Resolution Process – Case Reference IESS.24.046

Dear 1

I am writing to you to confirm that we have now completed our review of a representation raising concerns in respect of incineration overcapacity. The representation alleges a failure by Scottish Ministers to develop and implement recommendation 5¹ of the Independent Review² (the 'Review') and a potential failure to prevent incineration overcapacity from worsening.

As part of this review, ESS has carefully considered the evidence submitted in the representation alongside the information provided by both the Scottish Government and the Scottish Environmental Protection Agency (SEPA) in response to our Section 23 information requests and follow-up correspondence.

¹ Recommendation 5 relates to the development and implementation of an indicative cap that reduces over time for the amount of residual waste treatment needed as Scotland transitions towards a fully circular economy.

² [Stop, Sort, Burn, Bury \(www.gov.scot\)](http://www.gov.scot)

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Background

ESS notes that the total quantity of waste incinerated in Scotland has increased substantially. In 2023 1.62 million tonnes of waste was incinerated, representing an increase of 216,000 tonnes (15.4%) from 2022, and an increase of 1.21 million tonnes (296%) from 2011³.

Both the Review and a subsequent study⁴ undertaken by Zero Waste Scotland (ZWS) have found that a short-term gap in residual waste⁵ management capacity is likely when the biodegradable municipal waste landfill ban⁶ comes into force on 31 December 2025, however this will reduce as energy-from-waste (EfW)⁷ facilities in development come online during 2026 and 2027. Following this, potential overcapacity (c. 10-18% of total operating capacity) is reported if all the new EfW capacity is built, as proposed, and recycling performance improves from current levels.

The risk of excess capacity comes from three sources:

- the approval and construction of new facilities
- the construction and bringing online of planned ('pipeline') facilities
- the expansion of capacity at operational residual waste facilities

Incineration overcapacity has the potential to create a number of unfavourable outcomes. Firstly, excess capacity can result in 'lock-in' effects where investment in incineration infrastructure (which has a long operational life) and waste management contracts can limit and compete with management options further up the hierarchy, such as waste prevention and recycling. Secondly, burning residual waste releases carbon dioxide and contributes to adverse climate impacts. Although incineration is currently less climate damaging than landfill, unchecked growth of incineration, changes to waste composition and wider decarbonisation will make incineration less favourable over time, which if unaddressed will

³ [Quality Report for Waste Incinerated in Scotland 2023](#)

⁴ [Landfill Ban Assurance Study | Zero Waste Scotland](#)

⁵ Residual waste refers to material that cannot be recycled or reused. This material is predominantly disposed of through landfilling or used as feedstock for EfW facilities.

⁶ [Biodegradable municipal waste landfill ban | Scottish Environment Protection Agency \(SEPA\)](#)

⁷ A energy-from-waste (EfW) plant is a waste management facility that burns wastes to produce electricity

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have implications for Scotland's net zero ambitions. Thirdly, given the risks that incineration poses to human health and the environment, Scotland should not construct more capacity than it needs.

Accordingly, to prevent or mitigate the potential for harm to be caused from these facilities, it is important that incineration as a method of managing waste is properly considered and controlled and that overcapacity is avoided.

Environmental Law

This issue requires consideration of a number of relevant environmental laws. The development of new facilities and the operation of existing facilities are controlled by relevant planning laws and policies, namely:

- National Planning Framework 4 Policy 12(g)⁸ sets out that development proposals for new EfW facilities will not be supported, except under very limited or exceptional circumstances
- under Section 42 of the Town and Country Planning (Scotland) Act 1997⁹, applications for planning permission to deviate from previously granted conditions can be made and are determined by the relevant planning authority, allowing operators or developers to vary the conditions attached to previously granted consent, in respect of existing (operational) or new EfW developments
- under Part 5 of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013¹⁰ ('the 2013 Regulations') the Scottish Ministers may give a direction in respect of planning applications including: requiring information, requiring additional consultation, restricting the granting of planning permission or requiring the consideration of a planning condition. Currently a Notification Direction issued under the 2013 Regulations is in place that requires

⁸ [National Planning Framework 4 \(www.gov.scot\)](http://www.gov.scot)

⁹ [Town and Country Planning \(Scotland\) Act 1997](#)

¹⁰ [The Town and Country Planning \(Development Management Procedure\) \(Scotland\) Regulations 2013](#)

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planning authorities to notify Scottish Ministers when they receive a new application for an EfW development, and also if they intend to approve the application.

The operation of EfW facilities, including the extension of capacity, is also regulated by the Pollution Prevention and Control (Scotland) Regulations 2012¹¹ ('the PPC Regulations'). The PPC Regulations provide an integrated pollution control regime for Scotland for the purposes of implementing EU Directive 2010/75/EU¹² on industrial emissions and regulating other environmentally polluting activities. Incineration processes require authorisation (a PPC permit) to operate. SEPA is the competent authority for the purposes of administering the permitting of activities under the PPC Regulations.

ESS' Consideration

ESS may investigate whether a public authority is compliant with environmental law, whether the public authority's implementation (and/or application) of environmental law is effective, and whether the law itself is effective. Following our assessments in these areas, ESS' analysis and position in this case can be summarised as follows:

1. Failure to produce and implement a residual waste management cap

The Scottish Government has previously committed to the development and implementation of an indicative residual waste management cap, which will inform decision making in respect of Scotland's waste management infrastructure needs, including incineration capacity. However, the evidence suggests that limited progress has been made in this connection since the Review was published in 2022.

During ESS' enquiries, the Scottish Government provided no firm commitment or detail on when the indicative cap will be developed and fully implemented. The Scottish Government explained that the failure to implement the indicative residual waste management cap is due to the need for further and more robust data to support its development. Work to improve the

¹¹ [The Pollution Prevention and Control \(Scotland\) Regulations 2012](#)

¹² [Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions \(integrated pollution prevention and control\)](#)

quality of waste data is underway, including digital waste tracking and engagement with key partners.

ESS understands the need for the development of the indicative cap to be supported by robust data. However, in ESS' view the development and implementation of an indicative cap should be progressed as a priority given the critical timing and importance of it in ensuring that current and future decision making adequately considers and meets the residual waste management needs of Scotland, and minimises the risks highlighted above. Further, the continuing uncertainty in respect of residual waste management capacity needs and requirements has consequences for decision making undertaken by regulatory and planning authorities. This results in potential ineffective application/implementation of those planning and regulatory laws.

2. Oversight and governance of new EfW facilities

Currently two measures are in place to control the development of new EfW facilities. Local authorities are legally required to adhere to NPF4 policies when determining planning applications and the Notification Direction (issued under the 2013 Regulations) remains extant.

The Scottish Government has confirmed to ESS that, since the Review, no further planning permissions for new EfW facilities, have been granted.

In ESS' view, at present there appears to be adequate controls in place in respect of the development of new EfW facilities in Scotland: proposals for new EfW facilities will generally not be supported¹³ and the Scottish Ministers have oversight of all planning applications. This ensures that there is proper consideration and oversight of the need for, and opportunity to insert appropriate controls on additional (new) EfW capacity.

Notwithstanding the above, the consideration and oversight of planning determination processes could be further strengthened through the development of a residual waste

¹³ The Scottish Government confirm that in exceptional circumstances some facilities may be supported, for example if a proposal relates to a location where existing facilities are absent and this avoids transporting the waste elsewhere.

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management cap to better inform decision making, over how much capacity is needed, and at what rate this is expected to reduce over time. Having a residual waste management cap as a tool upon which to determine planning decisions has the potential to improve the rigour of individual decisions, increase accountability and promote greater transparency. Ultimately, it also has the potential to reduce the risk of incineration overcapacity lock-in and the potential negative effects of this.

3. Oversight and governance of 'pipeline' and existing (operational) EfW facilities

Several facilities in Scotland have been granted planning consent, but have not yet become operational ('pipeline'). Both the Review and representation highlighted the risk of incineration overcapacity occurring should all these proposed EfW facilities come online. However, the Scottish Government has advised that uncertainty remains over the development of some of these pipeline facilities, and one proposed facility has already confirmed it will not go ahead. The Scottish Government has set out that it continues to engage with key partners (SEPA, ZWS and local authorities) to monitor development progress.

The Scottish Government's position is that capacity at pipeline and existing EfW facilities are adequately controlled through the planning system. Firstly, where a 'development' (for example, an extension to the building) is being sought, planning permission is required. Secondly, a Section 42 application may be required should an operator seek to vary conditions of the original planning consent that limit the capacity of the plant, where such conditions are in place. Thirdly, planning authorities are encouraged to refer to the 'policy intent' of NPF4 policy 12(g) to support their interpretation of individual cases. Lastly, Scottish Ministers have general powers under the 2013 Regulations to require notification of any planning application and can also call in applications that they become aware of by other means.

ESS considers that there are limitations in the application of these planning controls for changes to pipeline and existing facilities. Section 42 applications may not always be required as it is dependent on the original planning consent containing conditions that control capacity. ESS has found evidence of planning consents that do not have any conditions

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controlling capacity. This includes the Dunbar facility where an increase of 65,000 tonnes (equating to an increase in over 4.6% of the national capacity for that year)¹⁴ was observed in 2023 without the requirement for a Section 42 application. Further, no full planning application was required for this variation as there was no structural change or extension to the building. Accordingly, ESS considers that the application of these planning controls is restricted and does not adequately control capacity at pipeline or existing facilities.

Both pipeline and existing (operational) facilities are also regulated by a permit under the PPC Regulations that serves to control their impact and limits the quantity of waste managed. The Scottish Government and SEPA have confirmed that, since the Review, no new EfW PPC permits have been issued and there has only been one variation of an existing PPC permit granted to allow for an increase of waste capacity. The Scottish Government's position is that, while increases in waste capacity at pipeline and existing facilities could lead to potential overcapacity, it may also reduce the need to develop new facilities and support endeavours to achieve an appropriate capacity in Scotland.

Given the identified weaknesses in the application of the planning controls for pipeline and existing facilities, the PPC permit could provide an opportunity for oversight to control capacity to ensure it aligns with Scotland's residual waste management needs. However, SEPA has confirmed that national capacity is not considered during the determination process for issuing new PPC permits or varying existing conditions.

In ESS' view this creates a gap whereby, if it is not caught by planning controls, and given SEPA do not consider capacity when issuing or varying permits, then there is potential for increases in incineration capacity to occur without adequate consideration of the impact on Scotland's residual waste management needs. This does not align with the overall policy objective of minimising incineration capacity and recommendations of the Review. This is exacerbated by the absence of an indicative residual waste management cap to inform whether the capacity of pipeline or existing facilities aligns with Scotland's residual waste management needs.

¹⁴ [Waste Incinerated in Scotland 2023](#)

Accordingly, the implementation of environmental law by the Scottish Government in this connection is potentially ineffective.

ESS believes the above points are within the Scottish Government's ability to rectify and therefore we would like to invite the Scottish Government to work with ESS to pursue informal resolution. We believe that agreeing effective remedial action on an informal basis will often be more expedient and cost-effective, and will result in better environmental outcomes, than pursuing formal enforcement action. However, where it is not possible to resolve a matter by agreement in a reasonable timescale, we will use the statutory powers available to us to prevent risk of harm to the environment, and to ensure the necessary remedial action is taken to put matters right.

We envision the informal resolution process to involve:

- dialogue between ESS staff and Scottish Government staff to discuss the identified issues in detail, clarify any misunderstandings, and seek appropriate remedial actions
- exchange of relevant information on a timely basis
- the Scottish Government providing return documentation demonstrating acceptable implementation of the remedial actions

We greatly welcome your attention to this matter, and request that you respond to myself within 15 business days to indicate the Scottish Government's willingness to proceed with informal resolution. It would also be appreciated if you could identify the staff best placed to participate in an initial meeting and their upcoming availability.

If you have any questions or queries please do not hesitate to contact me at the above e-mail address. Please reference our case number (IESS.24.046) in your return correspondence.

Yours sincerely

1

1

Senior Investigations Officer

Environmental Standards Scotland Enquiries

enquiries@environmentalstandards.scot

Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD
0808 1964000

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 10 June 2025 18:53
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: 20250530 Email Outgoing ESS to Scottish Government Subject - Invite to informal resolution - IESS.24.046

Dear 1 [redacted]

Thank you for your letter of 30 May (attached). Please also find attached for your attention our reply.

Best regards

1 [redacted]

Environment and Forestry Directorate
Circular Economy Division



[REDACTED]
Head of Recycling & Waste Management
[REDACTED]@gov.scot

By e-mail:

Senior Investigations Officer
Environmental Standards Scotland

Your ref: IESS.24.046
10 June 2025

Provision of Information to Environmental Standards Scotland (ESS): Incineration Overcapacity – Case Reference IESS.24.046

Dear [REDACTED]

Thank you for your letter of 30 May on incineration overcapacity and related matters. The Scottish Government is happy to engage with the ESS through the proposed informal resolution process.

Unfortunately our Division is going through a number of staff changes currently, with our Deputy Director (David McPhee) having moved in late May and I too am taking up a new role outside the Division, starting on Monday 16 June.

We are still arranging cover for [REDACTED] and my Unit Head role. So in the first instance, can I suggest a meeting with colleagues in the CED Waste Management team that is now headed up by [REDACTED] ([REDACTED]@gov.scot), supported by [REDACTED] ([REDACTED]@gov.scot), who you have met previously?

That meeting can review the history of the case and ESS' findings, and use that to discuss next steps or if further information required, such that [REDACTED] and [REDACTED] can then discuss with managers and support this informal review as required.

I hope that is helpful and if you could contact [REDACTED] with the next steps please, he can help to make arrangements from there.

Your sincerely

[REDACTED] [REDACTED]

[REDACTED]

Head of Recycling and Waste Management

Victoria Quay, Edinburgh EH6 6QQ
www.gov.scot



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From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 11 June 2025 14:31
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Dear 1 [redacted]

Thank you for your email, and confirming SG's willingness to work with ESS on this case. I hope all goes well in your new position.

1 [redacted] I look forward to meeting you. Please could you provide dates/times that both you and 1 [redacted] are available to have a call with ESS.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted]
Sent: 26 June 2025 15:36
To: 1 [redacted] 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject - Invite to informal resolution - IESS.24.046

Good afternoon 1 [redacted]

Further to my previous email, please could you advise me of suitable dates/times that you are available to have a meeting with ESS to discuss this case.

I break off tomorrow for annual leave, returning on Wednesday 16th July.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 16 July 2025 15:18
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Good afternoon 1 [redacted]

Please can you confirm suitable dates/times (ideally in July) for a meeting to discuss
ESS' incineration case.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] gov.scot[>
Sent: 16 July 2025 15:40
To: 1 [redacted] environmentalstandards.scot[>; 1 [redacted]
1 [redacted] gov.scot[>
Cc: 1 [redacted] gov.scot[>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Hi 1 [redacted]

Apologies for the late response and I hope you had a good break.

As you are aware 1 [redacted] has moved role and due to his departure and the leave period things have been a bit busy in the team.

I would like to introduce 1 [redacted] (cc'd) to you, he will be providing temporary cover for 1 [redacted] and will be attending the meeting with yourself.

I understand that you would like to ideally meet in July to discuss the resolution but that is a little challenging on our side due to planned leave (and changes in the team).

Would you have any availability in mid-August, the week starting 18th August?

We could do any of the below times:

Monday 18 August 11:30 – 12:30
Tuesday 19 August 16:00 – 17:00
Wednesday 20 August 09:00 – 10:00
Friday 22 August 10:00 – 11:00

Once again, apologies for the late reply and happy to discuss if none of the above dates/times suit.

1 [redacted]

Waste Management
Zero Waste Unit
Scottish Government



From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 17 July 2025 14:37
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Hi 1 [redacted]

Thank you for getting back to me. Please can we go for 11.30am on Monday 18th August.

Look forward to meeting with you and 1 [redacted] then.

Kind regards

1 [redacted]

From: 1 [redacted] gov.scot>
Sent: 17 July 2025 14:40
To: 1 [redacted] environmentalstandards.scot>; 1 [redacted]
1 [redacted] gov.scot>
Cc: 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Thank you 1 [redacted]

I will shortly send an invite out for the 18/08 11:30.

I would also like to introduce 1 [redacted] who is also providing cross-cover for
1 [redacted] with 1 [redacted] while his position is being backfilled.

Many thanks,

1 [redacted]

Waste Management
Zero Waste Unit
Scottish Government

 gov.scot

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 07 August 2025 16:14
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] environmentalstandards.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Hi 1 [redacted] 1 [redacted]

Hope you're both well.


I am writing to you to ask if it would be possible to move our meeting to Wednesday 20th August either at 16:00 – 17:00, or Friday 22nd August 13:30 – 14:30 as this would allow both 1 [redacted] and 1 [redacted] to attend?

If this is not possible, we can keep the current time on Monday 18th.

Many thanks,

1 [redacted]

Waste Management
Zero Waste Unit
Scottish Government

 gov.scot

From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 07 August 2025 16:28
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@environmentalstandards.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject - Invite to informal resolution - IESS.24.046

Hi 1 [redacted]

I can confirm that 1 [redacted] and I are both available on 20th (4 – 5 pm) so please feel free to move our meeting to then.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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General Enquiries | enquiries@environmentalstandards.scot
0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 22 August 2025 11:25
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] environmentalstandards.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Hi 1 [redacted] 1 [redacted]

Thank you for the discussion on Wednesday.

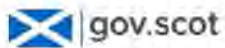
As agreed, we will work to an official response as quickly as we can, but we are unlikely to be able to have something ready before the end of September, given that our new Unit Head for waste management is due to start in their post next week and I will be on leave for two weeks.

I hope this still works for you.
Please do not hesitate to revert if you have any questions or concerns.

Many thanks,

1 [redacted]

Waste Management
Zero Waste Unit
Scottish Government



From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 28 August 2025 11:11
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject - Invite to informal resolution - IESS.24.046

Hi 1 [redacted]

Thank you for your email, and apologies for the delay in responding to you.

I appreciate the resource issues within your department at present, however please can a deadline for a formal response be confirmed. This would be greatly appreciated.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

ENVIRONMENTAL
Standards Scotland
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Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 29 August 2025 08:39
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>; 1 [redacted]
1 [redacted] 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20250530 Email Outgoing ESS to Scottish Government Subject -
Invite to informal resolution - IESS.24.046

Morning 1 [redacted]

Introducing 1 [redacted] who is now in post, and to confirm that we are working to the end of September as a deadline for formal response.

1 [redacted]

From: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Sent: 30 September 2025 16:28
To: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>
Subject: Invite to informal resolution - IESS.24.046

Dear 1 [redacted]

Please find attached a response from the Scottish Government to your informal resolution letter of 30 May 2025.

Please let me know if you would like to discuss any of the points or actions included in our response.

Kind regards,

1 [redacted]

Directorate for Environment and Forestry
Circular Economy Division



[REDACTED]
Head of Producer Responsibility
E: [REDACTED]@gov.scot

By email:
[REDACTED][environmentalstandards.scot](mailto:[REDACTED]@environmentalstandards.scot)
Senior Investigations Officer Environmental
Standards Scotland

30 September 2025

Subject: Response to Informal Resolution Process – Case Reference IESS.24.046

Dear [REDACTED]

Thank you for your letter of 30 May 2025.

The Scottish Government is committed to achieving a more circular economy which will produce less unavoidable and unrecyclable waste. In Scotland, we are creating less waste and landfilling less than at any time since records began, and we're investing in more reuse and recycling. We have met our 2025 target to cut waste by 15% from 2011 levels – with waste down by more than 20% in 2023. This is only one example of the significant, long-term progress we are making towards a circular economy in which fewer resources are wasted.

As we transition to a circular economy, Scotland must ensure it has sufficient capacity to treat its own waste responsibly. As you are aware, the independent incineration review (the Review) underlined that incineration is preferable to other forms of residual waste treatment, but also that it is less desirable than reducing and recycling waste. As such, alongside ongoing prioritisation of waste reduction and recycling, Scottish Ministers must balance the need for sufficient incineration capacity with the safeguards necessary to avoid long-term overcapacity.

Overcapacity risks

Your letter raises the concern that there will be incineration overcapacity from 2026 / 2027. Both the Review and the subsequent capacity analysis commissioned by Zero Waste Scotland (the SLR report) pointed to a shortfall in incineration in 2025 but possible overcapacity from 2027 if all pipeline facilities proceed. However, as you have noted, we do not expect all facilities with planning permission to proceed – indeed, one facility has since been cancelled. There is also a need for sufficient capacity to manage unforeseen circumstances, as demonstrated by two recent unplanned shutdowns.

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Based on the latest available data and discussions with industry, SEPA has concluded that very little, if any, overcapacity is expected by 2027. In light of this, **the Scottish Government will look to publish an updated capacity analysis to ensure that latest forecast is in the public domain.** We will continue to monitor pipeline capacity closely with SEPA, ZWS, and local authorities, to manage both undercapacity and overcapacity risks.

Your letter also raises concerns that overcapacity could introduce the risk of lock-in, undermining efforts to increase recycling. Most waste incinerated in Scotland is managed through 'spot pricing' and short-term contracts, which reduces this risk. Gate fees for incineration are significantly higher than for recycling, meaning that waste managers have little incentive to send more than the minimum to incineration – in the same way that high landfill costs have incentivised recycling over the last two decades. New policy developments, including the expansion of the UK Emissions Trading Scheme to energy from waste facilities (EfW), will further increase the cost of incineration in the future.

In the limited cases where contracts do include minimum guaranteed tonnages, incineration permit conditions required by the Pollution Prevention and Control (Scotland) Regulations 2012 prevent the incineration of separately collected recyclable waste to make up a contractual shortfall. As such, it would be more likely that parties negotiate a settlement or pay for treatment without delivering the waste, rather than divert recyclables to feed the plant and risk enforcement action. Unused EfW capacity is therefore a risk borne by EfW developers and operators, not their clients, who have neither obligation nor incentive to fill shortfalls.

Our position is therefore that it is unlikely that there will be incineration overcapacity in Scotland in 2027, that some level of overcapacity may be necessary for national resilience, and that even in the event of overcapacity there is a financial disincentive to prevent 'lock-in'. In parallel, the Scottish Government is developing further policies to disincentivise incineration and limit plastic waste, while increasing its removal prior to incineration. Details on policies to decarbonise disposal are set out in our [Circular Economy and Waste Route Map](#).

Planning and permitting controls for energy from waste facilities

While we take the view that incineration overcapacity is unlikely, the Scottish Government's position is that Scotland should not build more incinerators than required to manage residual waste responsibly. We have therefore adopted additional controls to prevent against this scenario.

Firstly, the Scottish Government accepted Recommendation 4 of the Review: to restrict new facilities to only those with existing planning permission (pipeline facilities). This was implemented through National Planning Framework 4 (NPF4), adopted February 2023. No new EfW planning requests have been submitted since 2023. Proposals for new facilities would need a very strong case in order to succeed.

We therefore welcome your conclusion that there are *"adequate controls in place in respect of the development of new EfW facilities in Scotland: proposals for new EfW facilities will generally not be supported and the Scottish Ministers have oversight of all planning applications. This ensures that there is proper consideration and oversight of the need for, and opportunity to insert appropriate controls on additional (new) EfW capacity"*.



Secondly, we recognise the value of a long term, evidenced-based indicative residual waste treatment cap to help inform planning and investment decisions as Scotland transitions towards a circular economy, as part of an overall strategic approach (Recommendation 5 of the review). **We will develop an indicative cap through Scotland's Residual Waste Plan (RWP), due in 2027.** The RWP will set a long-term vision for disposal practices, minimising climate and environmental impacts of waste, while ensuring adequate capacity for declining volumes of waste.

The Review recognised that there are significant challenges in developing a cap, including uncertainties in the data, the trajectory of residual waste arisings, and policy development and delivery. Progress on the cap has been impacted by external factors such as the delayed roll out of the UK-wide Digital Waste Tracking policy, which will allow for more accurate and timely data. The cap must also consider all residual waste capacity, including landfill and waste streams that must be incinerated by law, such as those containing persistent organic pollutants (POPs).

Finally, you raised concerns about permitting controls, since once planning is granted Ministers have limited powers to prevent changes in capacity. This was not a recommendation of the Review, which applied only to planning permission for facilities not already in place. The Review also emphasised the challenges of terminating or revoking planning permission once it has been granted.

Nevertheless, we acknowledge that some facilities may not have capacity limits within their planning permission. In some instances, a Section 42 planning application may not be required to increase capacity where there is no change to the plant. We consider that, without physical development, the risk of large-scale capacity increases is low given technical constraints such as storage space and ash handling. However, we recognise that a potential gap may exist. We also recognise that national capacity is not considered in SEPA's environmental permit decisions, and that this could risk an uncontrolled increase in capacity, however unlikely, once a cap is in place. **The Scottish Government will therefore work to ensure that any indicative cap is reflected in permitting regulations,** so that SEPA considers the cap when assessing all permits, capturing any such cases.

Our position is therefore that we consider existing planning policies to provide the right tools to control new EfW development, but that we will take additional steps to strengthen permitting requirements and develop an indicative residual waste treatment cap to help inform future planning and investment decisions.

In conclusion, we consider the risk of significant EfW overcapacity to be very low, and that the existing planning policies provide the right tools to control new EfW development. This is evidenced by the fact that no new facilities have sought planning permission in Scotland since 2023, and SEPA's latest assessment indicates that little or no overcapacity is expected by 2027.

We will continue to build on these measures to:

- monitor infrastructure developments with SEPA, ZWS and local authorities
- define an indicative cap on residual waste treatment capacity
- ensure any indicative cap is integrated into SEPA's permitting decisions
- continue to deliver the broader supporting policies to increase recycling and implement carbon pricing for EfW emissions.

Taken together, we are confident that these measures will provide additional safeguards against overcapacity, while ensuring that our residual waste is managed responsibly and supporting Scotland's transition to a circular economy.

Yours sincerely,

1

[Redacted]
Head of Producer Responsibility
Circular Economy Division

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Redaction Key:
1 = Redacted - R.11(2)
2 = Redacted - out of scope

From: 1 [redacted]
Sent: 03 October 2025 11:47
To: 1 [redacted] 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: 20251003 Email Outgoing Subject - Acknowledgement of response provided - IESS.24.046

Dear 1 [redacted]

Thank you for your email and the attached response.

ESS will consider the information provided, and should we require any further assistance, I will be in touch.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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From: 1 [redacted]
Sent: 02 December 2025 14:00
To: 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>
Subject: 20251202 Email Outgoing 1 [redacted] | Subject - Informal Resolution
response from ESS - IESS.24.046

Dear 1 [redacted]

Further to your response dated 30 September, I write to confirm that ESS accepts the actions outlined and welcomes the Scottish Government's commitment to addressing the issues identified. To this end, ESS will shortly publish an informal resolution report on its website, and will provide a link once available.

To ensure transparency and accountability, ESS requests an implementation plan detailing timelines, responsibilities, and reporting mechanisms. Please find attached a letter setting this out.

Additionally, ESS would appreciate confirmation that SEPA is aware of its role in integrating the indicative cap into permitting decisions.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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Senior Investigations Officer
Environmental Standards Scotland
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1
Head of Producer Responsibility
Circular Economy Division
Scottish Government
Victoria Quay
Edinburgh
EH6 6QQ

By email: 1@gov.scot
CC: 1@gov.scot

2 December 2025

Subject: Response to Scottish Government's Informal Resolution Submission – Case Reference IESS.24.046

Dear 1

Thank you for your detailed and constructive response dated 30 September 2025 regarding the concerns raised by Environmental Standards Scotland (ESS) in relation to incineration capacity in Scotland.

ESS welcomes the Scottish Government's commitment to undertake the range of measures outlined in your letter to address the concerns raised by ESS, including: an updated capacity analysis, the development of an indicative residual waste treatment cap and the integration of this cap into SEPA's permitting decisions.

To ensure transparency and accountability in the delivery of these commitments, ESS requests that the Scottish Government provide a formal implementation plan detailing how and when they will be delivered. This plan should include:

Environmental Standards Scotland Enquiries
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Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD
0808 1964000

- key milestones and timelines for the development and publication of the updated capacity analysis
- key milestones and timelines for the development and publication of the indicative cap
- details of how and when the indicative cap will be integrated into the Scottish Environment Protection Agency's permitting regulations
- identification of responsible parties for each action
- mechanisms for public reporting and progress updates, to ensure ongoing transparency and stakeholder confidence

ESS believes that such a plan will support effective oversight, collaboration and will help ensure that the measures outlined are implemented in a timely and coordinated manner.

We look forward to continuing our constructive engagement with the Scottish Government on this matter.

Yours sincerely

1

1

Senior Investigations Officer

Environmental Standards Scotland Enquiries

enquiries@environmentalstandards.scot

Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD
0808 1964000

From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 02 December 2025 14:00
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted]
1 [redacted] <[redacted]@gov.scot>
Subject: 20251202 Email Outgoing 1 [redacted] | Subject - Informal Resolution
response from ESS - IESS.24.046

Dear 1 [redacted]

Further to your response dated 30 September, I write to confirm that ESS accepts the actions outlined and welcomes the Scottish Government's commitment to addressing the issues identified. To this end, ESS will shortly publish an informal resolution report on its website, and will provide a link once available.

To ensure transparency and accountability, ESS requests an implementation plan detailing timelines, responsibilities, and reporting mechanisms. Please find attached a letter setting this out.

Additionally, ESS would appreciate confirmation that SEPA is aware of its role in integrating the indicative cap into permitting decisions.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

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From: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Sent: 02 December 2025 15:14
To: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>
Subject: RE: 20251202 Email Outgoing 1 [redacted] | Subject - Informal Resolution response from ESS - IESS.24.046

Thank you 1 [redacted] that is appreciated. We look forward to seeing the report once published.

We will write back to you in due course to confirm responsibilities and implementation plans, including confirmation that SEPA are aware of planned requirements to integrate the indicative cap into permitting decisions.

Kind regards,

1 [redacted]

From: 1 [redacted] 1 [redacted] <[redacted]@environmentalstandards.scot>
Sent: 03 December 2025 16:40
To: 1 [redacted] 1 [redacted] <[redacted]@gov.scot>
Cc: 1 [redacted] 1 [redacted] 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>; 1 [redacted] <[redacted]@gov.scot>
Subject: 20251203 Email Outgoing 1 [redacted] | Subject - update on the publication of IR report - IESS.24.046

Good afternoon 1 [redacted]

I am writing to inform you that the publication of our informal resolution report has been delayed in order to allow for consideration of additional comments received from the representation contact.

Once the report has been published, I will provide you with the link.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]



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Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 08 December 2025 16:27
To: 1 [redacted] 1 [redacted] gov.scot>
Cc: 1 [redacted] 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted] gov.scot>; 1 [redacted] gov.scot>
Subject: 20251208 Email Outgoing 1 [redacted] | Subject - Informal Resolution Report – Incineration Overcapacity Case - IESS.24.046

Good afternoon 1 [redacted]

Please find attached a copy of our informal resolution report regarding the incineration overcapacity case. This report will be published on our website tomorrow.

Should you have any questions or require further clarification, please do not hesitate to contact me.


Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted] environmentalstandards.scot
1 [redacted]

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**The effectiveness of the Scottish
Government's implementation
and application of environmental law in
relation to incineration capacity in
Scotland**

Case Reference: IESS.24.046

December 2025

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1. Executive summary

1.1 The incineration of residual waste has become a prominent waste management method in Scotland. The volume of waste incinerated has increased rapidly, with 1.86 million tonnes incinerated in 2024 (representing a 354% increase since 2011).

1.2 Evidence suggests that Scotland may soon have an excess of incineration capacity. This has the potential to create further unfavourable outcomes, including 'lock-in' effects (where the reliance on incineration as a waste management method undermines more sustainable waste reduction, reuse, and recycling techniques), climate impacts and risks to the environment and human health.

1.3 ESS received a representation alleging that the Scottish Government had failed to take necessary action to prevent excess incineration capacity. The representation also highlighted potential gaps in existing controls, allowing incineration capacity to grow without adequate oversight.

1.4 Following engagement with the Scottish Government, ESS found that existing planning and environmental permitting controls were potentially ineffective. This was due to 'gaps' in the frameworks which meant expansions in incineration capacity at planned and operational facilities could be approved without adequate consideration of whether they aligned with Scotland's actual residual waste management treatment needs. ESS also identified that the failure of the Scottish Government to develop an indicative cap (setting out Scotland's projected residual waste management requirements) rendered the application of the planning and regulatory controls potentially ineffective.

1.5 ESS made recommendations for improvement which the Scottish Government accepted and committed to implement through a series of remedial actions. In ESS' view, the implementation of these remedial actions will bring clarity over Scotland's residual waste management needs and ensure that adequate consideration is given to this when determining applications for capacity increases. This will, in the longer term, help support Scotland's climate objectives, contribute to the development of the circular economy, and prevent unnecessary risk of environmental and human health impacts.

1.6 Accordingly, ESS considers that informal resolution has been achieved. ESS will monitor the Scottish Government's delivery of the agreed remedial actions and provide public updates on progress.

2. Background

2.1 The incineration of residual waste (waste that cannot be reused, recycled, or composted) has become a prominent waste management method in Scotland. Compared to traditional landfill disposal, incineration is considered less environmentally harmful, offering benefits such as reduced greenhouse gas emissions and a lower risk of environmental impacts associated with leachate contamination.

2.2 Residual waste in Scotland is typically incinerated using three methods:

- by recovery – waste is used as fuel to generate energy, this approach is classified as 'energy from waste'
- by co-incineration – waste is used as fuel where the main purpose is energy generation or the production of materials (e.g. cement)
- by disposal – waste is burned primarily to reduce its volume

2.3 The quantity of waste incinerated in Scotland has increased substantially in recent years, as illustrated by Figure 1. In 2024, 1.86 million tonnes of residual waste was incinerated, representing a 354% increase since 2011¹.

2.4 The volume of waste incinerated by disposal has also grown significantly, as illustrated by Figure 1. From 2018 onwards this has steadily increased from 0.17 million tonnes to 0.52 million tonnes in 2024, representing a 259% increase. In 2024, approximately 28% of the total quantity of waste incinerated in Scotland was processed through disposal, despite this being the least energy and resource efficient incineration method currently used.

2.5 The shift towards increased incineration has resulted in the construction of new incineration facilities. As of 2024, eighteen permitted incineration sites were operating in Scotland¹. In addition, the available capacity at existing facilities has also risen. For example, in 2023, the Dunbar energy from waste facility expanded its capacity by 65,000 tonnes, which accounted for more than 4.6% of national capacity at that time.

¹ [Waste Incinerated in Scotland 2024](#)

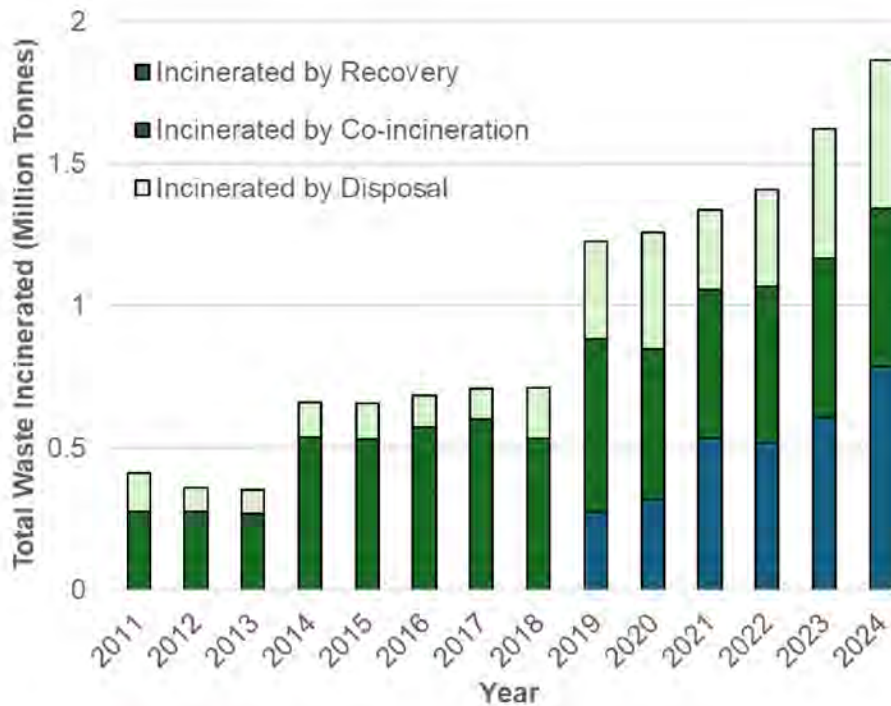


Figure 1 Quantity of Waste Incinerated by Method in Scotland

2.6 An Independent Review of Incineration² (“the Review”) published in 2022, examined the role of incineration within Scotland’s national waste hierarchy³ and assessed whether incineration capacity aligned with Scotland’s waste reduction and net zero targets. It concluded that, while well-regulated incineration has a role in managing unavoidable residual waste, the level of proposed incineration capacity exceeded Scotland’s projected future needs⁴. The risk of excess capacity comes from three sources:

- the approval and construction of new facilities
- the completion and commissioning of planned (‘pipeline’) facilities

² [Stop, Sort, Burn, Bury \(www.gov.scot\)](http://www.gov.scot)

³ Waste hierarchy is an order of preference for waste management established in the EU Waste Framework Directive.

⁴ A subsequent study undertaken by Zero Waste Scotland (ZWS) in 2024 reinforced these concerns. It estimated that if all proposed incineration capacity is built and recycling rates improve as expected, Scotland could face an excess of incineration capacity of approximately 10–18% from 2027 onwards ([Landfill Ban Assurance Study | Zero Waste Scotland](#)).

- expansions in capacity at existing operational facilities

2.7 To offset the risk of excess capacity, the Review made several recommendations, including:

- not granting any further planning permissions for incineration infrastructure, unless offset by equivalent closures of existing capacity
- developing an indicative cap (that declines over time) for the amount of residual waste treatment needed as Scotland transitions towards a fully circular economy

2.8 The Scottish Government accepted these recommendations and committed to integrating them into future waste and planning policy.

3. The representation

3.1 ESS received a representation from a Non-Governmental Organisation (NGO) asserting that the Scottish Government had failed to introduce an indicative residual waste management cap, leading to the risk of incineration overcapacity. The representation also claimed that the Scottish Government had failed to control incineration effectively, highlighting the potential impact of incineration lock-in.

3.2 The representation sought for action to be initiated to halt further increases in incineration capacity and to establish a cap that is progressively reduced over time.

3.3 Due to the following factors, ESS considered the case to be within its remit:

- the representation related to a public authority – the Scottish Government
- the representation related to environmental law – the laws as set out in this report
- the failure (as set out in the representation) constituted potential ineffective environmental law, or application of it

3.4 ESS also determined that the issue met its significance criteria given the negative effects associated with incineration overcapacity and long-term lock-in, potentially leading to adverse environmental and human health impacts. The potential undermining of the development of the circular economy in Scotland was also viewed as a significant factor.

4. ESS' consideration and engagement with the Scottish Government

4.1 Whilst the increase in the quantity of waste incinerated and growth in available capacity reflect progress in moving away from landfill, they also signal a growing reliance on incineration. This trend, combined with projected overcapacity from 2027 onwards, could lead to several negative outcomes.

4.2 Firstly, excess capacity can result in 'lock-in' effects where long-term investment in incineration infrastructure and waste management contracts can undermine preferable waste management options, such as waste prevention, reuse, and recycling. Secondly, burning residual waste releases emissions and contributes to adverse climate impacts. Although incineration is currently less climate damaging than landfill, unchecked growth, changes to waste composition, and wider decarbonisation will make incineration less favourable over time, which if unaddressed will have implications for Scotland's climate ambitions. Thirdly, incineration poses risks to human health and the environment through the release of pollutants that can reduce air quality and contaminate soil and water.

4.3 Accordingly, to prevent (or mitigate) the potential for harm to be caused from incineration lock-in, incineration must be carefully managed and controlled. This requires an effective regulatory framework, robust and transparent oversight, and accurate long-term planning.

Residual waste management cap

4.4 The indicative cap recommended by the Review was intended to act as a strategic benchmark for decision making, ensuring compliance with the objectives of the waste hierarchy, and preventing overcapacity that could undermine future recycling and waste reduction efforts. The Scottish Government accepted this recommendation in June 2022⁵ and committed to developing a cap. However, the cap has not yet been implemented.

4.5 During ESS' enquiries, the Scottish Government advised that the failure to develop the cap was due to the need for further and more robust data. The Scottish

⁵ [Scottish Government Response to: Stop, Sort, Burn, Bury? The Independent Review of the Role of Incineration in the Waste Hierarchy in Scotland](#)

Government also explained that work to improve the quality of waste data was underway, including digital waste tracking and engagement with key partners.

4.6 The purpose of an indicative cap is to provide a level of certainty on required capacity and the pace at which it should decline, helping to prevent unchecked growth of incineration capacity. ESS considers the absence of such a cap is a significant weakness, as it limits the effectiveness of existing controls in avoiding overcapacity and the associated environmental risks. Introducing a cap would establish a clear benchmark, strengthen decision-making, enhance accountability and transparency, and reduce the risk of long-term overcapacity lock-in and its negative impacts.

4.7 ESS accordingly approached the Scottish Government, setting out the potential ineffectiveness of existing controls and the importance of developing a cap to ensure that current and future incineration capacity decisions adequately reflect Scotland's residual waste management needs. ESS recommended that the Scottish Government should develop an indicative cap as a priority. The Scottish Government accepted this and agreed to develop an indicative residual waste treatment cap through Scotland's Residual Waste Plan, which is scheduled for completion in 2027. Additionally, the Scottish Government committed to publishing an updated capacity analysis to ensure the latest forecasts are publicly available and to continue to monitor infrastructure developments in collaboration with the Scottish Environment Protection Agency (SEPA), Zero Waste Scotland (ZWS) and local authorities.

[Governance of new incineration facilities](#)

4.8 National Planning Framework 4 (NPF4)⁶ guides decision making by planning authorities and restricts the development of new incineration capacity. NPF4 Policy 12(g) states that proposals for new incineration facilities will not be supported except in very limited or exceptional circumstances. In addition, a Direction⁷, issued by Scottish Ministers under the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013⁸ ('the 2013 Regulations') is currently in

⁶ [National Planning Framework 4 is the national spatial strategy for Scotland, setting out principles and priorities for national development and planning policy.](#)

⁷ [Chief Planner letter and Notification Direction - Energy from Waste \(Incineration and Advanced Thermal Treatment\) Facilities: 17 November 2021 - gov.scot](#)

⁸ [The Town and Country Planning \(Development Management Procedure\) \(Scotland\) Regulations 2013](#)

place, requiring all planning authorities to notify Scottish Ministers of any new incinerator applications and whether they intend to approve them. This Direction helps ensure NPF4's principle of restricting new capacity is being upheld. The Scottish Government has confirmed to ESS that, since the Review, no further planning permissions for new incineration facilities have been granted.

4.9 In ESS' view, these controls are broadly effective in preventing the development of new incineration facilities in Scotland, as proposals are generally not supported⁹, and Scottish Ministers have oversight of all planning applications. This provides assurance that any new capacity is subject to scrutiny and that appropriate planning conditions can be applied where necessary. The introduction of a residual waste management cap will supplement these controls in helping prevent overcapacity lock-in and its associated environmental and human health risks.

Governance of in-pipeline and existing facilities

4.10 There are several in-pipeline and operational facilities currently in Scotland. The Scottish Government considers incineration capacity at these sites to be controlled through two mechanisms: the planning system and SEPA's permitting regime.

4.11 In terms of the first mechanism, the Scottish Government explained to ESS that, under the planning system:

- physical extensions undertaken to allow increases in incineration capacity require fresh planning permission
- operators may also need to apply under Section 42 of The Town and Country Planning (Scotland) Act 1997¹⁰ to vary conditions in the original consent, such as capacity limits, where those conditions exist

⁹ The Scottish Government confirmed to ESS that proposals will not be supported, except under limited circumstances where a local or national need has been sufficiently demonstrated (e.g. where no local facility exists, to avoid transporting waste elsewhere).

¹⁰ Operators can apply to vary conditions attached to previously granted planning permissions. This includes changes to capacity restrictions imposed or adjustments for structural or operational modifications. These variation applications are determined by the relevant planning authority and partially manage any changes to incineration capacity.

- planning authorities are encouraged to consider the intent of NPF4 policy 12(g) when assessing individual cases
- Scottish Ministers also have general powers under the 2013 Regulations to require notification of planning applications and may call them in¹¹

4.12 Despite these controls, ESS understands that capacity has the potential to increase at existing incinerator facilities without any structural changes, meaning no new planning permission is required. Furthermore, Section 42 applications may not be required if the original consent lacks conditions controlling capacity. The Dunbar Energy Recovery Facility illustrates these loopholes in the regulatory system: in 2023 permitted capacity at this facility increased from 325,000 to 390,000 tonnes per annum¹² without any structural changes and therefore new planning consent was not required. Additionally, the original planning consent did not have any conditions controlling capacity which meant a Section 42 application was also not required.

4.13 The second mechanism cited by the Scottish Government is delivered through SEPA's regulation under the Environmental Authorisation (Scotland) Regulations 2018 (as amended)¹³ (EASR)¹⁴. Schedule 22, Part 2, Paragraph 5(1)(b) of EASR requires SEPA to ensure that authorisations regulating incineration and co-incineration activities include the facilities total waste incineration capacity. However, during ESS' enquiries, SEPA confirmed that it does not consider national capacity when determining or varying authorisations for individual facilities. In ESS' view, the absence of national capacity as a material consideration when limiting capacity at individual facilities creates the potential for incineration capacity to increase without assessing if this aligns with Scotland's overall residual waste management needs.

4.14 For the above reasons, ESS does not consider that the safeguards described by the Scottish Government comprehensively control capacity at pipeline or existing incineration facilities. Accordingly, ESS approached the Scottish Government to highlight these gaps within the existing planning and regulatory frameworks and set

¹¹ Under section 46(1) of the Town and Country Planning (Scotland) Act 1997, ministers may give a direction requiring a planning application to be referred to them instead of being dealt with by the planning authority.

¹² [dunbar-energy-recovery-facility-draft-decision-document-.pdf](#)

¹³ [The Environmental Authorisations \(Scotland\) Regulations 2018 \(as amended\)](#)

¹⁴ These regulations replaced the Pollution, Prevention and Control (Scotland) Regulations 2012 on 1 November 2025, which previously delivered an equivalent function.

out the need for strengthening to ensure that there is full and proper consideration of national capacity when determining individual decisions to prevent overcapacity lock-in. ESS did not prescribe how this should be achieved but emphasised that, without intervention, incineration capacity could increase unchecked and without adequate oversight. The Scottish Government accepted ESS' recommendation and agreed to ensure the residual waste management cap is reflected in SEPA's permitting regulations, meaning that national capacity is considered when assessing all environmental authorisations.

5. Conclusion

5.1 The incineration of residual waste has become a significant waste management method in Scotland. To prevent or mitigate the potential for harm to be caused, it is important that incineration as a method of managing waste is carefully considered and controlled.

5.2 ESS identified ineffective implementation of planning and environmental laws, which posed the risk of unchecked expansion of incineration capacity.

5.3 Following ESS' invitation, the Scottish Government agreed to work with ESS to rectify the identified failings and has committed to delivering the following actions:

- publish an updated capacity analysis to ensure the latest forecasts are publicly available and to continue to monitor infrastructure developments in collaboration with SEPA, ZWS and local authorities
- develop an indicative residual waste treatment cap through Scotland's Residual Waste Plan, due in 2027
- integrate the cap into SEPA's permitting regulations so that SEPA considers it when assessing all environmental authorisations

5.4 As a result of these actions, ESS considers that informal resolution has been achieved in that:

- they constitute a proportionate and targeted approach to rectifying the identified failings
- the risk of negative outcomes associated with incineration will be reduced
- they strengthen alignment with Scotland's climate targets and environmental objectives, reinforcing commitments under the waste hierarchy, the transition to a circular economy, and net-zero ambitions

To ensure transparency and effective delivery of these remedial actions, ESS has requested a formal implementation plan from the Scottish Government setting out how and when the agreed actions will be completed, including key milestones, responsible parties, and mechanisms for public reporting. ESS will monitor the Scottish Government's delivery of the agreed remedial actions and provide public updates on progress.

CONTACT

Environmental Standards Scotland
Thistle House
91 Haymarket Terrace
Edinburgh
Scotland
EH12 5HD

E-mail: enquiries@environmentalstandards.scot

Telephone: 0808 1964000

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If you require this report in an alternative format please contact:
enquiries@environmentalstandards.scot

From: 1 [redacted] 1 [redacted] gov.scot>
Sent: 09 December 2025 12:39
To: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Cc: 1 [redacted] 1 [redacted] gov.scot>; 1 [redacted]
1 [redacted] gov.scot>
Subject: RE: 20251208 Email Outgoing 1 [redacted] | Subject - Informal Resolution Report – Incineration Overcapacity Case - IESS.24.046

Hi 1 [redacted]

Not sure I replied to thank you for sharing ahead of time, and I see the report is now live.

As mentioned previously, we are working on a full response to your letter and requests. In the meantime, to formally confirm that SEPA were aware of the changes planned to be made to their permitting process to consider the indicative cap. I understand that SEPA has also raised this with ESS in the regular liaison catch up.

If you want to discuss anything else sooner please don't hesitate to get in touch.

Thanks
1 [redacted]

Schedule of Information – ESS and SEPA

EIR Reference Number: ESS.IR.029

Doc no.	Title	Attachment	Release – wholly or in part	Exemptions/ exceptions applied	Public interest test
1	20240830 Email Outgoing SIO to SEPA Subject - Notification of pending section 23 request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
2	20240902 Email Incoming SEPA to SIO Subject - response to notification of pending section 23 request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
3	20240902 Email Outgoing SIO to SEPA Subject - Section 23 Request - IESS.24.046	3.1 Section 23 Letter	In part	Reg 11(2)(a)	Not subject to public interest test
4	20240902 Email Incoming SEPA to SIO Subject – ack of section 23 request - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
5	20240923 Email Incoming SEPA to SIO Subject - Section 23 response - IESS.24.046	5.1 Response letter	In part	Reg 11(2)(a)	Not subject to public interest test
6	20240924 Email Outgoing SIO to SEPA Subject - Ack of Section 23 response - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test

7	20251203 Email Outgoing SIO to SEPA Subject: Update on the publication of IR report - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
8	20251203 Email Incoming SEPA to SIO Subject – ack of IR report publication - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
9	20251208 Email Outgoing SIO to SEPA Subject - Informal Resolution Report - Incineration Overcapacity Case - IESS.24.046	9.1 Informal Resolution report	In part	Reg 11(2)(a)	Not subject to public interest test
10	20251208 Email Incoming SEPA to SIO Subject - Ack of Informal Resolution Report - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test

From: 1 [redacted]@environmentalstandards.scot
Sent: Friday, August 30, 2024 11:20 AM
To: 1 [redacted] 1 [redacted]
Subject: 20240830 ESS Investigations - Notification of pending section 23 request - IESS.24.046

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear 1 [redacted]

I hope you are well.

ESS have received a representation over incineration overcapacity and we are looking to gather some information surrounding the concerns raised, a letter has been prepared for SEPA.

Please could you confirm if you would like a call before the issuing of this letter, or alternatively, I can issue and we can discuss once you have had the opportunity to consider the information requested.

Kind regards

1 [redacted]
1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

**ENVIRONMENTAL
Standards Scotland**
Irean Àrainneachdail na h-Alba

General Enquiries | enquiries@environmentalstandards.scot
0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD



Contact us via an online
Sign Language Interpreter
Contact Scotland BSL

BSL users can contact via an online BSL/English interpreter

From: 1 1 1 [redacted]@EPA.org.uk>
Sent: 02 September 2024 08:30
To: 1 [redacted] environmentalstandards.scot>
Cc: sepaessmailbox 1 [redacted]@sepa.org.uk>
Subject: RE: 20240830 ESS Investigations - Notification of pending section 23 request - IESS.24.046

OFFICIAL

Hi 1 [redacted]
I am happy for you to issue the letter, and we'll then consider whether your helpful offer of a discussion would be useful, thanks.
I'd be grateful if you could cc our mailbox.
Kind regards

1 [redacted]
1 [redacted]
Head of Environmental & Regulatory Legal
Scottish Environment Protection Agency
Buidheann Dion Àrainneachd na h-Alba

1 [redacted]
1 [redacted]@sepa.org.uk
Waverley Court | 4 East Market Street | Edinburgh | EH8 8BG
Postal address: Angus Smith Building | Unit 6, 4 Parklands Avenue | Holytown | Motherwell | ML1 4WQ
1 [redacted]



From: 1 [redacted]@environmentalstandards.scot
1 [redacted]@environmentalstandards.scot>
Sent: Monday, September 2, 2024 11:29 AM
To: 1 [redacted] 1 [redacted] 1 [redacted]@EPA.org.uk>
Cc: sepaesmailbox 1 [redacted]@sepa.org.uk>
Subject: 20240902 ESS Investigations - Section 23 Request - IESS.24.046

OFFICIAL

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Dear 1 [redacted]

Following my previous email, please see attached our Section 23 request for information.

Should you, or a colleague have any questions regarding the questions raised in this letter, please do not hesitate to contact me. I would be happy to arrange a teams call to discuss.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations
Officer Ingrid.wallace@environmentalstandards.scot
1 [redacted]

ENVIRONMENTAL
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Sign Language Interpreter
Contact Scotland BSL

BSL users can contact via an online BSL/English interpreter

1
Senior Investigations Officer
Environmental Standards Scotland
Ìrean Àrainneachdail na h-Alba

ENVIRONMENTAL
Standards Scotland
Ìrean Àrainneachdail na h-Alba

1 environmentalstandards.scot

By e-mail:

1
Head of Legal
Scottish Environmental Protection Agency (SEPA)

02 September 2024

**Subject: Provision of Information to Environmental Standards Scotland (ESS):
Incineration Overcapacity – Case Reference IESS.24.046**

Dear 1

I am writing to inform you that ESS has received a representation expressing concerns over incineration overcapacity in Scotland. The representation refers specifically to recommendation 5 of the 'Stop, Sort, Burn, Bury - incineration in the waste hierarchy: independent review' undertaken in 2022, and the development of an indicative cap in Scotland that declines over time.

One of ESS' roles is to consider Scottish public authorities' compliance with environmental law. I believe this matter is within ESS' remit, and I would appreciate your assistance to help me determine whether this is an issue that ESS should consider further. I am requesting your reasonable assistance under the public bodies co-operation duties as set out in section 23(1) of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021.

Following my preliminary review of the representation, and to provide background to my request, I note the summary points below:

- The representation outlines that to operate incinerators PPC permits are required, and these are issued by SEPA under The Pollution Prevention and Control (Scotland) Regulations 2012 ('the 2012 Regulations'). Under Regulation 60 of the 2012

Regulations the Scottish Ministers have the power to issue directions to SEPA, for example to require SEPA to refuse PPC permits for new incinerators or variations to existing permits which would increase incineration capacity.

- Additional information provided within the representation infers incineration capacity is increasing as a result of two factors. Firstly, the expansion of capacity at existing incinerator sites for example the Dunbar incinerator in 2023¹. Secondly, from incinerators that already have planning permission (granted prior to June 2022) but are either not yet operating or been built.
- The referrer offers the view that following a direction issued recently (April 2024) on the Environment Agency by the UK Government, pausing the determination of waste incineration environmental permits, a similar action should occur in Scotland as the legal powers under which that direction was made are comparable. The referrer has contacted the Scottish Ministers on two occasions to request such an action be taken, along with the development of a cap to prevent incineration capacity from increasing without any limit.
- In response, Scottish Ministers confirmed that following the Review, no further planning permission for new incineration facilities beyond what was already in place should be granted. National Planning Framework 4, clearly illustrates that the Scottish Government will not support development proposals for energy-from-waste facilities except under very limited or exceptional circumstances.
- Scottish Ministers also advised that with support from Zero Waste Scotland, the development of incineration facilities and capacity in Scotland will be closely monitored, and the measures currently in place to reduce the risk of overcapacity will continue to be reviewed. In addition, developers of those incineration facilities that already have planning permission will be encouraged to ensure they understand the Review's findings on capacity.
- Finally, the Scottish Ministers advised that several capacity studies have been commissioned (including the Review) and an additional capacity analysis has been commissioned through Zero Waste Scotland, as part of its work to consider delivery of the ban on landfilling biodegradable municipal wastes. The outputs and

¹ [PPC/A/1032878 - Viridor Dunbar Waste Services Limited: Dunbar Energy Recovery Facility, Oxwellmains, Dunbar, EH42 1SW - PPC Variation application - Scottish Environment Protection Agency - Citizen Space \(sepa.org.uk\)](#)

recommendations of this work are currently under consideration by the Scottish Government.

- The outcome sought from the representation is for the Scottish Government to immediately stop incineration overcapacity from worsening and set a cap on incineration capacity which is progressively reduced over time.

So that I can determine what action, if any, should be taken by ESS, I would be grateful if SEPA could provide me with the following information:

- The Scottish Government accepted recommendation 5 of the review, however to date no cap has been implemented. Please confirm what involvement SEPA has had in this connection (and if so, what progress has been made), since the Review was published in 2022.
- Since the review was carried out in 2022, please provide full details on all new and existing incinerator PPC permits that have been authorised or varied by SEPA to allow for an increase in annual capacity.
- It is understood that several incinerator projects have obtained planning permission but have not yet obtained PPC permits from SEPA. Please provide detail in respect of how many of these developments have progressed through the permitting process and, if so, the decision outcome.
- In addition, in respect of the modelling work carried out in April 2022 by Ricardo for the Review, is SEPA aware of any work having commenced at any new incinerator site since this time. If so, please provide details.
- A direction to pause the determination of waste incineration permits has recently been issued to the Environment Agency by the UK Government. In respect of such points, have Regulation 60 powers ever been exercised on SEPA to refuse a PPC permit relating to a new or an existing incinerator plant. If so, please provide details.
- Lastly, can you provide a copy of any guidance, policy and procedure in respect of SEPA's incinerator permitting process.

Responses to the above queries should be submitted to representations@environmentalstandards.scot or by post. Please reference our case number (IESS.24.046) in your return correspondence.

I would be grateful if you could provide the requested assistance within 15 business days of the date of this letter. If you have any questions or queries, please do not hesitate to contact me at the above e-mail address.

Yours sincerely

1 [Redacted]

1 [Redacted]

Senior Investigations Officer

From: [redacted] [redacted] [redacted] EPA.org.uk>
Sent: 02 September 2024 11:49
To: [redacted] [redacted] environmentalstandards.scot>
Cc: sepaessmailbox [redacted] sepa.org.uk>
Subject: RE: 20240902 ESS Investigations - Section 23 Request - IESS.24.046

OFFICIAL

Thanks [redacted]
I'll arrange for a response to be prepared and will come back to you if we have any questions.

Kind regards

[redacted]

[redacted]

Head of Environmental & Regulatory Legal
Scottish Environment Protection Agency
Buidheann Dion Àrainneachd na h-Alba



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From: 1 1 1 [redacted]@EPA.org.uk>
Sent: Monday, September 23, 2024 5:28 PM
To: 1 1 [redacted]@environmentalstandards.scot>
Cc: sepaessmailbox 1 [redacted]@sepa.org.uk>
Subject: RE: 20240902 ESS Investigations - Section 23 Request - IESS.24.046

OFFICIAL

Dear 1 [redacted]
Further to your email and letter of 2 September, please find enclosed our response and the 2 documents referred to in our response.

Please don't hesitate to let me know if we can assist further.

Kind regards

1 [redacted]

1 [redacted]
Head of Environmental & Regulatory Legal
Scottish Environment Protection Agency
Buidheann Dion Àrainneachd na h-Alba



1 [redacted]@sepa.org.uk

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[REDACTED]
Senior Investigations Officer
Environmental Standards Scotland
Thistle House
91 Haymarket Terrace
Edinburgh
EH12 5HD

Our Ref:
Your Ref: IESS.24.046

If emailing, mark FAO:

[REDACTED]

By email: [REDACTED] [environmentalstandards.scot](mailto:[REDACTED]@environmentalstandards.scot)

23 September 2024

Dear [REDACTED]

**Provision of Information to Environmental Standards Scotland (ESS):
Incineration Overcapacity – Case Reference IESS.24.046**

I refer to your letter of 2 September 2024 requesting SEPA's reasonable assistance under section 23 of the UK Withdrawal from the European Union (Continuity)(Scotland) Act 2021. In particular, you asked us to provide information in relation to a representation received by ESS expressing concerns over incineration overcapacity in Scotland.

We have answered the specific questions raised in your letter below, and have also provided some general opening remarks setting out SEPA's understanding of the position regarding incineration capacity in the wider context of waste treatment and disposal in Scotland.

In '[Stop, Sort, Burn, Bury – incineration in the waste hierarchy: independent review](#)' (May 2022) (the Review) it was confirmed that incineration remains the most appropriate form of residual waste treatment (Page 31). However, the Review also recognised there was sufficient capacity in the development pipeline and recommended that the Scottish Government "ensure no further planning permission (i.e. beyond that already in place) is granted to incineration infrastructure", except in limited circumstances (Recommendations 4 & 10).

Cont./

The [Notification Direction](#) issued to Local Authorities in 2021 had already signaled that Scottish Ministers were likely to call in all applications for incineration. The policy recommended by the Review was formalised in 2023 via [National Planning Framework 4 \(policy 12\(g\)\)](#).

SEPA is not aware of any new planning applications for incineration facilities since the 2021 Notification Direction and has not been contacted in relation to any new proposals in our role as a statutory consultee to the planning process.

Energy recovery plays a small but important role in the safe and responsible treatment of non-recyclable waste which would otherwise have gone to landfill. Scotland needs sufficient treatment capacity to manage our residual waste in compliance with the forthcoming ban on landfilling biodegradable municipal waste (31 December 2025) and to account for incinerator maintenance and downtime.

The Review recognised that more capacity was needed than was in operation at the time of publication (section 3.4 – Capacity Analysis Results). At 3.4.2, the Review anticipated this capacity gap could be closed by the time the ban comes into effect were Scotland to meet its 2025 recycling targets, but that there would be likely to be insufficient residual waste treatment capacity in Scotland in 2025 by 590-680 kt where policy targets are not achieved. As set out in [the Scottish Government document Delivering Scotland's circular economy A Route Map to 2025 and beyond](#) (page 17) (also published in May 2022), the Scottish Government recognised those targets will not be met. The [Waste Markets Study: Full Report](#) from 2019, commissioned by Scottish Government, is relevant. We understand an update to this report will be published shortly.

Cont./

Our understanding of the Review is that facilities with existing planning consent should be able to proceed towards financing and construction. The predicted overcapacity in 2027 (mentioned at section 3.4.2 of the Review) is based on current recycling progress and all facilities in the pipeline being constructed. This included six facilities for which construction has not begun. Our experience is that, in practice, we do not anticipate all facilities with planning consent to be financed and move forward to construction. For example, in January, one of these six announced that they would not be proceeding (covered in our answer to Question 3 below).

SEPA does not consider national capacity when determining PPC permits. However, we cannot grant a permit where the proposed facility does not have planning consent (Regulation 18, Pollution Prevention & Control (Scotland) Regulations 2012). That requirement ensures that only those facilities which have been granted planning consent, in line with Scottish Government planning policy, can obtain a PPC Permit.

SEPA's permitting process ensures incineration facilities are designed and operated to high technical standards and meet strict emission limits to protect the environment and human health.

Please find below answers to your specific questions.

- 1. The Scottish Government accepted recommendation 5 of the review, however to date no cap has been implemented. Please confirm what involvement SEPA has had in this connection (and if so what progress has been made), since the Review was published in 2022.**

SEPA regularly provides Scottish Government with data and information on incineration in Scotland, including on capacity. We also provide data and information on how much residual waste is landfilled or exported for incineration overseas. Together, this data can be used by Scottish Government to support the development of an 'indicative cap'.

Questions on how Scottish Government has progressed implementation of Recommendation 5 are best directed to Scottish Government.

Cont./

- 2. Since the review was carried out in 2022, please provide further details on all new and existing incinerator PPC permits that have been authorised or varied by SEPA to allow for an increase in annual capacity.**

Since 2022, there have been no new incinerator permits issued and there has only been one variation granted to allow an increase of capacity:

In 2023, SEPA varied the Permit for Viridor's Dunbar facility PPC/A/1032878 to allow an increase to the annual throughput from 325,000 to 390,000 tonnes. Viridor operate two lines, each with a capacity of 195,000 tonnes. The increase in throughput is not because of any physical changes to the plant but is because the incoming waste stream has a lower calorific value due to improved plastics recycling upstream. This fall in calorific value allows more waste to be processed within the thermal capacity of the existing furnace. The increase is also due to increased plant availability allowing continuous operation over a year without annual shutdowns.

- 3. It is understood that several incinerator projects have obtained planning permission but have not yet obtained PPC permits from SEPA. Please provide detail in respect of how many of these developments have progressed through the permitting processes and, if so, the decision outcome.**

PPC permit applications are being currently determined for the following sites which already have planning consent in place:

Oldhall, Irvine PPC/A/1197167 - application has been advertised and had its initial public consultation. Information regarding this application can be found here <https://www.sepa.org.uk/regulations/consultations/currentopen-consultations/dy-oldhall-energy-recovery-limited-oldhall-energy-recovery-facility-application/>.

Cont./

Binn Farm, Perth PPC/A/5007795 – application was received in May this year and is yet to go to advertising and public consultation.

Killoch Energy Park, Ochiltree PPC/A/SEPA2021-7036 -application has been advertised and had its initial public consultation. Information regarding this application can be found here <https://consultation.sepa.org.uk/regulatory-services/killoch-energy-recovery-park/>.

We understand from Barr Environmental's announcement in January - [Barr Environmental: Ochiltree incinerator plans withdrawn | Cumnock Chronicle](#) - that they do not plan to build this facility and our determination of this application is currently on hold.

4. **In addition, in respect of modelling work carried out in April 2022 by Ricardo for the Review, is SEPA aware of any work having commenced at any new incinerator site since this time. If so, please provide details. (We subsequently asked you, by email on 4/9/24, whether you are asking whether there has been any work at any site since April 2022 or whether there are any entirely new projects/sites started since 2022 and so were not included in the Ricardo model. By email of the same date, you confirmed the question relates to any new projects/sites since 2022).**

SEPA is not aware of any new incineration proposals since the publication of the Review. The only projects for which there have been permit applications, or where we understand construction work has started, are those which had secured planning consent before the Notification Direction in 2021 and were included in the Ricardo model.

5. **A direction to pause the determination of waste incineration permits has recently been issued to the Environment Agency by the UK Government. In respect of such points, have Regulation 60 powers ever been exercised on SEPA to refuse a PPC permit relating to a new or an existing incinerator plant. If so, please provide details.**

Cont./

Regulation 60 of the Pollution Prevention and Control (Scotland) Regulations 2012 has never been used by Scottish Ministers to direct SEPA to refuse an application for a permit or variation for an incineration facility.

We understand that the Direction to the Environment Agency expired on 24 May 2024 and that the Environment Agency has since restarted determining permit applications for incineration activities.

6. Lastly, can you provide a copy of any guidance, policy and procedure in respect of SEPA's incinerator permitting process.

We have information on Energy From Waste and Applications on SEPA's website (external link) [Energy from waste | Scottish Environment Protection Agency \(SEPA\)](#) including guidance for applicants on modelling, site reports, noise impact and human health impact assessments. Other guidance documents used are:

- (external link) PPC application form – <https://www.sepa.org.uk/media/4ogpyjite/ppc-part-a-new-application.pdf>
- (external link) SEPA guidance on PPC application - [Guidance | Scottish Environment Protection Agency \(SEPA\)](#)
- (external link) Thermal Treatment of Waste Guidelines [Thermal Treatment of Waste Guidelines \(2014\) \(sepa.org.uk\)](#)
- (external link) Part A practical guide - [ied-ppc-tg4-ppc-part-a-practical-guide.pdf \(sepa.org.uk\)](#)
- (internal document – PDF enclosed) Interim Procedure for Determination of New PPC Part A application
- (internal document – PDF enclosed) Guidance on assessing PPC A applications

- (external link) WI BREF and WI BAT Conclusions - [Waste Incineration | EU-BRITE \(europa.eu\)](#)
- (external link) IED (Industrial Emissions Directive) Chapter IV - [Directive - 2010/75 - EN - EUR-Lex \(europa.eu\)](#)

Yours sincerely

1

i

Head of Environmental & Regulatory Legal

Enc: Interim Procedure for Determination of New PPC Part application
Guidance on assessing PPC A applications

Guidance on Assessing Part A Applications

This document is meant as a training aide to help all Officers determine PPC Part A permit applications.

It provides advice and guidance on the different types of SEPA Forms which will be submitted as part of the application and hopefully is a good companion document to "[IED-PPC-TG4 - Pollution Prevention and Control \(PPC\) Technical Guidance: A practical guide for Part A activities](#)".

BREF & BAT-C

When making an assessment of any application the Officer should be clear what the relevant BAT Reference document and BATC document is to the proposed activity (this should have been clarified with the applicant via the pre-app discussion).

A link to the BREFS and BATC documents is found here:

[BAT reference documents | Eippcb](#)

Note: This document is not a formal document which must be completed as part of the formal PPC determination process. All formal decision making must be recorded on the most up to date versions of the Decision Documents.

Note: With regards to the Duly Made Checks, please note it is not a full technical assessment, it should just be used to check that an attempt has been made to answer each section of the application form.

Form A – to be completed for all applications					
Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
A1 and A2	About the application and authorised contact	Check that all questions in A1 and A2 have been completed.			Section 1 Administrative Information
A3	About the operator	Check the appropriate section of A3 has been completed			
A3.5	Company details	If section A3.5 has been completed (the application is on behalf of a company) - Cross check the details provided with those on Companies House.	If you have any concerns regarding the type of company then don't hesitate to get in touch with Legal. Finance can also provide expert advice in terms of the health of a company if required.		

Form B – To be completed for new permits – technical information about the installation.

Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
B1.1	Activities* comprising STU and DDAs, and PPC 2012 schedule 1 activity reference.	Ensure completed and correct activities applied for.		Is this correct? What is the relevant BREF/BAT-C7 (Note: This should have been agreed at pre-app) Have these been considered throughout the application?	DD01 Section 1 Administrative Information and DD02 section on Administrative determinations Schedule 1 of the Draft Permit
B1.3	Site condition report and baseline report and plans of site	Ensure reports supplied, or justification provided as why full reports are not required.	Contaminated Land Team or Groundwater Unit	Has a site condition and baseline report been submitted? Does this include the information required for Contaminated Land to make an assessment and set the soil and groundwater monitoring requirements? Has it followed publish guidance?	DD02 Sections on Fugitive emissions to water and Site Condition Report Permit – Soil and Groundwater conditions
Sections B2, B3 and B4 require applicants demonstrate how their proposals constitute BAT and justify their proposals against any relevant BAT conclusions or guidance. The following subjects and how they constitute BAT must be considered in their application.					
B2.1	Proposed management techniques			Description of the processes to be carried out on site, are these BAT? Have throughputs and capacities been provided? Management techniques and EMS, are these BAT?	DD02 Sections on Management and potentially Accidents and Consequences
B2.2	Identify raw materials		COMAH Specialists	List of raw materials and quantities to be stored on site. Quantities and location of storage - is there enough bunding? Compatibility of chemicals for storage, surfacing. Be aware that chemical/solvent storage may fall into COMAH.	DD02 Sections on Raw Materials and Raw Material selection. Potentially fugitive emissions to air and water and water use.
B2.3	Preventing and reducing waste and emissions			Efficient use of raw materials. At source reduction in waste, what waste management techniques to be used?	As above
B2.4	Disposal to land of List I and List II** substance and how groundwater directives have been met		Water Permitting, Contaminated Land Team, or Groundwater Unit	There is a presumption against discharge of these substances to land. Are there any local groundwater abstractions in the vicinity?	DD02 Sections on Point source emissions to Groundwater. Permit conditions on groundwater monitoring
B2.5	Discharges to water environment of List I and List II substances		Water Permitting, Contaminated Land Team, or Groundwater Unit	What is the quality of the receiving water body? Does the receiving water body have environmental capacity? Are there downstream users?	DD02 section on Point source emissions to surface water
B2.6	Waste quantities, management and storage			Quantities and location of storage, bunding, bund capacity, compatibility of chemical waste for storage, surfacing	DD02 section on Waste Handling Permit – Waste storage table and conditions
B2.7	Waste recovery, reuse or disposal			Is the waste hierarchy met? If disposal is used as an option, were other options considered?	DD02 sections on Waste minimisation and waste recovery or disposal
B2.8.1	Breakdown of proposed energy consumption and generation				
B2.8.2	Basic measures for improvement of energy efficiency			Do these meet the requirements of the BREF/BAT-C3? Refer to SEFAs guidance on Energy efficiency directive if appropriate.	DD02 Section on Energy
B2.8.3	Climate change levy agreement	Written confirmation should be provided if a climate change levy agreement is in place			

Form B – To be completed for new permits – technical information about the installation.					
Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
B2.9	Documented system to identify assess and minimise environmental risks and hazards of accidents and consequences			Environmental Risk assessment – have they assessed the environmental risk associated with their activities? How do they plan to manage and assess this on an ongoing basis? Appropriate bunding – CIRIA guidance?	DD02 sections on Management and Accidents and their consequences
B2.10	Noise and vibration, sources, receptors and proposed techniques for control		Waste and Industry Unit	Have the noise measures in the relevant BREF/BAT C been included? Has a noise assessment under BS4142 been carried out? Is there an indication of an adverse impact? Make reference to the new Joint Noise guidance.	DD02 section on Noise
B2.11	Measures for monitoring emissions		E&F helpdesk FAO [redacted] if assistance is required for air, water permitting specialists for emissions to water	What monitoring points are in place? What standards to they propose to monitor to? Do these meet standards in M2? What is being monitored? What is the sample frequency? Where and when will it be monitored?	DD02 section on monitoring and section 9 on Emission limit values or equivalent technical parameters. Permit conditions on air emissions; abatement may be included in schedule 1 DAAs
B2.12	Measures for definitive cessation of activities and return site to satisfactory state			Closure Plan.	DD02 section on Closure
B2.13	Techniques and measures if more than one operator		Legal?		DD02 section on Management
B3	Written information about the emissions which will result from the techniques described			Emissions and abatement, do these meet any BAT-AELs or equivalent? Have all the management techniques listed in the BREF/BAT-C been considered and installed? If not is there justification for this?	DD02 section on Point source emissions to air, point source emissions to water fugitive emissions to air, fugitive emissions to water, odour, monitoring and section 9 on Emission limit values or equivalent technical parameters.
B3.1	The nature, quantities, and sources of foreseeable emissions to land, air and water			Has a H1 assessment or air modelling to show environmental risk at sensitive receptors? Are any amendments required to the emission limits provided in the BAT-C/BREF notes?	Permit conditions on emissions to air and water. Abatement and water treatment likely to be included in schedule 1 as DAA
B4.1	An assessment of the potential significant human health and environmental effects of foreseeable emissions.	Likely to include an H1 assessment and potentially air modelling.	If includes air modelling, E&F helpdesk for attention of Air modeller?	Is nuisance from odour likely to be an issue? Have they provided odour modelling to show likely impact at sensitive receptors? What abatement is in place and is this adequately sized and BAT?	
B4.2	Demonstration that relevant objectives in Waste Management Licensing Regulations 1994 have been addressed (if applicable)			The relevant objectives require the operator to ensure that waste is managed in without endangering human health and without using processes or methods which could harm the environment, and facilitate and improve recovery where technically, environmentally and economically possible ensuring that different waste types are collected separately and not mixed.	DD01 Section on Specified Waste Management Activities assessment and potentially DD02 section on Management

Form B – To be completed for new permits – technical information about the installation.

Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
B4.3	Assessment of whether there is a likely significant effect on European Conservation Site	Check Nature Conservation Procedure for screening distances and ensure these have been considered. (see also B6)	Ecology Unit	The Nature Conservation Procedure provides a set screening distance for different types of PPC activity. Check the screening distance and then use the GIS function to confirm if the applicant has captured all relevant SSSIs, SPAs, SACs, etc within the zone.	DD02 section on Point source emissions to air, point source emissions to water fugitive emissions to air, fugitive emissions to water, odour, monitoring and section 9 on Emission limit values or equivalent technical parameters. Permit conditions on emissions to air and water. Abatement and water treatment likely to be included in schedule 1 as DAAs
B5.1	Has the development of the installation required an environmental statement under Council Directive 85/337/EEC	A copy of the report should be provided if this is the case	Planning Team?	?	DD02 Section on Environmental Impact assessment and COMAH
B6.1 to B6.9	Statutory consultees, all questions should be completed	Check the operator has listed appropriate consultees.	If a COMAH site consult with Waste and Industry unit.	Use this information to establish statutory consultees. B6.4 to 6.6 – Conservation sites this could be linked with B4.3 B6.9 – if site is COMAH, reference to safety report should be submitted.	DD02 section 2 on External consultation and SEPAs response and potentially Section on Environmental Impact assessment and COMAH
B7.1	Are they applying for a Specified Waste Management Activity (SWMA)?	If yes they should provide information on types and quantities and capacities of the disposal site and any hydrogeological and geological characteristics.	National Waste Unit Finance	Permits for SWMA can only be issued if we are satisfied that the applicant is a fit and proper person and that planning permission is in force. The fit and proper person is determined with reference to relevant convictions, financial provision, the provision of adequate professional technical development and training and whether the management of the installation will be in the hands of a technically competent person.	DD01 Section on Specified Waste Management Activities assessment and potentially DD02 section on Management
B7.2	Planning status of the site	Certificates or letter of confirmation from the planning authority that no planning is required should be included in the application	National Waste Unit	If the activity is a SWMA then Planning permission is generally required.	
B7.3	Relevant offences		Legal	This is important in assessing if an operator of a proposed SWMA is a fit and proper person.	
B7.4 to B7.7	Technical competence	Ensure at least one form of technical competence evidence has been submitted	National Waste Unit	This should be assessed against the <u>Technically Competent Person</u> guidance	
B7.8	Financial Provision	Ensure calculation of financial provision amount is included along with a proposed method of meeting this amount. First step with be a credit check by finance	National Waste Unit Finance	Finance for credit check and approval National Waste if applicant proposes alternative figures for financial provision amount	

***Note:** For Waste Incineration activities there is a list of additional information required. If applicable, check these have been supplied. Waste and Industry Unit lead on waste incineration will be able to provide additional advice.
***Note:** For waste incineration activities there is also a separate Decision Document to use.

Form C – To be completed for variations to permits – technical information about the proposed changes to the installation.

Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
C1.1	Activities* comprising STU and DDAs, and PPC 2012 schedule 1 activity reference	Ensure completed and correct activities applied for.		Is this correct? What is the relevant BREF/BAT-C? [Note: This should have been agreed at pre-app] Have these been considered throughout the application?	DD01 Section 1 Administrative information and DD02 section on Administrative determinations Schedule 1 of the Draft Permit
C1.2	Summary of the variation which is being applied for	Ensure this has been supplied and identifies the changes to be made on site Information can be used to help assess if this is a substantial variation. If substantial variation, this may be used as a non-technical summary of the application for the public participation directive.		Have all conditions that require amending been identified?	
C1.3	Additional land being included and Site condition report and baseline report and plans of site	Ensure reports supplied, or justification provided as why full reports are not required.	Contaminated Land Team or Groundwater Unit	Has a site condition and baseline report been submitted? Does this include the information required for Contaminated Land to make an assessment and set the soil and groundwater monitoring requirements? Has it followed publish guidance?	DD02 Sections on Fugitive emissions to water and Site Condition Report Permit – Soil and Groundwater conditions
C1.4	In the view of the operator is this a substantial variation	Use the Identifying substantial variation guidance, and information contained in the variation to check if you agree with their assessment			
<p>Sections B2, B3 and B4 require applicants demonstrate how their proposed changes constitute BAT and justify their proposals against any relevant BAT conclusions or guidance. The following subjects and how they constitute BAT must be considered in their application. Please note that if a change does not impact a particular aspect of the installation operators may not provide reports or information, but should justify why that aspect is not impacted by the proposed variation.</p>					
C2.1	Proposed management techniques			Description of the processes to be carried out on site, are these BAT? Have throughputs and capacities been provided? Management techniques and EMS, are these BAT?	DD02- Sections on Management and potentially Accidents and Consequences
C2.2	Identify raw materials		COMAH Specialists	List of raw materials and quantities to be stored on site. Quantities and location of storage - is there enough bunding? Compatibility of chemicals for storage, surfacing Be aware that chemical/solvent storage may fall into COMAH.	DD02 Sections on Raw Materials and Raw Material selection. Potentially fugitive emissions to air and water and water use.
C2.3	Preventing and reducing waste and emissions			Efficient use of raw materials, at source reduction in waste, what waste management techniques to be used?	As above
C2.4	Disposal to land of List I and List II** substances and how groundwater directives have been met		Water Permitting, Contaminated Land Team, or Groundwater Unit	There is a presumption against discharge of these substances to land. Are there any local groundwater abstractions in the vicinity?	DD02 Sections on Point source emissions to Groundwater. Permit conditions on groundwater monitoring
C2.5	Discharges to water environment of List I and List II substances		Water Permitting, Contaminated Land Team, or Groundwater Unit	What is the quality of the receiving water body? Does the receiving water body have environmental capacity? Are there downstream users?	DD02 section on Point source emissions to surface water
C2.6	Waste quantities, management and storage			Quantities and location of storage, bunding, bund capacity, compatibility of chemical waste for storage, surfacing	DD02 section on Waste Handling Permit – Waste storage table and conditions.

Form C – To be completed for variations to permits – technical information about the proposed changes to the installation.					
Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
C2.7	Waste recovery, reuse or disposal			Is the waste hierarchy met? If disposal is used as an option, were other options considered?	DD02 sections on Waste minimisation and waste recovery or disposal
C2.8.1	Breakdown of proposed energy consumption and generation			Do these meet the requirements of the BREF/BAT-Cs? Refer to SEPA's guidance on Energy efficiency directive if appropriate.	DD02 Section on Energy
C2.8.2	Basic measures for improvement of energy efficiency				
C2.8.3	Climate change levy agreement	Written confirmation should be provided if a climate change levy agreement is in place.			
C2.9	Documented system to identify assess and minimise environmental risks and hazards of accidents and consequences			Environmental Risk assessment – have they assessed the environmental risk associated with their activities? How do they plan to manage and assess this on an ongoing basis? Appropriate bunding – CIRIA guidance?	DD02 sections on Management and Accidents and their consequences
C2.10	Noise and vibration, sources, receptors and proposed techniques for control		Waste and Industry Unit	Have the noise measures in the relevant BREF/BAT C been included? Has a noise assessment under BS4142 been carried out? Is there an indication of an adverse impact? Make reference to the new Joint Noise guidance.	DD02 section on Noise
C2.11	Measures for monitoring emissions		E&F helpdesk FAO assistance is required for air, water permitting specialists for emissions to water	What monitoring points are in place? What standards to they propose to monitor to? Do these meet standards in M2? What is being monitored? What is the sample frequency? Where and when will it be monitored?	DD02 section on monitoring and section 9 on Emission limit values or equivalent technical parameters. Permit conditions on air emissions, abatement may be included in schedule 1 DAAs
C2.12	Measures for definitive cessation of activities and return site to satisfactory state			Closure Plan.	DD02 section on Closure
C2.13	Techniques and measures if more than one operator		Legal?		DD02 section on Management
C3	Written information about the emissions which will result from the techniques described.			Emissions and abatement, do these meet any BAT-AELs or equivalent? Have all the management techniques listed in the BREF/BAT-C been considered and installed? If not is there justification for this?	DD02 section on Point source emissions to air, point source emissions to water, fugitive emissions to air, fugitive emissions to water, odour, monitoring and section 9 on Emission limit values or equivalent technical parameters.
C3.1	The nature, quantities, and sources of foreseeable emissions to land, air and water			Has a H1 assessment or air modelling to show environmental risk at sensitive receptors? Are any amendments required to the emission limits provided in the BAT-C/BREF notes?	Permit conditions on emissions to air and water, Abatement and water treatment likely to be included in schedule 1 as DAAs
C4.1	An assessment of any change to the potential significant harm to human health and	If changes to air emissions proposed, likely to include an H1 assessment and potentially air modelling.	If includes air modelling, E&F helpdesk for	Is nuisance from odour likely to be an issue? Have they provided odour modelling to show likely impact at sensitive receptors?	

Form C – To be completed for variations to permits – technical information about the proposed changes to the installation.					
Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
	environmental effects of foreseeable emissions.		attention of Air modellers?	What abatement is in place and is this adequately sized and BAT?	
C4.2	Demonstration that relevant objectives in Waste Management Licensing Regulations 1994 have been addressed (if applicable)			The relevant objectives require the operator to ensure that waste is managed in without endangering human health and without using processes or methods which could harm the environment, and facilitate and improve recovery where technically, environmentally and economically possible ensuring that different waste types are collected separately and not mixed.	DD01 Section on Specified Waste Management Activities assessment and potentially DD02 section on Management
C4.3	Assessment of whether the proposed changes will have a likely significant effect on European Conservation Site	Check Nature Conservation Procedure for screening distances and ensure these have been considered. (see also B6)	Ecology Unit	The Nature Conservation Procedure provides a set screening distance for different types of PPC activity. Check the screening distance and then use the GIS function to confirm if the applicant has captured all relevant SSIs, SPAs, SACs, etc within the zone.	DD02 section on Point source emissions to air, point source emissions to water fugitive emissions to air, fugitive emissions to water, odour, monitoring and section 9 on Emission limit values or equivalent technical parameters. Permit conditions on emissions to air and water, Abatement and water treatment likely to be included in schedule 1 as DAAs
C5.1	Has the development of the installation required an environmental statement under Council Directive 85/337/EEC	A copy of the report should be provided if this is the case	Planning Team?	?	DD02 Section on Environmental Impact assessment and COMAH
C6.1 to C6.9	Statutory consultees, all questions should be completed	Check the operator has listed appropriate consultees.	If a COMAH site consult with Waste and Industry unit.	Use this information to establish statutory consultees. B6.4 to B.6 – Conservation sites this could be linked with B4.3. B6.9 – if site is COMAH, reference to safety report should be submitted.	DD02 section 2 on External consultation and SEPAs response and potentially Section on Environmental Impact assessment and COMAH
C7.1	Are they applying for a change to any Specified Waste Management Activity (SWMA)?	If yes they should provide information on types and quantities and capacities of the disposal site and any hydrogeological and geological characteristics.	National Waste Unit Finance	Permits for SWMA can only be issued if we are satisfied that the applicant is a fit and proper person and that planning permission is in force. The fit and proper person is determined with reference to relevant convictions, financial provision, the provision of adequate professional technical development and training and whether the management of the installation will be in the hands of a technically competent person.	DD01 Section on Specified Waste Management Activities assessment and potentially DD02 section on Management
C7.2	Planning status of the site	Certificates or letter of confirmation from the planning authority that no planning is required should be included in the application	National Waste Unit	If the activity is a SWMA then Planning permission is generally required.	
C7.3	Relevant offences		Legal	This is important in assessing if an operator of a proposed SWMA is a fit and proper person.	
C7.4 to C7.7	Technical competence	If there is a change to the technical competence on site, or a change to site activities, ensure at least one form of technical competence evidence has been submitted.	National Waste Unit	This should be assessed against the Technically Competent Person guidance	

Form C – To be completed for variations to permits – technical information about the proposed changes to the installation.					
Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
C7.8	Financial Provision	If there are changes to the waste types or quantities to be stored on site ensure calculation of financial provision amount is included along with a proposed method of meeting this amount. First step will be a credit check by finance	National Waste Unit Finance	Finance for credit check and approval National Waste if applicant proposes alternative figures for financial provision amount	

Form D – To be completed for transfer and partial transfer of permits – technical information about the proposed changes to the installation and the proposed transferee					
Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
D1.1	Activities* comprising STU and DDAs, and PPC 2012 schedule 1 activity reference that are to be transferred	Ensure completed and correct activities applied for.		Is this correct?	Administrative information of decision document, transfer notice and covering letter.
D2	Permit number				
D2.1	Is this application for a "partial transfer"	Ensure an explanation has been supplied and a plan of the new site boundary has been included.	Legal for shared boundary/part permit queries	Will need to vary the existing permit to account for the changes, at the very least update the site plan to show the new site boundary is the land being transferred within the existing site boundary, additional consideration needs to be given to part permits and shared boundaries.	
D2.2	Does the partial transfer require changes to the permit conditions?	Ensure this has been supplied and identifies the changes to be made on site		Have all conditions that require amending been identified? Consider whether it is just land that has been transferred, or have activities also been transferred to a new operator?	
D3.1	Legal status of proposed transferee	Ensure a selection has been made and the relevant section completed.		Ensure that the transferee will be the person in control of the installation and will meet the requirements of Regulation 47(8) which states the following: (8) SEPA must approve an application for transfer unless it considers that the— (a) proposed holder will not be the person with control of the operation of the installation or mobile plant after any transfer, (b) in the case of a permit authorising the carrying out of a specified waste management activity, the proposed holder is not a fit and proper person for the purposes of regulation 18, or (c) the proposed holder will not ensure compliance with the permit conditions.	
D3.2	Individual applicants				
D3.3	Applications from a partnership	Ensure that details of each person in the partnership has been included in the application			
D3.4	Details of the partnership	Ensure details of partnership have been completed			
D3.5	Companies or other Corporate Applicants	Ensure details of the company or corporate body have been included here and a copy of the certificate/evidence of status included. Companies house should be used to check the company number and registered address.			
D3.6	Subsidiary of holding company?	Check this has been completed if appropriate and again check companies house to ensure the details are correct.			
D4.1	Are they applying for a change to any Specified Waste Management Activity (SWMA)?	If yes they should provide details of the activity to be carried out	National Waste Unit Finance	Permits for SWMA can only be issued if we are satisfied that the applicant is a fit and proper person and that planning permission is in force. The fit and proper person is determined with reference to relevant convictions, financial provision, the provision of adequate professional	Section 11, specified waste management activities assessment

Form D – To be completed for transfer and partial transfer of permits – technical information about the proposed changes to the installation and the proposed transferee

Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
				technical development and training and whether the management of the installation will be in the hands of a technically competent person.	
D4.3	Relevant offences		Legal	This is important in assessing if an operator of a proposed SWMA is a fit and proper person.	
D4.3 to D4.6	Technical competence	Ensure the transferee has provided at least one form of evidence to show technical competence	National Waste Unit	This should be assessed against the Technically Competent Person guidance	
D4.7 to D4.8	Financial Provision	The transferee should provide information on how they will meet financial provision. First step with be a credit check by finance.	National Waste Unit Finance	Finance for credit check and approval National Waste if applicant proposes alternative figures for financial provision amount	

Form E – To be completed for surrender and partial surrender of permits – technical information about the decommissioning and surrender of the installation

Application Section Number	Information required	Duly made checks to be made	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
E1.1	Activities* comprising STU and DDAs, and PPC 2012 schedule 1 activity reference that are to be surrendered	Ensure completed and correct activities applied for.		Is this correct?	
E2.1	Is this application for a "partial surrender"	If yes, ensure an explanation has been supplied and a plan of the new site boundary has been included.		Will need to vary the existing permit to account for the changes, at the very least update the site plan to show the new site boundary.	DD section on Partial surrender and variation requirements.
E2.2	Does the partial surrender require changes to the permit conditions?	Ensure this has been supplied and identifies the changes to be made on site		Have all conditions that require amending been identified?	
E3.1	Closure Report	Check that this has been submitted and identifies any changes from the condition of the site as described in the site report and where applicable the baseline report		Has all the relevant information been provided to allow Contaminated land to carry out a full assessment of the ground conditions? Has all information on any incidents that have occurred on site that may have caused pollution been included in the application? Has information on the decommissioning of the site been submitted? Is there information on where waste, chemicals etc have been moved to?	
E3.2	Describe steps taken to avoid pollution risk and return the site to a satisfactory state.	This should include decommissioning of the site and incidents that have occurred on site during its operation.	Contaminated Land Team or Groundwater Unit if issues they have been dealing with Local EP team for site history and environmental events	Was all equipment removed from site removed in a safe and environmentally friendly manner? Has all equipment being left on site been left in a state that will not cause pollution, i.e. tanks emptied, pipelines cleaned, sumps and bunds emptied and evidence provided that this has been done in safe and environmentally friendly manner?	DD Determination of application
E3.3	Any European Conservation sites which may be affected by emissions from the installation?	GIS check to look for nearby sites that may have been impacted.		Has testing been provided to show that pollution from the installation has not migrated off site?	

Form F – To be completed for new permits – technical information about the installation.

Application Section Number	Information required	Duly made checks to be made *	Suggestion for internal consultation	Suggestions for consideration during full assessment	Relevant section of Decision Document
F7.1/7.2	Calculation of fees	Any calculation provided should be checked against SEPAs most recent fee table and the charging scheme guidance. Evidence of payment must be submitted with the application form.	Charging Scheme Team	If unsure about the fee or the method of charging for the application i.e. an hourly rate rather than a fixed fee, contact Charging.	DD01 section on Duly made check.
F8	Invoice details	A name and address should be provided for invoicing	Finance	If unsure contact Finance.	
F9	Commercial confidentiality and National Security	Please be aware if the applicant has declared any information should be kept from the public register due to commercial confidentiality we should assess using procedure . This should not impact on the duly made assessment but may need resolved prior to consultation.		No external consultation should begin until any claims of NS or CC have been resolved.	DD01 section on exclusion from the public register (CC/NS)
F10	Data Protection: This should be signed by all individuals mentioned in the application form.	Check all signatures provided.			
F11	Non-technical Summary	This should be provided for use on PPO.			
F12	Any other information	If yes, check that this has been provided			
F13	Signatures and declaration	Ensure this has been completed and signed by an authorised person. Check Companies House information for company directors, if someone else has signed the application they should include a letter stating that they are authorised to sign on behalf of the company.			

1. Introduction & Scope

Regulation 13 & Schedule 4 of the Pollution Prevention and Control (Scotland) Regulations 2012 provides the mechanism for applying for and SEPA granting or refusing a new PPC Permit.

2. Purpose

This procedure is intended to ensure that all new permit applications are dealt with in a manner which is legally correct, consistent and auditable.

3. Workflow

The steps to determine an application are included in section 4.

Officers should use this procedure in conjunction with the most up-to date version of the SEPA Guidance "A Practical Guide for Part A Activities" (IED-PPC-TG4) and "Guidance on Assessing Part A Applications".

Key terms and abbreviations:

CO = Co-ordinating Officer
RO = Registry Officer
PM = Permitting Manager
Admin = Relevant Admin officer depending on area
SRSG = SEPA Regulatory Support Group
SWMA = Specified Waste Management Activity

Notes:

Application Submission

All applications should be submitted to registry@sepa.org.uk on the relevant application forms with all the necessary accompanying documentation and evidence of payment.

Statutory Timescales

New Applications have a statutory timescale of 4 months from the date a duly made application was received (or longer as agreed with the applicant) for draft determination, plus an additional 28 days for online Public Consultation. If comments are received during IED consultation SEPA have an additional 21 days to consider these and give notice of the determination.

Process Deviations

Whilst the procedure is written to be followed, it is accepted that deviations may occur due to the procedure not capturing all scenarios, in such instances please ensure any deviation is recorded and agreed with the relevant managers approval.

Commitment to Improve

Please identify any opportunities for improvement

4. Details Of Procedure

Step 1: RO / PM Receive Application

- a) Registry receives application and logs details on the relevant system.
- b) RO check of the application for:
 - a. any application to have commercially confidential (CC) information excluded from the register
 - b. any information covered by a national security (NS) direction
 - c. any information which the applicant thinks should be excluded on NS grounds pending a decision by the Scottish Ministers.

Note:

- Any NS information should be securely stored in accordance with current guidelines.
- Any CC information should be withheld from the public register until reviewed
- Folders containing NS information should have restricted access.
- If the applicant has declared any NS or CC information, please follow the National Security and Commercial Confidentiality Issues Procedure.

- c) RO creates a file in Permitting filing system and copies all the application information to this file.
- d) RO sends link to ppcpermitting@sepa.org.uk confirming a new application has been received, logged and highlights and CC/NS direction/notification.
- e) PM assigns application to Coordinating Officer (CO).

Next:  Step 2

Step 2: CO / RO / PM Duly Made Check

Timescale for completion: 14 days from receipt of the application if no CC/NS

- a) CO saves relevant Decision Documents into the relevant folder of the Permitting filing system and completes the initial details (i.e. company name, address and permit number)

Note: Some activities have their own separate Decision Documents e.g. waste incineration, timber treatment, and intensive agriculture

- b) CO carries out duly made check.

Note: The Duly made check is not a full technical assessment, it is purely to check:

- The application is accompanied by the correct fee,
- That an attempt has been made to answer each question,
- All additional reports noted in the application form have been provided
- That basic information such as contact details and company numbers have been provided and are correct. A cross check should be carried out with Companies House.
- The application has been signed by a relevant company representative such as a director, or that evidence of authority from the Board of the company or body corporate has been provided.
- For SWMA a check that information relevant to a fit and proper person check has been included (planning, financial provision, relevant convictions and technical competency)

Step 2: CO / RO / PM Duly Made Check

- Please see further guidance in "Guidance on Assessing Part A Applications" and "[Application fees and refunds](#)"

c) Further to RO check for CC/NS information, CO checks for information that could potentially be CC.

Next: → If NS direction in place, or an application for CC made, please follow **National Security and Commercial Confidentiality Issues Procedure**

→ If no CC/NS information proceed to **Step 3**

Step 3: CO / RO Duly Made Check Outcome & Notification to Advertise

a) RO informs the applicant based on the relevant outcome from Step 2:

- **Not Duly Made**
RO returns application and fee.
RO sends email to the applicant outlining the reasons for return (supplied by CO).
CO should arrange for the fee to be returned minus a 20% deduction if appropriate (see "[Application fees and refunds](#)" guidance for further details)
- **Not Duly Made; minor amendments required**
Where an application is received with only minor omissions in information that are likely to be able to be submitted quickly (such as no location plan), the CO can contact the applicant requesting this additional information.
If information not supplied, discuss with PM.
- **Duly Made: No information subject to CC/NS**
RO sends email confirming receipt of application and advising applicant of requirement to advertise (with CO input for details).
RO places a redacted copy of the application on the register.
- **Duly Made: Information subject to CC/NS**
RO sends email confirming receipt of application and advising applicant of requirement to advertise (with CO input for details).
RO places a redacted copy of the application on the register, excluding any CC/NS information.

Note: In relation to the requirement to advertise, the applicant will be required to advertise in the following places:

- The Edinburgh Gazette; and
- one or more newspaper circulating in the locality where the installation will be operated

Next: → **Step 4**

Step 4: CO / RO Statutory Consultation (Substantial Variation)

Timescale for completion: 14 days from receipt of the application unless CC determination to be made.

a) CO assesses application for statutory consultation requirements.

PPC 2012 requires SEPA to give notice of the application (enclosing a copy) to the following consultees [*Sched 4, 13*]:

Step 4: CO / RO Statutory Consultation (Substantial Variation)

- Relevant health board;
- Relevant local authority;
- Food Standards Agency;
- Such other persons as the Scottish Ministers may direct.

Where the installation may involve an emission which may affect a Site of Special Scientific Interest (SSSI) or a European site within the meaning of the Conservation (Natural Habitats, &c.) Regulations 1994:

- NatureScot
- Natural England (where the emission may affect a SSSI or European site in England)

Note:

Nature Conservation Procedure (NCP-P-01) gives the screening distance to be used in GIS search to determine whether NatureScot needs to be consulted on air emissions; WAT-SG-90 SEPA conservation procedure for SACs, SPAs and SSSIs contains procedure for assessment of water discharges.

Where there may be release of substances into a sewer vested in Scottish Water:
• Scottish Water

Where there may be a release into a harbour:
• The relevant Harbour Authority

In respect of installations on a site where a nuclear site licence is required under Nuclear Installations Act 1965 or the site is a relevant nuclear site and includes an establishment under the Control of Major Accident Hazards Regulations 2015;

- The Office for Nuclear Regulation
- In respect of installations on a site which includes an establishment under the Control of Major Accident Hazards Regulations 2015: Health and Safety Executive (unless on a nuclear site as above).

Note: NS information should **not** be sent to a consultee unless directed to by the Scottish Ministers. Prior to sharing any information covered by an NS direction please contact Legal for advice.

CC information should **not** be sent to NatureScot (unless it is about the release of any substance which may affect a SSSI or European site), the Food Standards Agency or any relevant Harbour Authority (unless it is about the release of any substance into the relevant harbour).

All other statutory consultees should only receive CC information if it is relevant to their area of interest [Schedule 4, Part 3]

- b) CO update Decision Document and advise RO of statutory consultation requirements by email.
- c) RO sends template letter to statutory consultees, and provide a 28-day period to respond
- d) RO saves those responses received from statutory consultees to relevant file and advises CO.

Note: If no responses are received the CO should record this.

Responses received outside the 28-day period should be discussed with PM.

Step 4: CO / RO Statutory Consultation (Substantial Variation)

- e) CO assesses responses from statutory consultees and completes Decision Document. CO should address any relevant issues raised, recording justification for actions taken in the Decision Document.

Next:  **Step 5**

Step 5: CO / RO Discretionary Consultation

Timescale for completion: No statutory timescale as it is discretionary, however 14 days from receipt of the application, would be good practice.

- a) CO to decide if any discretionary consultation is required.
For example if there is particular interest from the Local Community Council, or it is a contentious site.
- b) CO update Decision Document and advise RO of consultation requirements by email.
- c) RO sends template letter to consultees, and provide a 28-day period to respond
- d) RO saves all responses from consultees relevant file and advises CO.
- e) CO assess responses from consultees and complete Decision Document ensuring decisions take into account consultees comments, or reasons are fully justified in the decision document.

Next:  **Step 6**

Step 6: CO Internal Consultation

- a) CO assess the internal consultation requirements, including the Environmental Performance Team that will be regulating the site, please refer to the "Guidance on Assessing Part A Applications" for further guidance.
- b) If a derogation from BAT-AEL is proposed, the air, industry and energy unit should be consulted on pcc@sepa.org.uk and advice sought. All requests for derogation should be referred to the Derogation Technical Oversight Panel for consideration.

Note: Derogations are more likely to be relevant to the variation applications & BATc reviews, as new installations would be expected to meet the BAT-AELs.

- c) If the site is carrying out a Specified Waste Management Activity (SWMA), a fit and proper person test must be carried out. This should be started at the earliest opportunity as internal consultation with Legal, Permitting Specialists, Intelligence and Finance will likely be required.

Note: SWMA's include activities which falls into Section 5.2 (landfill), Sections 5.3, 5.4 and 5.6 (disposal or recovery of waste) and Section 5.1 (the disposal or recovery of waste in a waste incineration installation) of Schedule 1 of the Regulations.

A fit and proper person check requires assessment of and consultation with:

- Financial Provision (Waste Permitting for an initial credit check and Finance for sign off),
- Technical Competence (if something other than WAMITAB proposed, check with National Operations Waste Team)

Step 6: CO Internal Consultation

- Relevant Convictions (Permitting Specialists, Legal, and Intelligence).

Separate guidance documents can be found on the SEPA website and internally with details of how to carry out these checks. Please speak to a permitting specialist if unsure.

If the applicant fails any of the fit and proper person checks this may be grounds for refusal and should be highlighted to the relevant manager at the earliest opportunity.

- d) CO updates the Decision Document with any comments or advice received.

Note: It is important to consult with all relevant internal Staff to ensure we are getting the best possible advice, to allow us to determine applications quickly and efficiently.

When consulting internally the CO should be clear on what it is they want advice in relation to.

The CO should provide links or references to the relevant parts to the application so that the internal consultee has all the necessary information.

Next:  Step 7

Step 7: CO / RO Detailed Assessment of Application

- a) CO must record the detailed assessment in Decision Document which must include:
- Any additional information relevant to the draft determination which became available after the application was advertised and result of any consultation.
 - The relevant BAT conclusions and other relevant guidance used as part of the draft determination;
 - If an SWMA, the outcome of internal consultation with regards to the fit and proper tests and assessment of these.
 - Justification for draft conditions proposed
 - Information relating to how emission limit values have been set in relation to BAT-AELs (both to air and water); and
 - The reasoning and considerations on which the draft determination has been based.
 - Please see the "Guidance on Assessing Part A Applications" for further guidance

Note: Comments should be concise, factual and as anonymous as possible. i.e., "Co-ordinating Officer" rather than name; "Applicant" rather than name of contact.

- b) Where the CO considers they are minded to grant the application, a draft permit should be created using a relevant permit template, where one exists.
- If a template permit does not exist then the CO should speak to the PM or Specialists regarding what permit should be used.
- c) Where changes are made to template conditions or other non-standard conditions are proposed, the CO should consult with CB Legal and Permitting Specialists to ensure that the proposed conditions are appropriate.

Step 7: CO / RO Detailed Assessment of Application

Note: All conditions drafted should be:

- Necessary
- Comprehensive
- Unambiguous
- Enforceable

d) Where the CO thinks the application may need to be refused, they should discuss this with the PM.

Note: Any concerns regarding possible refusal should be flagged with the PM as quickly as possible.
Deficiencies identified during the detailed assessment could be addressed through obtaining further information (see Step 8).

e) CO updates Decision Document.

Next: → **Step 8**

Step 8: CO / PM / RO / CB Legal Further Information Notice (If required)

a) If required, CO prepares a further information notice (FIN) [Schedule 4; para. (7)] using the relevant schedule, front cover and covering letter.

The FIN should consider comments made by internal consultees. It should be succinct and require all the information necessary to complete the determination of the application.

b) The draft FIN should be peer reviewed by the appropriate PM and / or CB Legal, and reasonable timescale for response should be agreed.

c) The CO should discuss the use of FIN's with the applicant and our expectation with regards to the quality of the information we expect to be provided, and underline the importance of providing it within the stated timescale.

If the applicant expresses concerns regarding the proposed timescale then the CO should discuss and agree with PM.

The CO should also confirm the implications of issuing a FIN on the statutory determination date.

d) CO passes peer reviewed FIN to appropriate Admin for formatting.

e) CO forwards formatted FIN to RO.

f) RO issue FIN to applicant.

g) RO updates the relevant system with new determination date, taking into account the deadline for the FIN and places a copy on the public register.

Note: The issuing of a further information notice stops the clock with respect to the timescale for determination.

h) RO receives response to FIN, saves to relevant file and advises CO.

i) CO assesses response to FIN, and where appropriate refers back to internal consultees to ensure they have sufficient information to provide their advice so that determination of the application can be progressed.

Step 8: CO / PM / RO / CB Legal Further Information Notice (If required)

- j) If the applicant fails to either respond to the FIN, or provide the information requested within the stated period, then SEPA may by notice, treat the application as having been withdrawn. In both cases this should be discussed with the PM and would probably require referral to the SRSG.
- k) CO updates Decision Documents.

Next: → If further FIN is required repeat **Step 8**

→ **Step 9**

Step 9: CO / PM / RO Extension to Determination Date

- a) If at any point during the determination process the CO think an extension to the determination date is required, they should discuss with PM.
- b) CO sends request by email, to the applicant, requesting they respond by return email confirming that they agree to the requested extension.
- **Applicant agrees to extension**
CO sends applicants response to RO confirming new determination date.
 - **Applicant refuses extension**
If they applicant refuses to agree an extension they may notify SEPA that they consider their application to be deemed refused, they may then appeal this deemed refusal to the Scottish Ministers.
- If the applicant indicates this is the route they wish to proceed down then the CO should discuss this immediately with their PM.
- c) CO updates Decision Document.
- d) RO updates the relevant system with the new determination date.

Next: → **Step 10**

Step 10: CO / PM Referral to SEPA Regulatory Support Group (If required)

- a) CO in consultation with the PM, should consider if the application should be referred to the SRSG.
The SRSG terms of reference should be checked.
If referral is required, or sought, then the CO should draft a paper in consultation with the PM and submit it to SRSG@sepa.org.uk, copying in the PM.
- b) If the application is referred to the SRSG, then the CO should record any advice or recommendations made in the Decision Document.

Note: An application may need to be referred to the SRSG more than once.

Next: → **Step 11**

Step 11: CO Informal Consultation with Applicant

Step 11: CO Informal Consultation with Applicant

- a) CO forwards applicant a copy of the draft conditions and provides a timescale for returning comments.
- b) CO should record all informal consultations in the Decision Document.

Note: There is no statutory requirement for this, however it should be considered as it can be helpful to reach agreement on proposed conditions.

The CO should assess the operator's response, particularly if this relates to their ability to comply with conditions.

There is no requirement to alter the proposed conditions, particularly where these are legislative requirements or previously agreed standard conditions.

Next:  **Step 12**

Step 12: CO / PM Finalise Draft Determination

Note: The CO must arrive at one of the following three determinations:

- **Grant** a permit subject to the conditions imposed by or under the relevant regulations.
- **Refuse** the application on one or more of the following grounds:
 - i. SEPA does not consider that the applicant will have control over the operation of the installation concerned after the grant of the permit
 - ii. SEPA considers that the applicant will not ensure that the installation is operated so as to comply with the conditions which would be included in the permit.
- **Deem the application withdrawn** if the applicant fails to provide information requested in a further information notice by the stated date.

- a) CO finalises the relevant documentation associated with their Draft Determination.
- b) CO agrees with PM the most appropriate person to undertake a Peer Review of the draft determination.
- c) CO sends relevant draft determination documents to the Peer Reviewer, along with timescale for response.
- d) Peer Reviewer provides response to CO who logs comments in the file.
- e) CO addresses any comments raised, discussing with PM if required.
- f) CO updates Decision Document.

Next:  **Step 13**

Step 13: CO / RO / Web Team Public Consultation - Draft Determination

Timescale for completion: 3 days from notifying the applicant of the draft determination.

- a) CO notifies the applicant of their draft determination.
 - b) CO liaises with Admin and RO to prepare relevant determination documents for Public Consultation.
- The documents consulted upon will depend on the draft determination but can include:

Step 13: CO / RO / Web Team Public Consultation - Draft Determination

- Draft Decision Document which explains SEPAs rationale behind its determination. (word)
 - Draft permit and all conditions (word); and
 - Technical summary of the application (pdf)
- c) RO sends finalised documents to the Web Team for publication on the internet for a 28-day period.
- d) Web Team ensure the consultation includes all the relevant information including:
- Explain where other information and guidance relevant to the application can be found;
 - Explain that any person may make written representations to SEPA within the 28-day period, including the address to which representations must be sent (registry@sepa.org.uk);
 - Explain the timescales associated with finalising determination of the application if:
 - o No representations have been made; or
 - o Representations have been made.
- e) Any representations received by RO should be logged and forwarded to the CO.

Next:  Step 14

Step 14: CO Charging – Calculating Environmental Score

Notes: For some regulated activities the annual subsistence charge will have an environmental score component which must be calculated by the CO, with input from EP and Charging as appropriate.

Guidance on how to do this can be found on the charging section of our website. Officers should use the Charging Calculator on the Citrix Infomatics Hub or on our [website](#) to ensure consistency.

- a) CO calculates environmental score using Charging Scheme Calculator and associated guidance detailed in DD.
- b) CO completes charging section of DD including the Environmental scores and details of all regulated activities that will be carried out on site and associated charges.

Next:  Step 15

Step 15: CO DREAM – calculating inspection frequency

Notes: Please use [DREAM - Hazard Assessment for Inspection Frequency.xlsx](#) and the associated technical guidance document DRM-G-003 to calculate the number of inspections per year. As per DRM-G-003 the relevant tables on the "all hazard tables" tab of the hazard assessment spreadsheet should be completed.

- a) CO uses DREAM and associated guidance to calculate the inspection frequency.
- b) CO completes the DREAM inspection section of the DD to record the calculated hazard score, band and inspection frequency.

Next:  Step 16

Step 16: CO DREAM –SEPA monitoring frequency

Notes: Please use tables 1 to 3 in [DREAM - Compliance Monitoring \(Inspection, Sampling & Data Returns\) - DRM-G-003.docx](#) to establish if sampling is required, and the frequency of any water sampling to be added to SEPAs monitoring plan and summarise the results below. If required, SEPA stack monitoring can be scheduled with field chemistry.

Step 16: CO DREAM –SEPA monitoring frequency

- a) If there is to be a discharge to the water environment (not sewer) the CO uses information from the application determination and the table in DRM-G-006 to determine the frequency of water sampling required.
- b) CO completes the relevant section of the DD to record the sampling frequency.

Next: → **Step 17**

Step 17: CO / RO / Admin Response to Public Consultation and Issue

Timescale for completion: If no representations are received the CO must finalise and issue the determination within **7 days**.
If representations are made then the CO must finalise and issues the determination within **21 days**, or longer as agreed with the applicant.

- a) RO to send a letter to acknowledge any responses to the Public Consultation stating SEPA will take their comments into consideration.
- b) CO should consider and discuss any comments with the PM, with decisions recorded in the Final Decision Document and all comments anonymised.
- c) CO should prepare and save the relevant documents into a dedicated folder within the filing system:
 - finalised Decision Documents (DD01 and DD02);
 - front notice;
 - schedule of conditions;
 - covering letter.
- d) CO emails relevant hyperlink and PM name to PPC Admin inbox (ppcadmin@sepa.org.uk).
- e) Admin will format documents and advise CO who will forward on for peer review (if required).
- f) Admin will complete final check and remove any watermark/comments, ensure all signature boxes are completed and then send hyperlink to CB Permitting Manager's Sign Off mailbox (managerpermitting@sepa.org.uk). (For W&I permits the Permitting Manager will forward to W&I UM).
- g) Permitting Manager or W&I Manager approves documents & informs Registry by email that the permit can be issued to the applicant – **PPC Admin mailbox and CO must be cc'd**.
- h) Registry PDF & issue documents and update PAL (**including permit status, charging, inspection and sampling information from the DD**) then advise PPC Admin, CO and relevant EP team mailbox to confirm that this has been done (and request charging activity from CO if required).
- i) RO places on public register, and where the draft determination has been for public consultation publishes the final documentation on the website.

END

Procedure revision table

Version Number	Step	Revision notes
V2.0	2 and 3	Refer to "Application fees and refunds" guidance
	4	Refer to WAT-SG-90 for water discharges affecting designated sites
	6 and 7(a)	Introduction of revisions to Fit and Proper person check procedures
	7 (c)	Discuss changes to template or non-standard conditions with Permitting Specialist and Legal.
	14	Response to Public Consultation and Issue procedure revised
	15	New step to introduce Environmental component charge calculation
	Revision Table	Introduction of revision table
V3.0	Insert steps 14-16	Inserted steps 14 to 16 requiring <ul style="list-style-type: none"> • 14. calculation of the environmental score for charging at an earlier stage (this was previously the last step). • 15. Calculation of inspection frequency using DREAM and • 16. Identification and calculation of SEPA water sampling frequency.
	Step 17h (previously 14)	Reminder to registry to update PAL with charging, inspection and sampling info.

From: 1 [redacted] 1 [redacted] environmentalstandards.scot>
Sent: 24 September 2024 11:52
To: 1 [redacted] 1 [redacted] 1 [redacted] EPA.org.uk>
Cc: sepaessmailbox 1 [redacted] sepa.org.uk>
Subject: RE: 20240902 ESS Investigations - Section 23 Request - IESS.24.046

Dear 1 [redacted]

Thank you for your email and attached information, this is greatly appreciated.

Should I need anything further, I will get back to you.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations
Officer 1 [redacted] @environmentalstandards.
scot

ENVIRONMENTAL
Standards Scotland
Irean Àrainneachdail na h-Alba

1 [redacted]

General Enquiries | enquiries@environmentalstandards.scot
0808 1964000 | www.environmentalstandards.scot
Address: Thistle House, 91 Haymarket Terrace, Edinburgh, EH12 5HD



Contact us via an online
Sign Language Interpreter
Contact Scotland BSL

BSL users can contact via an online BSL/English interpreter

From: 1 [redacted]
Sent: 03 December 2025 16:44
To: sepaesmailbox 1 [redacted] <[redacted]@sepa.org.uk>
Cc: 1 [redacted] 1 [redacted] 1 [redacted] <[redacted]@epa.org.uk>
Subject: 20251203 Email Outgoing 1 [redacted] | Subject: ESS Investigations - update on the publication of IR report - IESS.24.046

Good afternoon 1 [redacted]

Further to your meeting with 1 [redacted] this morning, I am writing to inform you that the publication of our incineration overcapacity report has been delayed in order to allow for consideration of additional comments received from the representation contact.

Once the report has been published, I will provide you with the link.

Should you have any questions, please do not hesitate to contact me.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations
Officer 1 [redacted] <[redacted]@environmentalstandards.scot>
1 [redacted]

**ENVIRONMENTAL
Standards Scotland**
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Sign Language Interpreter
Contact Scotland BSL

BSL users can contact via an online BSL/English interpreter

From: [redacted] [redacted] [redacted] EPA.org.uk>
Sent: 03 December 2025 18:37
To: [redacted] [redacted] environmentalstandards.scot>
Subject: RE: 20251203 Email Outgoing [redacted] | Subject: ESS Investigations -
update on the publication of IR report - IESS.24.046

OFFICIAL

Thanks [redacted]

[redacted]
Head of Environmental & Regulatory Legal
Scottish Environment Protection Agency
Buidheann Dion Àrainneachd na h-Alba

[redacted]
[redacted] [sepa.org.uk](mailto:[redacted]@sepa.org.uk)
Waverley Court | 4 East Market Street | Edinburgh | EH8 8BG
Postal address: Angus Smith Building | Unit 6, 4 Parklands Avenue | Holytown |
Motherwell | ML1 4WQ

From: 1 [redacted]@environmentalstandards.scot
1 [redacted]@environmentalstandards.scot>
Sent: 08 December 2025 16:23
To: sepaessmailbox 1 [redacted]@sepa.org.uk>
Cc: 1 [redacted] 1 [redacted] 1 [redacted]@EPA.org.uk>
Subject: 20251208 Email Outgoing 1 [redacted] | Subject: ESS Investigations - Informal Resolution Report – Incineration Overcapacity Case - IESS.24.046

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Good afternoon 1 [redacted]

Please find attached a copy of our informal resolution report regarding the incineration overcapacity case. This report will be published on our website tomorrow.

Should you have any questions or require further clarification, please do not hesitate to contact me.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations
Officer 1 [redacted]@environmentalstandards.
scot
1 [redacted]


ENVIRONMENTAL
Standards Scotland
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**The effectiveness of the Scottish
Government's implementation
and application of environmental law in
relation to incineration capacity in
Scotland**

Case Reference: IESS.24.046

December 2025

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Contents

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1. Executive summary

1.1 The incineration of residual waste has become a prominent waste management method in Scotland. The volume of waste incinerated has increased rapidly, with 1.86 million tonnes incinerated in 2024 (representing a 354% increase since 2011).

1.2 Evidence suggests that Scotland may soon have an excess of incineration capacity. This has the potential to create further unfavourable outcomes, including 'lock-in' effects (where the reliance on incineration as a waste management method undermines more sustainable waste reduction, reuse, and recycling techniques), climate impacts and risks to the environment and human health.

1.3 ESS received a representation alleging that the Scottish Government had failed to take necessary action to prevent excess incineration capacity. The representation also highlighted potential gaps in existing controls, allowing incineration capacity to grow without adequate oversight.

1.4 Following engagement with the Scottish Government, ESS found that existing planning and environmental permitting controls were potentially ineffective. This was due to 'gaps' in the frameworks which meant expansions in incineration capacity at planned and operational facilities could be approved without adequate consideration of whether they aligned with Scotland's actual residual waste management treatment needs. ESS also identified that the failure of the Scottish Government to develop an indicative cap (setting out Scotland's projected residual waste management requirements) rendered the application of the planning and regulatory controls potentially ineffective.

1.5 ESS made recommendations for improvement which the Scottish Government accepted and committed to implement through a series of remedial actions. In ESS' view, the implementation of these remedial actions will bring clarity over Scotland's residual waste management needs and ensure that adequate consideration is given to this when determining applications for capacity increases. This will, in the longer term, help support Scotland's climate objectives, contribute to the development of the circular economy, and prevent unnecessary risk of environmental and human health impacts.

1.6 Accordingly, ESS considers that informal resolution has been achieved. ESS will monitor the Scottish Government's delivery of the agreed remedial actions and provide public updates on progress.

2. Background

2.1 The incineration of residual waste (waste that cannot be reused, recycled, or composted) has become a prominent waste management method in Scotland. Compared to traditional landfill disposal, incineration is considered less environmentally harmful, offering benefits such as reduced greenhouse gas emissions and a lower risk of environmental impacts associated with leachate contamination.

2.2 Residual waste in Scotland is typically incinerated using three methods:

- by recovery – waste is used as fuel to generate energy, this approach is classified as 'energy from waste'
- by co-incineration – waste is used as fuel where the main purpose is energy generation or the production of materials (e.g. cement)
- by disposal – waste is burned primarily to reduce its volume

2.3 The quantity of waste incinerated in Scotland has increased substantially in recent years, as illustrated by Figure 1. In 2024, 1.86 million tonnes of residual waste was incinerated, representing a 354% increase since 2011¹.

2.4 The volume of waste incinerated by disposal has also grown significantly, as illustrated by Figure 1. From 2018 onwards this has steadily increased from 0.17 million tonnes to 0.52 million tonnes in 2024, representing a 259% increase. In 2024, approximately 28% of the total quantity of waste incinerated in Scotland was processed through disposal, despite this being the least energy and resource efficient incineration method currently used.

2.5 The shift towards increased incineration has resulted in the construction of new incineration facilities. As of 2024, eighteen permitted incineration sites were operating in Scotland¹. In addition, the available capacity at existing facilities has also risen. For example, in 2023, the Dunbar energy from waste facility expanded its capacity by 65,000 tonnes, which accounted for more than 4.6% of national capacity at that time.

¹ [Waste Incinerated in Scotland 2024](#)

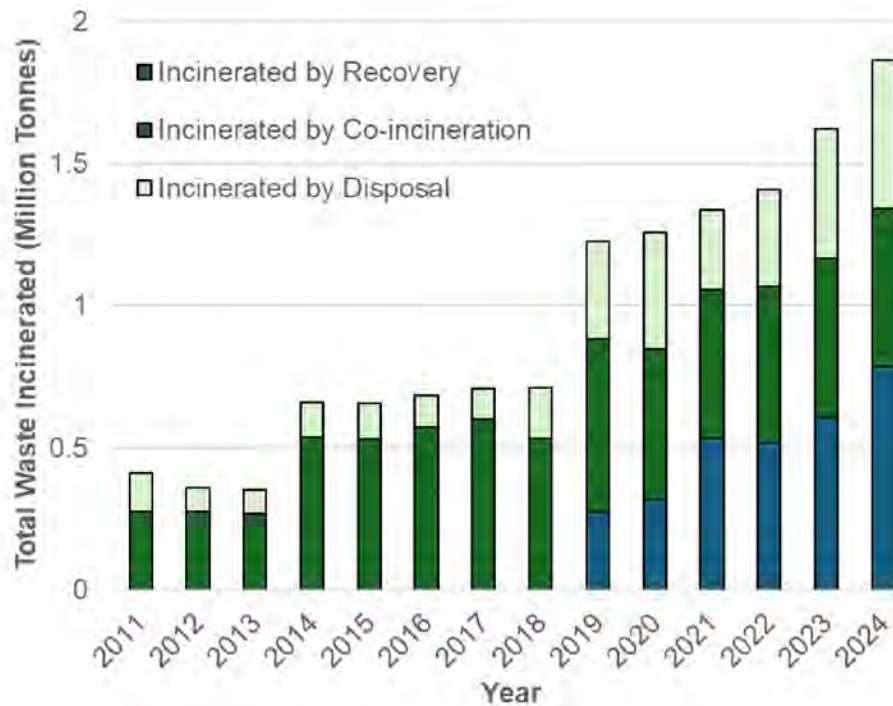


Figure 1 Quantity of Waste Incinerated by Method in Scotland

2.6 An Independent Review of Incineration² (“the Review”) published in 2022, examined the role of incineration within Scotland’s national waste hierarchy³ and assessed whether incineration capacity aligned with Scotland’s waste reduction and net zero targets. It concluded that, while well-regulated incineration has a role in managing unavoidable residual waste, the level of proposed incineration capacity exceeded Scotland’s projected future needs⁴. The risk of excess capacity comes from three sources:

- the approval and construction of new facilities
- the completion and commissioning of planned (‘pipeline’) facilities

² [Stop, Sort, Burn, Bury \(www.gov.scot\)](http://www.gov.scot)

³ Waste hierarchy is an order of preference for waste management established in the EU Waste Framework Directive.

⁴ A subsequent study undertaken by Zero Waste Scotland (ZWS) in 2024 reinforced these concerns. It estimated that if all proposed incineration capacity is built and recycling rates improve as expected, Scotland could face an excess of incineration capacity of approximately 10–18% from 2027 onwards ([Landfill Ban Assurance Study | Zero Waste Scotland](#)).

- expansions in capacity at existing operational facilities

2.7 To offset the risk of excess capacity, the Review made several recommendations, including:

- not granting any further planning permissions for incineration infrastructure, unless offset by equivalent closures of existing capacity
- developing an indicative cap (that declines over time) for the amount of residual waste treatment needed as Scotland transitions towards a fully circular economy

2.8 The Scottish Government accepted these recommendations and committed to integrating them into future waste and planning policy.

3. The representation

3.1 ESS received a representation from a Non-Governmental Organisation (NGO) asserting that the Scottish Government had failed to introduce an indicative residual waste management cap, leading to the risk of incineration overcapacity. The representation also claimed that the Scottish Government had failed to control incineration effectively, highlighting the potential impact of incineration lock-in.

3.2 The representation sought for action to be initiated to halt further increases in incineration capacity and to establish a cap that is progressively reduced over time.

3.3 Due to the following factors, ESS considered the case to be within its remit:

- the representation related to a public authority – the Scottish Government
- the representation related to environmental law – the laws as set out in this report
- the failure (as set out in the representation) constituted potential ineffective environmental law, or application of it

3.4 ESS also determined that the issue met its significance criteria given the negative effects associated with incineration overcapacity and long-term lock-in, potentially leading to adverse environmental and human health impacts. The potential undermining of the development of the circular economy in Scotland was also viewed as a significant factor.

4. ESS' consideration and engagement with the Scottish Government

4.1 Whilst the increase in the quantity of waste incinerated and growth in available capacity reflect progress in moving away from landfill, they also signal a growing reliance on incineration. This trend, combined with projected overcapacity from 2027 onwards, could lead to several negative outcomes.

4.2 Firstly, excess capacity can result in 'lock-in' effects where long-term investment in incineration infrastructure and waste management contracts can undermine preferable waste management options, such as waste prevention, reuse, and recycling. Secondly, burning residual waste releases emissions and contributes to adverse climate impacts. Although incineration is currently less climate damaging than landfill, unchecked growth, changes to waste composition, and wider decarbonisation will make incineration less favourable over time, which if unaddressed will have implications for Scotland's climate ambitions. Thirdly, incineration poses risks to human health and the environment through the release of pollutants that can reduce air quality and contaminate soil and water.

4.3 Accordingly, to prevent (or mitigate) the potential for harm to be caused from incineration lock-in, incineration must be carefully managed and controlled. This requires an effective regulatory framework, robust and transparent oversight, and accurate long-term planning.

Residual waste management cap

4.4 The indicative cap recommended by the Review was intended to act as a strategic benchmark for decision making, ensuring compliance with the objectives of the waste hierarchy, and preventing overcapacity that could undermine future recycling and waste reduction efforts. The Scottish Government accepted this recommendation in June 2022⁵ and committed to developing a cap. However, the cap has not yet been implemented.

4.5 During ESS' enquiries, the Scottish Government advised that the failure to develop the cap was due to the need for further and more robust data. The Scottish

⁵ [Scottish Government Response to: Stop, Sort, Burn, Bury? The Independent Review of the Role of Incineration in the Waste Hierarchy in Scotland](#)

Government also explained that work to improve the quality of waste data was underway, including digital waste tracking and engagement with key partners.

4.6 The purpose of an indicative cap is to provide a level of certainty on required capacity and the pace at which it should decline, helping to prevent unchecked growth of incineration capacity. ESS considers the absence of such a cap is a significant weakness, as it limits the effectiveness of existing controls in avoiding overcapacity and the associated environmental risks. Introducing a cap would establish a clear benchmark, strengthen decision-making, enhance accountability and transparency, and reduce the risk of long-term overcapacity lock-in and its negative impacts.

4.7 ESS accordingly approached the Scottish Government, setting out the potential ineffectiveness of existing controls and the importance of developing a cap to ensure that current and future incineration capacity decisions adequately reflect Scotland's residual waste management needs. ESS recommended that the Scottish Government should develop an indicative cap as a priority. The Scottish Government accepted this and agreed to develop an indicative residual waste treatment cap through Scotland's Residual Waste Plan, which is scheduled for completion in 2027. Additionally, the Scottish Government committed to publishing an updated capacity analysis to ensure the latest forecasts are publicly available and to continue to monitor infrastructure developments in collaboration with the Scottish Environment Protection Agency (SEPA), Zero Waste Scotland (ZWS) and local authorities.

[Governance of new incineration facilities](#)

4.8 National Planning Framework 4 (NPF4)⁶ guides decision making by planning authorities and restricts the development of new incineration capacity. NPF4 Policy 12(g) states that proposals for new incineration facilities will not be supported except in very limited or exceptional circumstances. In addition, a Direction⁷, issued by Scottish Ministers under the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013⁸ ('the 2013 Regulations') is currently in

⁶ [National Planning Framework 4 is the national spatial strategy for Scotland, setting out principles and priorities for national development and planning policy.](#)

⁷ [Chief Planner letter and Notification Direction - Energy from Waste \(Incineration and Advanced Thermal Treatment\) Facilities: 17 November 2021 - gov.scot](#)

⁸ [The Town and Country Planning \(Development Management Procedure\) \(Scotland\) Regulations 2013](#)

place, requiring all planning authorities to notify Scottish Ministers of any new incinerator applications and whether they intend to approve them. This Direction helps ensure NPF4's principle of restricting new capacity is being upheld. The Scottish Government has confirmed to ESS that, since the Review, no further planning permissions for new incineration facilities have been granted.

4.9 In ESS' view, these controls are broadly effective in preventing the development of new incineration facilities in Scotland, as proposals are generally not supported⁹, and Scottish Ministers have oversight of all planning applications. This provides assurance that any new capacity is subject to scrutiny and that appropriate planning conditions can be applied where necessary. The introduction of a residual waste management cap will supplement these controls in helping prevent overcapacity lock-in and its associated environmental and human health risks.

Governance of in-pipeline and existing facilities

4.10 There are several in-pipeline and operational facilities currently in Scotland. The Scottish Government considers incineration capacity at these sites to be controlled through two mechanisms: the planning system and SEPA's permitting regime.

4.11 In terms of the first mechanism, the Scottish Government explained to ESS that, under the planning system:

- physical extensions undertaken to allow increases in incineration capacity require fresh planning permission
- operators may also need to apply under Section 42 of The Town and Country Planning (Scotland) Act 1997¹⁰ to vary conditions in the original consent, such as capacity limits, where those conditions exist

⁹ The Scottish Government confirmed to ESS that proposals will not be supported, except under limited circumstances where a local or national need has been sufficiently demonstrated (e.g. where no local facility exists, to avoid transporting waste elsewhere).

¹⁰ Operators can apply to vary conditions attached to previously granted planning permissions. This includes changes to capacity restrictions imposed or adjustments for structural or operational modifications. These variation applications are determined by the relevant planning authority and partially manage any changes to incineration capacity.

- planning authorities are encouraged to consider the intent of NPF4 policy 12(g) when assessing individual cases
- Scottish Ministers also have general powers under the 2013 Regulations to require notification of planning applications and may call them in¹¹

4.12 Despite these controls, ESS understands that capacity has the potential to increase at existing incinerator facilities without any structural changes, meaning no new planning permission is required. Furthermore, Section 42 applications may not be required if the original consent lacks conditions controlling capacity. The Dunbar Energy Recovery Facility illustrates these loopholes in the regulatory system: in 2023 permitted capacity at this facility increased from 325,000 to 390,000 tonnes per annum¹² without any structural changes and therefore new planning consent was not required. Additionally, the original planning consent did not have any conditions controlling capacity which meant a Section 42 application was also not required.

4.13 The second mechanism cited by the Scottish Government is delivered through SEPA's regulation under the Environmental Authorisation (Scotland) Regulations 2018 (as amended)¹³ (EASR)¹⁴. Schedule 22, Part 2, Paragraph 5(1)(b) of EASR requires SEPA to ensure that authorisations regulating incineration and co-incineration activities include the facilities total waste incineration capacity. However, during ESS' enquiries, SEPA confirmed that it does not consider national capacity when determining or varying authorisations for individual facilities. In ESS' view, the absence of national capacity as a material consideration when limiting capacity at individual facilities creates the potential for incineration capacity to increase without assessing if this aligns with Scotland's overall residual waste management needs.

4.14 For the above reasons, ESS does not consider that the safeguards described by the Scottish Government comprehensively control capacity at pipeline or existing incineration facilities. Accordingly, ESS approached the Scottish Government to highlight these gaps within the existing planning and regulatory frameworks and set

¹¹ Under section 46(1) of the Town and Country Planning (Scotland) Act 1997, ministers may give a direction requiring a planning application to be referred to them instead of being dealt with by the planning authority.

¹² [dunbar-energy-recovery-facility-draft-decision-document-.pdf](#)

¹³ [The Environmental Authorisations \(Scotland\) Regulations 2018 \(as amended\)](#)

¹⁴ These regulations replaced the Pollution, Prevention and Control (Scotland) Regulations 2012 on 1 November 2025, which previously delivered an equivalent function.

out the need for strengthening to ensure that there is full and proper consideration of national capacity when determining individual decisions to prevent overcapacity lock-in. ESS did not prescribe how this should be achieved but emphasised that, without intervention, incineration capacity could increase unchecked and without adequate oversight. The Scottish Government accepted ESS' recommendation and agreed to ensure the residual waste management cap is reflected in SEPA's permitting regulations, meaning that national capacity is considered when assessing all environmental authorisations.

5. Conclusion

5.1 The incineration of residual waste has become a significant waste management method in Scotland. To prevent or mitigate the potential for harm to be caused, it is important that incineration as a method of managing waste is carefully considered and controlled.

5.2 ESS identified ineffective implementation of planning and environmental laws, which posed the risk of unchecked expansion of incineration capacity.

5.3 Following ESS' invitation, the Scottish Government agreed to work with ESS to rectify the identified failings and has committed to delivering the following actions:

- publish an updated capacity analysis to ensure the latest forecasts are publicly available and to continue to monitor infrastructure developments in collaboration with SEPA, ZWS and local authorities
- develop an indicative residual waste treatment cap through Scotland's Residual Waste Plan, due in 2027
- integrate the cap into SEPA's permitting regulations so that SEPA considers it when assessing all environmental authorisations

5.4 As a result of these actions, ESS considers that informal resolution has been achieved in that:

- they constitute a proportionate and targeted approach to rectifying the identified failings
- the risk of negative outcomes associated with incineration will be reduced
- they strengthen alignment with Scotland's climate targets and environmental objectives, reinforcing commitments under the waste hierarchy, the transition to a circular economy, and net-zero ambitions

To ensure transparency and effective delivery of these remedial actions, ESS has requested a formal implementation plan from the Scottish Government setting out how and when the agreed actions will be completed, including key milestones, responsible parties, and mechanisms for public reporting. ESS will monitor the Scottish Government's delivery of the agreed remedial actions and provide public updates on progress.

CONTACT

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enquiries@environmentalstandards.scot

From: [redacted] [redacted] [redacted] EPA.org.uk>
Sent: 08 December 2025 16:43
To: [redacted] [redacted] environmentalstandards.scot>
Subject: RE: 20251208 Email Outgoing [redacted] | Subject: ESS Investigations - Informal Resolution Report – Incineration Overcapacity Case - IESS.24.046

OFFICIAL

Thanks [redacted]

[redacted]
Head of Environmental & Regulatory Legal
Scottish Environment Protection Agency
Buidheann Dion Àrainneachd na h-Alba

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Waverley Court | 4 East Market Street | Edinburgh | EH8 8BG
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Schedule of Information

Case Reference Number: ESS.IR.029

Doc no.	Title	Attachment	Release – wholly or in part	Exemptions/ exceptions applied	Public interest test
1	20251202 Email Incoming FOE to ESS Subject - IR publication enquiry - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
2	20251202 Email Outgoing ESS to FOE Subject - response to IR publication enquiry - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
3	20251202 Email Incoming FOE to ESS Subject – ack IR publication response - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
4	20251203 Email Outgoing ESS to FOE Subject - update on publication of IR report - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
5	20251204 Email Incoming FOE to ESS Subject – out of office message - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test
6	20251209 Email Outgoing ESS to FOE Subject - notification of IR publication - IESS.24.046		In part	Reg 11(2)(a)	Not subject to public interest test

From: 1 [redacted] 1 [redacted]@foe.scot>
Sent: 02 December 2025 16:03
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: ESS incineration report - timings?

Hi 1 [redacted]

1 [redacted] from ERCS has let me know that ESS will be publishing its report on the incineration investigation this week. Is it possible to get a clearer idea on when you will be publishing, so I know when to look out for it?

Many thanks,

1 [redacted]

1 [redacted] (she/her)
Circular Economy Campaigner
Friends of the Earth Scotland

1 [redacted]
1 [redacted]@foe.scot

I usually work 8.30-4.30, Monday – Thursdays.



From: 1 [redacted]@environmentalstandards.scot
1 [redacted]@environmentalstandards.scot>
Sent: 02 December 2025 16:14
To: 1 [redacted] 1 [redacted]@oe.scot>
Subject: RE: ESS incineration report - timings?

Hi 1 [redacted]

Thank you for your email. We plan to publish the report on Thursday (4 December), I am happy to send you the link once available.

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

ENVIRONMENTAL
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Document 3

From: 1 [redacted] 1 [redacted]@oe.scot>
Sent: 02 December 2025 16:16
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: RE: ESS incineration report - timings?

Hi 1 [redacted]

That would be really helpful.

Many thanks,

1 [redacted]

Document 4

From: 1
Sent: 03 December 2025 16:35
To: 1 1@pe.scot>
Subject: RE: ESS incineration report - timings?

Good afternoon 1

Further to my email yesterday, I wanted to let you know that the publication of our informal resolution report will be delayed. Once it has been published, I will share the link with you.

Kind regards

1

1 (She/Her)
Senior Investigations Officer
1@environmentalstandards.scot
1

ENVIRONMENTAL
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Document 5

From: 1 [redacted] 1 [redacted]@foe.scot>
Sent: 03 December 2025 16:35
To: 1 [redacted] 1 [redacted]@environmentalstandards.scot>
Subject: Automatic reply: ESS incineration report - timings?

I'm in training this afternoon. I'll be back tomorrow (4th Dec).

For media inquiries, please contact media@foe.scot

From: 1 [redacted]
Sent: 09 December 2025 10:01
To: 1 [redacted] 1 [redacted]@oe.scot>
Subject: RE: ESS incineration report - timings?

Good morning 1 [redacted]

I can confirm that ESS' incineration overcapacity report has now been published - [Incineration Capacity Investigation - Informal Resolution Report - Environmental Standards Scotland](#)

Kind regards

1 [redacted]

1 [redacted] (She/Her)
Senior Investigations Officer
1 [redacted]@environmentalstandards.scot
1 [redacted]

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