

**At the request of
European Sustainable Phosphorus Platform**

**LEGAL OPINION
on
'End of Waste' and use of Cat 1 ABP incineration ash as fertiliser**

Background

1. The Client is the European Sustainable Phosphorus Platform of 67 rue de Trèves, 1040 Bruxelles, Belgium. Its interest in phosphorus sustainability extends to fertiliser issues, including waste-derived fertilisers. It therefore has an interest in the "end of waste" market for non-virgin fertilisers, in particular those produced as a result of the incineration of Category 1 Animal By-Products ("ABPs").
2. It is understood that Category 1 ABP-derived ash (produced as a result of an incineration process which fully complies with ABP and Waste legislation) contains high levels of phosphorus and potassium and is already used in the UK where the market exceeds 10,000 tonnes annually, with testing under way in Portugal for use as a forestry fertiliser.

3. In this Opinion we shall consider Cat 1 ABP ash in the context of (a) the EU Animal By-Products Regulation¹ ["ABPR"], (b) the EU Waste Framework Directive² ["WFD"] and (c) the EU Fertilising Products Regulation³ ["FPR"].

Relationship between ABPR and WFD (inc. pointers from caselaw)

4. A crucial point to consider at the outset is which should prevail in a conflict between ABPR and WFD and indeed whether there is any overlap between them, or indicators as to which should apply at which lifecycle stage. An important indicator towards the answer can be found in the WFD, which sets out exclusions from its own scope at Article 2. (Incidentally, we are focusing primarily on the relationship between ABPR and WFD and in so doing ignoring FPR for the time being, on the basis that FPR is essentially an optional set of provisions regulating certain products and which doesn't deal with the fundamentals of whether certain material falls to be regulated under WFD rather than ABPR.)
5. Article 2(2) lists certain wastes which are excluded from the scope of the WFD "to the extent that they are covered by other Community legislation" (presumably to avoid unnecessary double regulation, and on the assumption that the "other Community legislation" adequately governs the treatment and management of the named waste streams which are being excluded from regulation under the WFD).
6. For present purposes Article 2(2)(b) is relevant and provides that the following waste is excluded from the scope of the WFD to the extent that it is covered by other Community legislation, namely,
"animal by-products including processed products covered by Regulation (EC) No 1774/2002⁴, **except those which are destined for incineration, landfilling or use in a biogas or composting plant**" [emphasis added]

¹ Regulation 1069/2009

² Directive 2008/98/EC

³ Regulation 2019/1009

⁴ Regulation 1774/2002 was the previous iteration of the ABPR, itself repealed by Regulation 1069/2009

7. The clear implication of the above is that ABPs which are, for example, to be disposed of by incineration are not to be left regulated by the ABPR but instead are to be INCLUDED within the scope of the Waste Framework Directive. It would appear that the crossover point (i.e. where regulation under ABPR should cease and the WFD should take over) should be the point at which the ABPs are identified as being “destined” for incineration etc.

8. The ECJ has had to rule several times on the inter-relationship between the ABP and Waste regimes. One of its most recent rulings is the 23 May 2019 Judgment in Case C-634/17 ReFood GmbH & Co. KG -v- Landwirtschaftskammer Niedersachsen, which says the following [at paragraphs 46 and 47]:

[46] However, as is apparent in essence from recitals 12 and 13 of the [WFD], the EU legislature considered that Regulation No 1774/2002 [**i.e. the predecessor of the current ABPR**] provided for proportionate rules, in particular, for the carriage of all animal by-products, including waste of animal origin, in order to prevent such waste from presenting a risk to animal and public health, and, in the light of the experience gained in the application of that regulation, considered that, in cases where such by-products pose potential health risks, that appropriate legal instrument for this type of risk was, in principle, that very regulation, so that duplication of rules and unnecessary overlaps with the legislation on waste should be avoided, by excluding from the scope of Directive 2008/98 animal by-products where they are intended for uses that are not considered waste operations.

[47] Accordingly, Article 2(2)(b) of [WFD] excludes animal by-products, including processed products covered by Regulation No 1774/2002, from the scope of that directive, with the sole exception of those which are destined for incineration, landfilling or use in a biogas or composting plant, thus highlighting the intention of the EU legislature to separate, in principle, animal by-products from the scope of legislation on waste.

9. It is therefore reasonably clear that ABPs destined for incineration (or any other outlet that is a *waste operation*) fall to be regulated as “waste” under the WFD. The implication of the above *dictum* is that the WFD is intended to take over the regulation of ABPs once they are destined for incineration etc. so that *duplication of rules and unnecessary overlaps* is avoided.

ABPR – Scope, and disposal of Cat 1 – does it conflict?

10. The EU ABPR lays down rules to protect the safety of the food and feed chain. It creates three categories of ABPs comprising (in increasing order of seriousness) Category 3

(which includes slaughtered animals fit for human consumption but not intended for that use), Category 2 (which includes animal manure and animals killed for disease control), and Category 1 (which includes infected wild animals and TSE-infected animals and parts). This Opinion is concerned with Category 1 ABPs (as defined in Article 8 of the ABPR), and the materials resulting from their incineration.

11. Article 12 ABPR deals with disposal and use of Cat. 1 material. It is mandatory in its terms (setting out 6 options lettered (a) to (f) for the disposal or use of Cat.1 material), which are as follows:

Category 1 material **shall be:**

(a) **disposed of as waste by incineration:** [emphasis added]

(i) directly without prior processing; or

(ii) following processing, by pressure sterilisation if the competent authority so requires, and permanent marking of the resulting material;

(b) recovered or disposed of by co-incineration, if the Category 1 material is waste:

(i) directly without prior processing; or

(ii) following processing, by pressure sterilisation if the competent authority so requires, and permanent marking of the resulting material;

(c) in the case of Category 1 material other than material referred to in Article 8(a)(i) and (ii), disposed of by processing by pressure sterilisation, permanent marking of the resulting material and burial in an authorised landfill;

(d) in the case of Category 1 material referred to in Article 8(f), disposed of by burial in an authorised landfill;

(e) used as a fuel for combustion with or without prior processing; or

(f) used for the manufacture of derived products referred to in Articles 33, 34 and 36 and placed on the market in accordance with those Articles.

12. It can be noted that options (a) to (e) involve either waste disposal processes (such as landfilling or incineration) or waste recovery processes (such as combustion as a fuel). Option (f) on the other hand - which innovates on the purely waste disposal options for Cat 1 material contained in the predecessor ABPR⁵ - involves the Cat.1 material being

⁵ Regulation 1774/2002

subsumed within another product and dealt with in terms of Articles 33, 34 and 36 of the ABPR. It should be further noted that options (a) and (f) are, clearly, entirely different processes, and not simply alternative labels for the same process.

Non-waste use of derived products under Article 12(f) ABPR

13. Before moving on to consider the legal status of ash resulting from the incineration of Cat.1 ABPs and the requirements of the WFD it is worth pausing, by way of contrast, to consider Article 12(f) of the ABPR, and the “derived products” referred to in Articles 33, 34 and 36 in slightly more detail.
14. The term “derived products” is defined in Article 3(2) ABPR as “products obtained from one or more treatments, transformations or steps of processing of animal by- products”. Indeed, derived products are at the heart of the ABPR to the same extent as ABPs themselves, with the full title of the ABPR referring to ABP and “derived products”. Significantly though, the definition of “derived products” does not extend, at least on the face of it, to products or production residues resulting from the disposal of ABPs as waste, on the basis that disposal by incineration is “disposal” (and consequential reduction to waste residues) and is something linguistically and conceptually separate and distinct from either a “treatment”, “transformation” or “step of processing” of an ABP. Moreover, as already noted, a “derived product” from Cat.1 ABPs for the purposes of Article 12 would be a product manufactured under Article 12(f), and not the residues resulting from incineration under Article 12(a).
15. The stated purpose of the ABPR, per Article 1, is thus to lay down public/animal health rules for ABPs and derived products “to prevent and minimise risks to public and animal health [...] and in particular to protect the safety of the food and feed chain”.
16. In addition, Article 4 (dealing with the regulatory “starting point”) requires that as soon as an operator generates ABP “or derived products” falling within the scope of the ABPR, they must be dealt with in accordance with the ABPR; and Article 5 (dealing with the “end point in the manufacturing chain”) requires ABPR controls to cease (i) when derived products referred to in Article 33 have reached the stage of manufacturing

regulated by the legislation referred to in Article 33 and (ii) when derived products referred to in Articles 32, 35, and 36 no longer pose any significant risk to public or animal health.

17. Article 33 lists 6 product types already regulated by other EU legislation (e.g. “veterinary medicinal products as defined in Article 1(2) of Directive 2001/82/EC”), and Article 34 supplements matters by providing that the ABPR shall continue to apply in the event that the other legislation does not suitably deal with the control of potential risks to public and animal health.
18. Article 36 authorises operators to place on the market derived products, other than the products referred to in Articles 31, 32, 33 and 35, provided (a) they are not intended to be used as animal feed or applied to land from which farmed animals are to be fed and (b) they ensure the control of risks to public and animal health by (i) safe sourcing in accordance with Article 37, (ii) safe treatment in accordance with Article 38, where safe sourcing does not ensure sufficient control, or (iii) verifying that the products are only used for safe end uses in accordance with Article 39 where safe treatment does not ensure sufficient control. There is nothing on the face of the ABPR to suggest that a derived product made from Cat.1 ABPs could not be dealt with pursuant to Article 36 as applied by Article 12(f), or treated as having reached its “end point in the manufacturing chain” under Article 36 (so long as, of course, it met the requirements of Article 36 and demonstrably no longer posed any significant risk to public or animal health).
19. The crucial aspect relating to the above provisions (which, it will be recalled, are set out in Article 12(f) as an *alternative* to Cat 1 material being incinerated, landfilled etc.) is that they are designed to ensure that there is control over the potential risks to public and animal health from those derived products.
20. It would of course have been useful if there had been a specific provision, in the context of the “end point” for ABPR controls, stating that the end point for ABPR controls in relation to those ABPs destined for incineration was the point at which they became subject to the WFD. Nevertheless, the inference from Recital 39 [which provides that

“Disposal of animal by-products and derived products should take place in accordance with environmental legislation regarding landfilling and waste incineration”] is that there is no need for ABPR controls once WFD controls take over.

21. There is a further argument in favour of the WFD prevailing (even when live issues arise under ABPR), and it is considered by the ECJ in the case quoted above at paragraph 8 [[Case C-634/17 ReFood GmbH & Co. KG -v- Landwirtschaftskammer Niedersachsen](#)]. It concerns the fact that the WFD applies to “waste” in the form of materials which the holder is “required” to discard.
22. Paragraphs 53-59 of the ECJ Judgment are of particular relevance and are set out here in full:

53 As was stated in paragraph 35 of this judgment, the observations submitted to the Court suggest that materials such as meat-and-bone meal can be classified as waste in view of the requirements imposed, as regards animal by-products, by the provisions of Regulation No 1774/2002. The relevance of those provisions must therefore be examined and it must be considered, in particular, whether a requirement to discard meat-and-bone meal can be inferred from them. It should be borne in mind that the national court has left open the question whether or not the meat-and-bone meal contains specified risk material, as is apparent from the wording of the questions referred to the Court.

54 If that meat-and-bone meal contains specified risk material, it must be classified as ‘Category 1 material’ within the meaning of Article 4(1)(b)(i) of Regulation No 1774/2002. In accordance with that provision, Category 1 material is to comprise specified risk material or any material containing such material.

55 Under Article 4(2) of Regulation No 1774/2002, Category 1 material must be either directly disposed of as waste by incineration in an approved incineration plant or processed in an approved processing plant and finally disposed of as waste by incineration or co-incineration or by burial in an approved landfill.

56 An obligation to dispose of products such as meat-and-bone meal where they contain specified risk material results from the provisions of Article 4(2) of Regulation No 1774/2002 read in the light of the need, expressed in the seventh recital in the preamble to that regulation, to avoid the risk of spreading disease presented by the use, in animal feed, of proteins derived from the bodies, or parts of bodies, of the same species.

57 Therefore, that meat-and-bone meal, if it contains such material, must be regarded as a substance which the holder is required to ‘discard’ within the meaning of Article 1(a) of Directive 75/442 and, therefore, as waste.

58 By contrast, if the meat-and-bone meal does not contain any specified risk material, it could be a ‘Category 3 material’ within the meaning of Article 6 of Regulation No 1774/2002, as one of the ‘animal by-products derived from the production of products intended for human consumption’ referred to in Article 6(1)(e) of that regulation.

59 Under Article 6(2)(a) and (b) of Regulation No 1774/2002, that category of by-products must be disposed of as waste by incineration in an approved incineration plant. However, unlike Category 1 material, Category 3 material is not intended exclusively for disposal. In particular, Article 6(2)(c) to (f) provides that that material may be either processed into products of economic value or used as raw material in a petfood plant. Since disposal of such by-products as waste is thus optional, an absolute requirement to discard substances such as meat-and-bone meal in so far as they do not contain specified risk material cannot be inferred from Regulation No 1774/2002.

23. Applying the rationale of paragraph 59 of the ReFood Judgment to the present, it might be argued that because of the existence of Article 12(f)⁶, disposal of Cat 1 ABPs is thus optional and an absolute requirement to discard it cannot be inferred from the ABPR. That is undoubtedly correct. However, given the mandatory terms of Article 12, the corollary would be that UNLESS the Cat 1 material is diverted to fuel use under Article 12(e), or used to manufacture derived products under Article 12(f), then it *necessarily* requires to be disposed of, and accordingly it would and should be categorised as a material which the holder is required to discard (and is therefore “waste”) as soon as disposal under Article 12(a)-(d) is identified as the way forward.
24. Such an approach aligns with and supports the separate argument based on the interpretation of the words “destined” for incineration etc (as indicating the point where regulation under ABPR ceases and the WFD takes over) as contained in Article 2(2)(b) of the WFD referred to at paragraph 7 above

ABPR or WFD?

25. The position in the UK (unchanged since Brexit) is that “*Ash resulting from the incineration of category 1 specified risk material is not under the control of the ABP regulations. This comes under the control of Environmental Controls (Waste Framework Directive)*”.⁷ Such an approach appears to be in conformity with the conclusions reached so far, as to the appropriate point at which ABPR controls fly off, to be replaced by WFD controls.

⁶ and, for that matter, Article 12(e), since it sets out a waste recovery process rather than a waste disposal process

⁷ <https://www.gov.uk/guidance/animal-by-products-how-to-burn-them-at-an-incinerator-site>

26. This contrasts with the European Commission's position which is understood to focus primarily on Article 32(1)(a) of the ABPR. The Commission has noted⁸ that under that Article "organic fertilisers and soil improvers" may be placed on the market and used provided they are derived from Category 2 or Category 3 material, but that manufacturing fertilisers from Category 1 materials would require a revision of the ABPR. Such an approach appears to fail to take into account ABPR/WFD caselaw and jurisprudence as referred to above, and to imply into the ABPR a prohibition which is not expressly stated. Nor does it provide an answer to ancillary questions, such as "what about *inorganic* fertilisers derived from Cat.1 ABPs?"
27. The undeniable reality is that Article 32 does not expressly state that Category 1 material cannot be used in organic fertilisers and soil improvers. Nor does it state that organic fertilisers and soil improvers cannot be derived from incinerator ash which is itself derived from Category 1 material.
28. Nevertheless, the Commission choose to interpret Article 32(1)(a) as though it expressly stated both of the above points, and without taking into account the obvious interface between ABPR and WFD. Such a position would appear to be incorrect.

The ABPR Implementing Regulation

29. At various points (e.g. Articles 15, 21, 27, 40, 42) the ABPR anticipates that detailed "implementing measures" will be laid down by means of a separate Regulation, and the principal implementing Regulation is Regulation 142/2011.
30. Article 6 thereof contains implementing measures in relation to the disposal of ABPs by incineration. It provides that incineration plants shall only be approved if they comply with the requirements set out in Annex III.
31. The requirements of Annex III include
 - the following (at Annex III, Chapter I, Section 1, paragraph 3):

⁸ in correspondence with the Client dating from February 2018

“Animals must not have access to the plants, animal by-products and derived products that are awaiting incineration or co-incineration **or to ash resulting from the incineration or co-incineration of animal by-products.**”

- the following (at Annex III, Chapter I, Section 3.1) headed “Incineration and co-incineration residues”:

“Incineration and co-incineration residues shall be minimised in their amount and harmfulness. Such residues must be recovered, where appropriate, directly in the plant or outside it in accordance with relevant Union legislation or disposed of in an authorised landfill.”

32. It is therefore apparent that the underling policy does not insist upon the ash residues being landfilled and appears to give approval to the residues being “recovered” (as distinct from being landfilled, and so long as the recovery does not permit animals to have access to the ash), although the requirement to “minimise” the amount of such residues suggests that the production of the ash residues, according to the original version of the Implementing Regulation, is not exactly being encouraged.

33. Amendments were later introduced to the Implementing Regulation by virtue of Regulation 592/2014, recital 5 of which was in the following terms:

“Residues from the combustion of poultry manure, primarily ashes, are a rich source of minerals that may be harvested for the production of mineral fertilisers and the Commission is currently developing Union legislation for such residues. It is therefore appropriate to provide for the possibility to make use of the combustion residues rather than to dispose of them as waste.”

34. The above recital wasn’t given particular voice in the substantive changes set out in Regulation 592/2014, but it was an encouraging indicator of a move away from residues being, for example, landfilled, towards “product” status.

Could it be both ABPR and WFD?

35. It is not inconceivable that ABPRs destined for incineration, and the materials resulting from the incineration process, might be regulated both by the ABPR and by the WFD. If it were so it would certainly be counter-intuitive and apparently unnecessary, but it would scarcely be the first time that two items of legislation produced by a legislature

were in conflict with each other, or inadvertently overlapped, or indeed deliberately overlapped.

36. The question therefore arises as to whether there are any pointers within the ABPR to indicate that its intended scope (including that of Article 32) extends to Category 1 material which has undergone disposal by incineration under ABPR Article 12(a).
37. Before answering that question it is necessary to consider what the ABPR says about "organic fertilisers and soil improvers" taking up the Commission's point about Article 32(1)(a) expressly allowing only organic fertilisers and soil improvers that (subject to meeting three other conditions specified in Article 32(1)) are "derived from Category 2 or Category 3 material".
38. Article 3.22 defines "organic fertiliser" and "soil improver" as meaning "materials of animal origin used to maintain or improve plant nutrition and the physical and chemical properties and biological activities of soils, either separately or together; they may include manure, non-mineralised guano, digestive tract content, compost and digestion residues."
39. The following is a non-exhaustive list of ABPR provisions applicable to "organic fertilisers" and "soil improvers":-
 - (a) Article 5(4) provides that the Commission, by 15th January 2020, should carry out an assessment of derived products referred to in Article 32 that are already widely used in Europe as organic fertilisers and soil improvers (such as meat and bone meal), and that if the assessment concludes that those derived products no longer pose any significant risk to public or animal health, the Commission shall determine an end point in the manufacturing chain pursuant to Article 5(2) without undue delay and in any case no later than six months after the assessment is finalised.
 - (b) Article 15(1)(i) authorises that implementing measures may be laid down relating to *inter alia* the application to land of certain animal by-products, organic fertilisers and soil improvers.
 - (c) Article 24 requires operators to ensure that establishments or plants under their control are approved by the competent authority, where such establishments or plants carry out *inter alia* one or more of the following activities [including]
 - (b) disposal, as waste, by incineration of animal by-products and derived products, excluding establishments or plants which have a permit to operate in accordance with Directive 2000/76/EC;
 - (f) manufacturing of organic fertilisers and soil improvers

- (d) Article 32(1)(a), as already noted, provides that organic fertilisers and soil improvers may be placed on the market and used provided “they are derived from Category 2 or Category 3 material” [and meet 3 further conditions specified at Article 32(1)(b)-(d)].
 - (e) Article 32 also provides that Member States may adopt or maintain national rules imposing additional conditions for or restricting the use of organic fertilisers and soil improvers, provided that such rules are justified on grounds of the protection of public and animal health.
40. Admittedly, Cat.1-derived incineration ash may be said to meet the ABPR definition of “organic fertiliser or soil improver” in that it is of animal origin and used to improve soils, but that is only of significance if the ABPR continues to apply after the material is disposed of as waste. But against the background of the ReFood judgment, the clear suggestion appears to be that regulation under the WFD is intended to replace regulation under the ABPR for Cat.1 material that has been incinerated. Once incinerated, aspects relating to the protection of the public and animal health arising from the “waste” ash can be satisfactorily governed under the WFD, and it would be surprising if, in such a case, with the WFD provisions being applicable, a proper reading of the situation required Article 32 of the ABPR (but not any other provisions of the ABPR) to continue to apply.
41. Our conclusion is, accordingly, that a proper legal analysis, taking into account the provisions of ECJ case law on ABPR and WFD as well as the ABPR and WFD themselves, leads to the conclusion that the WFD becomes the applicable legislation following incineration of Cat.1 ABPs. To suggest that this cannot be simply because of Article 32 ABPR is simplistic and ill-reasoned, and fails to take account of the relevant jurisprudence and the move to support the circular economy.
42. There is, however, an important practical postscript to that conclusion. As we shall see in the later section dealing with the Fertilising Products Regulation, we have a paradoxical situation where (as reasoned above) incineration residues of Cat.1 ABPs should be regulated under the WFD rather than being regulated as a derived product under ABPR, but such an approach could risk disqualifying the material under the FPR. This is because there is no express route into the FPR under CMC10 unless the material consists of or contains “derived products” under ABPR which have reached the end point in the manufacturing chain. Accordingly Cat.1-derived ash, if argued not to be a

derived product regulated by the ABPR, might risk being left in legal limbo for the purposes of the FPR, given the deliberate link back to the ABPR as contained in the FPR.

Waste Framework Directive

43. We now consider the application of the WFD to ABP-derived incinerator ash. "Waste", under the WFD, means "any substance or object which the holder discards or intends or is required to discard". As the ECJ has repeatedly said in every case concerning waste, "the scope of the term waste... turns on the meaning of the term 'discard'..."⁹ and "the concept of waste cannot be interpreted restrictively"¹⁰.
44. Several ECJ cases have explored the circumstances where a substance which might appear to have been "discarded" has in fact not been discarded. It is not enough that the material has a practical and monetary value – that on its own will not be conclusive in relation to whether the material is "waste". The focus in those cases has generally been on either (a) materials which have undergone a recovery process and been turned into a new product for which waste controls need not apply (the so-called "End of Waste" test) or (b) production residues (which might be better classified as "By-Products").
45. The 2008 version of the WFD, in light of those ECJ decisions, introduced for the first time statutory provisions in relation to both "End of Waste" and "By Products".

End of Waste test

46. The statutory End of Waste test¹¹ provided that certain wastes could cease to be waste once they had undergone a "recovery" operation, so long as they met certain conditions, including (a) that the substance is commonly used for specific purposes; (b)

⁹ See Case C-129/96 *Inter-Environnement Wallonie* [1997] ECR I-7411, paragraph 26, as quoted in most subsequent waste cases.

¹⁰ See Joined Cases C-418/97 and C-419/97 *ARCO Chemie Nederland and Others* [2000] ECR I-4475, paragraphs 37 to 40, and Case C-9/00 *Palin Granit and Vehmassalon kansanterveystyön kuntayhtymän hallitus* [2002] ECR I-3533, '*Palin Granit*', paragraph 23), which implies a strict interpretation of the exceptions to the concept of waste.

¹¹ WFD Article 6

that a market or demand exists for it; (c) that it fulfils the technical and legislative requirements for the product; and (d) the use of the substance will not lead to overall adverse environmental or human health impacts.

47. In terms of Cat.1 ABPs being transformed into ash by incineration, it is difficult to argue that that incineration process is anything other than a “disposal” operation¹², rather than the incineration itself being a “recovery” operation.
48. As a result, the “End of Waste” provisions in the WFD would be inapplicable to the initial process of *incinerating* the ABPs, since the End of Waste test is intended to apply only to material resulting from a “recovery” operation¹³, and not to material resulting from disposal. (But see paragraphs 52-61 below.)

By Products test

49. As well as introducing an “End of Waste” test for recovered materials, the 2008 version of the WFD¹⁴ also introduced a “By Products” test to the effect that a substance or object, resulting from a production process, the primary aim of which was not the production of that item, may be regarded as a non-waste by-product if (but only if) the following conditions are met:
 - (a) further use of the substance or object is certain;
 - (b) the substance or object can be used directly without any further processing other than normal industrial practice;
 - (c) the substance or object is produced as an integral part of a production process; and
 - (d) further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.
50. There are initial difficulties in seeking to apply the By Products test to the incineration of the ABPs and the resulting ash, primarily as a result of the legal requirement that the

¹² Namely, “incineration on land” as referred to in WFD Annex 1, item D10.

¹³ Or, under the updated version of Article 6 of the WFD introduced by Directive 2018/851, a

¹⁴ At Article 5

materials must result from a "production process", since pure incineration as a means of disposing of Cat.1 ABPs would primarily be regarded as a waste disposal process rather than as a production process.

51. That is not to say that ash can never qualify as a By Product, but it depends on establishing the existence of a "production process". We are aware of ash-as-fertiliser materials which have successfully sought By Product status from waste regulators. One example is a distillery fuelled by a biomass boiler, where the boiler ash was capable thereafter of being utilised as fertiliser. In such examples, though, the boiler is an integral part of the distillery and of the whisky production process, thus opening up the possibility of the By Products avenue being available. In seeking to apply that same reasoning to the process of ash resulting from the disposal by incineration of Cat 1 ABPs, care would need to be taken legitimately to set up the process to be part of a production process. In other words, it would not be impossible to analyse the process of producing ash as a "production process" (or to devise a suitably compliant process), but it would likely not be the default interpretation, and a lot of effort would likely be needed (in the absence of criteria adopted by the Commission that were applicable to such residues) to persuade the appropriate authorities that By Product status should be conferred. Demonstrating compliance with criteria (a) to (d) of the By Products test would likely not be unduly onerous, once the authorities were satisfied that the ash was the output of a "production process".

End of Waste test revisited

52. It was noted above that the "End of Waste" provisions in the WFD would likely be inapplicable to the initial process of incinerating the ABPs, since the incineration process would primarily be regarded as a disposal process for Cat.1 ABPs, rather than as a "recovery" operation. Might there be, however, a means of revisiting the ash, post-incineration, and applying the EOW test?
53. After all, the recitals to the WFD appear to be inviting us to do so. These include the following:

Recital (8) to 2008/98: "Furthermore, the recovery of waste and the use of recovered materials should be encouraged in order to conserve natural resources."

Recital (19) to 2008/98: "The definitions of recovery and disposal need to be modified in order to ensure a clear distinction between the two concepts, based on a genuine difference in environmental impact through the substitution of natural resources in the economy and recognising the potential benefits to the environment and human health of using waste as a resource."

Recital (22) to 2008/98: "[T]his Directive should clarify when certain waste ceases to be waste, laying down end-of-waste criteria that provide a high level of environmental protection and an environmental and economic benefit; possible categories of waste for which 'end-of-waste' specifications and criteria should be developed are, among others, construction and demolition waste, some ashes and slags, scrap metals, aggregates, tyres, textiles, compost, waste paper and glass."

and perhaps most significantly for present purposes:

Recital (22) to 2008/98: "For the purposes of reaching end-of-waste status, a recovery operation may be as simple as the checking of waste to verify that it fulfils the end-of-waste criteria."

54. The above appears to suggest that, in relation to ash resulting from the incineration of ABPs, it may be possible to (1) regard the ash as a potential product, (2) adapt a product-specific EOW test for the ash that meets the legal criteria in Article 6 WFD, and (3) deem the process of checking that the ash meets the EOW criteria as the necessary "recovery" operation.
55. Moreover, we have since had the benefit of the amendments to the WFD introduced as part of the Circular Economy "package" of measures, including Directive 1018/851 which introduced amendments to the WFD and to the End-of-Waste test itself. The recitals to that Directive include the following:

Recital (2): "Improving the efficiency of resource use and ensuring that waste is valued as a resource can contribute to reducing the Union's dependence on the import of raw materials and facilitate the transition to more sustainable material management and to a circular economy model."

Recital (17): "In order to provide operators in markets for secondary raw materials with more certainty as to the waste or non-waste status of substances or objects and to promote a level playing field, it is important that Member States take appropriate measures to ensure that waste that has undergone a recovery operation is considered to have ceased to be waste if it complies with all the conditions laid down in Article 6(1) of Directive 2008/98/EC as amended by this Directive."

56. The End of Waste criteria introduced originally in 2008 originally envisaged that EU-wide EOW criteria would be developed for specific recovered products by the European Commission¹⁵, and further provided that where such criteria had **not** been set at Community level, Member States could decide on a case-by-case basis whether certain waste had ceased to be waste, taking into account applicable case law.
57. The EOW criteria in the WFD have now been further modified as a result of Directive 2018/851. That Directive made some fairly major changes to the EOW provisions in Article 6 of the WFD, and had a transposition deadline of 5th July 2020. Those are the applicable provisions for present purposes. For ease of reference, the modified Article 6 is set out in Annex I to this Opinion.
58. The Article 6.1 criteria are:
 - (a) the substance or object is to be used for specific purposes;*
 - (b) a market or demand exists for such a substance or object;*
 - (c) the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products;*
and
 - (d) the use of the substance or object will not lead to overall adverse environmental or human health impacts.*
59. In order to satisfy the EOW test for ABP-derived ash, evidence would have to be supplied to demonstrate how each criterion is met. We do not propose looking into the specifics of such a test in this Opinion. As ever with the EOW test, the principal challenge usually arises in relation to criteria (c) and (d) to show equivalence of product standard

¹⁵ So far, this has only been achieved in relation to three waste streams, namely, (a) iron, steel and aluminium scrap, (b) glass cullet, and (c) copper scrap, the last of these being back in 2013.

and environmental impact as between a waste-derived product and its virgin equivalent. No doubt suitably detailed testing would be beneficial to demonstrate that the pathogens and other contents of concern in Cat.1 ABPs had been destroyed during the incineration process.

60. The revised Art. 6 wording adds certain elements of detail to the EOW test including in the following respects:-

(a) Previously, it was not entirely clear whether the criteria in Article 6.1 were to inform all domestic case-by-case decisions, or whether those criteria were only intended to apply to Community-wide measures such as those mentioned in footnote 15. Now, however, Member States must take appropriate measures to “ensure” that EOW status is accorded to products which meet the Article 6.1 criteria i.e. it is clear that these are the domestic criteria applicable in each Member State.

(b) Article 6.2 also contains detailed criteria labelled (a) to (e) to be taken into account not only by the Commission when setting EU-wide EOW criteria, but also by Member States (under Article 6.3) when setting any national criteria. These include a requirement for “*quality criteria in line with the applicable product standards*”.

(c) Where a Member State has not set a national standard, it may proceed on a case-by-case approach, but under Article 6.4 such an approach is expected to apply both the Article 6.1 criteria AND the Article 6.2 criteria.

(d) Article 6.5 is completely new and places an obligation on the person who places a non-waste material on the market for the first time to ensure that it meets the applicable product legislation¹⁶.

¹⁶ This is a factor that would have to be considered in framing any ash-specific EOW test. This may include not just meeting fertilizer product specifications, but in a more general sense potentially seeking approval under the REACH regime (i.e. EC Regulation No 1907/2006 of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals), which generally becomes applicable to a former “waste” which is now a “product”. Exemptions may be possible where in effect the same product has been registered before, and specialist advice should be sought on REACH.

(e) There is no longer any reference to individual decisions being taken on the basis of “applicable case law”. EOW decisions now have to be taken in accordance with the criteria set out in the Directive. To that extent it may remove an element of ‘wiggle room’ associated with the interpretation of case law.

It therefore appears that there is nothing in the ABPR that would prevent Cat.1 ash being the subject of a detailed EOW submission pursuant to the WFD, with a view to demonstrating that it meets all elements of the EOW test. The impact, if any, of the ABPR Implementing Regulation (see paragraphs 29-34 above) would have to be taken into account in devising an acceptable EOW submission. The Implementing Regulation currently stipulates (albeit in the context of the regulation of incineration plants, rather than in blanket waste recovery terms) that incineration plants must comply with the requirement that animals must not have access to ash resulting from the incineration of ABPs. That is of course not the same as a blanket ban on “products” derived from Cat 1 ash being used on grazing land. The Implementing Regulation also indicates that ash should be “recovered”, and the prohibition against animals having access to the ash does not appear to cover ash which has gone on to be “recovered”. It would therefore appear that the Implementing Regulation is confined to prohibiting the direct spreading on fields to which animals have access of unprocessed incinerator ash, and that it would not prevent the subsequent use of an EOW fertiliser product on fields to which animals have access (unless of course the authority agreeing the EOW criteria stipulated for such a prohibition and felt it was justifiable).

61. One fairly recent innovation in relation to End of Waste status appears in the FPR (which we shall consider in the next section) which notes at Article 19 that

“This Regulation lays down criteria in accordance with which material that constitutes waste, as defined in Directive 2008/ 98/EC, can cease to be waste, if it is contained in a compliant EU fertilising product. In such cases, the recovery operation under this Regulation shall be performed before the material ceases to be waste, and the material shall be considered to comply with the conditions laid down in Article 6 of that Directive and therefore to have ceased to be waste from the moment that the EU declaration of conformity was drawn up.”

62. This obviously suggests that you can automatically achieve EOW status if you have also achieved product status under the FPR (i.e. by meeting all of the requirements of the

FPR as set out in the next section, rather than through the preparation of a WFD EOW submission), although the working assumption would be that achieving product status for an EU Fertilising Product under the FPR would likely require even greater effort than establishing EOW status under the WFD.

63. In terms of actual end-use it should also be noted that achieving product status under FPR for waste-derived materials would be confined to use as an EU Fertilising Product (and achieving that status would require compliance with all 4 annexes of the FPR, not just the particular CMC). We are aware that Cat 1 ash can be processed to produce waste-derived phosphoric acid, which may not be destined for use as a fertilising product, and may simply be destined for sale as a commodity chemical. In such cases it would be necessary for the “product” to be shown to meet the WFD EOW test for that specific end-use. If an EOW case for phosphoric acid derived from Cat 1 ABP ash were to be established, it would generally avoid waste controls being applicable to the handling or transportation of the “product”.

Fertilising Products Regulation

64. In this final section we move on to consider the extent to which ash capable of meeting the WFD EOW test, and thereby achieving product status, would have its use regulated by, or limited by, EU law applicable to fertilisers.
65. The principal item of legislation at EU level is the Fertilising Products Regulation 2019/1009¹⁷ (“FPR”), the full text of which is scheduled to apply as from 16th July 2022. Its purpose is to cover a wider range of fertilising materials than its predecessor, including organic and inorganic fertilisers, and other products which promote plant growth.
66. It is understood that compliance with the FPR is not compulsory in that domestic use within a Member State could still be authorised by an agreed EOW test with the national

¹⁷ Regulation 2019/1009 of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003

authorities in a particular Member State without the fertiliser needing to meet FPR requirements, and that it would be for the producer to decide whether he was content to comply with national rules, or wished to seek approval under the EU regulation.

67. Accordingly, if a producer wished to open up the product to the full EU market, it would require to comply with the FPR. There would therefore be no European-wide market or freedom of movement of the product between Member States without either legal compliance with the FPR, or in circumstances where the domestic laws and compliance requirements between two Member States (and in all probability in any other Member States through which the material might be transiting) happened to coincide, or are aligned pursuant to the Mutual Recognition Regulation 764/2008.
68. The FPR was adopted as part of the Circular Economy Action Plan and those credentials are apparent from its opening recital:

“The conditions for making fertilisers available on the internal market have been partially harmonised through Regulation (EC) No 2003/2003 of the European Parliament and of the Council, which almost exclusively covers fertilisers from mined or chemically produced, inorganic materials. **There is also a need to make use of recycled or organic materials for fertilising purposes.** Harmonised conditions for making fertilisers made from such recycled or organic materials available on the entire internal market should be established in order to provide an important incentive for their further use. **Promoting increased use of recycled nutrients would further aid the development of the circular economy** and allow a more resource-efficient general use of nutrients, while reducing Union dependency on nutrients from third countries. The scope of the harmonisation should therefore be extended in order to include recycled and organic materials.”

69. On the interface between ABPR and FPR recital 14 states:

“Where one or more of the component materials [in an EU fertilising product] is a derived product within the meaning of [ABPR] but has reached a point in the manufacturing chain beyond which it no longer poses any significant risk to human, animal or plant health, to safety or to the environment (the ‘end point in the manufacturing chain’), to continue subjecting the product to the provisions of [ABPR] would represent an unnecessary administrative burden. Such fertilising products should therefore be excluded from the requirements of [ABPR].”

In that connection, see comments below in relation to CMC10.

70. Conversely, recital 18 provides:

“The making available on the market of an animal by-product or a derived product within the meaning of [ABPR] for which no end point in the manufacturing chain has been determined, or for which the determined end point has not been reached at the time of making available on the market, is subject to the requirements of [ABPR]. Therefore, it would be misleading to provide for the product’s CE marking under this Regulation. Any product containing or consisting of such an animal by-product or derived product should therefore be excluded from the scope of this Regulation.”

and this is reflected in the scope provision at Article 1.1 which says: "This Regulation does not apply to animal by-products or derived products which are subject to the requirements of Regulation (EC) No 1069/2009 when made available on the market". In that connection, see comments below in relation to CMC11.

71. Put briefly, the FPR seeks to introduce harmonised requirements requiring Quality (e.g. minimum nutrient content), Safety (e.g. maximum levels for heavy metals), and Labelling. There is also a detailed "conformity assessment" procedure.
72. In this document we do not intend looking in any great detail at the individual quality, safety, labelling or conformity assessment procedures for ABP-derived post-incineration ash, but it is useful to highlight the points below by way of overview.
73. Reflecting the above structure, Article 4 provides that an EU fertilising product shall
 - (a) meet the requirements set out in Annex I for the relevant product function category;
 - (b) meet the requirements set out in Annex II for the relevant component material category or categories;and
 - (c) be labelled in accordance with the labelling requirements set out in Annex III.(and as a catch-all Article 4.2 provides that for any aspects not covered by Annex I or II, EU fertilising products shall not present a risk to human, animal or plant health, to safety or to the environment.)

Article 15 then directs that "conformity assessment of an EU fertilising product with the requirements laid down in this Regulation shall be carried out under the applicable conformity assessment procedure in accordance with Annex IV"

74. Accordingly an "EU Fertilising Product" is one which meets the requirements for a Product Function Category under Annex I, meets the requirements for a Component Material Category under Annex II, is labelled according to the requirements of Annex III, and which passes the conformity assessment procedure under Annex IV. It is then CE-marked and can move freely in the internal market as a fertilising product.

75. Annex I sets out 7 different “product function categories” (such as “organic fertiliser”, “soil improver”, “inhibitor” etc), and details the technical requirements for each category.
76. Annex II then sets out 14¹⁸ “component material categories” or CMCs including CMC10 (“derived products” within the meaning of the ABPR), CMC11 (“by-products” within the meaning the WFD), and CMC 13 (“thermal oxidation materials or derivates”) and proceeds to define the component materials for each CMC.
77. It should be noted that Article 42(2) of the FPR had required the Commission to assess ash-based products with a view to creating additional CMCs, if satisfied that (a) they had the potential to be the subject of significant trade on the internal market, and (b) there was scientific evidence that they (i) did not present a risk to human, animal or plant health, to safety or to the environment, and (ii) ensured agronomic efficiency.
78. For CMC10 Annex II states the following:
“An EU fertilising product may contain derived products within the meaning of Regulation (EC) No 1069/2009 having reached the end point in the manufacturing chain as determined in accordance with that Regulation, and which are listed in the following table and as specified therein”,
but there is no table supplied.
79. Instead, a footnote explains that the table is to be established by delegated acts under Article 42.5, which in turn provides that
“The Commission may only adopt delegated acts pursuant to paragraph 1 amending Annex II to this Regulation to add derived products within the meaning of [ABPR] in the component material categories where an end point in the manufacturing chain has been determined in accordance with Article 5(2) of that Regulation.”
80. It seems somewhat extraordinary that, with the Regulation about to go live in its entirety, no end points have been defined by the Commission, and CMC10 remains devoid of substantive content. In any event, applying the point already noted at paragraph 14 above, on the basis of the ABPR as presently drafted ABP ash could not be considered under CMC 10 anyway, since it is an incineration residue pursuant to

¹⁸ Originally 11, but 3 additions have been made by the Commission using delegated powers

Article 12(a) ABPR rather than a “derived product” manufactured under Article 12(f) ABPR. It would therefore appear that CMC 10 does not offer a route in to FPR for ABP ash.

81. For CMC 11 Annex II states the following:
1. An EU fertilising product may contain by-products within the meaning of Directive 2008/98/EC, except: (a) **animal by-products or derived products within the meaning of Regulation (EC) No 1069/2009** [...and 5 other excluded categories].
 2. The by-products shall have been registered pursuant to [the REACH Regulation], with a dossier containing: (a) the information provided for by Annexes VI, VII and VIII to [the REACH Regulation] and (b) a chemical safety report pursuant to Article 14 of [the REACH Regulation] covering the use as a fertilising product, unless explicitly covered by one of the registration obligation exemptions provided for by Annex IV to [REACH] or by point 6, 7, 8 or 9 of Annex V to that Regulation.
 3. From 16 July 2022, the by-products shall comply with the criteria established by delegated act referred to in Article 42(7). An EU fertilising product placed on the market after that date shall not contain by-products referred to in point 1 which do not comply with such criteria.
82. It is not entirely clear what the scope of above exclusion is intended to be. It could be that it is merely stating the obvious and simply means, “When we say it can contain *by-products* we don’t obviously mean untreated *animal* by products”. Or is it intended to strike at all materials which have at any point comprised ABPs? Taking into account Recital 18 quoted at paragraph 70 above, the exclusion in CMC11 should probably be read as applying to those ABPs which continue to be regulated under the ABPR (which should not include those which have been incinerated as waste and which may have managed to satisfy the By Products test under the WFD, including the issues around the “production process” referred to at paragraph 51 above).
83. CMC 13 was introduced by the Commission¹⁹ under the delegated powers conferred by Article 42 of the FPR. They were required to assess ash-based products and to create a CMC in relation to such products if their assessment concluded that EU fertilising products containing such materials do not present a risk to human, animal or plant health, to safety or to the environment, and ensure agronomic efficiency.

¹⁹ Commission Delegated Regulation 2021/2087

84. The scope of CMC 13 is set out in 8 highly detailed paragraphs. For ease of reference its text is set out at Annex II to this Opinion.
85. The recitals to the delegated regulation²⁰ narrate that the Commission's Joint Research Centre issued a report concluding
- that thermal oxidation materials and derivatives, if produced following the recovery rules suggested in the report, provide plants with nutrients or improve their nutrition efficiency and therefore ensure agronomic efficiency;
 - that there is an existing and growing market demand for thermal oxidation materials and derivatives, and that those materials are likely to be used to provide nutrient inputs to European agriculture; and
 - that the use of thermal oxidation materials and derivatives produced following the recovery rules suggested in the report does not lead to overall adverse environmental or human health impacts
86. Of further interest are the following recitals:
- (9) In particular, animal by-products or derived products within the meaning of [ABPR] should only be allowed as input materials for thermal oxidation materials and derivatives governed by [FPR], if and when their end points in the manufacturing chain have been determined in accordance with Article 5(2), third subparagraph of [ABPR] and will be reached at the latest by the end of the production process of the EU fertilising product containing the thermal oxidation materials or derivatives.
 - (10) Furthermore, given the fact that thermal oxidation materials and derivatives can be considered to be recovered waste or by-products within the meaning of Directive 2008/98/EC, such materials should be excluded from the component material categories I and 11 of Annex II to [FPR] pursuant to Article 42(1), third subparagraph of that Regulation.

²⁰ See fn 19

87. Read short, point 1 of CMC 13 states that the input materials to the thermochemical conversion cannot include either ABPs [point 1(a), final exception] or ABPs classified as waste [point 1(g), final exception].
88. Viewed strictly, the wording of the latter exception may permit a degree of latitude in that the allowable input material is waste within the meaning of [WFD] with the exception of [amongst others] “*animal by-products or derived products **within the scope** of [ABPR]*”. As already noted earlier in this Opinion, ash from the incineration of ABPs would fall to be regulated under the WFD rather than the ABPR, and to that extent could be argued not to be “within the scope” of the ABPR.
89. However, EU law is well known for favouring a purposive, goal-based approach to interpretation, rather than a literal one. In reading CMC 13 as a whole one could not interpret CMC 13 point 1 without also taking cognisance of point 2, which states
- Notwithstanding point 1, an EU fertilising product may contain thermal oxidation materials obtained through thermochemical conversion under non-oxygen-limiting conditions from Category 2 or Category 3 materials or derived products thereof, in accordance with the conditions set out in Article 32(1) and (2) of [ABPR] and in the measures referred to in Article 32(3) of that Regulation, alone or mixed with input materials referred to in point 1, provided that both of the following conditions are fulfilled:
- (a) the end point in the manufacturing chain has been determined in accordance with Article 5(2), third subparagraph of Regulation (EC) No 1069/2009;
 - (b) the conditions in points 3, 4, and 5 are met.
90. The above accordingly makes it sufficiently plain that, at present, Cat 1 materials are not intended to be permitted as an input material under CMC 13. There is no explanation within Commission Delegated Regulation 2021/2087 (which provides the wording of CMC 13) why this should be the case. The working assumption must be that it stems from the Commission’s [questionable] interpretation of the ABPR itself (to the effect that the combined effect of Articles 5(2) and 32 of the ABPR is that Cat 1-derived soil improvers, specifically those derived from incineration ash, can never have an end point or be placed on the market). [See paragraph 28 above.]

91. In conclusion, seeking approval of Cat.1-derived ash as fertiliser, or as an ingredient in fertiliser, will require that it meets either the EOW test, or the FPR test²¹, as well as requiring registration under REACH or a demonstrable exemption. Showing compliance will require an enormous effort.
92. For producers there is clearly a problem not just in the lack of a CMC10 table, but in the failure of the ABPR to acknowledge that incineration constitutes an end point, and the decision to exclude ash derived from Cat 1 materials under CMC 13. Representations will require to be made to the Commission in the hope that agreement can be reached on
- (a) acknowledging that Cat.1-derived ash is not in fact unlawful under the ABPR;
 - (b) acknowledging that an end point could be devised for Cat.1-derived ash under ABPR;
 - (c) accepting that meeting the EOW test under the WFD would (putting aside FPR issues) constitute a suitable end point, given that issues relating to product standards, human health and environmental impacts would have thereby been addressed;
 - (d) accepting (where the above safety issues have been satisfactorily addressed) that there is no legal prohibition on Cat.1-derived ash being used on grazing land (and with matters being capable of being covered by appropriate labelling such as that provided for under FPR Annex III, Part 1, paragraph 4²²);

²¹ Or, less likely, the By Products test, or indeed some stand-alone test devised by the Commission under ABPR Article 36

²² "(4) Where the EU fertilising product contains derived products within the meaning of Regulation (EC) No 1069/2009 other than manure, the following instruction shall be provided on the label: 'Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days.'"

September 13, 2022

(e) agreeing a sensible way forward for such materials potentially gaining entry to the EU market under FPR (perhaps through a modification to CMC 13 – which would require the Commission to accept that the ABPR, WFD and FPR, viewed together, do not amount to a legal prohibition against the use of Cat.1-derived fertiliser products). [N.B. If CMC 13, point 2, were to be changed to acknowledge that Cat.1 material could feature, it would also be necessary thereafter to address the “end point in the manufacturing chain” aspect in order that the conditions in CMC 13, point 2, could be complied with.]

93. As already noted, if all that is currently standing in the way of that process is that the Commission believes Cat.1-derived ash is a legal impossibility under the ABPR, then they must be prevailed upon to substantiate that position as, on the basis of the foregoing analysis, it is an unsupportable conclusion which fails to (i) acknowledge the lack of any express prohibition to that effect, (ii) address the interface between WFD and ABPR, and (iii) achieve the purposive result envisaged by the Circular Economy principles.



13th September 2022.

This is the Opinion of:

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ANNEX I

(NB. Those provisions labelled "M4" are amendments introduced by the 2018 Directive, while those labelled "B" are from the original 2008 WFD.)

Article 6

End-of-waste status

▼M4

1. Member States shall take appropriate measures to ensure that waste which has undergone a recycling or other recovery operation is considered to have ceased to be waste if it complies with the following conditions:

(a) the substance or object is to be used for specific purposes;

▼B

(b) a market or demand exists for such a substance or object;

(c) the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and

(d) the use of the substance or object will not lead to overall adverse environmental or human health impacts.

▼M4

2. The Commission shall monitor the development of national end-of-waste criteria in Member States, and assess the need to develop Union-wide criteria on this basis. To that end, and where appropriate, the Commission shall adopt implementing acts in order to establish detailed criteria on the uniform application of the conditions laid down in paragraph 1 to certain types of waste.

Those detailed criteria shall ensure a high level of protection of the environment and human health and facilitate the prudent and rational utilisation of natural resources. They shall include:

(a) permissible waste input material for the recovery operation;

(b) allowed treatment processes and techniques;

(c) quality criteria for end-of-waste materials resulting from the recovery operation in line with the applicable product standards, including limit values for pollutants where necessary;

(d) requirements for management systems to demonstrate compliance with the end-of-waste criteria, including for quality control and self-monitoring, and accreditation, where appropriate; and

(e) a requirement for a statement of conformity.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 39(2).

When adopting those implementing acts, the Commission shall take account of the relevant criteria established by Member States in accordance with paragraph 3 and shall take as a starting point the most stringent and environmentally protective of those criteria.

3. Where criteria have not been set at Union level under paragraph 2, Member States may establish detailed criteria on the application of the conditions laid down in paragraph 1 to certain types of waste. Those detailed

criteria shall take into account any possible adverse environmental and human health impacts of the substance or object and shall satisfy the requirements laid down in points (a) to (e) of paragraph 2.

Member States shall notify the Commission of those criteria in accordance with Directive (EU) 2015/1535 where so required by that Directive.

4. Where criteria have not been set at either Union or national level under paragraph 2 or 3, respectively, a Member State may decide on a case-by-case basis, or take appropriate measures to verify, that certain waste has ceased to be waste on the basis of the conditions laid down in paragraph 1 and, where necessary, reflecting the requirements laid down in points (a) to (e) of paragraph 2, and taking into account limit values for pollutants and any possible adverse environmental and human health impacts. Such case-by-case decisions are not required to be notified to the Commission in accordance with Directive (EU) 2015/1535.

Member States may make information about case-by-case decisions and about the results of verification by competent authorities publicly available by electronic means.

▼M4

5. The natural or legal person who:

(a) uses, for the first time, a material that has ceased to be waste and that has not been placed on the market;
or

(b) places a material on the market for the first time after it has ceased to be waste,
shall ensure that the material meets relevant requirements under the applicable chemical and product related legislation. The conditions laid down in paragraph 1 have to be met before the legislation on chemicals and products applies to the material that has ceased to be waste.

ANNEX II

CMC 13: THERMAL OXIDATION MATERIALS OR DERIVATES

1. An EU fertilising product may contain thermal oxidation materials obtained through thermochemical conversion under non-oxygen-limiting conditions exclusively from one or more of the following input materials:

(a) living or dead organisms or parts thereof, which are unprocessed or processed only by manual, mechanical or gravitational means, by dissolution in water, by flotation, by extraction with water, by steam distillation or by heating solely to remove water, or which are extracted from air by any means, except (*):

- materials originating from mixed municipal waste,
- sewage sludge, industrial sludge or dredging sludge, and
- animal by-products or derived products within the scope of Regulation (EC) No 1069/2009;

(b) vegetable waste from the food processing industry and fibrous vegetable waste from virgin pulp production and from production of paper from virgin pulp, if not chemically modified;

(c) bio-waste fraction resulting from subsequent treatment operations of bio-waste separately collected for recycling within the meaning of Directive 2008/98/EC, for which incineration delivers the best environmental outcome in accordance with Article 4 of that Directive other than animal by-products or derived products within the scope of Regulation (EC) No 1069/2009;

(d) materials resulting from a controlled microbial or thermochemical conversion process using exclusively the input materials referred to in sub-points (a), (b), and (c);

(e) sewage sludge from municipal wastewater treatment plants, other than animal by-products or derived products within the scope of Regulation (EC) No 1069/2009;

(f) materials from the independently operated treatment of waste water not covered by Council Directive 91/271/EEC (**) from food processing, pet food, feed, milk and drink industries, other than animal by-products or derived products within the scope of Regulation (EC) No 1069/2009;

(g) waste within the meaning of Directive 2008/98/EC with the exception (*) of:

- input materials referred to in sub-points (a) to (f),
- hazardous waste within the meaning of Article 3, point 2 of Directive 2008/98/EC,
- materials originating from mixed municipal waste,
- bio-waste within the meaning of Article 3, point 4 of Directive 2008/98/EC resulting from separate bio-waste collection at source, and

— animal by-products or derived products within the scope of Regulation (EC) No 1069/2009;

(h) auxiliary fuels (natural gas, liquefied gas, natural gas condensate, process gases and components thereof, crude-oil, coal, coke as well as their derived materials), when used to process input materials referred to in sub-points (a) to (g);

(i) substances which are used in production processes of the iron and steel industry; or

(j) substances and mixtures, with the exception (*) of:

— input materials referred to in sub-points (a) to (i),

— waste within the meaning of Article 3, point 1 of Directive 2008/98/EC,

— substances or mixtures which have ceased to be waste in one or more Member States by virtue of the national measures transposing Article 6 of Directive 2008/98/EC,

— substances formed from precursors which have ceased to be waste in one or more Member States by virtue of the national measures transposing Article 6 of Directive 2008/98/EC, or mixtures containing such substances, and

— animal by-products or derived products within the scope of Regulation (EC) No 1069/2009.

2. Notwithstanding point 1, an EU fertilising product may contain thermal oxidation materials obtained through thermochemical conversion under non-oxygen-limiting conditions from Category 2 or Category 3 materials or derived products thereof, in accordance with the conditions set out in Article 32(1) and (2) of Regulation (EC) No 1069/2009 and in the measures referred to in Article 32(3) of that Regulation, alone or mixed with input materials referred to in point 1, provided that both of the following conditions are fulfilled:

(a) the end point in the manufacturing chain has been determined in accordance with Article 5(2), third subparagraph of Regulation (EC) No 1069/2009;

(b) the conditions in points 3, 4, and 5 are met.

3. The thermal oxidation shall take place under non-oxygen limiting conditions in such a way that the gas resulting from the thermochemical conversion process is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even under the most unfavourable conditions to a temperature of at least 850 °C for at least 2 seconds. These conditions shall apply to all input materials, with the exemption of:

(a) the input materials referred to in points 1(a), (b) and (h), or resulting from a controlled microbial or thermochemical conversion process using exclusively those materials, and

(b) input materials referred to in point 2,

for which a temperature of at least 450 °C for at least 0,2 seconds shall apply;

4. The thermal oxidation shall take place in an incineration or combustion chamber. The chamber may only process input materials, which are not contaminated with other material streams, or input materials, other

than animal by-products or derived products within the scope of Regulation (EC) No 1069/2009, which have been contaminated with other material streams unintentionally in a one-off incident resulting only in trace levels of exogenous compounds.

All of the following conditions shall be met in the plant, where the thermal oxidation takes place:

- (a) the production lines for the processing of input materials referred to in points 1 and 2 shall be clearly separated from production lines for the processing of other input materials,
- (b) the input material shall be oxidised in such a way that the total organic carbon (Corg) content of the resulting slags and bottom ashes is less than 3 % by dry matter of the material,
- (c) physical contact between input and output materials shall be avoided after the thermochemical conversion process, including during storage.

5. The thermal oxidation materials shall be ashes or slags, and have no more than:

- (a) 6 mg/kg dry matter of PAH16 (***) ,
- (b) 20 ng WHO toxicity equivalents (****) of PCDD/F (*****)/kg dry matter.

6. An EU fertilising product may contain derivatives from thermal oxidation materials that have been produced from the input materials referred to in points 1 and 2 that meet the conditions of point 5 and that have been manufactured by a thermochemical conversion process in accordance with points 3 and 4.

The derivative manufacturing process shall be executed so as to intentionally modify the chemical composition of the thermal oxidation material.

The derivative manufacturing process shall be of the following nature:

- (a) chemical manufacturing: derivatives are produced through one or more chemical manufacturing steps that react thermal oxidation materials with input materials referred to in sub-point 1(j) that are consumed in or used for chemical processing whereas non-biodegradable polymers shall not be used;
- (b) thermochemical manufacturing: derivatives are produced through one or more manufacturing steps that thermochemically react thermal oxidation materials with reactants referred to in points 1 and 2 that are consumed in or used for chemical processing.

Thermal oxidation materials that display one or more of the hazardous properties listed in Annex III to Directive 2008/98/EC shall not be mixed or reacted, either with waste, substances or materials with the intention of reducing hazardous substances to levels below the limit values for the hazardous property as laid down in Annex III to that Directive. Using a mass balance approach, manufacturers that use thermal oxidation materials with hazardous properties must demonstrate the removal or transformation of the contaminants to levels below the limit values laid down in Annex III to Directive 2008/98/EC.

7. Contaminants in an EU fertilising product containing or consisting of thermal oxidation materials or derivatives must not exceed the following limit values:

(a) total chromium (Cr): 400 mg/kg dry matter, if the thermal oxidation materials or derivatives are from input materials referred to in sub-points 1(e), (g) or (i);

(b) thallium (Tl): 2 mg/kg dry matter, if the thermal oxidation materials or derivatives are from input materials referred to in sub-points 1(e), (g), (h) or (i);

The chlorine (Cl⁻) content shall not be higher than 30 g/kg of dry matter. However, this limit value shall not apply to EU fertilising products produced through a manufacturing process where a Cl⁻ containing compound has been added with the intention of producing alkali metal salts or alkaline earth metal salts, and is declared in accordance with Annex III;

The vanadium (V) content shall not be higher than 600 mg/kg dry matter if the thermal oxidation materials or derivatives are from input materials referred to in sub-points 1(g) or (i).

8. The thermal oxidation materials or derivatives shall have been registered pursuant to Regulation (EC)

No 1907/2006, in a dossier containing:

(a) the information provided for by Annexes VI, VII and VIII of Regulation (EC) No 1907/2006, and

(b) a chemical safety report pursuant to Article 14 of Regulation (EC) No 1907/2006 covering the use as a fertilising product,

unless explicitly covered by one of the registration obligation exemptions provided for by Annex IV to Regulation (EC) No 1907/2006 or by points 6, 7, 8 or 9 of Annex V to that Regulation.

(*) The exclusion of an input material from a sub-point does not prevent it from being an eligible input material by virtue of another sub-point.

(**) Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment (OJ L 135, 30.5.1991, p. 40).

(***) Sum of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzo[a,h]anthracene and benzo[ghi]perylene.

(****) van den Berg M., L.S. Birnbaum, M. Denison, M. De Vito, W. Farland, et al. (2006) The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds. *Toxicological sciences: an official journal of the Society of Toxicology* 93:223-241. doi:10.1093/toxsci/kfi055.

(*****). Polychlorinated dibenzo-p-dioxins and dibenzofurans.'