

Technical Report - End of Waste Criteria – 2nd Working Document - 11<sup>th</sup> October 2011  
 Comparison of: Proposed new specifications v PAS100 ADQP

No:	Section	Page	Proposed Specifications	Current PAS110/ADQP/ASRS	Comments
1	4.3	90	15% Minimum organic dry matter content of the final product – the rationale for this is align it with compost criteria. Obviously impossible to achieve with food AD plant	Declare result, no minimum.	
2	4.3	90	Minimum stability of 1,500 mg organic acids (total) per litre digestate	VFA screening value 0.43 g COD / g VS, and RBP Test 0.25 l / g VS	
3	4.3	90	Pathogen indicator species No salmonella in 50 g fresh matter. E. Coli 1000 CFU / g fresh matter	No salmonella in 25 g fresh matter. E. Coli 1000 CFU / g fresh matter	
4	4.3	90	2 viable weed seeds per litre of digestate	Not currently a PAS110 requirement. Would entail a “growing” test in a laboratory.	
5	4.3	90	Limits on macroscopic impurities / physical contaminants: (1) Glass, metal, plastic,	Same for glass, metal, plastic, other fragments. Stones are treated separately	

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			Maximum of 2mm size (one dimension) and limit of 0.5 % m/m dry matter. Distinguish between natural impurities such as stones and manmade impurities	(see below)	
5a	4.3	90	Limits on Impurities / physical contaminants (2) Stones Not clear whether stones > 5 mm would be reported separately from 'total physical contaminants'. If separate, there appears to be no proposed upper limit.	Stones - no larger than 5 mm	
6	4.3	90	Heavy Metals - mg/kg Zn - 400 <b>Cu - 100</b> Ni - 50 Cd - 1.5 <b>Pb - 120</b> Hg - 1 Cr - 100	Heavy Metals - mg/kg Zn - 400 <b>Cu - 200</b> Ni - 50 Cd - 1.5 <b>Pb - 200</b> Hg - 1 Cr - 100	
7	4.3	85	No Market for digestate defined	England, Wales, NI - ADQP – there must be a market for the	

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				digestate. Scotland – no need for market	
8	4.3	91 - 92	External accredited sampling (probably for each sample rather than just one or two) <b>Comment:</b> <i>“Pro’s” - would give maximum confidence that quality of samples tested are the same as each sampled portion of production. “Cons” - Adds cost and could be more cost-effectively policed by certification bodies’ complaints procedures. A percentage of participating AD processes being independently sampled each year (the selection of the plant could take account of complaints received by BCS)</i>	Sampling is currently carried out by operators and tested by independent laboratories. It has been suggested that PAS110 is altered to include a minimum of one external unannounced sample per year.	
9	4.3	91 - 92	Frequency of sampling and testing: proposes ‘probabilistic sampling’ [and testing] - “the magnitude (severity) of the possible adverse consequence(s), and the likelihood (probability) of occurrence of each	PAS110 tests were selected after Cranfield assessment of risk, pathways and receptors	

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			consequence”.		
10	4.4	92	<p><b>Two options:</b>  <u>Positive List</u> - A list of input feedstocks which is “ preferred “ because their origin ensures absence or minimisation of risks. <b>Comment:</b> <i>This appears to be the most likely choice (driven by composters)</i>  <u>Negative List</u> - Allow most input sources, but identifies materials that pose a specific environmental problem</p>	<p>For England, Wales and NI - ADQP has a positive list. Provides confidence to users but is inflexible for new feedstock sources. Scotland - SEPA does not use ADQP &amp; has a flexible approach to new feedstocks</p>	
11	4.4	93	<p><b>Requirement on input materials</b> - Update of positive list of feedstocks - Should add a mechanism of feedstock supply agreement</p>	<p>Feedstock supply agreements required</p>	
12	4.3	94	<p>It is not clear whether non waste feedstocks are allowed including energy crops, manures, slurries. JRC may intend that biodegradable materials that are not ‘waste’ would be an allowed input. and would want this; to request that JRC makes this clear in final technical report.</p>	<p>Non-waste biodegradable materials allowed.</p>	

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13	4.3	94	Additives - Certain additives which enhance the biology should be allowed before validation (except micelles from antibiotics production) and also initial seeding with sewage sludge	Additives and seeding with sewage sludge is allowable under BCS Guidance	
14	4.5	General	Source separation:- a number of biodegradable waste types are proposed as 'positive list' allowable input materials. The JRC, based on evidence available so far, plans to exclude organic fines from residual waste (MBT) and sewage sludges.	Core principle of source separation	
15	4.5	97	Input materials: 'When visual inspection would entail health or safety risks, as in the case of liquid input materials, visual inspection shall be replaced by sample taking and storage for possible analysis.' <i>Comment - It is intended to emphasise to JRC that operators should be allowed flexibility to choose where sample taking and testing (or storage) is carried out. This could include</i>	Require feedstock agreements	

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			<p><i>organisations supplying the waste as well as those in the waste supply chain; this would be more in-line with current practices and avoids the potential delays and commercial impacts if the sample taking and storage (or testing) is restricted to the AD operator. Sample storage rather than testing by the AD operator seems of little value, unless there is dispute about the nature of the waste supplied.)</i></p>		
16	4.5	98 2 <sup>nd</sup> para.	<p><b>AD Process requirements:</b> the general objective is to define the minimum treatment conditions, necessary to produce a digestate quality suitable for EoW status and which is fit for marketing and use. Includes transporting, handling, storage, trading and final use. Criteria include (i) basic requirements for all types of waste (ii) specific process requirements for certain waste types. (see details below)</p>	Residual Biogas Potential Test Limit of: 0.25 l / g VS	

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17	4.5	98 Last para.	<p>It is not intended to prescribe specific collection schemes. However cannot include collection schemes in which is not possible to meet the conditions of EoW criteria.                  (example: a black bag collection scheme)                  Collection methods are relevant to source separated criteria</p>	<p>Source segregation of feedstocks is mandatory in PAS110 and ADQP. (defined in para 3.75 page 11 of PAS110.</p>	
18	4.5	1 <sup>st</sup> point in table, page 99	<p>Hygienisation: the proposal is to include both                  (a) an indicator organism quality criterion and                  (b) time temperature profile</p> <p>Proposed criteria for non-ABP AD:                  (a) a time temperature profile of 55 C for a minimum of 24 hours and a hydraulic retention time of at a minimum of 20 days                  (b) Member States should be allowed to grant authorization for other time-temperature profiles after demonstrating their effectiveness for hygienisation.</p> <p><b>Comment:</b> The proposal for a</p>	<p>In PAS110 hygienisation is achieved by complying with the pasteurisation criteria which are based on ABPRs. These include the UK catering waste alternatives.</p>	

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			<i>temperature/time profile fails to take into account the wide variations in the strength of feedstocks. We support the idea that each member state should decide on its own test parameters</i>		
19	4.6	101 - 103	<p><b>Provision of Information</b>                  Declaration of the following product properties when offering digestate on the market:</p> <p>Soil improving function:</p> <ul style="list-style-type: none"> <li>• Organic matter content</li> <li>• Alkaline effective matter (CaO content)</li> </ul> <p>Fertilising function:</p> <ul style="list-style-type: none"> <li>• Nutrient content (N, P, K, Mg &amp; S</li> <li>• Mineralisable nitrogen content (NH<sub>4</sub>-N, NO<sub>3</sub>-N)</li> </ul> <p>Pollutants and impurities relevant for environmental and health protection</p> <ul style="list-style-type: none"> <li>• Contents of macroscopic impurities (such as glass, metals, plastics)</li> </ul>	Section 14, pages 44 & 45 of PAS110 defines this information	



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			<ul style="list-style-type: none"> <li>• Contents of some heavy metals and persistent organic compounds</li> </ul>		
20	4.7	104	<p>Proposed information for inclusion on the Statement of conformity</p> <ul style="list-style-type: none"> <li>• Compost/digestate designation identifying the product by general type</li> <li>• Batch code</li> <li>• Quantity (to be expressed by preference in weight or otherwise in volume)</li> <li>• The parameters to declare through labelling</li> <li>• A statement that End of Waste criteria have been met</li> <li>• Product declaration in line with national regulations</li> <li>• The conformity with national quality assurance requirements</li> <li>• Location of AD plant</li> <li>• Statement of conformity with End of Waste requirements</li> <li>• The recommended conditions of storage</li> <li>• A description of the application areas for which the compost/digestate may be</li> </ul>	<p>Section 14, pages 44 &amp; 45 of PAS110 defines this information</p>	

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			<p>used and</p> <ul style="list-style-type: none"> <li>any limitations &amp; recommendations for use</li> </ul>		
21	4.7	105	<p>Requirements on Quality Assurance procedures - options:</p> <ol style="list-style-type: none"> <li>An internationally recognised and externally verified quality management system such as ISO 9001</li> <li>ECN-QAS Quality assurance scheme e.g. similar to one operated by the European Compost Network.</li> <li>Existing National systems such as BCS or the AfOR Compost Certification Scheme</li> </ol> <p>Main areas to be covered:</p> <ul style="list-style-type: none"> <li>Control of inputs</li> <li>Monitoring and recording processes</li> <li>Product monitoring, sampling and analysis</li> <li>Third party inspection</li> <li>Plant certification</li> <li>Conformity with National Regulations</li> <li>Review process</li> </ul>	Biofertiliser Certification Scheme (BCS) already in place in UK	

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			<ul style="list-style-type: none"> <li>• Training</li> </ul>		
22	4.8	109	<p><b>End of Waste Criteria proposals</b>                  Compost/digestate ceases to be waste, provided all other, end-of-waste criteria are fulfilled, when used by the producer or upon its transfer from the producer to the next holder. However, if there is no final lawful use, compost/digestate will be considered waste.</p> <p>Compost/digestate can be stored and traded freely as a product once it is placed on the market by the producer. The benefits of the end-of- waste criteria are made actual if compost/digestate users are not bound by waste legislation (this means, for example, that farmers or landscapers using compliant compost/digestate do not require waste permits nor do formulators of growing media that use compost/digestate as a component). Users have, however, the obligation to use the product according to purpose and to comply</p>	<p>ADQP</p> <p>End of Waste Criteria</p> <p>a. Digestate produced using source-segregated input materials as in Appendix B of ADQP</p> <p>b. Meets requirements of PAS110</p> <p>c. Destined for designated market sectors (not applicable in Scotland)</p>	

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			with the other existing legislation and standards applicable to digestate.		
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BCS