

Countryside Council for Wales

Interim Casework Internal Guidance

Livestock Production

September 2010

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Contents

	Page No.
i	Note regarding this guidance3
ii	Non-executive Summary4
1.0	Introduction5
2.0	Ammonia Impacts5
3.0	Thresholds applied to EA and Planning Consultations.....6
3.1	CCW position on Ammonia Threshold for existing EPR sized livestock units6
3.2	CCW position on Ammonia Threshold for all new livestock units or expansions of existing ones6
4.0	Assessment Protocol7
4.1	Environment Agency EPR/PPC livestock unit consultations7
4.2	Local planning authority livestock unit consultations7
4.2.1	Stage 1 Is the installation relevant?.....7
4.2.2	Stage 2 Is the installation significant?8
4.2.2.1	Stage 2 Step 1: Is the unit process contribution greater than 1% of the relevant critical level?9
4.2.2.2	Stage 2 Step 2: Is the unit process contribution greater than 10% of the relevant critical level?10
4.2.2.3	Stage 2 Step 3: Is the unit process contribution greater than 20% of the relevant critical level?10
4.2.3	Stage 3 Appropriate assessment10
4.2.3.1	Stage 3 Confirming unit process contribution.....10
4.2.4	Stage 4 Options appraisal11
4.2.4.1	Web links.....11
5.0	Glossary.....13
6.0	References.....13

i Note regarding this guidance

This guidance has been produced to assist CCW staff to respond to planning consultations for livestock units. This guidance is interim and subject to change as new scientific information emerges and informs policy. At the point of finalising, the information contained in this guidance is CCW's position. This guidance is available to partner organisations and third parties on request with the understanding that the guidance is subject to change.

Note: CCW cannot take responsibility for the content of non-CCW websites or the stability &/or longevity of embedded web-based hyperlinks. Unless otherwise stated hyperlinked content and documents are copy-write protected.

Approved by 

.....Date...30 September 2010.....
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ii

(See below for English)

Crynodeb Anweithredol

Yn y canllawiau hyn ceir cyngor ar gyfer ymdrin ag, ac ymateb i, unedau da byw sydd y tu allan i Reoliadau Caniatáu Amgylcheddol (Cymru a Lloegr) 2010, ond sydd angen caniatâd cynllunio. Cafodd y canllawiau eu datblygu'n bennaf ar gyfer staff Cyngor Cefn Gwlad Cymru, sef y rhai sy'n ymdrin â gwaith achos o'r fath. Gall partneriaid allanol, ffermwyr ac ymgynghorwyr eu defnyddio er mwyn sicrhau bod yr wybodaeth angenrheidiol yn cael ei chyflwyno gyda'r cais cynllunio, fel y gall y Cyngor Cefn Gwlad ymateb yn fwy effeithiol.

Mae'r camau a nodir yn seiliedig ar y prawf ar gyfer pennu Arwyddocâd Tebygol a amlinellir yn Rheoliad 61 Rheoliadau Gwarchod Cynefinoedd a Rhywogaethau 2010. Caiff y camau eu rhoi ar waith hefyd i benderfynu a yw'r datblygiad yn weithred sy'n debygol o niweidio nodweddion o ddiddordeb ar SoDdGA (A28 Deddf Bywyd Gwyllt a Chefn Gwlad 1981, fel y'i diwygiwyd).

Ar gyfer pob cam yn y broses, rhoddir cyngor ynglŷn â pha wybodaeth sy'n angenrheidiol a beth allai barn y Cyngor Cefn Gwlad fod.

Non-executive summary

This guidance provides advice in dealing with and responding to livestock units that are outside of the Environmental Permitting (England & Wales) Regulations 2010 but require planning permission. The guidance was developed primarily for CCW staff that deal with such casework. It can be used by external partners, farmers and consultants to ensure that the necessary information is provided with the planning application to enable CCW to respond more effectively.

The steps described are based on the Test of Likely Significance as outlined in Regulation 61 of the Conservation of Habitats and Species Regulations 2010. The steps are also applied to determine whether the development is an operation likely to damage the interest features of an SSSI (S28 Wildlife and Countryside Act 1981, as amended).

For each step of the process advice is given on which information is required and what CCW's view may be.

1.0 Introduction

Since 2007 there have been concerns regarding the impact of livestock units on neighbouring designated sites. Farms over the PPC Regulations 2000 threshold (Box 1), and now the Environmental Permitting (England & Wales) Regulations 2010, are dealt with by the Environment Agency. The 2007 guidance that was produced by Natural England may be used to assist in processing Environment Agency Appendix 4's or 11's (DCT-10-053509, DCT-09-015999).

More recently there has been increased workload within the Regions for livestock units that are below the EPR/PPC threshold (Box 1). These installations require planning permission but not an additional EPR/PPC permit from EA. It is therefore the planning authority's responsibility to consider all impacts and demonstrate there will not be adverse effect to site integrity of an N2K/Ramsar (Reg 61 of the Conservation of Habitats and Species Regulations 2010) or operation likely to damage (OLD) an SSSI (S.28 W&CA 1981 as amended) prior to granting planning permission.

Box 1

Pollution Prevention and Control (England & Wales) Regulations 2000, Schedule 1, Chapter 6, Section 6.9, Part A(1)a

- >750 sows
- >2000 pigs
- >40,000 birds

The PPC Regulations 2000 has been superseded by the Environmental Permitting (England & Wales) Regulations 2010, Schedule 1, Chapter 6, Section 6.9, Part A(1)a

- >750 sows
- >2000 pigs
- >40,000 birds

Any installations that fall into these categories require full permit from the Environment Agency.

Any installations that fall below these thresholds do not require an EPR (PPC) permit, but do require planning permission.

This guidance has been produced as an interim document to assist Regions in responding to livestock consultations that fall below the EPR (PPC) thresholds from planning authorities.

2.0 Ammonia Impacts

Ammonia emissions from livestock units are damaging to sensitive ecosystems. Emissions from these sources result in local hotspots of high ammonia concentrations and deposition around installations; this is set against a background of high nitrogen deposition across much of the country. Ammonia can affect ecosystems through exposure to high gaseous concentrations which are toxic to vegetation, or through wet and dry deposition of ammonia and its secondary products (ammonium compounds) which cause nitrogen enrichment and also lead to acidification of soils and freshwaters

(http://www.environment-agency.gov.uk/static/documents/Business/Ammonia_fact_sheet.pdf).

The UNECE has produced critical levels (Box 2) for the protection of vegetation based on empirical studies.

Box 2

Critical levels for Ammonia

For lichens and bryophytes, or ecosystems where they are an integral part, the critical level is $1\mu\text{g}/\text{m}^3$.

For other sites the critical level is $3\mu\text{g}/\text{m}^3$ (annual mean), with an uncertainty range of $2\text{--}4\mu\text{g}/\text{m}^3$. This is referred to as the critical level for higher plants.

(UNECE Expert Workshop on Ammonia, Leith, Edinburgh, UK. 4-6 December 2006 in Sutton, Reis and Baker 2009).

Critical levels (CLe) are set for the protection of vegetation from gaseous concentrations. *Critical loads* (CLo) for nutrient nitrogen are habitat specific, and set to protect habitats from deposition (see Glossary for definitions). *Critical loads* are also established for acidity. Large areas of England and Wales are predicted to exceed the critical loads. Ammonia (and its compounds) is now the dominant component of total nitrogen deposition.

3.0 Thresholds applied to EA and Planning Consultations

3.1 CCW Position on Ammonia Threshold for existing EPR sized livestock units

A generic risk-based approach to the assessment of ammonia impacts from existing livestock units was developed and agreed with the Environment Agency through the Air Quality Technical Advisory Group (AQTAG). The approach broadly follows the principles and procedures outlined in Chapter 4 of the Environment Agency Habitats Directive Handbook 2007 (DCT-09-061137). This process is detailed further in Annex B of the H1 Horizontal Guidance Note (<http://publications.environment-agency.gov.uk/pdf/GEHO0410BSIH-e-e.pdf>). Due to the legal tests required to determine if there is a likely significant effect (LSE) and no adverse effect to site integrity for Natura 2000 sites and Ramsars or the OLD SSSIs, differing sets of thresholds were agreed (Table 1).

Table 1 Ammonia likely significant effect/operation likely to damage and appropriate assessment thresholds for existing EPR sized livestock units

Site Designation	LSE or OLD Test	Appropriate Assessment
	PC (alone) % of CLe	PC (in combination)% and PC +background (or PEC) % of CLe
SAC, SPA, Ramsar	4	20
SSSI	20	50
Non-statutory sites	20	100

PC = Process Contribution ; PEC = Predicted Environmental Contribution

Therefore, for all Natura 2000 and Ramsar sites the LSE alone was agreed to be 4% of the relevant critical level and 20% when considering in combination or cumulative impact (column two of Table 1). For existing livestock units the 20% thresholds were agreed for use in the assessment where the units were *already* part of an air pollution problem. For SSSIs the OLD threshold alone was agreed at 20% of the relevant critical level and 50% in combination/cumulative. For non-statutory sites the threshold alone was set at 20% of the relevant critical level and 100% in combination/cumulative. CCW and Natural England did not agree with the 50% or 100% threshold set for in combination/cumulative tests for SSSI/non statutory sites.

3.2 CCW Position on Ammonia Threshold for all new livestock units or expansions of existing ones

CCW and Natural England do not accept the use of the thresholds applied to existing units that applied for PPC/EPR permits (Table 1) to be appropriate for new installations or expansions to existing installations. A more precautionary approach is needed to deal with situations where background ammonia levels already exceed the relevant critical level of a protected habitat. For this reason, for the alone and in combination test of likely significant effect or OLD for all sites, regardless of designation, CCW propose the threshold be set at 4% of the relevant critical level (Table 2). This 4% threshold is applied **only** to applications that have used the Environment Agency Ammonia Screening Tool.

The Environment Agency accepts that a revised approach is required for assessing expansions to existing livestock units and for new units. This revised approach is under consideration and a decision is expected by the end of this financial year 2010 – 2011. The process for dealing with Environment Agency consultations has only altered in CCW's position in relation to the 4% threshold applied for the tests of likely significance/potential to damage and the 10% threshold

against prevailing environmental conditions and the assessment of “in combination” effects. At present CCW is not disagreeing to Environment Agency conclusions but rather expressing our concerns of creeping increase in background levels exceeding the ammonia critical level of the site.

If the online Simple Calculation of Ammonia Impact Limits tool (<http://www.scail.ceh.ac.uk/>) has been used for the initial screening then a threshold of 1% due to concerns being raised on whether SCAIL is sufficiently precautionary. There is evidence indicating that the outputs from SCAIL reflect the actual concentrations expected from a unit rather than a precautionary method that would overestimate (Bealey *et al.*, 2009). Due to this, for all SCAIL outputs provided the threshold for determining LSE or OLD is 1% of the relevant ammonia CLe (Table 2). For the purposes of this guidance it is assumed that the applicant has used the free online SCAIL screening tool.

Table 2 Ammonia likely significant effect/operation likely to damage and appropriate assessment thresholds for all new livestock units or expansions of existing ones when using SCAIL

Site Designation	LSE or OLD Tests	Appropriate Assessment
	PC% CLe	PC + background or PEC % of CLe in combination/cumulative
SAC, SPA, Ramsar	1	10 – 20
SSSI	1	10 – 20
Non-statutory sites	1	10 – 20

PC = Process contribution ; PEC = Predicted Environmental Contribution

4.0 Assessment Protocol

4.1 Environment Agency EPR/PPC Livestock Consultations

Natural England and JNCC provided casework advice notes to enable conservation officers to process and respond to all Environment Agency EPR/PPC consultation. These advice notes are located centrally on Ffynnon (Intensive Livestock Information Guidance v1 2007 DCT-10-053509, Update to Intensive Livestock Information Guidance v6 2007 DCT-09-015999). Environment Agency Intensive Farming sector specific guidance (<http://publications.environment-agency.gov.uk/pdf/GEHO0410BSIH-e-e.pdf>) can be obtained from their website (<http://www.environment-agency.gov.uk/business/sectors/32795.aspx>).

4.2 Local planning authority livestock unit consultations

If a planning authority wishes to grant planning permission for a livestock unit they are required to comply with Regulation 61 of the Conservation of Habitats and Species Regulations 2010. Further advice on how Regulation 61 applies to planning policy can be obtained from Annex 3 of TAN 5.

4.2.1 Stage 1: Is the installation relevant?

It is accepted that if a farm is within 250m from a protected site then detailed modelling is required to assess its impact on the site. Therefore, steps outlined in Stage 3 (Section 4.2.3 onwards) apply.

This is based on a distance screening criteria depending on whether the protected site is a Natura 2000 Site (SAC, SPA) or Ramsar, Site of Special Scientific Interest (SSSI) or a non-statutory site. Table 3 presents the distance criteria for the various designations. If the installation is further away than that presented then it is regarded as not relevant and no further assessment is needed and planning permission may be granted. Conversely, if the installation is within the distance criteria then it is considered relevant and the application progresses to Stage 2

Table 3 Distance screening criteria for determining relevance

Designation	Distance from Site (km)
SAC, SPA, Ramsar	10
SSSI	5
Non-statutory site	2

Note that these distances are considered precautionary for smaller livestock units but these will be quickly screened out in Stage 2.

It is important to ensure that all relevant sites have been identified. This can be done using the mapping tool on the CCW website (<http://www.ccw.gov.uk/interactive-maps/protected-sites-map.aspx>).

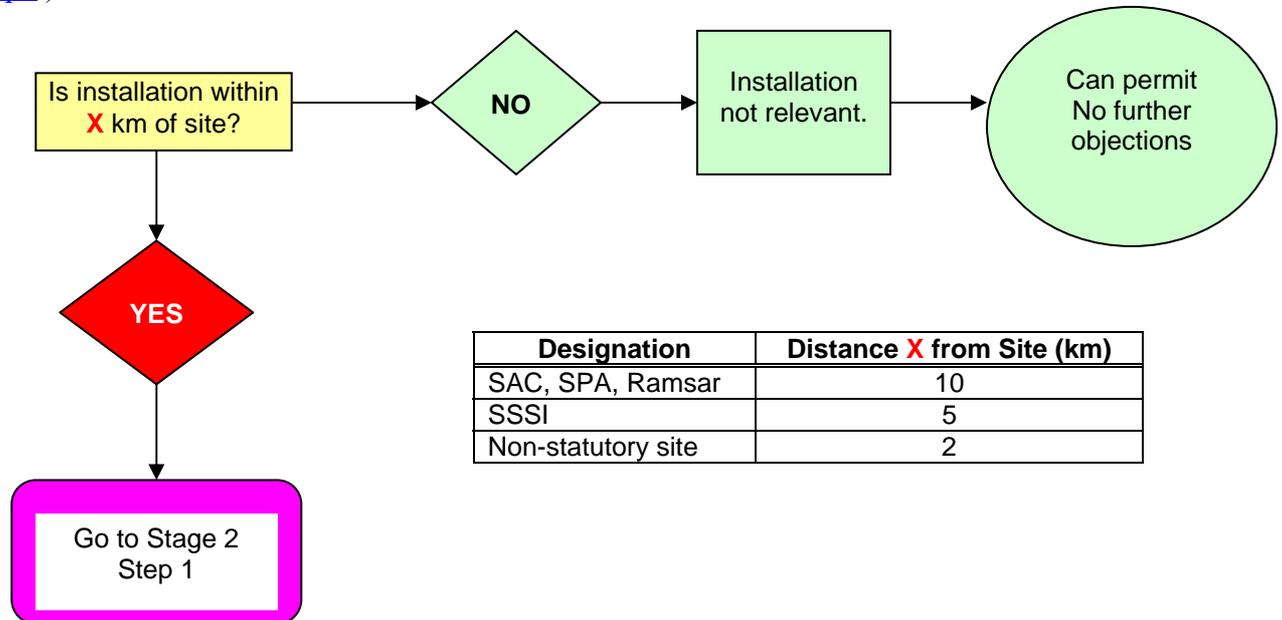


Figure 1 Stage 1: Is the installation relevant?

4.2.2 Stage 2: Is the installation significant?

This stage is a three step process and is based on the calculation of the percentage process contribution (Box 3) the unit has in relation the site relevant ammonia CLe. The most appropriate ammonia CLe for the site (or sites) will depend on the presence of sensitive lichens and/or bryophytes (Box 2). In order to do this core management plans for SAC/SPA (<http://www.ccw.gov.uk/landscape--wildlife/protecting-our-landscape/special-sites-project.aspx>) and Ramsar/ SSSI citations, site management statements (<http://www.ccw.gov.uk/interactive-maps/official-maps--docs-and-citati.aspx>) are available for download from the CCW webpages.

If the unit is below the EPR categories (Box 1) then it is the role of the Local Planning Authority to ensure they have all the relevant information to determine significance. The planners can use SCAIL to help them determine significance.

Box 3
Calculation of the percentage Process Contribution (PC) of the Critical Level

Likely Significant Effect alone/Potential to Damage alone

$$\frac{PC}{CLe} \times 100 = \geq 1\%$$

It is important to note that when assessing the farm ammonia emissions that land spreading of manure is incorporated into the calculation.

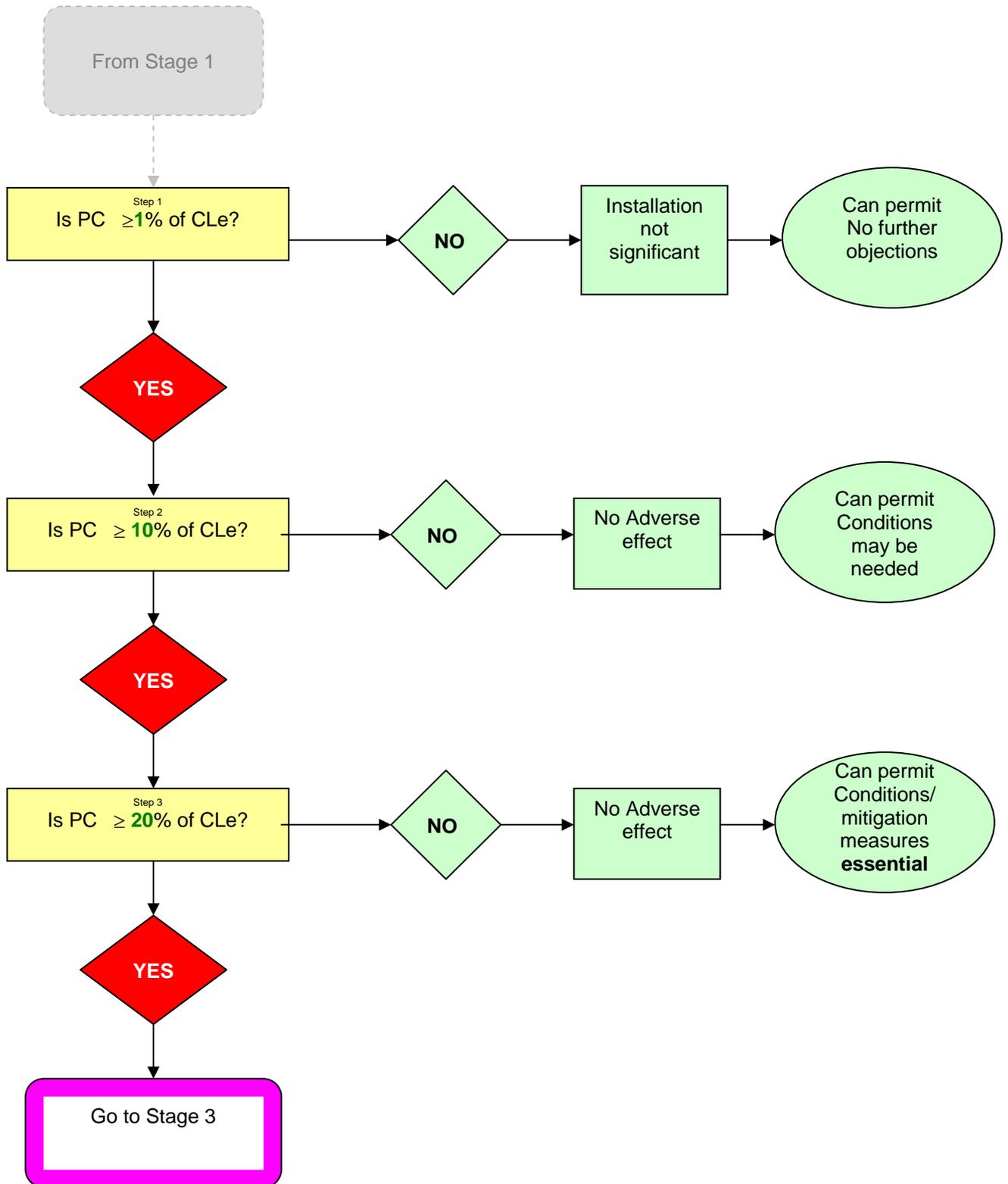


Figure 2 Stage 2 Steps 1 to 3: Is the installation significant?

4.2.2.1 *Stage 2 Step 1: Is the unit process contribution greater than 1% of the relevant critical level?*

If SCAIL has been used and the output shows that the unit's PC is 1% or greater than the CLe then there is a likely significant effect/potential to damage. The application requires further

consideration. Provided the SCAIL data shows that the farm contribution is less than 10% then the assumption is that there will not be an adverse effect. In such cases CCW will not object. The farm can obtain planning permission. CCW will remind the planning authority that measures need to be in place to ensure the farm will not exceed emissions of 10%.

4.2.2.2 *Stage 2 Step 2: Is the unit process contribution greater than 10% of the relevant critical level?*

If the SCAIL output shows that a farm process contribution is between 10 – 20% of the relevant critical level, CCW will not object to the application. CCW will express serious concerns that measures need to be considered to ensure the process contribution is kept below 10% of the relevant critical level.

4.2.2.2 *Stage 2 Step 3: Is the unit process contribution greater than 20% of the relevant critical level?*

If the SCAIL output shows that the farm process contribution is above 20% of the relevant critical level then CCW will object to the application. The application is progressed to detailed modelling or appropriate assessment

4.2.3 Stage 3: Appropriate Assessment

4.2.3.1 *Stage 3: Confirming unit process contribution using detailed modelling*

If the application is considered significant then an appropriate assessment is required. This will require detailed modelling (Box 4) that will have to be provided by the applicant to the planning authority/regulators. The detailed modelling will need to be completed using more refined tools than the web-based SCAIL tool.

Box 4

Further Detailed Assessment Modelling (not using SCAIL)

- Confirm critical level
- Confirm feature location
- Check for site specific information on background ammonia concentrations.
- Check for information on site condition/evidence of impacts.
- Carry out full alone assessment to confirm process contribution from unit.
- Carry out full in combination/cumulative assessment of discrete impacts from installations that have not been 'screened out', to determine net area of adverse effect.

It is CCW opinion that the assessment criteria for the appropriate assessment should be 10% of the critical level (see Section 3.2 page 5). To be consistent with Environment Agency process CCW agree to allow 20% of the relevant critical level until the outcome of the threshold review is concluded at the end of the financial year 2010 – 2011.

The detailed modelling will need to confirm the PC from the unit. If this detailed modelling demonstrates that the PC is $\leq 20\%$ of the relevant CLe then it can be concluded that there is no adverse effect on the protected site by the unit on its own. CCW will express serious concerns that measures need to be considered to ensure the process contribution is kept below 10% of the relevant critical level. Conversely, if the PC is $>20\%$ of the CLe then there is an adverse effect to site integrity and CCW will object to the application.

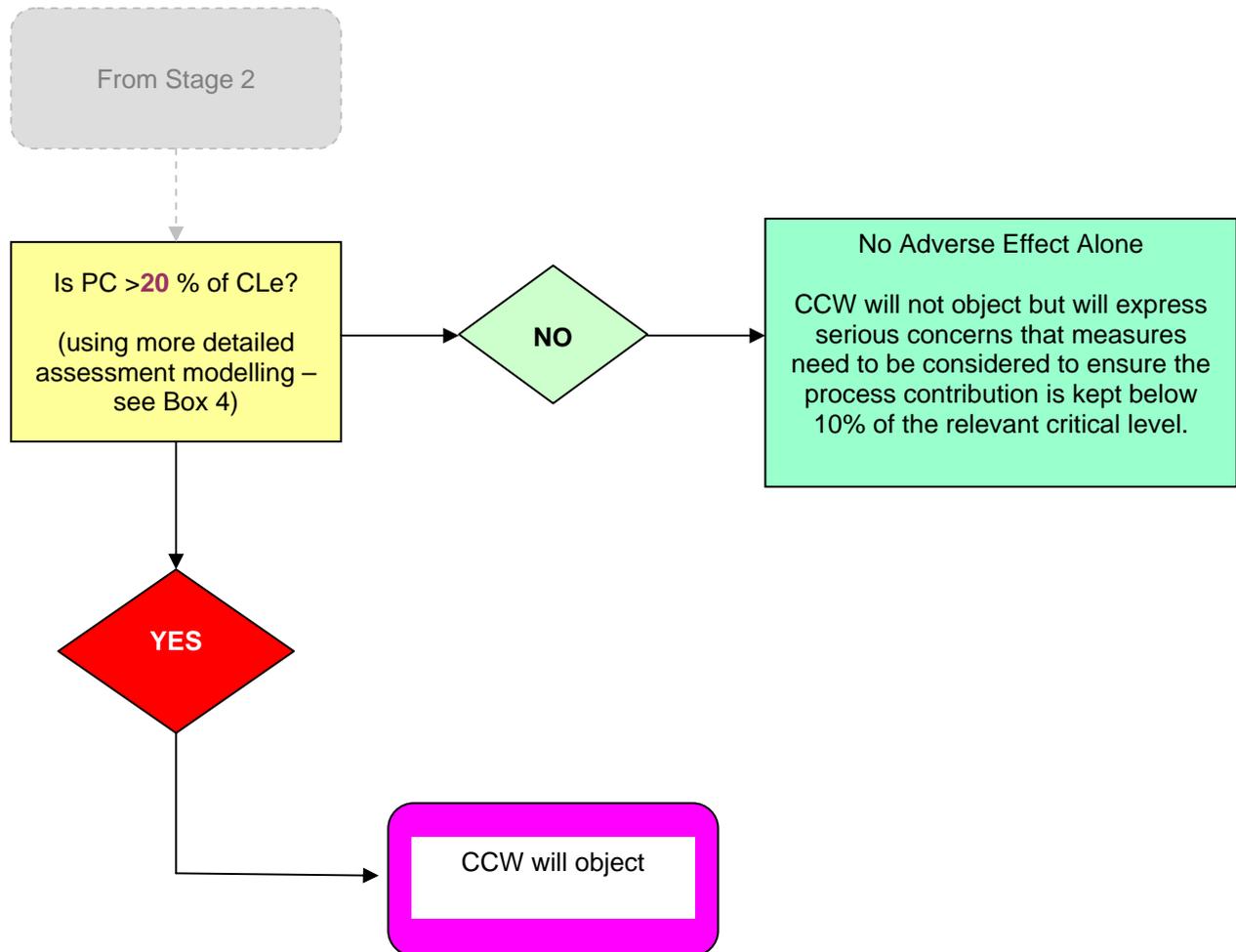


Figure 3 Stage 3 Appropriate Assessment: Detailed modelling of unit

4.2.4 Stage 4 Options appraisal

The final decision to grant planning permission lies with the planning authority but they must consider what the implications are if they do grant permission.

If the planners are minded to give a permit then they must consider ways in which the unit PC can be brought to between 10 – 20%. If the planners decide to allow one farm to take up the entirety of this 20% then that, in effect, restricts the development of other units in the area. The planners, therefore, must consider planning conditions that would reduce the ammonia emissions to enable other development and cancel out the adverse effect to the features. Below (Table 4) is a brief list of potential methods that could be used to reduce ammonia emissions.

In relation to manure management, there are numerous sources of reference and guidance on the best practice of storage and spreading manure. The DEFRA CoGAP website is a good starting source. Examples can be found on the web (e.g. Genesis QA see below).

4.2.4.1 *Web links:*

DEFRA:

<http://archive.defra.gov.uk/foodfarm/landmanage/cogap/index.htm>

The Business Link:

<http://www.businesslink.gov.uk/bdotg/action/detail?type=RESOURCES&itemId=1083636729>

Genesis QA:

<http://www.genesisqa.com/Downloads/Genesis%20QA%202.5.2%20Farm%20Manure%20Management%20Plan%20-%20Pigs.pdf>

Table 4 Techniques that can be employed to potentially reduce ammonia emissions from unit

Technique	% Reduction (estimate)	Cost £ (estimate)
Poultry Housing		
Reduce dietary N intake	20	NA
Phase feeding	10	NA
Convert deep pit to belt manure removal	50	£0.46/ bird place
Increased frequency of manure removal – layers (>once per week)	50	£0.02/ bird place
In-house manure drying (layers and broilers)	25 – 50	0.02 – 0.46/ bird place depending on system
Litter amendments	60%	£0.008/ bird place
Install air scrubbers	70 – 95	Up to £30/ bird place
Poultry Manure Handling		
Cover solid manure stores with plastic sheet	65	£0.55/ t
Store FYM >3months prior to application	30	£2.06/ t

Source: EA Emissions Reduction Workshop November 2008. Estimated percentage reductions and costs valid to this date.

5.0 Glossary

Critical Level (CLE): A threshold for direct effects of pollutant concentrations according to current knowledge. The exceedance of a critical level is defined as the atmospheric concentration of the pollutant above the critical level.

Critical Load (CLo): A quantitative estimate of exposure to deposition of one or more pollutants, below which significant harmful effects on sensitive elements of the environment do not occur, according to present knowledge. Exceedance of a critical load is defined as the atmospheric deposition of the pollutant above the critical load.

Exceedance: Violation of environmental protection standards (e.g. critical level, critical load, environmental quality standards) by exceeding allowable limits or concentration levels.

LSE: Likely Significant Effect (need definition alone and in combination)

Process Contribution (PC): The amount that an installation emits a particular pollutant. Normally compared as a percentage of the critical level or critical load.

Predicted Environmental Contribution (PEC): The addition of the PC with the background levels of a pollutant, providing a cumulative impact assessment. Normally compared as a percentage of the critical level or critical load.

SCAIL: Simple Calculation of Ammونيا Impact Limits web based online tool (<http://www.scail.ceh.ac.uk/>) to calculate the emissions from a livestock unit

6.0 References and online resources:

Note: CCW cannot take responsibility for the content of non-CCW websites or the stability &/or longevity of embedded web-based hyperlinks. Unless otherwise stated hyperlinked content and documents are copy-write protected.

- Bealey, WJ, Sutton, MA & Theobald, MR (2009). Approaches for ammonia screening assessments. Environment Agency Science Report SC060037/SR2, Environment Agency, Bristol, UK.
- Countryside Council for Wales (2010). Core management plans, conservation objectives for all SAC, SPA and Ramsar sites in Wales <http://www.ccw.gov.uk/landscape--wildlife/protecting-our-landscape/special-sites-project.aspx>
- Countryside Council for Wales (2010). Official Maps, documents and citations for all SSSI in Wales <http://www.ccw.gov.uk/interactive-maps/official-maps--docs-and-citati.aspx>
- Environment Agency (2007) Chapter 4 – Taking a new permission, plan or project through the Habitats Regulation. In: *EU Habitats and Birds Directives, Handbook for Agency permissions and activities*, Environment Agency, Bristol, UK. (CCW TRIM Record Number DCT-09-061137).
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- Environmental Permitting (England & Wales) Regulations 2010 <http://www.legislation.gov.uk/ukxi/2010/675/contents/made>
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- Sutton, MA, Reis, S and Baker, SMH (eds.) (2009). *Atmospheric Ammonia – Detecting emission changes and environmental impacts*. Springer Science + Business Media BV,
- TAN 5 Nature Conservation and Planning (2009). Welsh Assembly Government. <http://wales.gov.uk/topics/planning/policy/tans/tan5/?lang=en>

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