

Guidance note

Assessing the impact of ammonia and nitrogen on designated sites from new and expanding intensive livestock units

Technical guidance for determining environmental permit applications or responding to planning application consultations

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What is this document about?

This document explains how to assess the impacts of ammonia emissions and nitrogen deposition from intensive livestock units on designated sites.

Who is this document for?

This guide is for Natural Resources Wales staff who assess permit applications and advise on planning applications. It can also be used by local authority planning officers to help assess planning applications.

Additionally, it provides guidance on the assessment process for people making applications for environmental permits or planning permission to build and operate intensive livestock units, including changes to existing permits or permissions.

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To report issues or problems with this guidance contact Guidance Development

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1 Introduction

This document explains how we assess the impact of predicted ammonia and nitrogen emissions from intensive livestock units. It covers the assessment of direct effects of ammonia and indirect impact from nutrient nitrogen deposition (eutrophication) on designated sites. The assessment procedure is used in the same way for livestock units applying for environmental permits or planning permission.

Natural Resources Wales has introduced revised thresholds of insignificance and a new upper threshold for process contributions for designated sites. We have also revised the screening distances for European Sites.

This guidance takes you through the steps needed to carry out the assessment on the following designated sites:

- European sites
 - Special Areas of Conservation (SAC)
 - Special Protection Areas (SPA)
 - Ramsar Sites (as a matter of government policy)
- Sites of Special Scientific Interest (SSSI)

This guidance is to be used in conjunction with OGN41 Assessment of ammonia and nitrogen from livestock units.

1.1 What this document replaces

This guidance document replaces Environment Agency guidance H1, Annex B – Intensive Farming for the assessment of the impact of ammonia and nitrogen emissions on European sites and SSSIs. It does not replace existing guidance for assessing the impact of emissions on local nature reserves (LNRs), local wildlife sites (LWSs) and ancient woodland (AW). For these sites you should use "Intensive farming risk assessment for your environmental permit" which is available on GOV.UK.

1.2 Relevant legislation

Legislation relevant to this guidance note is:

- Environmental Permitting (England and Wales) Regulations 2016
- Conservation of Habitats and Species Regulations 2010
- Countryside and Rights of Way Act 2000
- Environmental Protection Act 1990
- Wildlife and Countryside Act 1981
- Environment (Wales) Act 2016
- Well-being of Future Generations (Wales) Act 2015
- Planning (Wales) Act 2015

This guidance can also be used in assessing intensive livestock units that require environmental impact assessment under the relevant legislation such as the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.

1.3 Related documents

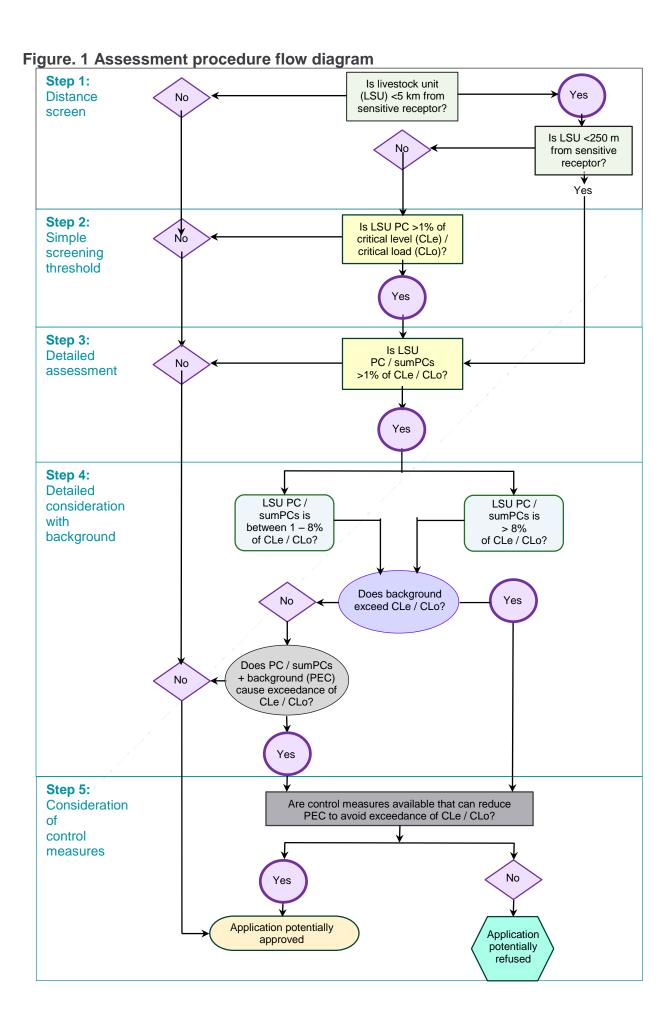
- Quick Guide QG9 Poultry units: planning permissions and environmental assessment.
- Operational Guidance Note OGN 41 Assessment of ammonia and nitrogen impacts from livestock units.
- Operational Guidance Note OGN 200 Habitats Regulations Assessment of Projects.
- Guidance on modelling concentration and deposition of ammonia emitted from intensive livestock units. Environment Agency, Air Quality Modelling Assessment Unit, 22 November 2010 v3

2 The assessment process

Figure 1 illustrates the procedure set out in this table.

	Question: Is the live	estock unit closer than 5 km from a sensitive receptor?	
	If	then	
Step 1:	Yes, it is within 5km but further than 250m	proceed to Step 2 Simple Screening threshold	
Distance screen	Yes, it is closer than 250m	proceed to Step 3 Detailed Assessment. Detailed modelling will be required and must follow the agreed EA AQMAU 2010 guidance (see Related documents).	
	No, it is further than 5km	further assessment will not be required in support of the application. The application can be determined without the need to assess the impact of aerial emissions of ammonia and nitrogen.	
Step 2: Simple	The ammonia critical level and nitrogen critical load should be obtained from one or more of the following sources: Air Pollution Information System (APIS); established from site citations; confirmed by relevant NRM officer within NRW. Question: Is the process contribution (PC) of the livestock unit above 1% of the appropriate ammonia critical level / nitrogen critical load?		
screening threshold	If	then	
	Yes	proceed to Step 3 Detailed Assessment. Detailed modelling will be required and must follow the agreed EA AQMAU 2010 guidance.	
	No	Detailed assessment will not be required in support of the application. A decision can be made on the application.	
Step 3: Detailed assessment	A detailed model will be required to complete the assessment from this point forward. Determine: the background ammonia concentrations and nitrogen deposition at the sensitive receptor. if there are other sources that could potentially act in combination and cumulatively at the sensitive receptor such as: Applications that are submitted but not yet determined; Livestock units that have permits but are not yet (fully) operating Livestock units that started operating after the most recent update of background levels. !NRW staff must contact relevant DPAS, Permitting Service, NRM to identify any relevant sources that could potentially act in combination and cumulatively at the sensitive receptor. !Applicants will need to contact NRW Permitting Service / DPAS to identify any relevant sources. Applicants will need to contact the relevant local planning authority to identify any relevant sources that require permission from that authority.		

Question: Is the process contribution (PC) or sum of the process contributions (sumPCs) (<i>i.e.</i> the livestock unit + other sources) above the appropriate ammonia critical level / nitrogen critical load? If then			
lf than	contributions (sumPCs) (i.e. the livestock unit + other sources) above 1% of		
ıı uieii			
Yes, the PC or sumPCs is above 1% proceed to Step 4 Detailed consideration with background.			
No further assessment is not required. A decision made on the application.			
Where the livestock unit's process contribution, either alone or in convith other sources (where they exist), is between 1 – 8 % or above 8 needs to be considered in the context of background ammonia concand nitrogen deposition at the sensitive receptor. This is termed the environmental concentration (PEC) and includes the addition of the unit being assessed with other sources (sumPCs) and with backgroulevels. Confirm the background ammonia concentrations and nitrogen depot the sensitive receptor and whether there is an exceedance of the an critical level or nitrogen critical load. Step 4 Detailed	3% it entration predicted PC of the und esition at monia		
Consideration with Question: Where the background is not exceeding the critical level does the process contribution (PC) or sum of process contributions	(sumPCs), in addition to background (i.e. PEC) cause an exceedance of the		
If then			
If Yes, the PEC causes an exceedance of the critical level / load then proceed to Step 5 Consideration of control meaning the control mean	asures.		
Yes, the PEC causes an exceedance of the critical level / load No, the PEC does not cause an exceedance of the critical level / load No tause an exceedance of the critical level / load No tause an exceedance of the critical level / load	can be		
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3 Simple distance and critical level / load screening

3.1 Screening distance (Step 1)

Where an intensive livestock unit is **within 250m** of a sensitive receptor detailed assessment using detailed modelling is automatically required for that development. In such cases steps 1 and 2 are not required, however the relevant critical levels and loads **must** still be established. The detailed modelling must follow the agreed guidance (Guidance on modelling concentration and deposition of ammonia emitted from intensive livestock units Environment Agency Air Quality Modelling Assessment Unit, 22 November 2010 v3).

Follow the steps below for assessing livestock unit applications or variations situated between 250m and 5km from a sensitive receptor. Use these with the screening values given in Table 1.

3.2 Assigning critical levels and loads

For all sensitive receptors the appropriate ammonia critical level and nitrogen critical load should be determined as part of the pre-application discussions.

For ammonia critical levels where

- lichens and bryophytes (moss and liverworts) are integral to the sensitive receptor apply a critical level of 1µg/m3.
- lichens and bryophytes are not present then apply a critical level of 3µg/m3.

Nitrogen critical loads are based on the habitat and differ accordingly. Nitrogen critical loads are expressed as a range (e.g. 10 – 20 kgN/ha/yr). The lower value is used in all screening assessments. A good source of information in assigning a nitrogen critical load to a sensitive receptor is the Air Pollution Information System (APIS http://www.apis.ac.uk/).

3.3 Simple screening against critical level or critical load threshold (Step 2)

We expect applicants to carry out screening during pre-application using the most up-todate information available on the distribution of sensitive receptors, sites, habitats and species important for biodiversity in Wales (and England for cross border receptors). The screening process will involve making a balanced judgement about the environmental and legal risks associated with each type of activity against the sensitivity of the nature conservation interest present in that location.

Screening carried out at the pre-application stage will determine whether detailed modelling is required from the applicant to support their permit application. This basic assessment can be completed using a free on-line tool Simple Calculation of Atmospheric Impacts Limits (SCAIL http://www.scail.ceh.ac.uk/) using the conservative met mode. [NOTE: Other models are available (e.g. ADMS).]

Key point

The screening thresholds in Table 1 must be used in the screening procedure.

Table 1 Screening distance and thresholds for livestock units

Sensitive Receptors	Screening distance from source	Threshold of insignificance % of critical level load	Upper threshold % of critical level / load
Special protection areas (SPA), special area of conservation (SAC), Ramsar sites, sites of special scientific interest (SSSI)	5 km	1 %	8 %

Livestock units more than 5km away from a sensitive receptor, or where the Process Contribution is less than 1% of the critical load or critical level for the sensitive site(s) identified within that radius, do not need detailed assessment for their permit to be determined.

4 Detailed Assessment requirements and information

4.1 Requirements for assessments on designated sites

Statutory requirements for European sites

Under Regulation 62 of the Conservation of Habitats and Species Regulations 2010 (Habitats Regulations) NRW has a legal obligation to carry out an appropriate assessment of any plan or permission that is 'likely to have a significant effect on a European site in Great Britain (either alone or in combination with other plans or projects)'. An "appropriate assessment" is a term used under Habitats Regulations to describe an assessment that is more detailed than a screening exercise.

Appropriate assessment (detailed assessment) of European sites

The appropriate assessment using detailed modelling will determine whether it is possible to conclude no adverse effect on the integrity of the European site. The assessment is carried out on the livestock unit alone, and where necessary in-combination with other plans and projects, in the context of prevailing environmental conditions.

Prevailing environmental conditions include diffuse or background contributions to the European site and the residual effects of plans and projects that have been completed or implemented.

The appropriate assessment must consider the conservation objectives for the features of the European site, and the associated favourable condition targets.

4.2 Information needed from the applicant

The applicant will need to provide the information below to enable the assessment of the impact of ammonia emissions and nitrogen deposition from their livestock development on sensitive receptors, as identified during the pre-application screening

- confirmation of the relevant ammonia critical level and nitrogen critical load
- confirmation of the background ammonia and nitrogen at the sensitive receptor

- modelling input data and results, such as that required by the free on-line screening tool Simple Calculation of Atmospheric Impact Limits
- Ordnance Survey grid reference locations for the proposal and the name, address of the livestock unit
- what type of ventilation system is being proposed, for example fan or natural ventilation
- location of the ventilation, for example roof or side mounted (if roof mounted the height
 of the vents above the ground must also be provided), the number of fans, the fan
 diameter and radius in metres, the fan efflux velocity in metres per second and the fan
 flow rate in cubic metres per second
- area of floor space of the housing in square metres
- the quantity of manure stored on the livestock unit at any one time (in tonnes)
- the surface area in square metres of any slurry storage facility on the site (including lagoons) and the type of cover used
- a breakdown of animal numbers by type and by type of housing (e.g. the number of sows, growers and finishers on fully slatted floorings and the number on partly slatted flooring)
- the most appropriate ammonia emission factors for the type of animals reared
- the most appropriate ammonia emission factors for the housing type
- modelling with isopleth maps covering all relevant sensitive receptors, where preapplication screening indicates it is needed

Confirming critical level and critical load

Critical levels, and where appropriate critical loads, are normally confirmed during the preapplication discussions using site specific information. This information is readily available from the NRW internet <u>designated sites search page</u> for European sites and SSSIs. Where there are no lower plant records (lichens, bryophytes), the critical level for higher plants is used, together with the appropriate nitrogen critical load.

It is possible that emissions of ammonia between $1\mu g/m^3$ and $3\mu g/m^3$ would result in deposition above the minimum nitrogen critical loads for nutrient enrichment. Applying the critical level for ammonia only would not provide full protection of the nature conservation site.

Site relevant critical loads

Site-relevant critical loads represent the best available information on the sensitivity of individual European and SSSI features and are available from the following sources:

- Air Pollution Information System (APIS)
- APIS Site Relevant Critical Loads
- APIS Search by location to help confirm location specific background levels.

The justification for the critical level, and where appropriate critical load, as part of the detailed assessment is required.

Key point

Where the applicant has proposed a different critical level or load in their detailed modelling report, they must provide a valid and auditable justification.

4.3 Further Information to consider for the detailed assessment Site condition monitoring

All European sites and SSSIs are surveyed by NRW as part of the Habitats Directive Article 17 reporting or common standards monitoring. However, currently this monitoring is not designed to identify the specific effects of air pollution.

This information can still be used to inform a detailed assessment, for example the presence and location of sensitive habitats or species. However, even if the status of a feature was favourable it cannot be automatically assumed that there is no impact from the current emissions from the unit.

The effects from the ammonia emissions might be masked through the management of the SSSI, or they might not have been assessed.

Habitats Regulations review of consents

General information is available on the susceptibility of European sites to nutrient enrichment from the Habitats Directive review of consents programme.

Consider any actions on air quality identified in the relevant site action plan, and ensure that these are not compromised through the permitting of an intensive livestock unit.

Conservation objectives

These are management objectives developed for each European site and SSSI, and each feature designated within that site. For European sites the conservation objectives are in the Core Management Plans which are located on the NRW <u>Designated Sites Search</u> webpages. The objectives will allow the protected habitat or species to be restored to, or maintained in 'favourable condition', which is the desired state of the species or habitat. The air pollution conservation objectives for all features are not fully completed. Seek advice from relevant NRW specialists if needed.

For SSSIs, additional information is in the Site Management Statement (SMS) explaining what is important and what management is required to help protect the site. SMS are also on the NRW Designated Site Search webpages.

It is important that the detailed assessment only considers the features sensitive to ammonia emissions and nitrogen deposition and their individual conservation objectives.

The detailed assessment must ensure that the conservation objectives for each relevant sensitive feature will not be compromised by the proposed intensive livestock unit.

Distribution of features within the designated site

As part of the screening process for intensive livestock units a critical level (ammonia), and where necessary critical load (nutrient enrichment and acidification) would have been applied to the conservation site based on the presence of sensitive features (lichen and bryophytes). However, no account will have been taken of the location of these features in relation to the pollution footprint from the unit.

The detailed assessment can be used to determine whether the sensitive features present at the nature conservation site fall within the pollution footprint of the unit. Pollution footprint isopleths should be included in the modelling submitted by the applicant.

Species and habitat information can be obtained from various sources, including:

- NRM,
- NRW habitat or species specialists
- NRW site condition monitoring reports
- any survey work submitted by the applicant.

Where the sensitive feature occurs beyond the pollution footprint, consider a more appropriate critical level or critical load.

If it appears that there is no further readily available information on a particular feature then, as a precautionary measure assume that it occurs under the pollution footprint of the farm.

Local environmental factors

Local factors, including environmental conditions and site management, are not always considered when setting critical loads. Where they are assigned as a range of values, the lowest end of the range is usually selected to ensure sufficient levels of protection.

However, local factors may modify the habitat or species sensitivity and response to a particular pollutant. For example, intensively managed heath land with frequent removal of vegetation may be less sensitive to nitrogen deposition due to the periodic removal of nutrients from the system. In such cases further consideration of which end of the critical load range may be more appropriate. APIS has provided additional information with indicative nitrogen critical loads to use for <u>air pollution impact assessments</u>.

The table 2 is indicative and not comprehensive, and not all factors will be relevant to all sites or all pollutants. It is not possible to quantify the effect these local factors have and to assign a new critical load on the basis of them. However, it may indicate that the higher or lower end of the critical load range is appropriate and further advice from NRW experts should be sought.

Table 2 Environmental factors and potential influence on habitats

Environmental Factor	Habitat type and influence
Precipitation	UK experts have provided guidance on how to apply the appropriate nitrogen critical load for raised and blanket bog habitats for air quality assessments. APIS has provided a grid reference tool to identify the rainfall range the bog habitat is located in.
Exposure	Woodland edges generally experience higher concentrations and deposition rates of pollutants and are therefore more vulnerable. This must be taken into consideration when assessing the unit's pollution footprint.

Water supply	When considering nutrient nitrogen (N) deposition for wet habitats, other sources of nutrient inputs, such as diffuse pollution, should be considered which may be more important. In these cases the relative contribution from atmospheric and land based sources may need to be considered further to inform any judgements. Seek advice from NRW specialists as to whether a critical level or critical load is appropriate for the European site or SSSI.
Soil phosphorous (P) status	High P availability increases sensitivity to N whilst low P availability may decrease the response to N. Note that some species such as lower plant communities may be sensitive to direct inputs of N regardless of P availability. For example, alkaline fens and reed beds have low P availability in their systems, which helps protect them from the effects of N eutrophication. They are characterised by species with base rich, nutrient poor characteristics.
Limiting nutrients in freshwater	Many river and lake freshwater systems are often P limited (or N/P co-limiting). However, a number of systems are N limited and in these cases atmospheric sources may be significant. This is most likely to occur in upland catchments where agricultural inputs are lower. Important Seek advice from NRW specialists as to whether a critical level or critical load is appropriate for the European site or SSSI. Important Critical level and critical load values are currently not provided for some standing waters or rivers. Critical levels and critical loads must be applied to any emergent vegetation or terrestrial feature that is within the designated site (e.g. floating water plantain is located on water surface and exposed to ammonia concentrations so the ammonia critical level would apply but not necessarily the nitrogen critical load because it is rooted under the water surface providing some protection.
Habitat management	Management regimes may obscure or modify some of the relationships between atmospheric deposition and habitat change. For example, intensive management of calcareous grassland can offset higher N inputs, to a certain extent, by removal through grazing, mowing or harvesting. Poor or infrequent management may increase vulnerability to N inputs. Consider whether there is active management of the nature conservation site in your detailed assessment. If there is active management seek advice from NRW specialists to determine which part of the nitrogen critical load range may be more appropriate to use.

The exact nature and magnitude of these factors is not fully understood but it is important to take site-specific information into account where it is available.

Ellenberg values

Ellenberg indicator values have been produced for vegetation (<u>ECOFACT Volume 2</u>) and for bryophytes (<u>BRYOATT</u>) in the British countryside. Bryoatt has also <u>tabulated</u> this information for many British bryophytes.

Ellenberg scores can be used in a detailed assessment where historical survey results are available for comparison, to determine whether:

- the nature conservation site has indicator species associated with nutrient enrichment or acidification;
- the lower plant species identified through survey are sensitive to the effects of ammonia.

Key point

For European sites and SSSIs, do not use these values in isolation. Seek advice from relevant NRW specialists if needed.

5 Carrying out the detailed assessment (Steps 3 and 4)

5.1 Assessing adverse effects on European sites

The appropriate assessment will need to determine whether an exceedance of 8% of the ammonia critical level or nitrogen critical load would result in an adverse effect, when considering the information set out in this document.

The scope and content of the appropriate assessment must be based upon the location and size of the farm, and magnitude of effect on the European sites.

NRW permitting staff must to use OGN 200 Habitats Regulations Assessment of Projects guidance for such an assessment. OGN 200 is available on the NRW Operational Guidance Note intranet pages.

The appropriate assessment must be documented on OGN 200 Form 1 and provided to relevant NRW staff (such as Natural Resource Management team, specialists) or Natural England and the Environment Agency for cross border sites for consultation. Representations made by relevant NRW staff, Natural England and the Environment Agency must be taken into account before determining the application.

Key point

An application must be refused where it is not possible to conclude no adverse effect on site integrity, and there are no options available to mitigate an effect.

5.2 Statutory requirements for SSSI

Sites of Special Scientific Interest are nationally designated nature conservation sites that have statutory protection under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000). Therefore, an assessment of an activity that could have the potential to damage the scientific interest of SSSIs is required.

5.3 Operation likely to damage the scientific interest (OLDSI) of SSSI

The detailed assessment using detailed modelling will determine whether the emissions of ammonia and nitrogen from the intensive livestock unit is an operation likely to damage the scientific interest of the SSSI.

Due to the nature of emissions from intensive livestock units and their rural setting, they need to be considered in combination with other activities to ensure damage does not occur to the SSSI.

Assessing ODLSI of SSSI

The detailed assessment will need to determine whether an exceedance of 8% of the ammonia critical level or nitrogen critical load would damage the scientific interest of a SSSI, when considering the information set out in this document.

A record of the detailed assessment must be made on an Appendix 4 CRoW form. If identified as an OLDSI the form must be sent to relevant NRW staff (such as Natural Resource Management team, specialists) or Natural England and the Environment Agency for cross border sites for consultation. Representations made by relevant NRW staff, Natural England and the Environment Agency must be taken into account before determining the application. If not an OLDSI, keep this form on file for audit purposes.

Key point

The application must be refused where a conclusion is that the proposal is an OLDSI, and there are no options available to mitigate against the expected damage.

5.4 In-combination effects

The detailed assessment must take account of overlapping in-combination effects with other intensive livestock units and other sources of nitrogen or ammonia on European sites and SSSI. OGN41 provides a few examples of sources that need to be included in an incombination assessment.

NRW permitting staff can use the latest version of the ammonia screening tool (AST) to estimate ammonia concentrations, and nitrogen deposition from neighbouring livestock units at the maximum concentration point of the proposed or expanding farm. AST can be obtained from NRW's Air Quality Modelling Risk Assessment Team (AQMRAT). Information on other sources of ammonia and nitrogen will have to be sought from, for example NRW DPAS, NRM, Permitting Services.

Sum the results to obtain the overlapping in-combination concentration (sum PCs).

5.5 Assessment of background concentrations

Confirm the background ammonia concentrations and nitrogen deposition at the sensitive receptor and whether there is an exceedance of the ammonia critical level or nitrogen critical load. Where the background level already exceeds the critical level / load, control measures may have to be considered to reduce the emissions.

Background pollution values can be obtained from DEFRA UK-AIR (https://uk-air.defra.gov.uk/), National Atmospheric Emissions Inventory (https://naei.beis.gov.uk/) and APIS (https://www.apis.ac.uk/).

Add the background level to the PC and / or the SumPCs to determine the Predicted Environmental Concentration (PEC) and compare this with the ammonia critical level and the nitrogen critical load

Where the PEC causes an exceedance of the critical level or critical load control measures may have to be considered to reduce emissions.

Key point

When all avenues to reduce the contributions are exhausted then the application will be refused

6 Concluding the detailed assessment for European sites and SSSI (Step 5)

6.1 New and expanding intensive livestock units

For all intensive livestock units assessed as having an adverse effect on European sites, or as an OLDSI, the applicant will need to demonstrate how the relevant ammonia and nitrogen no adverse effect targets can be met before the permit application can be determined.

For units that are assessed as exceeding the 8% threshold either alone, or in combination, the applicant will be required to submit a plan as part of their permit application detailing how the ammonia emissions and nitrogen deposition will be reduced. A Schedule 5 notice of the Environment Permitting Regulations (EPR) should be issued to the operator if this information is not provided or is insufficient.

The reductions must be to a level that will allow:

- for European sites a conclusion of no adverse effect on site integrity;
- for SSSIs a conclusion of no damage to the designated features.

Depending on the chosen ammonia reduction techniques, it may be necessary to include process monitoring in the permit.

The decision as to whether the proposals are robust should be made in consultation with the relevant NRW technical leads.

6.2 Determination of application

Determination in respect of the impact of the intensive livestock unit(s) needs to be undertaken in the context of the appropriate legislation (for example Habitats Regulations, CRoW Act, Environment Act, Environment (Wales) Act and Environmental Permitting Regulations)

Permitting outcomes should be considered after the impact of the ammonia emissions from the farm has been fully assessed.

Key point

NRW must consider refusing the application where an operator is unable to supply proposals to reduce emissions, or following the assessment of their proposals there is a continued risk of adverse effect or damage.

7 Possible outcomes for applications

The following possible outcomes are not exhaustive and only indicative. They should only be considered once steps 1 to 5 listed above have been completed and a detailed assessment carried out where required.

7.1 Permit without additional conditions

Permit the installation in line with the normal permitting procedures.

The applicant must have provided proposals on how their critical level/critical load target at the nature conservation site(s) will be met as part of the application process.

7.2 Permit with additional conditions

Conditions should mitigate against the effect of releases at the nature conservation site.

Conditions could also include a requirement for emissions and/or biological monitoring near to or within the conservation site (depending on legislative regime).

For an existing farm an improvement condition to submit an ammonia / nitrogen reduction plan, and / or to consider additional control measures to meet the required process contribution at a nature conservation site may be possible.

An ammonia / nitrogen reduction plan improvement condition is not possible for a new or expanding farm. The farm will need to meet the required emission standards from the point of permit issue.

Where an existing farm is expanding it may be necessary to include an improvement condition to ensure the existing sheds are retrofitted with agreed ammonia abatement equipment within a specified timescale.

Where an operator is allowed an additional insignificance threshold (1%) following survey work, the permit will need to include an improvement condition requiring the operator to carry out biological survey of the nature conservation site.

7.3 Refuse a permit

Consider refusal for:

- European sites where it is not possible to conclude no adverse effect;
- SSSIs where the activity is an operation likely to damage the scientific interest.

The assessment is likely to have been based on the outcome of a modelling exercise. Consideration should be given to alternatives to refusal if the predicted impacts are lower than the uncertainties in the assessment. If refusal is based on nature conservation grounds it is advisable to speak to the NRW technical specialists first to ensure all necessary steps have been taken prior to refusal.

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