CPRW BRECON & RADNOR: INTENSIVE POULTRY AND PIG APPLICATIONS – reference document

This summary is intended as a resource for residents affected by local applications for intensive poultry or pig applications. Part 1 sets out the legal and regulatory requirements and planning advice. Part 2 looks at the potential impacts of intensive poultry or pig developments relevant to planning determination.

Information below as at November 2021.

Quick 'how to' on writing an objection:

1. **Find the planning application on the Powys planning website.**
2. **Contact your local County Councillor without delay to have the application brought before the planning committee. (See 'determination – delegated or planning committee' below.)**
3. **See Part 2 below 'material planning considerations' – planning officers will only consider objections based on these considerations which come within planning law and which they are required to factor into their decision on the application. Animal welfare is not a material planning consideration and will dilute your case.**
4. **Spotted something seriously wrong? Is the application information significantly inadequate or inaccurate? Take this up directly with any relevant consultee as well as briefing the planning officer.**
5. **Don't delay. You can always submit a further objection later should more information become available.**
6. **If you can, provide evidence to accompany your objection. Are there local experts or other authoritative sources of evidence for your points of objection?**
7. **Be concise.**
8. **Individual objections carry more weight than petitions.**
9. **Submit your planning objection to the planning officer, and copy in your local county councillor.**
10. **Note that Powys planners are no longer publishing objections on the planning website. You can write to planning.representations@powys.gov.uk asking to see all public representations for an application.**

INTRODUCTION: POULTRY: As at November 2021, there are over 10 million chicken places approved or in planning in Powys. Welsh Government has supported and subsidised the intensification of livestock farming in Powys, but has not to date commissioned any research into the cumulative environmental and social impacts, despite repeated requests and the unprecedented density of the industry in the county.

PIGS: In September 2021 our figures show applications for pig fattening units for just under 8,500 pigs. Applications are typically for multiples of 990 pigs. We know of another 13 units (representing just under 13,000 pigs) where intensively reared pigs have been installed, although this use was concealed in the application thus avoiding any environmental planning scrutiny by Powys Development Management (PCC DM) and Natural Resources Wales (NRW). Documents accompanying a recent application suggest that by July 2020 there were already 26 pig units in Powys. Our FOIs to NRW and Powys County Council reveal neither has any information about pig units in the county.

PHEASANTS: Powys is the home of the Bettws Hall, Newtown, game bird hatchery, which claims to be the largest in Europe and claims to produce over 800,000 chicks per week. We've been unable to find any planning applications for this or other game bird breeding businesses in the county.

The intensive livestock industry in Powys has been allowed to reach unprecedented concentrations without strategy or environmental oversight. For both pig and poultry units the number of animals in Powys alone exceeds Wales wide totals given in Welsh Government's June 2020 National Statistics for Wales. Welsh Government figures exclude the rearing of game birds.

Poorly located or designed intensive livestock units (ILUs) have potential for serious pollution impacts to air, soil and water, the fundamentals of ecosystem health, and living close to an ILU may compromise neighbours' health, amenity and standard of living. All of these impacts are planning considerations. The links between intensive livestock farming and pandemic risk have received much attention in 2020[i], but until the public health risk is officially acknowledged, this will not feature in the determination of applications[ii]. New applications continue to be approved in Powys without adequate assessment of the impacts.

IPU (intensive poultry unit) TYPES:

1. Broiler, free range or not[iii],
2. Egg production, free range or not[iv],
3. Fertile egg production
4. Pullets to point of lay

Meat and egg chickens are bred for their specific purpose. Broiler chickens are slaughtered at 6/7 weeks old. Male egg chickens are killed at a day old. Female layers are reared to 16/18 weeks before transfer to egg laying facilities where they will remain approximately one year. Fertile egg hens begin production at approx. 26 weeks and produce for 34/36 weeks. This gives an indication of the length of individual production cycles. The average natural life expectancy of a chicken depends on breed but lies between 6 and 12 years[v].

Pig sheds: Powys applications to date have been for indoor finishing units i.e. the fattening stage of pig production, where young pigs approximately one month old are brought in for around 5 months until they reach slaughter weight of around 90kg.

PART ONE: POWYS/WELSH LEGISLATIVE FRAMEWORK AND GUIDANCE FOR DETERMINATION OF ILU APPLICATIONS

Powys planners have a responsibility to ensure that applications which are approved satisfy the requirements of policies within the **Powys Local Development Plan** (LDP) and Supplementary Planning Guidance, relevant Welsh and international law, CPO letters (Welsh Government advice to Chief Planning Officers), Technical Advice Notes and NRW Guidance Notes.

There is no specific policy for intensive livestock development in the Powys LDP, but all policies relevant to pollution, landscape, amenity , highways etc. apply. During the examination of the draft LDP CPRW Brecon & Radnor branch argued for the inclusion of an intensive livestock policy and submitted a draft reviewed by our

planning barrister. Powys rejected our arguments. Soon after this the Welsh Government issued **advice** that LDPs should contain intensive livestock policies.

Well Being of Future Generations Act 2015 (WBFG)

This Act commits public bodies to *'sustainable development'*, having regard to *'the importance of balancing short term needs with the need to safeguard the ability to meet long term needs, especially where things done to meet short term needs may have detrimental long term effect'*. Well-being goals include 'A resilient Wales' which *'maintains and enhances a biodiverse natural environment with healthy functioning ecosystems'* and 'A globally responsible Wales'.

Public bodies must also have regard to the '**national indicators'** which include:

14. The Ecological Footprint of Wales.
43. Areas of healthy ecosystems in Wales.
44. Status of Biological diversity in Wales.
45. Percentage of surface water bodies, and groundwater bodies, achieving good or high overall status.

Environment Act (Wales) 2016

NRW: Part 1 of the Act sets out the duty placed on NRW to *'pursue sustainable management of natural resources'*, where natural 'resources' include:

(a) animals, plants and other organisms;
(b) air, water and soil;
(c) minerals;
(d) geological features and processes;
(e) physiographical features;
(f) climatic features and processes.

S4 of the Environment Act sets out the principles of '**sustainable management of natural resources'** which NRW must follow. They include: the need to gather evidence where there is uncertainty, taking account of long term consequences of action, taking action to prevent significant damage to ecosystems and building the resilience of ecosystems.

Local authorities: S6 imposes the following duty on local authorities:

Biodiversity and resilience of ecosystems duty

(1) A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.

(2) In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects—

(a) diversity between and within ecosystems;
(b) the connections between and within ecosystems;
(c) the scale of ecosystems;
(d) the condition of ecosystems (including their structure and functioning);

(e) the adaptability of ecosystems.

Planning Policy Wales 11

Planning Policy Wales sets out the Welsh Government's land use planning policies. Para 5.6.9 states *'Care should be exercised when considering intensive livestock developments when these are proposed in close proximity to sensitive land uses such as homes, schools, hospitals, office development or sensitive environmental areas. In particular, the cumulative impacts (including noise and air pollution) resulting from similar developments in the same area should be taken into account'.*

EU DIRECTIVE RESPONSIBILTIES, COMPETENT AUTHORITIES & INTERRELATIONSHIP OF PERMITTING PROCESS (NRW) AND DETERMINATION OF APPLICATIONS (PCC DM)

The EU Water Framework Directive (WFD), transposed into UK legislation via the **Water Environment (WFD) (Eng. & Wales) Regs 2003**, was introduced to bring about improvements in the ecological and chemical condition of ground and surface waters. The Habitats Regulations (**Conservation of Habitats and Species Regulations 2017)** consolidate EU directives for the protection of EU designated sites i.e. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar wetlands. Under the Habitats Regulations, development can only be allowed where the competent authority has made certain beyond 'reasonable scientific doubt'[vi] that the integrity of an EU designated site will not be harmed. Information on national and EU designated sites can be found on the **NRW website.** The River Wye together with substantial parts of its tributaries is designated as an SAC.

Powys is the 'competent authority' responsible for ensuring compliance with WFD and Habitats Regulations duties for all applications below the threshold for permitting. Where the IPU falls within the permit regime (over 40,000 birds) PCC DM remains responsible where any parts of the development fall outside the remit of the permitting regime – see below. PCC DM should take these responsibilities into account when determining applications.

Respective responsibilities are set out in advice given by Natural Resources Wales in relation to application P/2014/0009[vii]:

> *"The **Water Framework Directive** (WFD) places a duty on your Authority to have regard to River Basin Management Plans. This means that a Local Authority should ensure when determining an application that they are meeting with the '**no deterioration**' objective of the WFD. In considering the application, you should therefore ensure that it has sufficient information to conclude that the proposal (plan) will not result in any deterioration of waterbody status or prevent a waterbody from achieving Good Ecological Status. The same duty will apply to us when issuing any environmental permit but we will only consider WFD in the activities we regulate. Therefore, issues such as the construction stage, associated development (such as access tracks) and landscaping will not be assessed during a permit application and WFD not considered by us in the process. We recommend you discuss potential mitigation measures that can ensure you meet your WFD duty with your ecologist, for example securing a Construction and Environmental Management Plan if planning permission is granted."*

From the same letter:

*"The Planning Authority is the Competent Authority under the **Habitats Regulations** (HR) for planning permissions…. This* [HRA] *should be done in advance of issuing any planning permission and should assess direct, indirect and cumulative impacts. If/when an environmental permit is applied for, we will also be a Competent Authority under the Habitats regulations."*

New Welsh Water Regulations: *Note that in spring 2021 Welsh Government introduced the '**Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021'**..* ***See page 14 below.***

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

1. Applications for over 85,000 places for broilers or 60,000 places for hens (Schedule 1 17 (a)) are all EIA applications.
2. Applications for over 3000 production pigs (over 30kg) or 900 sows are EIA applications (Schedule 1 17 (b)).
3. All intensive poultry or pig sheds where the floor area exceeds 500 m² (Schedule 2: 1(b)) must be screened for EIA status i.e. assessed (by the LPA or Welsh Government) for their likelihood to *'have significant effects on the environment by virtue of factors such as its nature, size or location'*[viii].

Full reasons must be given for the screening decision reached[ix] and Sch.3 of the **2017 EIA Regulations** sets out the criteria to be taken into consideration. **Evidence of EIA screening should be requested and decisions challenged where appropriate.**

PCC DM have almost never given a Sch.2 IPU application EIA status and in CPRW B&R's view EIA screenings fall far short of the requirements of the 2017 EIA Regulations. Pig units have in many cases evaded all planning scrutiny by concealment of the intended use of the buildings. A decision by the case officer that the application is not EIA development can be challenged by (evidenced) appeal to the Welsh Ministers. Support from an ecologist or environmental NGO might increase the chance of success.

EIA applications must be accompanied by an Environmental Statement (ES). Sch.4 of the EIA Regs sets out the information which the ES should contain and provides a legal framework which effectively raises the bar for the consideration of environmental impacts of the application.

DETERMINATION – DELEGATED OR PLANNING COMMITTEE?

Prior to January 2020 all IPU applications with EIA status and a (very) few non EIA applications were determined by decision of the Planning Committee. Since changes to the **Planning Protocol** in January 2020, Powys Development Management (PCC DM) is currently determining almost all ILU applications, including EIA applications, under delegated powers i.e. the case officer decides without reference to the planning committee and without the opportunity for opponents to put their case direct to the committee.

The Powys County Councillor for the ward containing the development site can request that the application be heard at a public Planning Committee Meeting at which a residents' representative can ask to speak. According to the Planning Protocol, the call-in request has to be received by planners within **21 days** of the Councillor's being notified of the development.

Residents should approach their local councillor as soon as possible to call in the application for committee determination.

POWYS SUPPLEMENTARY PLANNING GUIDANCE

Powys LDP is supported by **Supplementary Planning Guidance** on several topics including **Biodiversity** and **Landscape**. Guidance on Biodiversity includes a short section on intensive livestock.

TECHNICAL ADVICE NOTES

Technical Advice Note 5 'Nature Conservation and Planning' (2009): Summary of issues around conservation in the planning system, designated sites and protected species. Note: this TAN has not been updated to reflect the formation of NRW in 2013, or legislation and guidance since 2009.

Following CPRW Brecon & Radnor's **Petition to Welsh Government** for control of impacts of ILUs, Welsh Government committed to the production of a Technical Advice Note on Intensive Livestock Developments. The outbreak of Covid has halted work on this TAN.

CHIEF PLANNING OFFICER ADVICE

The Chief Planning Officer's **CPO letter ILUs** (June 2018) advised that:

- LDPs should include policies on intensive livestock development
- Local planning authorities determining intensive livestock applications must assess the cumulative impacts, and
- Local planning authorities must consider the proximity of intensive livestock units to 'sensitive land uses' including homes and schools.

CPO letter Biodiversity (October 2019) advises local authorities on ecosystem resilience and securing net benefits for biodiversity through planning.

ENVIRONMENTAL PERMITS

Farms with over 40,000 birds, 2,000 production pigs or 750 sows fall within the scope of Integrated Pollution Prevention and Control (IPPC) regulations and will require an Environmental Permit from NRW. This will consider emissions to air, land and water including:

- ammonia
- nutrients from manure, litter and slurry
- effluent discharges
- dust
- odour
- noise

where emissions come from the operation itself only but not from ancillary development such as new roads. The grant of a permit should not influence the planning decision and vice versa. NRW's **website guidance** sets out the remit for environmental permitting.

It is illegal to operate without a permit if required. The permit will apply conditions, which must be followed to be judged a 'competent operator'. Inspections may be carried out, permits may be varied, suspended, and prosecutions may follow non-compliance where this is in the public interest

The Northern Ireland Environment Agency has produced useful **guidance regarding risks, mitigations and the assessment of environmental impacts from IPPC developments**, the principles of which are applicable to all intensive poultry developments[x]. The template example (pp6-9) usefully summarises likely environmental impacts from the IPU itself and potential mitigations.

The permitting regime results in a situation where the major pollution risks are more likely to be associated with smaller developments which do not require a permit. This was one of the findings of NRW's **Powys Pilot Poultry Study** (2015) so it is disappointing that so little has changed since.

PCC DM appear unclear about threshold criteria for the permitting regime and about its scope and purpose. The requirement for an environmental permit does not remove PCC DM's duty to assess impacts as part of the process of determination of the application. Nor does the process of issuing an environmental permit look at impacts which might arise offsite or from activities other than the egg/chicken production operation itself. So Manure Management Plans are not relevant to the environmental permit and must be examined as part of the determination process.

FREE RANGE RANGING AREAS – INTEGRAL PART OF THE PROPOSED DEVELOPMENT

Intensive farming:

PCC DM have sometimes maintained that case officers don't need to consider impacts of poultry ranges. Both indoor and outdoor elements of poultry units fall within the EU definition of intensive farming and this is confirmed by the Welsh Government's Chief Planner, Neil Hemington Chief Planner, who writes re application P/2014/0877:

"In reaching that conclusion I have not overlooked the submission put forward on your client's behalf that what is proposed [extension of existing sheds to accommodate a further 6,000 birds] is not an 'intensive livestock installation' for the purposes of the 1999 regulations. I have, however, had regard to the advice provided in the EC document 'Interpretation of definitions of certain project categories of Annex I and Annex II of the EIA Directive[xi]' and, in particular to the advice at paragraph 3.3 of that document that the 'Intensive livestock installation' project category 'can be considered to include installation for the concentrated rearing of livestock either in purpose-built units or in areas dedicated to this activity, either indoor or outdoor."

The outdoor range of a free range development is an integral part of the development.

Range plan: Applications should include a plan of the proposed range where relevant – see **NRW Guidance GN 021** The size of range for free range laying hens is determined by EU legislation at a minimum 1 hectare for each 2,500 birds[xii]. In some cases a lesser density is stipulated, for example, Soil Association standards stipulate a maximum 1,000 laying hens per hectare for organic certification. See **Soil Association**, **RSPCA** standards for more information, including advice on minimum range size, range design and maintenance. Range plans are essential to identify the area availability of suitable land, location of range ammonia emissions, run-off pollution risks and impacts on watercourses, hedgerows, ancient woodlands, archaeology etc.. Ranges must be excluded from land available for spreading. NRW Guidance Note GN 021 (below) sets out that range plans should clearly show the boundaries, 'sensitive receptors' (water, hedgerows, protected sites and species..), slope, soil type together with a management plan and location of mitigations.

Poultry ranges should be rotated to avoid poaching, allow for vegetation regrowth and reduce disease risk. For organic egg laying flocks a minimum rest period of 9 months between flocks is stipulated in the **Soil Association standard** (s 3.12.17). This requirement for rotation increases the minimum land area which must be available for the range.

NRW ILU GUIDANCE

NRW ammonia guidance has been revised in the summer of 2021 and now covers all ammonia emitting development. GN020 and GN036 describe the process to be followed in assessing ammonia impacts from proposed new development:

- **Guidance Note GN 020: Assessing the impact of ammonia and nitrogen on designated sites from new and expanding intensive livestock units** – initial ammonia screening.
- **Guidance Note GN036: Modelling the concentration and deposition of ammonia emitted from intensive farming** – detailed modelling of ammonia process contribution.

Guidance Note GN 021 – contains a checklist of information for poultry applications, required for purposes of the NRW consultation. GN 021 also sets out requirements regarding safe storage of manure, slurry and dirty water, range management, manure management plans, nutrient planning, pollution prevention and accident management planning. (We are unsure of the current status of this document but the checklist is still a useful guide to the type of information required and what should reasonably be expected to be included within an ILU application.)

PART TWO: ASSESSMENT OF IMPACTS: MATERIAL PLANNING CONSIDERATIONS

MATERIAL PLANNING CONSIDERATIONS: Issues which should be considered by the Planning Officer in determination of an ILU application. Planners won't consider any objection which doesn't relate to material planning considerations.

Principle impacts:

1. Ammonia emissions: point and area (range) source
2. Nutrient pollution (nitrate and phosphate) to soil, ground and surface waters
3. Run off pollution potentially including veterinary medicines, pesticides, cleaning products, disinfectants,
4. fuels and oils and other biologically active materials, from ranges, verandas, washing out, tracks and roads etc.
5. Ecology, including impacts from the development, construction, ancillary development, highways modifications etc.
6. Landscape character and visual impacts
7. Potential impact on listed buildings/conservation areas/registered parks and gardens
8. Traffic – regular movements of large vehicles, sometimes on small roads, sometimes necessitating hedgerow removal, widening/straightening of minor roads (safety, noise, amenity, vibration etc.)
9. Noise impacts on neighbouring properties
10. Odour impacts on neighbouring properties
11. Toxic poultry dust impacts on neighbouring properties
12. Water requirements and impacts on private water supplies
13. Impacts on rights of way
14. Ecological implications of emissions from the development, construction, ancillary development, highways modifications etc.
15. Potential impact on archaeology from range management practices, construction, ancillary development, highways modifications etc.

Further considerations:

1. Sustainability of the development and impacts on global warming
2. Global responsibility
3. Tourism
4. Light pollution
5. Vermin and flies
6. Accuracy of assessment of economic and employment benefits

Application reports on potential impacts: The application should contain impact assessments together with:

- Range plan for free range birds
- Manure management plan
- Pollution Prevention Plan

These should be accompanied by

- Design and Access Statement
- Location map
- Plans of built structures

- Planning Permission Form
- Screening request and direction

See **NRW GN021 checklist**.

Cumulative impacts with other nearby ILUs or polluting developments should be considered. CPRW B&R are very concerned that we have seen no evidence that there is any reliable source of information on existing pig and poultry units in Powys, and so have created a **map of Powys poultry units** and a spreadsheet of intensive poultry unit planning applications since July 2015[xiii]. We are investigating whether a full account of intensive pig units in Powys can be provided to enable the statutory authorities to comply with their duties to assess ammonia and nitrogen impacts[xiv].

Inadequate information: Most applications fail to provide the information required. PCC DM should be reminded of the need to obtain missing information.

NRW CONSULTEE ROLE IN DETERMINATION OF PLANNING APPLICATIONS

NRW's consultee role: NRW now work to a very restricted **remit** when acting as statutory consultee for planning authorities. The remit is focused on national and European designated sites, protected species and designated landscapes. In the case of ILUs over the IPPC thresholds, NRW are also responsible for the grant of environmental permits.

NRW accepted the need to adopt a strategic approach to the accumulation of poultry units back in 2015[xv]. There is still no strategy.

AMMONIA

Ammonia emissions and resulting nitrogen deposition negatively affect biodiversity and ammonia is one of the greatest threats to our wild plants, which threatens wildlife habitats and entire ecosystems : see Plantlife report '**We need to talk about nitrogen'**.

NRW introduced new guidance for the assessment of ammonia impacts from ILUs in 2017 which has been revised in summer 2021. The UK Government is legally committed to the reduction of ammonia emissions (from 2005 baselines) of 8% by 2020 and 16% by 2030. Agriculture is responsible for nearly 90% of UK ammonia emissions.

- **Guidance Note GN 020: Assessing the impact of ammonia and nitrogen on designated sites from new and expanding intensive livestock units** – initial ammonia screening.
- **Guidance Note GN036: Modelling the concentration and deposition of ammonia emitted from intensive farming** – detailed modelling of ammonia process contribution.

Critical levels and loads: Critical Levels (gaseous concentration of ammonia pollutant in the air) and Critical Loads (nitrogen pollutant deposited from air to the ground) are the thresholds above which harmful effects are

expected. Critical loads are specific to particular habitats while critical levels are assigned to broad vegetation types. For ammonia concentration in air, the Critical Level for higher plants is **3.0 µg-NH3/m3** as an annual mean, and for sites where there are sensitive lichens and bryophytes present, or lichens and bryophytes are an integral part of the ecosystem, the Critical Level is **1.0 µg-NH3/m3** as an annual mean. Critical levels and loads are obtained from the **Air Pollution Information System (APIS) website**.

Background levels: The **APIS website** can also be used to obtain latest data on nutrient levels within designated sites and consequences of exceedances on habitats within that site. While this is the best available data, and will be used for cumulative assessments, the underlying measurements from the relatively few monitoring sites making up this data are some years old, e.g. current data was updated in March 2021 to the 3 year average from the years 2017-2019 and is assumed to exclude all developments coming into operation after 31st December 2018. You can also look up ammonia concentration and nitrogen deposition loads at any particular grid location.

Ammonia assessment: **New NRW advice** (summer 2021) has introduced changes[xvi] to the method of ammonia assessment for new applications. All ammonia emitting operations must follow the new guidance, including landspreading where it is in relation to an EIA application, where a Habitats Regulation Assessment is required, or where landspreading is to take place close to a sensitive site. Depending on background levels of ammonia and other sources, applicants may be required to complete a screening assessment (SCAIL) or detailed ammonia modelling, following NRW's 2 stage process set out in the guidance, to arrive at the modelled 'process contribution' for the development. The screening assessment may in any case point to the need for detailed modelling.

Process contribution:

- SCAIL: If either process contribution + background level > Critical Level for any relevant sensitive site or there are other ammonia emitting sources to consider, detailed modelling is required.
- Detailed modelling: If the process contribution < 1% of the Critical Level at relevant sensitive sites and there are no other ammonia emitting developments to consider, NRW will consider ammonia impacts acceptable whatever the background level.
- Otherwise, NRW will look to see whether the process contribution, in combination with other ammonia emitting developments, will raise ammonia levels at local sensitive sites close to or above the Critical Level, and if it does, will require abatement measures.

For both SCAIL modelling and detailed modelling, nearby nitrogen sensitive sites and other ammonia emitting developments, which should include all those listed in NRW's guidance, must be identified. However, we've seen no evidence yet that either Powys or NRW hold good information on the locations of intensive poultry farms, let alone other ammonia emitting developments.

NRW web pages on ammonia emitting developments now advise on screening distances and emissions factors to be used in modelling. (Note that the emissions factor for egg layers with manure removal belts assumes a twice weekly removal cycle, rather than the 4 day cycle more commonly in operation.) NRW have also now published a **MAP** showing what they consider to be the most nitrogen sensitive sites. The map is a work in progress and it's acknowledged that other sites may be included when evidence is gathered. So exclusion of a

site, for example, ancient woodland, national nature reserve, or a wildlife trust site, from the map does not indicate the absence of species sensitive to nitrogen.

Free range poultry and ammonia source apportionment: NRW and other UK environmental agencies are applying the assumption that 80% of ammonia emissions on a poultry farm derive from the housing and 20% from the range. A recent Powys appeal case (Forest View APP/T6850/A/21/3266394[xvii]) upheld this apportionment.

Will new NRW guidance achieve protection of ecosystems? CPRW B&R is concerned that the intention to limit ammonia increases and hold ammonia emissions below Critical Levels does not address existing ecological damage and the urgent need to reduce ammonia emissions, or the fact that current methodology does not recognise the issue of damaging 'spikes' of ammonia occurring at certain points in the poultry cycle. The Woodland Trust, in their 2021 report Wood Wise[xviii], set out the view that Critical Levels are set too high to adequately protect woods, trees and associated species. CPRW B&R is also concerned that the exclusion of sites from NRW's map (above) may be wrongly interpreted by applicants and agents as an indication that these sites are less deserving of protection.

Many designated sites within Powys are already well in excess of critical loads/levels for nutrients and so will *already,* at date of most recently uploaded monitoring data, be experiencing damage to ecosystems. According to **2019 Trends Report** 'more than 70% of designated sites in Wales and Northern Ireland, currently have exceedance of acidity critical loads for one or more features'. Natural England have produced a report **'Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance'** on the harmful effects of further deposition on semi-natural habitats of conservation importance which already exceed their critical load.

Further reading:

1. Parliamentary briefing on Ambient Air Quality: https://researchbriefings.files.parliament.uk/documents/POST-PN-458/POST-PN-458.pdf

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MANURE AND NUTRIENT POLLUTION: MANURE SPREADING

ILUs produce large quantities of nutrient rich manure which must be safely stored and used. Applicants should provide Manure Management Plans, but there is no mechanism for their enforcement. An NRW survey of ILUs on the Lugg (Autumn 2020) has revealed a "*general issue*" over adherence to Manure Management Plans and other protective measures.

Chemical composition of ILU manures: Intensive poultry manure is rich in nutrients (in particular, nitrogen and phosphorus) and low in carbon, needs careful storage and should only be used as a fertiliser with caution – see IBERS report **'Poultry Manure Management'**. **DEFRA NVZ completion tables** sets out N (nitrogen) and P (phosphate) values for livestock manure by type i.e. pullets, free range, caged, broilers and pigs by weight. Averaged manure and nitrogen output can be found on Pages 119 and 120 of '**Guidance on complying with the rules for Nitrate Vulnerable Zones in England for 2013 to 2016'**.

Quantities and impacts: **Natural England Research Report NERR030 'Nutrient and pollution management – intensive livestock'** contains a useful summary of impacts on environmental sustainability from spreading of ILU manures (see text box below). Using data from the 2021 **Welsh water regulations** a 16,000 laying bird shed would produce approximately 700 tonnes of manure a year, containing 8,760 kg of nitrogen and requiring just over 52 hectares of suitable land for spreading. (A similar calculation using NERR030 data suggests spreadable land of just over 62 hectares would be required.)

Extract from Natural England NERR030

"Summary of impacts

Biodiversity

6.21 Oxidation of ammonia in soils has an acidifying effect, with the extra nitrogen impacting ecosystems through eutrophication. This, and the aerial deposition of nitrogen from ammonia, affects the resilience of some native plant species and can cause die-off of some mosses and lichens.

6.22 Increased deposition of nutrients on natural and semi-natural vegetation will result in a change in species composition, either due to the increased growth of some species, or because of an increase in susceptibility to disease or climatic extremes, for example frost hardiness, of other species.

6.23 Habitats such as woodlands, wetlands and semi-natural grasslands adjacent to areas of nutrient production can be affected by atmospheric deposition, surface flow or leaching.

6.24 Nutrient deposition into watercourses and groundwater can affect rivers, standing water and coastal and marine waters. Aquifers can also carry nutrients in groundwater to fens, affecting their botanical structure.

Resource protection

6.25 Intensive livestock production involves the associated production of large amounts of waste products, predominantly manure and urine. These are potentially major sources of gaseous products such as ammonia and methane, as well as nitrates and phosphates. These have a potential value as crop nutrients.

6.26 These products can also have profound negative effects on soils and water quality, as can heavy metals contained in the waste products.

6.27 Ammonia emissions can combine with oxidised nitrogen and sulphur to form particulate matter which can have a detrimental effect on human health.

Greenhouse gases

6.28 Use of manure and slurries can improve soil fertility for agriculture and offset CO2 and N2O emissions resulting from the manufacture and transport of inorganic fertilisers.

6.29 Storage of manures, particularly slurries, can be a major source of methane. Whilst it is possible to capture and use this gas for power generation, the equipment for its production, storage and use requires a high capital outlay."

M**anure management plans:** An MMP should declare all livestock on the farm whether housed indoors or not, add in the proposed livestock unit, and calculate the total manure produced. Then field plans must be provided showing the area available for manure spreading. Typically the plans provided are separated onto several pages without any overall plan to improve transparency about spreading in relation to steeply sloping land, habitations, watercourses or other geographical features. **Guidance GN021** sets out minimum requirements for information which should be set out within a manure management plan, and requires consideration of both nitrogen and phosphate nutrient loads.

Farming good practice: '**Code of Good Agricultural Practice'** (COGAP) stipulates maximum distribution of 250 kg/ha of nitrogen in organic manures to any field in any 12 month period, and this has been the maximum spreadable until introduction of new water regs in Wales in 2021.

Water Regs: In March 2021 Welsh Government enacted the **Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021** which are intended to reduce agricultural diffuse pollution and protect water quality in our streams, rivers and ground waters. These are currently (September 2021) under legal challenge by the NFU. In addition to requirements for closed periods, risk maps, safe spreading and safe storage for organic manures, the regulations limit the amounts spreadable from the COGAP maximum of 250Kg/Ha to 170Kg/Ha each year.

Off farm spreading: Judgement in the 2019 case **R. (on the application of Squire) v Shropshire Council v Matthew Bower** concluded that the impacts of manure spreading **off the farm** needs to be taken into account in the determination of ILU applications whether housed indoors or not. It is not acceptable for applications to shrug off responsibility for assessment of environmental impacts of the manure produced by a new development by stating that it will be taken off the farm.

ANAEROBIC DIGESTERS (ADs): As the quantity of manure produced by ILUs becomes harder to dispose of safely on the land, more is likely to exported to ADs. We are increasingly seeing applications stating that all or some of the manure produced will be exported to ADs, most often across the English border in Shropshire or Herefordshire. Export off farm will have traffic, storage and sustainability implications, and impacts still require assessment.

On farm ADs have themselves been associated with a high number of high profile pollution incidents in Powys and West Wales.

The digestate produced by the anaerobic digestion process is also likely to be spread on land, and is likely to be nutrient rich because the phosphorus remains in the digestate though the exact chemical makeup will depend on the inputs to the AD plant. Export of poultry manure does not resolve the issue of the safe disposal/use of excess nutrients.

MANURE AND NUTRIENT POLLUTION: RIVERS, STREAMS AND GROUNDWATERS

The problem: Diffuse pollution from agricultural sources is estimated to exceed 65% of the phosphate pollution to the Upper Wye and Lugg. Excess nutrients (nitrates and phosphates) cause eutrophication impoverishment of freshwater ecosystems and the loss of aquatic life[xix]. ILU operation potentially causes contamination with other pollutants/poisons such as pesticides, veterinary medicines, biologically active materials, cleaning products, heavy metals etc. Pollution risks arise from manure spreading and storage, shed washing, spreading of dirty wash waters onto land, run off from outdoor ranges and verandas, soil erosion, contaminated waters from shed roofs where dust has accumulated in drier periods, ammonia deposition, and increased traffic movements. Manure/slurry enters watercourses via surface run-off or hydrological pathways from storage or dirty water leaks. Small water courses with lower flow rates are likely to be more severely affected than larger rivers.

Deterioration of Welsh SAC rivers including the River Wye: The state of the river Wye has prompted questions about the proliferation of intensive livestock farming in Powys and the reliability of NRW river monitoring for

phosphate and nitrate concentrations. In 2020 NRW initiated a review of water monitoring data and has now confirmed widespread failure of SAC rivers throughout Wales against the phosphate targets – see **Compliance Assessment (Welsh SAC rivers)** and **Compliance Assessment (River Wye)**.

New NRW guidance (summer 2021) requires all applications for phosphate producing developments within the catchment of a Welsh SAC river to be screened for likely significant impacts, i.e. to be accompanied by a Habitats Regulations Assessment. Developments in the catchments (including non-SAC tributaries) of failing SACs must demonstrate phosphate neutrality.

Guidance also sets out NRW's expectation that any phosphate mitigation measures are supported by *'evidence from developers … demonstrating those measures are guaranteed, effective, reliable, timely and will be maintained for the lifetime of the development'.* Mitigation measures must also be legally enforceable.

2021 Welsh Water Regs: See Manure and Nutrient Pollution above

Further reading:

2. Parliamentary briefing on diffuse water pollution by agriculture: https://researchbriefings.files.parliament.uk/documents/POST-PN-478/POST-PN-478.pdf (October 2014)
3. Parliamentary briefing on Phosphate Resources: http://researchbriefings.files.parliament.uk/documents/POST-https://researchbriefings.files.parliament.uk/documents/POST-PN-477/POST-PN-477.pdfPN-477/POST-PN-477.pdf(August 2014)

ECOLOGY

See **Powys LDP Supplementary Planning Guidance**.

Pollution to aquatic habitats - see above. NRW is responsible for the review of ammonia impacts on designated sites (see above). The local planning authority is responsible for the consideration of other ecological impacts including :

- impacts of ammonia on sensitive sites which don't carry a national or international designation – which includes National Nature Reserves, Wildlife Trust Reserves, ancient woodland, parkland, ancient trees, meadows
- the proximity of vulnerable and/or protected species local to the development
- Ecological damage from the construction and ancillary development

Ancient woodland: Ammonia impacts on designated sites are assessed and taken into account in determination of the application. Other sites receive very much less protection. Ancient woodlands are irreplaceable, rich and very sensitive ecosystems, vulnerable to damage from ammonia – see **Woodland Trust report 'Impacts of nearby development on the ecology of ancient woodland'**. Ancient woodland occupies just 1.2% of UK land area and 95% already exceeds its nitrogen critical load. Despite this, with the exception of those ancient woodlands included on the NRW **MAP** (See Ammonia above), a convention depending on an English Environment Agency decision is generally still upheld by NRW whereby each ILU is allowed to contribute **100%** of the critical load. This is regardless of background levels or ammonia from other local ILUs and is essentially statutory permission for ILUs to continue the destruction of Ancient Woodland biodiversity.

Although now dated, '*Interim Guidance on Dealing with Poultry Units and Biodiversity in the Planning Process – July 2010*' is a useful summary[xx]. This sets out the likely need for an ecological survey, and discusses Biodiversity Action Plan habitats including hedgerows, woodlands and trees, rivers and streams; protected species, in particular Great Crested Newts; cumulative impacts, including impacts from road passing bays, with respect to both air quality and water quality. The requirement for EIA status for applications in sensitive areas and where cumulative impacts are an issue is raised. It is made clear that it is the LPA's responsibility to refuse applications where harmful impacts cannot be mitigated, in accordance with TAN5 and the Environmental Damage (Prevention and Restoration) (Wales) Regulations 2009.

LANDSCAPE:

See **Powys LDP Supplementary Planning Guidance**.

The Welsh landscape tool LANDMAP interactive maps can be viewed on the **NRW website.** LANDMAP consists of 5 layers: visual and sensory, cultural, historic, geological and landscape habitats. Each layer of each aspect area is given an evaluation, sometimes capricious, ranging from 'poor' to 'outstanding'.

Powys currently has no qualified Landscape Officer, and the Case Officer is responsible for assessing landscape impacts. It is rare for the applicants' information to be challenged, however inadequate. Impacts on LANDMAP Historic and Cultural layers may be considered by the authority's Built Heritage Officer where there is the potential for harmful impacts.

NRW will only advise on landscape impacts where there is a potential impact on a designated landscape, such as Brecon Beacons National Park or Shropshire Hills AONB, or registered historic landscape, of which there are several in the county. PCC DM may need to be reminded.

Landscape is a material planning consideration. Very large intensive poultry sheds, together with verandahs, silos and new access tracks, hedgerow loss and road splays, are likely to have an impact on the appearance and enjoyment of Powys's rural landscapes. Note that application P/2014/1149, Land at Tansomalia, was refused, and the subsequent appeal upheld the refusal, supporting the Council's assessment of unacceptable landscape impacts[xxi].

TRAFFIC:

Intensive poultry sheds create significant extra heavy traffic on rural roads. Traffic movements will be associated with egg/bird collection, 'thinning' of broiler birds, deliveries of birds, feed deliveries, shed cleaning, daily visits to monitor birds and collect carcases, manure removal (including export to AD or other farms) and spreading etc. For some developments the number, size and weight of vehicles may be unsuitable for the small roads that may access the development. This has the potential to create safety issues for other road users and residents which may only be resolved by improvement works to the roads. These ancillary works may have

their own impacts such as ecological impacts of hedgerow removal, access impacts from highway works, even (in one instance) impact on a scheduled ancient monument adjacent to the road.

A major increase in traffic will have pollution implications and the sustainability of intensive farming developments in isolated rural locations should be assessed. The vibrations caused by heavy traffic regularly passing roadside houses may impact on their structural stability.

Human health: Ammonia emissions from the IPU can combine with vehicle pollution to form small particulates PM2.5 which can infiltrate deep into the lungs and are particularly hazardous to the elderly and those with underlying illnesses such as heart disease and asthma. The World Health Organisation has now (September 2021), after 15 years, revised the **WHO Global Air Quality Guidelines** stating '*there is now a much stronger body of evidence to show how air pollution affects different aspects of health at even lower concentrations than previously understood'.* The new guidelines estimate that reducing annual average fine particulate matter (PM 2.5) concentrations from levels of 35 µg/m³, common in many developing cities, to the WHO guideline level of **10 µg/m³**, could reduce air pollution-related deaths by around 15%.

The application should provide information about the number and type of vehicles which will be required for different activities and the frequency of their being required. It's important to check whether this information is reasonable.

NOISE:

Public health and amenity issues: PCC DM is responsible for all assessment of impacts from noise, odour and dust except where the ILU requires an environmental permit and the emissions source is the operation itself only, excluding ancillary activities.

Poultry developments will have noise impacts during construction and, more importantly, during operation, from associated traffic movements, feed deliveries and transfer into silos, shed destocking and cleaning etc., from ranges and from the sheds themselves, including the ventilation systems. Some developments may require night time working, for example when 'thinning and destocking' birds, as this is less stressful for the chickens.

Noise impacts must satisfy BS4142 and require establishment of typical background noise levels. Impact assessments should then consider all noise sources associated with all operations and all stages of the development. It is advisable to check all assumptions made and data used within the noise impact assessment for reasonableness.

World Health Organisation **noise guidelines**[xxii] may be useful.

ODOUR:

Odour assessments should take into account the impacts of routine operations and shed cleaning, manure storage and spreading, but assessments are usually confined to emissions from the shed only, and produce predicted annual average odour emissions.

Averaged odour predictions won't adequately reflect the nuisance experienced by neighbours as smells are known to build up towards the end of the cycle and peak at clean out. Shed cleaning for broilers is more frequent than for laying hens as the cycles, up to 8 each year, are much shorter. Broiler chickens are generally slaughtered at 5 to 7 weeks and the number of cycles in a year will depend on the turnaround time between flocks.

Odour impacts may be affected by 'cold drainage flow' or katabatic winds. This can give rise to unpredicted odour dispersion and is described in Environment Agency document **H4 'Odour Management'**:

> *"**Cold drainage flow***
> *Cold drainage flow occurs on clear, still nights, when cooled air flows downhill. This night-time surface cooling is what sometimes causes ground frost when ambient air temperatures remain above freezing. Cold drainage can result in localised ground frost conditions which follow low lying flow paths.*
> *The flow of surface cooled air can happen on smooth slopes above about one degree through to rough slopes above five degrees. Drainage flow speeds are typically one or two metres per second. This can concentrate odour in low-lying places.*
> *This phenomenon will only apply to ground level sources."*

Applications have been known to assume different ventilation systems in different reports, e.g. noise and odour reports, and this information should be verified.

Powys EH has expressed concern at potential for odour nuisance where nearest houses to a poultry development were sited at 160m distance. (P/2014/0553) but stopped short of recommending refusal.

Welsh Government's **Technical Advice Note 6** contains the following statement:

> *'6.6.3 To minimise the potential for future conflict between neighbouring land uses, planning authorities should exercise particular care when considering planning applications for houses or other new protected buildings within 400 metres of established livestock units. It is important also for planning authorities to keep incompatible development away from other polluting or potentially polluting uses.'*

The same caution is not applied when livestock units are proposed within 400m of neighbouring houses, although **CPO letter ILUs** (June 2018) does require local planning authorities to consider the proximity of intensive livestock units to 'sensitive land uses' including homes and schools.

DUST:

Where any assessment is included in the application, it is likely to exclude consideration of dust emissions from manure storage, transport and spreading.

Impacts of poultry dust on human health are reported by the **Health and Safety Executive**, which, although the focus is on risks to poultry workers, confirms poultry dust as a substance hazardous to human health, linked with respiratory complaints and with potential for permanent lung damage. Poultry dust typically contains faecal matter, skin, feathers, feed, bedding, proteins, fungal and bacterial species and various endotoxins, as well as ammonia, odour, nitrogen, phosphorus, heavy metals and nitrous oxides, with odour being strongly associated with and bound to particulate matter.

Defra studies suggest dust deposition problems are likely to occur within 100m of sheds, although the report **'Risks caused by bio-aerosols in poultry houses'** cites much greater distances of travel of harmful dust components. The Defra report does not account for a significant fraction of particles known as inhalable dust and nor for temperature inversions and so is thought to under-report potential health impacts.

Public Health Wales (re Banc Gwyn P/2014/0009[xxiii]) have recommended, in view of the health risks: that emissions must be limited at sensitive receptors; that regulators must be satisfied that predictive assessments are appropriate to local conditions; that best available techniques are employed, and operators have a dust management plan. The advice also sets out that '*people with pre-existing lung or heart disease, the elderly and children are particularly sensitive to particulate air pollution'*, while in respect of bio-aerosols *'there is considerable uncertainty about the health risks to local residents'*. Composting plants, also sources of bio-aerosol emissions, are generally not permitted within 250m of local communities.

Poultry dust/particulate matter can also cause vegetation stress and ecosystem alterations. Dust will accumulate on roofs and hard standing during drier periods and wash off as 'lightly contaminated run off' which should be prevented from reaching ground or surface waters untreated. A further **report** produced in relation to application P/2014/0009 states that an 80,000 bird broiler development will emit approx. **9,000kg** of poultry dust p.a. However, the highest dust concentrations occur in houses for laying hens[xxiv].

WATER DEMANDS AND IMPACTS ON PRIVATE WATER SUPPLIES

Intensive poultry sheds place high demands for water on local supplies. Where the sheds are off mains this may potentially impact on local private water supplies.

From **EC '**Best Available Techniques (BAT) Reference Document for the Intensive Rearing of Poultry or Pigs'

Table 3.11: Water consumption of different poultry species per cycle and per year

Poultry species	Average water to feed ratio (l/kg)	Water consumption per cycle (l/head per cycle)	Annual water consumption (l/bird place per year)
Laying hens	1.8–2.0	10 (up to production)	73–120 (egg production)
Broilers	1.7–1.9	4.5–11	30–70
Turkeys	1.8–2.2	45–100	117–150
Ducks	3.5–6	30–46	195–300
Source: [44, IKC 1993] [391, Italy 1999] [24, LNV 1994] [358, France 2010] [500, IRPP TWG 2011]			

So a 16,000 layer shed will use an estimated 1.168 - 1.92 million litres in a year, excluding shed cleaning. And 10,000 broilers will use an estimated 45,000 – 110,000 litres per cycle, excluding shed cleaning and operation of scrubbers (if fitted).

Consumption of water for shed cleaning is set out in the following table:

Based on these figures, daily operation of an egg layer poultry unit will require 20m³/day of water at a size somewhere between 61,000 and 100,000 birds. If the unit is off mains, an abstraction licence should be obtained for consumption exceeding 20m³/day.

Table 3.12: Estimated water use for cleaning of poultry housing

Poultry species	Use (m^3 per m^2 cleaned)	Cycles per year	Use (m^3 per m^2 per year)
Layers (enriched cages)	0.01	1	0.01
Layers (deep litter)	0.030–0.060 (1)	1	0.03–0.06 (1)
Broilers	0.005–0.008 (1)	6	0.03–0.048 (1) 0.085–0.105 (2)
Turkeys	0.009–0.010 (1) 0.02 (2)	2–3	0.018–0.03 (1) 0.04–0.06 (2)
Ducks (Pekin)	0.005–0.050 (2)	8.6	0.040–0.430 (2)
Ducks (Barbary)	0.064 (1)	3.5	0.215 (1)
(1) Data related to French poultry farms. (2) Data related to UK poultry farms. *Source*: [500, IRPP TWG 2011] [624, IRPP TWG 2013]			

Cleaning may potentially use another 40,000 – 81,600 litres for an 85m by 16m shed, which might hold 16,000 egg layers. Broiler sheds are likely to require 7-9 cleanings in a year.

IMPACTS ON RIGHTS OF WAY

Public rights of way are identified in the Powys Local Development Plan (LDP) (policy SP7) as strategic assets. Policy DM13(9) states that development proposals will only be permitted where '*The public rights of way network*

or other recreation assets listed in Policy SP7 (3) are enhanced and integrated within the layout of the development proposal; or appropriate mitigation measures are put in place where necessary'. In our view, the LPA has been insufficiently robust in its protection of rights of way and the amenity of those using them.

Planning permission does not grant the right to close, alter or build over a right of way in any way, even temporarily, and this includes, for example, a change in the surface, width or location. Inclusion of a right of way within a poultry range, for example, may in practice render that route unavailable, and there may also be a biosecurity risk posed by public access to poultry ranges, particularly during a bird flu outbreak.

BIOSECURITY

See government advice on disease prevention: Disease prevention for livestock and poultry keepers - GOV.UK (www.gov.uk) which includes recommendations which may conflict with the application, in particular:

- Limit farm visitors and restrict contact with livestock
- Avoid application of slurry to grazing land/land used to produce silage

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CUMULATIVE

The Chief Planning Officer's **CPO letter ILUs** (June 2018) obliges LPAs to assess cumulative impacts when determining any intensive livestock application. While attempts are in some cases made to assess cumulative air quality impacts, (see above) this advice is widely ignored when it comes to other impacts. We recognise the difficulty in compliance where LPAs have failed to keep good records of intensive livestock applications, but this argues the urgent necessity on the part of LPAs to create complete ILU records for their counties.

SUSTAINABILITY AND CLIMATE CHANGE

Impacts outlined above undermine any claim that intensive livestock units can be regarded as genuinely sustainable.

In September 2020 Powys declared a climate emergency.

An Environmental Statement for an EIA application is required to address '*the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change'*: (EIA (Wales) Regs 2017 Sch 4 'Information for inclusion in environmental statements' para (5)(f)).

Planning Policy Wales 11 refers to climate change throughout: For example, para 2.28 asks:

- will the causes and impacts of climate change be fully taken into account through location, design, build, operation decommissioning and restoration and
- does it support decarbonisation and the transition to a low carbon economy?

Applications and officer assessments generally don't address these issues, or the contribution to carbon emissions from the import of feed (imported mostly from the Americas, where production is at the expense of whole-sale destruction of

biodiverse habitats), traffic generated by ILU developments, air pollution, high water consumption, deterioration of ecosystems.

CPRW believes climate change impacts should be treated as a key consideration.

We thought it might be helpful to include the following key to acronyms used in the text above:

AD anaerobic digester
APIS Air Pollution Information System
COGAP Code of Good Agricultural Practice
CPO Chief Planning Officer
CPRW B&R CPRW Brecon & Radnor Branch
DM Development Management
EH Environmental Health
EIA Environmental Impact Assessment
ES Environmental Statement
HR Habitats Regulations
HRA Habitats Regulations Assessment
ILU intensive livestock unit
IPPC Integrated Pollution Prevention and Control
IPU intensive poultry unit
LDP Local Development Plan
LPA Local Planning Authority
MMP manure management plan
NGO Non-Governmental Organisation
NRW Natural Resources Wales
NVZ Nitrate Vulnerable Zone
PCC Powys County Council
SAC Special Area of Conservation
SCAIL simple calculation of atmospheric impact limits
SPA Special Protection Area
SPG supplementary planning guidance
SSSI Site of Special Scientific Interest
TAN Technical Advice Note
WFD Water Framework Directive
WBFG Well being of Future Generations Act 2015

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[i] For a summary of issues see Is The Next Pandemic On Our Plate | Compassion in World Farming (ciwf.org.uk)
[ii] See legal challenge to UK Government Scrap Factory Farming – A campaign to scrap factory farming
[iii] http://www.ciwf.org.uk/research/species-meat-chickens/compendium-the-complete-guide-to-broiler-chickens/

https://www.ciwf.org.uk/media/5235306/The-life-of-Broiler-chickens.pdf

[iv] http://www.ciwf.org.uk/research/species-laying-hens/compendium-the-complete-guide-to-laying-hens/
[v] http://www.mercerandhughes.co.uk/chicken-care/
[vi] Waddenzee Case C-127/02 7/9/2004

[vii] Document 3036988 P/2014/0009 p 8 Powys planning portal
http://planning.powys.gov.uk/portal/servlets/ApplicationSearchServlet?PKID=126870
[viii] The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 s2
[ix] The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2016

[x] Preparing IPPC Site Reports for Intensive Livestock Installations (daera-ni.gov.uk)
[xi] http://ec.europa.eu/environment/eia/pdf/cover_2015_en.pdf
[xii] Commission Regulation (EEC) No 1274/91 (OJ No L 121 of 16.5.91) as amended requires that free range poultry enterprises satisfy at least the conditions specified in Article 4 of Directive 1999/74/EC in order to mark their small egg packs as free range. One of the requirement is that ranging areas have a maximum stocking density of 2500 hens per hectare (4m2 per hen) for free range chickens (DEFRA Laying Hens Code of Recommendations for the Welfare of Livestock). See also Poultry: welfare recommendations - GOV.UK (www.gov.uk)
[xiii] Please contact us for a copy - secretary@brecon-and-radnor-cprw.wales

[xv] Peter Matthews, then chair of NRW to Prof. Ormerod, now ViceChair of NRW: 'Notwithstanding all these issues, there are a significant number of these developments (both above and below 40,000 poultry places) being proposed in Powys and we agree that we need to begin to take a strategic approach rather than look at each development in isolation'. P/2014/0009
[xvi] **Ammonia process contribution from 2017 up to revision of guidance summer 2021: GN020** (old version) sets out how NRW assess the impact of predicted ammonia emissions on European designated sites and Sites of Special Scientific Interest:

- Where a proposed ILU is within 250m of a designated site detailed modelling, following EA guidance, is necessary as the Ammonia Screening Tool (AST) cannot calculate ammonia concentrations at distances below 250m.
- Where there are designated sites between 250 and 5km of the ILU, **detailed modelling** will be required ***if*** the predicted 'process contribution' from the development is more than 1% of the appropriate ammonia critical level/nitrogen critical load.
- **Detailed modelling** takes into account other ILUs within the appropriate screening distance of a designated site which are in planning, approved but not operating, or came into operation since the most recent APIS sampling uploaded into APIS background data (last updated 18/3/20 to 3 year average of 2017-2019 sampling) i.e. since 1/1/2020.
- If the combined process contribution is 1% or below no further assessment is required and the application may be approved, subject to other considerations.
- If the combined process contribution is above 1% but when added to background levels at the designated site **does not** take levels above critical thresholds no further assessment is required and the application may be approved.
- If the combined process contribution is above 1% and **does** tip levels at the designated site over critical thresholds, mitigations will be essential to potentially secure approval of the application.
- If the combined process contribution is over 8% and cannot be reduced and cannot be mitigated GN020 sets out considerations to be taken into account in determining whether or not emissions would compromise the scientific integrity of the designated site.

[xvii] Reference: APP/T6850/A/21/3266394 (planninginspectorate.gov.uk)
[xviii] Wood Wise - evidence for action - Woodland Trust

> 'Worryingly, there is increasing evidence that ecologically significant impacts occur at lower nitrogen concentrations, suggesting that current thresholds are not robust enough. The nitrogen deposition threshold for key components of woodland ecosystems such as the life-support fungi associated with tree roots (ectomycorrhizae) has recently been proposed to be nearer to 5–6kg of nitrogen per hectare per year (N/ ha/y), whereas the current threshold for most woodland in the UK (last revised in 2010) is 10kg N/ha/y. Similarly, the current threshold for the concentration of ammonia in the air is insufficient to avoid impacts on the most sensitive species. It is set at 1µg NH3/m3, but ecologically significant changes occur at levels as low as 0.5µg NH3/m3. There is also growing concern about the impacts of acute toxicity on woodland species arising from spikes in ammonia concentrations during, for example, slurry/manure spreading, so annual mean ammonia concentrations may not be the most robust way of assessing impacts.'

[xix] See planetary boundary exceedances and the nitrogen cycle Planetary boundaries - Stockholm Resilience Centre, Planetary boundaries - Wikipedia
[xx] http://planning.powys.gov.uk/portal/servlets/ApplicationSearchServlet?PKID=79329 Document 1433615
[xxi] https://powys.moderngov.co.uk/documents/s4310/Decision%203133184%20Tansomalia%20Felindre.pdf Powys planners subsequently gave approval to the development.

[xxii] https://www.euro.who.int/__data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf
[xxiii] http://planning.powys.gov.uk/portal/servlets/ApplicationSearchServlet?PKID=126870 Document 3835006 pp181-6
[xxiv] Risks caused by bio-aerosols in poultry houses http://www.fao.org/ag/againfo/home/events/bangkok2007/docs/part2/2_10.pdf