Appendix A

Task and Finish Group Report

The Impact of the Intensive Poultry Industry on Human Health and Wellbeing

July 2022

Task and Finish Group: The Impact of the Intensive Poultry Industry on Human Health and Wellbeing

Chairperson's Foreword

I am very pleased to present this report to the Health Care and Wellbeing Scrutiny Committee (formerly the Adult and Wellbeing Scrutiny Committee), as requested at the meeting on 6 September 2021.

Keeping the citizens of Herefordshire safe is at the heart of Herefordshire Council's responsibilities, and local people care deeply about not only their own health and wellbeing, but also that of future generations. More than simply an internal or procedural piece of work, our task was undertaken in the spirit of serving our local community.

The Task and Finish group, made up of four councillors, are all lay people with no professional expertise in this area. We met on eight occasions, and the process was interesting and enlightening for all of us, despite Intensive Poultry Farming being such an emotive subject.

However, it became clear that there is far more work to be done than we could cover under the remit we had undertaken. We did not find enough evidence to conclude that Intensive Poultry Units (IPUs) are harmful to health, although there were many indications and much anecdotal evidence that this may be the case, especially the impact on mental health and wellbeing. We also realised that while we needed to stick to our brief, other related issues needed to be identified and explored further. For example – the wider impacts of IPUs on tourism; water quality; climate change; biodiversity; traffic movements; manure management; use of AD plants; the large processing plant in Hereford; all areas outside our remit (*Appendix 7*).

Our recommendations reflect the need for further investigations and research; for a new look at permitting, monitoring and inspection; for wider consultation; and more locally focused control over the IPU process.

I am extremely grateful to the witnesses from local agencies, who gave up their time to prepare and present to us what intensive poultry farming is, how it works, how it's being monitored, how the various agencies work together, and what more could and should be done to ensure it is safe. Unfortunately, because of the farm closures due to Avian Flu, we were unable to visit a poultry farm as we had intended.

The contributions from Dr Alison Caffyn of the Food, Farming and Countryside Commission, who supported the work of the group by sharing research and answering questions, were also extremely useful.

The evidence, explanations and patience from our own officers with specialist knowledge and experience in this area were invaluable, as was the support and report preparation from our governance support officers Joanna Morley and Simon Cann.

The excellent contributions from members of the public made for informative, educational and in many instance saddening reading. These comments really helped the group to get an understanding of how intensive farming practices impact people in their everyday lives.

I am very grateful to my fellow Task and Finish group members, Cllr Trish Marsh, Cllr Nigel Shaw and Cllr David Summers. I appreciate their commitment to understanding the issues, and to collaborative group work, as well as their determination to produce constructive and meaningful recommendations.

This report isn't a ticked box; it is part of an ongoing process to assure, and ensure, that we are doing all we can for the local community, and further developments will be monitored with interest**.** I trust it will be a useful contribution to the work of the Health, Care and Wellbeing Scrutiny Committee.

Cllr Felicity Norman, April 2022

Chairperson of the health and wellbeing impact of the intensive poultry industry Task and Finish Group

Contents

Appendices

Executive Summary Overview

In summary the group's findings were as follows:

1 The Intensive Poultry industry in Herefordshire is extensive. Over 16 million chickens are reared in units of over 40,000 birds at any one time. The cycle for raising chickens to slaughter is 42 days so over the course of a year over 7 batches of chickens are produced in Herefordshire, in total over 112 million. The human population of Herefordshire is under 200,000. *See Appendix 1, figure 1 for a graphic representation of IPU Units in Herefordshire, Shropshire and Powys.*

2 The scale of this industry means that substantial quantities of ammonia and particulates (dust) are actively vented from the chicken sheds. The industry also produces over 100,000 tonnes of chicken litter, combined with urine and faeces, annually in Herefordshire (*see section 1.6 paragraph 2)*. This figure far exceeds the human waste reaching the sewage system: Welsh Water generates 12,500 tonnes a year of sludge cake, which although dewatered, still stands in stark contrast to the volume of poultry waste, *(See Appendix 1 for effects of these outputs).*

3 There is no causal proof of local harm to physical health from IPUs. As no monitoring of emissions to air is required by the Environment Agency, who are the permitting agency for IPUs, such a study is not possible. Even if this data were available, demonstrating causation in a sparsely populated rural area is impractical as numbers would be too small and variables too many.

4 Since the national Health Protection Agency published their Position Statement (December 2006) on Intensive Farming (*Appendix 6)* there has been no national update on managing and regulating the health risks of intensive agriculture. Since that time there has been an enormous increase in the numbers of Intensive Poultry Units in Herefordshire and in neighbouring Powys and Shropshire. Regulatory oversight of this sector is so light that it took the efforts of volunteers to demonstrate the increase in IPUs by painstakingly checking dispersed records to map the location and size of IPUs in these counties. This vital information was not held by the regulator. In our view an updated framework with regards to studying and controlling the health impacts of the burgeoning intensive sector is urgently needed (*see Appendix 1 for more detail).*

5 It is well documented that high levels of ammonia and particulates are emitted without monitoring and largely without abatement from the high density of IPUs locally. Science is unequivocal that both are harmful to human health *(Appendix 1).* The scale and nature of cumulative emissions from IPUs clearly reduces the quality of our shared air and adds to the overall probability of harm to human health, even though this may well be beyond the county borders and extremely difficult to measure.

6 The annual subsistence fees levied by the Environment Agency, the sector regulator, on Herefordshire IPU operators exceed £100K per year. This sum is sufficient to employ full time officer/s to actively ensure that the operation of the IPUs and their outputs meets regulatory standards (*Appendix 3b)*.

7 Material received by our Task and Finish group from residents, in response to a brief call for evidence, indicates that IPUs affect the health and wellbeing of local residents in a variety of ways (*Appendix 5)*. These impacts in many cases relate to the management of the large tonnages of manure generated by IPUs and are similar to those found and documented by social science studies undertaken by academics in the local area. We note the link between damage to human wellbeing and the detrimental effect of excess phosphates on our highly protected and biologically rich

river ecosystem. This is now widely accepted as being 70% from agricultural sources and is strongly related to poultry manure spreading.

8 There are some levers that local councils can use to moderate the human health impacts of the IPU sector on residents (Appendix *2)*. However these are modest in scale. Nevertheless Herefordshire Council have been actively working with multiple agencies to improve local river health for several years. Herefordshire Council will maintain a watching brief for opportunities to improve human health and wellbeing, aided by our skilled Public Health team, Environmental Health and Planning.

9 It is in the best interests of all parties to work together urgently to control and reduce emissions from IPUs to air and water. This would potentially have many benefits, including to the health and wellbeing of our residents.

1 Executive Summary

1.1 At its meeting on 29th March 2021 the Adult and Wellbeing Scrutiny Committee (now the Health Care and Wellbeing Scrutiny Committee) reported that the chairperson and vice-chairperson had recently discussed the possibility of undertaking a Task and Finish group on the health impact of the intensive poultry industry. It was suggested that a scoping statement be prepared for consideration by the committee at a future meeting. At its meeting on 6th September 2021 the Adult and Wellbeing scrutiny committee agreed the scoping document of the intensive poultry industry Task and Finish group, subject to the changes outlined at the meeting, and provided a delegation to the chairperson and vice chairperson to make changes to the scope in consultation with officers. The topic was identified by the scrutiny committee as a priority, based on concerns regarding the health impacts of the intensive poultry industry. The review contributes to the following ambitions contained in the Herefordshire County Plan 2020-2024:

"*Strengthen communities to ensure everyone lives well safely together*".

1.2 The Task and Finish group undertook eight meetings. The first meeting on 3rd February 2022 saw the appointment of a chairperson. It was agreed that the research should be limited to poultry and not include other animals. The use of phosphates was discussed and it was agreed that, although they are regarded as damaging to the eco system, their minimal impact on drinking water means that there is no evidence to demonstrate they are significantly harmful to human health. Swimming and other activities on the river impacted by poultry manure spreading, however, could be impacted which led to a decision to expand the group title to refer to Health *and Wellbeing* Impacts of the Intensive Poultry Industry. Wellbeing could also include the mental health impact of noise, odour and other unwelcome by-products.

Subsequent meetings involved virtual question and answer sessions with representatives and researchers from: Herefordshire Council's planning department, the National Farmers' Union, Avara Foods Ltd, the Food Farming and Countryside Commission and Cllr Peter Jinman, OBE, BVetMed, Dip Arb, FCIArb MRCVS, FRAgS. Written questions were also put to the Environment Agency (EA), unfortunately the Environment Agency was not able to provide a representative to attend any of the group's meetings. The group met for an eighth and final time to agree the recommendations it wished to make to the scrutiny committee.

1.3 The Task and Finish group developed an understanding of the possible health impacts of intensive poultry farming including: those caused by air and water pollution, zoonotic pathogens, anti-microbial resistance and additional issues including poor mental health. When the group discussed associated health impacts

and statistics (*Appendix 1 and 2*) the public health consultant stressed the importance of acknowledging that correlation does not prove causation. This was a thread that ran through all of the group's meetings as anecdotal evidence was in abundance, but a lack of longitudinal data and high quality research meant the group could not establish or fully disprove a direct link between conditions such as asthma and Chronic Obstructive Pulmonary Disease (COPD) and local IPUs. However, it was noted that an absence of evidence does not necessarily demonstrate an absence of effect.

1.4 The group was given two definitions of an IPU in UK legislation which stated: under environmental permitting legislation it is an installation with over 40,000 birds in it, whereas an environment impact assessment for planning is required for installations with over 85,000 broilers or 60,000 hens. Based on animal health records it was estimated that there were 16 million birds in Herefordshire, although the Environment Agency (EA) put the figure as high as 16.8 million. The Environment Agency figures do not include any flocks under 40,000 birds and there are very few of these in the county.

1.5 At a meeting on 1st March 2022, Cllr Peter Jinman, drawing on his extensive veterinary and agricultural knowledge and experience, was able to talk to the group about zoonotic health, as well as the legislation and industry self-regulation in place to protect the animals, the environment, workers and the public.
A senior planning officer explained to the group that the purpose of an emerging Supplementary Planning Document (SPD) was to focus on the phosphate issues arising from agriculture in the River Wye and Lugg catchment. It was also to complement the work Herefordshire Council had done in terms of housing development and having a phosphate calculator. The planning team worked with Public Health, the NHS and the One Public Estate to get as many inputs as possible. Planners envisaged that health will be an embedded thread throughout the Local Plan 2021-2041 as it would touch on so many areas in terms of how places are designed, opportunities to walk and cycle, access to open space as well as infrastructure.

A representative of the National Farmers' Union (NFU) echoed concerns the group had voiced about staffing levels at the Environment Agency (EA), but confirmed additional recruitment was underway.

The representative also informed the group that Avara (Herefordshire's largest poultry producer) had stated its wish to be part of the solution when looking at disposal of manure and the NFU recognized that there was definitely the want and the will by the farmers of Herefordshire to look at ways to address this and find a solution. With the poultry litter/manure itself they were looking at incineration, anaerobic digestion and Bokashi (anaerobic compost) for dealing with much of the derived waste product, rather than spreading it to land.

1.6 During a meeting on 21st March 2022 the group received responses to questions (*Appendix 3 and 4*) sent out to the Environment Agency by an officer. It was noted that there are 78 permitted installations in Herefordshire, but not all are operational or even built at the moment. They are supposed to be inspected once every three years, but this had not happened recently due to avian flu, Covid and resourcing problems. There were only 13 inspections in the last year and the Environment Agency confirmed that it had served no enforcement notices on these units. This could suggest the units are very compliant or alternatively that they are simply not being regulated to the level required.

When questioned on the estimated annual amount of manure (plus litter) being produced in the county, the Agricultural Director of Avara Foods Ltd felt that 120,000

tonnes was a reasonable ball park figure. Regarding waste (comprised of chicken litter, manure and urine) management, officers advised that there is not a requirement to state exactly where it is being spread. The only requirement is that there is no contravention of the County's nitrate vulnerable zones (NVZs) and the actual tonnage per acre. Phosphates, are covered under the Farming Rules for Water from 2018, which recommend that every five years, each field should be examined to make sure that it is not being over applied for fertilizing (which can include phosphates). It was acknowledged that both NVZs and the 2018 Rules were enforced by the Environment Agency and not the Council.

The group produced a breakdown of themes based on public feedback about IPUs (*Appendix 5*). Complaints about odour and river quality featured highly and perceived mental wellbeing issues and respiratory problems were the most common health complaints. In some cases, the increased stress experienced by local people related to the fear that an application might be approved in the future, rather than to the presence of an IPU at the present time.

The Agricultural Director of Avara Foods Ltd, joined the meeting and answered questions relating to the company, its relationship with local farmers and how it plans to address the negative image and impact of IPUs. The Agricultural Director assured the group that where possible Avara was doing everything it could to address any problems within its operation and wanted to be part of the solution in terms of adopting best practice going forward.

1.7 A member of the Food Farming and Countryside Commission joined the group meeting on 11th April 2022 to answer questions the group had prepared for her. She explained that a lack of empirical evidence and data made it difficult to establish or disprove a link between IPUs and poor public health. She raised concerns about the lack of updates or revisions made to the Health Protection Agency's (HPA as was) 2006 position statement on intensive farming (*Appendix 6*), especially given the number of IPUs that had been granted permits in the time since it was originally published. However, it was noted that the conclusion of the HPA in 2006 was that '*intensive farms may cause pollution but provided they comply with modern regulatory requirements any pollutants to air, water and land are unlikely to cause serious or lasting ill health in local communities'* (HPA, 2006, p.4.)

1.8 The purpose of the review conducted by the Task and Finish group was to establish whether or not there was a link between human health and wellbeing and intensive poultry units in the county. The group interviewed and questioned various witnesses and agencies, and noted that national and international research has informed the regulatory framework within which the industry is required to operate. Therefore UK regulation of IPUs assumed that a compliant and monitored industry would be unlikely to cause significant health harm at population level, yet there is a lack of local research evidence here. The lack of focused academic research was exacerbated by the almost non-existent local industry monitoring and recording of potentially harmful by-products, waste and contaminants being produced within the units.

There was also a lack of research into the cumulative impact of pollution from IPUs upon human health which the group felt important given the high numbers of IPU installations with the county. As the legislation did not require monitoring of pollutants from the IPU extract vents, this made it difficult to gain a clear picture of what was really going on. Over the course of the review, it became clear that IPUs can produce considerable volumes of ammonia and particulates. Both of these can impact adversely on human health, however, in order to establish or disprove whether or not this farming style and local IPUs have an adverse impact on human health it would be necessary to conduct potentially costly, long-term research and monitoring of

units to produce empirical data that was based on more than just anecdotal evidence.

1.9 Ultimately, the group found no evidence of correlation between the health of people locally and the ammonia, particulates and other matter released by IPUs. The Environment Agency does not require IPUs permitted by themselves to monitor any of these releases. So there is no individual or cumulative data on emissions from IPUs.

The group also heard that it would be extremely challenging to find health links to IPU emissions in a small rural area with a widely dispersed population, especially where some individuals are more susceptible than others and much of the population could have been transient over the period studied.

However, it is apparent that IPUs do regularly release materials through their vents that are known to be hazardous to human health, arguably the most concerning of these being particulate matter under the size of 2.5 microns/m^3 (known as $PM_{2.5}$). Local authorities are required to review and assess air quality from IPUs by using a government produced screening tool, to model the impact of particulate matter upon the nearest housing receptors. This is because there is usually no real data to assess.

It is well documented that particulates are detrimental to human health when inhaled. These tiny particles (PM_{10} and $PM_{2.5)}$ carry on air currents for significant distances. Air pollution is known to be a major cause of death worldwide with maximum exposure levels set by the government based on EU directives in the 1990s.

1.9.1 In the area of water quality, the work of volunteer citizen scientists (with citizen science being public participation in scientific research) during the last few years, has ensured that there is now much more information in the public domain relating to IPUs in both Herefordshire and other counties, spurred on by recent algal bloom events nationwide. It is, perhaps, surprising in this modern age of data availability that much of this information was not available until undertaken by volunteers.

It is generally accepted that the heavier the burden of pollutants, the more likely it is to have an impact. It would follow that the significant scale of IPU operations locally would increase the impacts that they will have on human health, though in the case of PM_{10} and $PM_{2.5}$ (which can be airborne for a long time), that may be on humans many miles from the county. This will, of course, be difficult to establish given the many variables involved.

1.9.2 It is widely accepted that ammonia is hazardous to human health. Poor litter and manure management increases the emissions, but even a well-managed facility will release significant quantities of ammonia. However, the group heard that the population potentially most at risk to ammonia would be IPU employees, as dispersion and dilution would significantly reduce the risk for more distant receptors. This could account for why most planning mitigation for ammonia pollution relates to the protection of the natural environment rather than to human health.

The responses the group received directly from residents indicate that IPUs are a mental health stressor for a significant number of people in a number of different ways. Their effects are more pronounced on their immediate neighbours, or those downwind of one of more IPUs (*Appendix 5*).

The handling of the manure that is necessarily generated by IPUs also can have health impacts. Odour, especially when cleaning out the units every seven weeks or spreading on agricultural land, has an impact on people's wellbeing and ability to

enjoy time outside. The impact of manure run off on the state of the county's rivers is a stressor for many people, as demonstrated by the data received from residents in response to the group's call for residents to write in about their own personal impacts from IPUs.

The rivers are protected by the Environment Agency and Natural England in order to keep them at the highest ecological quality permissible. Instead it is now widely agreed by experts that many of the iconic species for whom the river is home are increasingly unable to live and reproduce there. This is mostly because of the elevated level of phosphates from both human sewage and agriculture, which in turn causes algal blooms that then impede light into the water, collapsing the local natural fauna and therefore habitats here. The impoverishment of a rich natural environment is distressing to many – and threatens the livelihoods of those who rely on enjoyment of the river or who seek a living from it, such as tourism and angling. Anxiety about climate change, the environment and loss of biodiversity are increasingly common, especially among the young. The trend is likely to increase as effects of climate change accelerate, although the science behind this is not yet fully understood.

1.9.3 The failure at a national level to allow the cumulative impact of IPUs to be taken into account when seeking individual permit applications from the Environment Agency has led to an exponential increase in IPUs countywide and across the region. This was compounded by planning authorities only recently requesting cumulative impact studies to support environmental impact assessments. However, this work is largely undertaken by just a small handful of consultants who use modelled data which the planning authorities then have to rely upon in the absence of any defendable evidence to the contrary – invariably these assessments have not been found to be a reason for refusal. It is only since Natural England and Herefordshire Council's ecologists have objected to applications in response to Habitat Risk Assessments showing likely phosphate impact upon the Rivers Wye and Lugg, that applications have been refused or have stalled.

The group therefore believes there is a need for a more rigorous regulatory framework to require cumulative impact assessments for IPU permits (and similar facilities) to reduce the burden of pollutants in communal air and a major rewrite on requirements for the management of manure once it leaves the curtilage of an IPU, to halt the destructive impact of phosphates on our rivers.

The group also recommends that regulators ensure that Best Available Technology (BAT) for IPUs is reviewed regularly and that requirements to abate their exhaust emissions is seriously considered as a requirement of all permit variations and that these should then be continuously monitored to ensure there is a reduction in airborne pollutants known to be hazardous to human health.

1.10 Following the presentations, discussions and questioning of witnesses the group produced recommendations on the following topics:

1. Promotion of public engagement and awareness
2. Joint working with partners and external agencies
3. Planning and permit issuing
4. Inspection, regulation and monitoring
5. Independent research
6. Mental health awareness
7. Publicising the report

2. Composition of the Task and Finish group

2.1 Members of the Task and Finish group were:

Cllr Felicity Norman (Chairperson)
Cllr Trish Marsh
Cllr Nigel Shaw
Cllr David Summers

The group did not include a co-optee.

2.2 Support officers were:

Dr. Frances Howie	Consultant in Public Health
Marc Willimont	Head of Public Protection
Joanna Morley	Democratic Services
Simon Cann	Democratic Services

3 Context

Why did we set up the Task and Finish group?

3.1 The Task and Finish group was convened to:

- To understand relevant health functions of the council and how such health powers could be utilised to address health and wellbeing impacts.
- Consider the potential human health and wellbeing impacts of the intensive poultry industry.
- To review key published literature to assess the strength of existing scientific evidence, the potential health impacts identified by this evidence and where such impacts might occur; and
- To examine whether health data held by or available to Herefordshire Council and key health partners is sufficiently granular to allow for analysis and identification of identified potential impacts in Herefordshire.
- To understand what work might be taking place nationally, or is planned, to gather data and examine health impacts.

What were we looking at?

3.2 The focus of the review was to:

- Receive and consider national and regional air and water pollution statistics as it relates to intensive poultry farming.
- Receive available details on environmental impact of intensive poultry in Herefordshire, and consequent impact on human health.
- Receive and consider pathways to improvement of intensive poultry farming methods to help mitigate health hazards.
- Receive detail of any work that might be taking place or is planned nationally to consider risk and determine any health impacts.
- Receive detail of relevant health powers of the council that could be utilised to address any risk or health impacts identified.

3.2.1 Given the pressures of times and resources, the focus of the review did not:

- Give consideration of the impact of the consumption of intensively reared poultry and poultry products.

- Give consideration of other impacts of intensive poultry units as these are outside the remit of the parent committee.
- Give consideration to hatcheries as they were not as ubiquitous as other types of IPU.

3.3 Through the review the Task and Finish group sought to:

- Establish the scale of the intensive poultry industry in the county.
- Gather the experience of health and wellbeing impacts on Herefordshire residents.
- Gain an understanding of the current published evidence on the potential health impacts of the industry; and
- Gain an understanding of the ability to identify such impacts in available data for Herefordshire.
- Establish communication with government and regulatory agencies in respect of ongoing or planned studies and regulatory responses in respect of health impacts.
- Gain an understanding of the health functions and powers of Herefordshire Council in respect of the issue and possible way that Herefordshire Council can further address health issues raised.

Who did we speak to?

3.4 Between February 2022 – April 2022, the group convened eight meetings and engaged the following officers and witnesses:

Organisation	**Officer/Spokesperson**
Herefordshire Council	– Kelly Gibbons, Development Manager (Planning)
Food, Farming and Countryside Commission (FFCC)	– Dr Alison Caffyn, PhD
Herefordshire Council	– Rebecca Jenman Principal Planning Officer
Herefordshire Council	– Angela Newey, Senior Planning Officer (Policy)
Avara Foods Ltd	– John Reed, Agricultural Director
Environment Agency	– Replies to FOI email, email correspondence with Environment Agency officers.
Herefordshire Council	– Cllr Peter Jinman: OBE, BVetMed, Dip Arb, FCIArb MRCVS, FRAgS
Local Residents	– Resident Feedback from Online invitation to comment
Welsh Water	– Via email
National Farmers' Union (NFU)	– Georgie Hyde

What did we ask?

3.5 The group focused on the following questions:

- What is known about the impacts of ammonia, nitrogen deposition, phosphates and particulate matter from intensive poultry on human health?
- What is known about any consequent deterioration of rural health and living conditions?
- What considerations of risk of avian influenza should form part of the review?
- What national work is ongoing or planned?
- What are the relevant health functions and powers of the council in respect of the issue?
- What we sought to establish through the consultation?

From our research and talking to officers and witnesses to what extent did we fulfil the aims of the Task and Finish group contained in the terms of reference?

3.6 To assess the outcomes, it was agreed that the final report would examine whether the Task and Finish group had achieved the objectives contained in its terms of reference. An assessment against the objectives is provided below:

i) Receive and consider national and regional air and water pollution statistics as it relates to intensive poultry farming.

Outcome – The group found that, due to the absence of any permit requirement to monitor emissions to air and water from the IPUs and the manure arising from it, there was little empirical research or statistical data available that could demonstrate a clear causative link between air and water pollution and intensive poultry farming.

ii) Receive available details on environmental impact of intensive poultry in Herefordshire and its consequent impact on human health.

Outcome – The group discovered that there was very little research or empirical data available to demonstrate what kind of environmental impact intensive poultry farming in Herefordshire was having. Research pieces carried out by Emma Tegg and Dr. Alison Caffyn drew on the evidence of experts by experience, but did not set out to demonstrate causation.

iii) Receive and consider pathways to improvement of intensive poultry farming methods to help mitigate health hazards.

Outcome – The main concern raised by the National Farmers' Union representative was the farming community's inability to invest in new units due to concerns over phosphate impact on rivers. However, there was a willingness to invest in ammonia scrubbing systems to mitigate planning constraints in response to objections from Natural England on ammonia impact to sensitive ecosystems.

The group were informed that that there was also active ongoing consideration by Avara for alternative ways in which poultry litter could be handled and disposed of, including centralised plants for incineration, pyrolysis or anaerobic digestion which would alleviate the impact of manure upon the aquatic environment and therefore overcome planning concerns.

The group were told by an officer that there are three planning applications not yet determined relating to existing units, where they already have woodchip boilers to generate heat. The proposal was to switch the boilers for larger scale incineration plants, which would create all the energy for the units and would dispose of almost 90% of all the manure arising from these units. If there are no emission problems from particulates, then this could be a potentially positive development. Since the group heard of these applications, it can be reported that they were all granted planning consent in late April 2022 (planning ref nos. 213072, 213073 & 213074), following no objections being raised by neither the Environment Agency nor from Natural England.

As mentioned earlier in this report, Avara had been looking into such initiatives and it was made clear that the progress of these applications were therefore being closely followed by Avara. This seems to be because Avara saw them as a potential initiative which could be expanded upon further across the County to reduce manure application upon the fields, provided planning approval were given of course – which they have. The group was therefore interested to see how this might progress and

whether this would have a positive impact upon the water quality of the county's rivers.

iv) Receive detail of any work that might be taking place or is planned nationally to consider risk and determine any health impacts.

Outcome – Amid growing public concern regarding the perceived impact of intensive poultry farming on the environment and rivers, the industry is looking for solutions to some of the problems inherent in this style of farming, especially manure management. The Task and Finish group is also recommending consideration be given to working with the UK Health Security Agency and other public health bodies to facilitate and possibly fund research into the health and environmental impacts of intensive poultry farming and units.

v) Receive detail of relevant health powers of Herefordshire Council that could be utilised to address any risk or health impacts identified.

Outcome – Currently Herefordshire Council's health powers to address risk or health impacts are limited although it has a duty under the Health and Social Care Act 2012 to produce a Joint Strategic Needs Assessment and to improve the health of its local population.

The group had not found any requirement for operators of any permitted installation to physically monitor any particulate matter, so there would not be any environmental monitoring carried out for the Environment Agency nor data to consider.

However, for those units under 40,000 birds which do not require an environmental permit, Herefordshire Council does have the power to investigate (and if necessary abate) any nuisance arising from odour, flies or dust from an IPU. That said, because of the smaller scale of such installations, complaints were uncommon and regulatory intervention rarely required beyond informal warnings given.

Likewise, the local authority also has the power to investigate (and if necessary abate) any nuisance arising from odour arising from the application of manure to fields or the storage (tumping) of it. However, even when complaints are received by the environmental health service in the periods of spring and autumn when manure is generally applied, the officers invariably find that the Defra approved code of practice is being followed and the complainants are therefore advised that there is no regulatory intervention possible. Manure application is an inherently odorous process that lasts only a few days twice a year and the approved code of practice accepts this, provided the best practical means are followed to minimise the impact.

By far, the local authority's greatest power to address any risk or health impacts from IPUs is through the planning process.

Firstly, Herefordshire Council has an obligation to have a local plan (Core Strategy) which should address agricultural development, including intensive farming. However, such plans have to be in accordance with the National Planning Policy Framework (NPPF), which is why Herefordshire's current Core Strategy cannot (and therefore does not) prohibit IPUs, provided there are no material planning considerations which, on balance, would lead to their refusal. The existing Core Strategy is currently being reviewed. In the meantime a supplementary planning document (SPD) is also being drafted to provide better policy assistance to the planning service on IPUs and other agricultural developments that may have a detrimental impact upon the environment, particularly our rivers.

Secondly, Herefordshire Council also has an obligation to determine any planning applications received for any IPU or other intensive unit. Again such applications have to be determined in accordance with policy, such as the Core Strategy and any Neighbourhood Development Plan for that area. Great weight also has to be applied to any consultation responses received, especially those from statutory bodies such as the Environment Agency and Natural England. Applications for IPUs within the Wye or Lugg catchments are usually attracting negative comments from Natural England about their impact to these catchments and as a consequence their likelihood of approval is dependent upon the applicant mitigating this impact, presumably by disposing of the manure outside of the catchment.

Under the Environmental Act 1995, Herefordshire Council also has an obligation to review and assess local air quality, including particulate matter. There are many different sources, one being agriculture, but particulate matter also comes from diesel emissions, harvesting, domestic heating and construction, etc.

When there is a planning application for an IPU there are various air quality screening methods that the environmental health service has to undertake, but to date these screening exercises have not led to an objection about an IPU application, due their remote locations. Likewise there has been no declaration of an air quality management area in the vicinity of an IPU. This is because, by their very nature, IPUs are located several hundred metres away from the nearest housing receptors.

4. Summary of our findings

1. Promotion of public engagement and awareness
2. Joint working with partners and external agencies
3. Planning and permit issuing
4. Inspection, regulation and monitoring
5. Independent research
6. Mental health awareness
7. Publicising the report

4.1 Promotion of public engagement and awareness

At the outset of this review the group invited members of the public to provide (via email) their thoughts, opinions and experiences on the impact IPUs have had on the health and wellbeing of: them, their families, their businesses and the wider community. One common response was that members of the public were not aware of how (or if) they could make complaints about noise, odour, traffic problems and other anxiety-inducing IPU related issues. Additionally those who had made historic complaints had rarely received any kind of acknowledgement or feedback in relation to their comments and were left with a sense of frustration, despair and helplessness (which gave rise to poor mental health issues). It was felt that by better publicising the available channels of complaint (such as the Environment Agency's hotline for such issues as poor manure management) Herefordshire Council and other agencies could generate more feedback and gain greater insight into the areas causing the public most distress; this could also contribute to targeted action by the regulators. The group felt that Talk Community might be able to provide a platform to disseminate, collate and report both positive and negative factual information about the intensive poultry farming industry.

Finally, the idea of using Community wellbeing surveys as a means of obtaining more opinion on IPUs and giving people an opportunity to voice their frustrations, concerns and fears about the sites was proposed as another means for allowing peoples' voices to be heard.

4.2 Joint working with partners and external agencies

Over the course of the review, representatives from Avara Food Ltd, the National Farmers' Union and the Environment Agency all stated that they were aware of negative public perception of IPUs and intensive farming and were keen to adopt a proactive approach to addressing common issues and concerns. The agricultural director of Avara Foods Ltd pointed out that he always kept an eye on social media and the local press to see what people were saying about the company.

Each of these agencies has expressed an interest in being part of the solution in relation to environmental damage and adverse health impacts on the public and it was felt that this might present an opportunity to arrange and facilitate more regular engagement with representatives from these agencies, through council committee activity. It was suggested that working more closely with the public via services such as Talk Community would also benefit the wider community.

The group became aware that, due to the active interest in addressing the state of the rivers across many areas of Herefordshire, there was a possibility that they might unwittingly be duplicating work that was already being carried out by other parts of Herefordshire Council. It was therefore proposed that the Adult and wellbeing scrutiny committee should ensure that any research gathered and recommendations made by the Task and Finish group would be pooled together with that of any other Herefordshire Council committees or commissions working in similar areas.

4.3 Planning and permit issuing

During discussions relating to the Environment Agency and the issuing of permits to IPUs, officers were uncertain as to whether or not funds collected by the Environment Agency from the issuing of permits were being reinvested in a way that would ensure site monitoring standards remained robust. However an FOI response (*Appendix 3b*) from the West Midlands Environment Agency shed more light on funding and reinvestment. It was also noted that separating IPU permits from other permitting and planning activity being carried out by a local authority was of little/no benefit to the community and was potentially damaging. The group felt that the issuing of IPU permits might be better handled by local authorities, however it acknowledged that enabling this shift or responsibility would not be a simple task and would likely require Defra and possibly even parliamentary intervention to implement a change in the permitting regulations to transfer IPUs from the category A1 to A2 local authority IPPC permits. It would also require the reallocation of the annual subsistence funding for IPU permits to be diverted to local authorities in order to find their regulation.

During one meeting a planning officer explained that there was a desire to include and consult public health bodies in relation to the drafting of Supplementary Planning Documents. This was something that was welcomed by the group members, who were keen to make sure this becomes a norm going forward. Group members felt that all planning applications should be screened for suitability for full health impact assessments and these should take into account any likely health impact from the proposed development. They must also consider the cumulative impact of the increasing number of intensive poultry farms in the area.

The group discussed and were alarmed by the stark difference between the way human sewage and agricultural manure is treated. It was noted that all there is in place to control the use of manure in agriculture are the Farming Rules for Water, enacted by Defra in 2018. The laws underlying this are set out in the Reduction and Prevention of Agricultural Diffuse Pollution Regulation 2018. These might well be helpful, but since they were enacted, not one single prosecution for breach of these

rules has been brought in England, despite increasing levels of phosphates in rivers and the effects on watercourses.

4.4 Inspection, regulation and monitoring

The group noted that farming in general and intensive poultry farming are not part of small cottage industry, but are instead operating within a highly sophisticated, technology-driven, multi-billion pound sector. This makes the relatively low level of emission monitoring, data logging and record keeping carried out in these sites somewhat puzzling. The group felt it would be helpful to obtain answers from the Environment Agency about how/if the money from permit issuing is being used to fund regular inspections and check expected standards within the industry are being adhered to. The group also felt that it was time the industry took emission monitoring more seriously and that robust legislation and regulations should be put in place at a national level; this would offer greater protection for the environment and workers within the industry.

It is vital that water and air quality is regularly monitored in Herefordshire to gain an understanding of the current environmental burden of existing intensive poultry farms and evidence-based mitigation measures must be adopted. It was unfortunate that due to resourcing issues the Environment Agency was not able to provide a representative to talk with the Task and Finish group directly about the groups concerns relating to water monitoring standards.

4.5 Independent research

Perhaps the greatest problem encountered by the group during the course of the review, was the lack of independent (or indeed any) empirical data and research that had been conducted into the impact of intensive poultry farming on the health and wellbeing of the public at local level. While the adverse impact of many of the by-products of intensive farming on human health and wellbeing are well documented, there appears to be little research that establishes or disproves a link between the units and poor health. The group was mindful of the fact that correlation does not imply causation. One suggestion was that Herefordshire Council together with other interested parties could investigate the feasibility and viability of conducting tests that could establish or disprove that link. Such research would, no doubt, require significant funding and require long term commitment (which would probably be best suited to UKHSA). Without data to back up anecdotal evidence then it will remain difficult to address some of the less desirable impacts of the industry.

It was noted that since the publication of the 2006 position statement on intensive farming, the Health Protection Agency, as was, has undergone a variety of transformations and has fragmented into a number of separate bodies. It was felt that given the passage of time and significant number of IPU permits granted in the last 16 years, this would be a good opportunity to push for a review and update of the statement. It would also present an opportunity to work jointly with the three key national public health bodies: UKHSA (UK Health Security Agency), OHID (the Office for Health Improvement and Disparities) and Public Health Wales. Working together it might be possible to identify suitable researchers who could conduct studies with a view to producing empirical data to establish or disprove causation in relation to IPUs and adverse health and wellbeing.

4.6 Mental health awareness

Members of the public were invited by the group to share their opinions and experiences relating to IPUs in the county. Many of the responses made reference to adverse mental health issues, including stress and anxiety that were caused by

factors such as smell, noise and the perception of pollution. The feedback from residents, who are arguably experts by experience, showed that many people were profoundly affected by IPUs in a wide variety of ways. The issues raised in the 64 responses are highlighted in Appendix 5. However, this chart cannot accurately portray the very strong feelings and distress caused to many of those who wrote in requesting anonymity.

- A significant number of respondents were distressed by issues related to animal welfare
- Over half were distressed by the pollution of local rivers and the impending loss of an ecosystem
- Odour, especially during the clean out after each consignment of birds has been moved on, was so strong, that it constrained the ability of many respondents to enjoy their gardens, or open their windows freely
- Others were stressed by finding their businesses threatened by issues including odour and the unsightly matter covering the river beds.

The group felt that it was important these themes and complaints were highlighted to primary care services in order to raise awareness of this possible cause of mental ill-health and anxiety.

4.7 Publicising the report

The group was concerned that reports can, on occasion, be filed away upon completion and that recommendations within them are not always acted on. Given the public participation in providing input for the report and the alarming number of reference to mental health issues, it was felt that the report should be published in a prominent position on Herefordshire Council's website to demonstrate that people are being listened to and action is being taken.

5 Summary of Recommendations

From its findings, the Task and Finish group makes the following seven recommendations to the executive and scrutiny committee and ask that they are given appropriate consideration:

5.1 Promotion of Public Engagement and Awareness

That the executive:

- **Undertakes a review of the accessibility of Council information to improve clarity and awareness around how to make a formal complaint regarding Intensive Poultry Farming-related issues.**

- **Engages and works with Talk Community, with a view to:**

    i. **Disseminating information relating to Intensive Poultry Farming via the Talk Community channels.**
    ii. **Producing a fact checking/myth-busting document (*based on Appendix 1 and 2 of this report*) tackling common misconceptions about matters such as anti-microbial resistance and the use of antibiotics in intensive poultry farming.**

- **Includes Intensive poultry farming-related questions in the next Community Wellbeing survey.**

5.2 Joint working with partners and external agencies.

That the Health, Care and Wellbeing Scrutiny Committee:

- **Ensures the findings of the Task and Finish group are used in conjunction with and to support any similar activity or planned activity being carried out by groups/committees already in place within the council.**

- **Encourages regular participation in scrutiny meetings by the public, relevant community-based groups and industry bodies such as the NFU when items relating to Intensive Poultry Farming are being considered.**

5.3 Planning and permit issuing.

That the executive:

- **Ensures that relevant local public health bodies, including the Herefordshire and Worcestershire Integrated Care Board are consulted in all relevant Supplementary Planning Documents (SPD) activity and that where appropriate, advice is sought from the UK Health Security Agency (UKHSA) and the Office for Health Improvement and Disparities (OHID).**

- **Encourages the Strategic Planning team and the Directorate of Public Health at Herefordshire County Council to work together to consider the development of a 'Health Impact in Planning' Supplementary Planning Document, which would provide guidance to: local authority planning officers, applicants, relevant organisations and the wider community on delivering healthier developments. Any such document should include a toolkit for conducting health impact assessment.**

- **Lobbies Defra to transfer responsibility of issuing and regulating IPU permits from the Environmental Agency to local authorities (where there is a high density of IPUs) to facilitate better local control and resource. The income from this permitting regime would fund this for local authorities.**

- **Works with the industry, the National Farmers' Union and the Environment Agency to formulate and encourage the adoption of a countywide waste manure management strategy which is compliant with the Farming Rules for Water 2018.**

5.4 Inspection, regulation and monitoring

That the executive:

- **Lobbies Defra about the need for the Environment Agency to review the 'best available techniques' now available for IPU pollution abatement equipment for both ammonia and particulates, for the permitted sites both within the county and nationally.**

- **Works with the Health and Safety Executive to ensure the health and wellbeing of workers within the industry is being protected.**

- **Works with and encourages local MPs to request accurate monitoring and recording of national quantities of manure and manure management.**

5.5 Independent Research

That the executive:

- **Shares this report with a view to working jointly with local university faculties/dissertation students, the Environment Agency, National Resources Wales, other local authorities with a high density of IPUs and the UKHSA (the latter of which might be best positioned to carry detailed, meaningful research, using patient records, etc.) to conduct empirical research investigating the possible link between IPUs and poor health and wellbeing in humans:**

    i. Via air pollution sampling tests around IPUs and control locations looking for evidence of high levels of respiratory and zoonotic disease near IPU sites.
    ii. Continue to take samples from the county's private water supplies and wells to test for any potential link between poultry manure spreading and pollution.
    iii. Any other relevant research that could establish or disprove causation of adverse health resulting from IPU activity.

- **Suggests that the current elements (specifically the UK Health Security Agency, Office for Health Improvement and Disparities, and Public Health Wales) of what was the Health Protection Agency (HPA) revisit and update the HPA's 2006 position statement on intensive farming and report back on whether the significant number of permits granted for IPUs in the intervening years has had any cumulative adverse impact on public health and wellbeing.**

- **Works jointly with UKHSA and OHID to identify and approach researchers who would like to carry out studies in this area, to form a stakeholder research group.**

5.6 Mental Health Awareness

That the Health, Care and Wellbeing scrutiny committee provides primary care services with a thematic summary of the responses the group received on this subject from the public, highlighting the frequency of people reporting adverse mental health issues (stress, anxiety) resulting from their exposure to smell, noise and perceived pollution from IPUs.

5.7 Publicising the report

That the Health, Care and Wellbeing scrutiny committee request that the report be published under separate cover, to highlight the work that has been undertaken by the group to the local community and members of the public who provided feedback on their personal experiences and agree to revisit this issue in six months' time to get an update on action taken.

APPENDICES

Appendix 1

Overview of the health impacts of intensive poultry farming

Report prepared by the Public Health Department to inform the work of the Task and Finish Group set up by the Adults and Wellbeing Scrutiny Committee (now Health, Care and Wellbeing Scrutiny Committee) to consider The Impact of the Intensive Poultry Industry on Human Health and Wellbeing

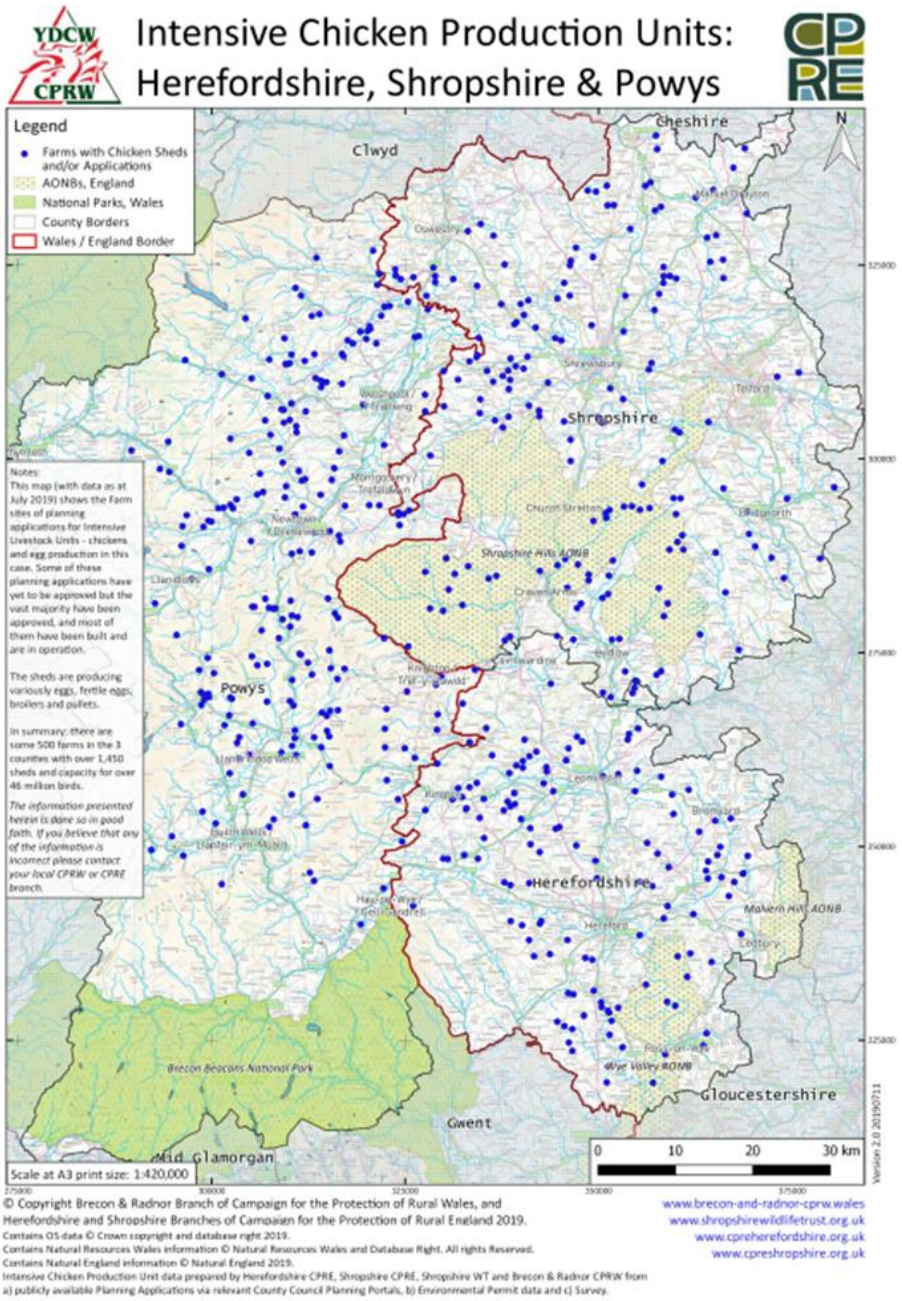
Introduction

This report aims to provide an overview of the most commonly studied health outcomes related to intensive poultry farm exposure. It is not an exhaustive summary, but may be used to inform considerations within future health impact assessments; to supplement current planning procedure policies; and to contribute to the deliberations of the Task and Finish Group in its identification of recommendations.

In the UK demand for chicken and eggs continues to grow. Chicken now comprises 42% of meat consumption and the UK produces over one billion chickens a year. 20-25% of UK meat chickens are raised in Herefordshire (17 million at any one time) and Shropshire (13 million).

Numbers of intensive poultry farms have increased in recent decades and there were 164 successful planning applications for intensive poultry farms in Herefordshire between 2000 and 2020 (Caffyn, 2021).

Figure 1: Locations of intensive poultry farms in Herefordshire, Shropshire and Powys *(Source: Brecon and Radnor branch of Campaign for the Protection of Rural Wales, and Herefordshire and Shropshire Branches of Campaign for the Protection of Rural England, 2019)*



Intensive poultry farming is controlled by the Integrated Pollution Prevention and Control (IPPC) regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. Under the IPPC directive, intensive poultry units (containing over 40,000 birds) must obtain an Environment Agency permit to operate. The Best Available Techniques (BAT) Conclusions document for the Intensive Rearing of poultry or pigs (IRPP) was published in 2017, setting out the standards that permitted farms must meet (Santonja et al., 2017). Despite this regulation, planning applications for new poultry farms have generated controversy in recent years as public concern over environmental and health impacts has grown.

Health impacts of intensive poultry farming

The Health Protection Agency produced a position statement on intensive farming in 2006, concluding that '*intensive farms may cause pollution but provided they comply with modern regulatory requirements any pollutants to air, water and land are unlikely to cause serious or lasting ill health in local communities'* (HPA, 2006, p.4.) However, this position statement has

not been updated since publication and the cumulative health impact of increased numbers of units is under-researched.

The potential physical and mental health impacts of intensive poultry farms are broad and can operate via multiple routes, for example, reduced air quality, water course pollution, noise and odour. The dense housing of poultry may also facilitate the spread of zoonotic diseases and anti-microbial resistance.

1. Air and water pollution

Intensive poultry farming has the potential to release many pollutants into the air and watercourses. At present in the UK, most farmers do not normally monitor emissions to air and water unless specifically required to do so as a result of local complaints (Santonja, 2017). The most commonly cited pollutants are described below, though others, such as phosphates and farming chemicals can also impact on health.

Bioaerosols

Bioaerosols are airborne particles that contain living organisms, fragments, toxins, and waste products. In animal houses, major sources of bioaerosols are animals, their waste, feed and bedding (Wang, 2012). Bioaerosols can stay suspended in the air for prolonged periods and potentially travel long distances from their source. As a result, they may pose health effects to nearby communities. In England permitting arrangements require operators to undertake a site specific bioaerosol risk assessment if an intensive farming operation is within 100 m of a sensitive human receptor (e.g. a residential house or place of work) (Santonja, 2017).

Human exposure to bioaerosols has been associated with a range of acute and chronic adverse health effects and diseases. The most commonly reported are respiratory system problems (e.g. rhinitis, asthma, bronchitis and sinusitis). Other health problems reported include gastro-intestinal issues, fatigue, weakness and headache (Douwes et al., 2003).

A major problem for the study of potential health consequences of agricultural bioaerosol exposure is that proxy measures of exposure (such as distance) are often used and may not be valid. Additionally, the effects of bioaerosols, other pollutants and socio-economic circumstances cannot be readily disentangled. O'Connor et al. (2017) conducted a systematic review of potential health effects associated with living in close proximity to an intensive farm with inconclusive findings. This finding is consistent with local data searches of GP records conducted as part of this review. These, relating to asthma and chronic obstructive pulmonary disease, did not suggest any correlation between changes in incidence of these conditions and increased numbers of intensive farms.

Douglas et al. (2017) conducted a systematic review to evaluate potential health effects associated with bioaerosol emissions from intensive farming. They included occupational studies to investigate the type of health effects reported in those most highly exposed to bioaerosols, to inform their interpretation of community studies.

The majority of included studies (n = 18) were conducted on pig farms. One study was conducted on pig and poultry farms (Radon et al., 2001), another study was conducted on just poultry farms (Donham et al. 2000) and two studies were conducted on pastoral farms (including poultry farms but also cattle, sheep, and goat) (Eduard et al., 2004; Eduard et al., 2009). No consistent differences were observed between pig and poultry farm types.

The studies provided evidence linking occupational bioaerosol exposure to respiratory-tract symptoms. This finding is likely to be impacted by healthy worker bias as those suffering health impacts from workplace exposures are more likely to leave their employment, thereby diluting the association between exposure and respiratory outcomes. Findings from farm workers cannot be used to predict community impact where more vulnerable groups (e.g. older people, and children) reside.

The review showed that endotoxin concentrations inside intensive farms are similar to those levels typically detected at composting facilities. A systematic review by Pearson et al. (2015) provided evidence linking bioaerosol emissions from composting facilities to poor respiratory health in workers and nearby residents. Given that there was only one community-based study that objectively measured bioaerosol concentrations in the review by Douglas et al. (2017), it is not possible to make inferences on the impact of intensive poultry farming based on the findings from composting facilities.

The community studies usually relied upon proxy exposure measures of exposure and reported mixed results in adults, with some studies linking it with adverse self-reported respiratory health and others reporting no effect. Studies with children provided consistent evidence supporting increased self-reported asthma rates among those children living or attending schools located within close vicinity of an intensive farm. Douglas et al. (2017) concluded that further longitudinal research is needed to objectively measure exposure and health outcomes in communities and that this should be used to inform risk assessments around the location of intensive farms.

A similar conclusion was drawn by the Environment Agency (2008) in their Bioaerosol Report. This review identified factors that influence bioaerosol concentrations inside and emitted from building, including:

- Animal housing conditions
- Feed type
- Waste management
- Ventilation type
- Seasonal ventilation changes
- Stock density

The Environment Agency critically reviewed control methods but stated that generic guidance could not be produced because although there is extensive evidence of health impacts for farm workers (and HSE employer guidance is available), there is insufficient evidence to assess the potential for increased risk of respiratory ill health (or other adverse health effect) in surrounding residential areas.

However, the Health Protection Agency (2006) assumed that further data on the impact of intensive farming on local air quality would become available and recommended that these data should inform future decision-making. This has not happened.

Ammonia

Ammonia (NH_3) is a colourless gas which is both naturally occurring and manufactured. The main source of ammonia pollution is agriculture, where it is released from manure and slurry and through the application of fertiliser. Ammonia can have significant effects on both human health and the environment.

Agriculture is the dominant source of ammonia emissions in the UK, with the sector accounting for around 88% of total UK emissions. Poultry farming comprises 15% of agricultural emissions (DEFRA, 2018).The government has agreed to reduce ammonia emissions by 8% in 2020 and 16% in 2030, compared to 2005 levels. The Department for Environment, Food and Rural Affairs (DEFRA) has produced a Code of Good Agricultural Practice (COGAP) for reducing ammonia emissions, outlining practical steps that can be taken around appropriate feeding and manure management (DEFRA, 2018).

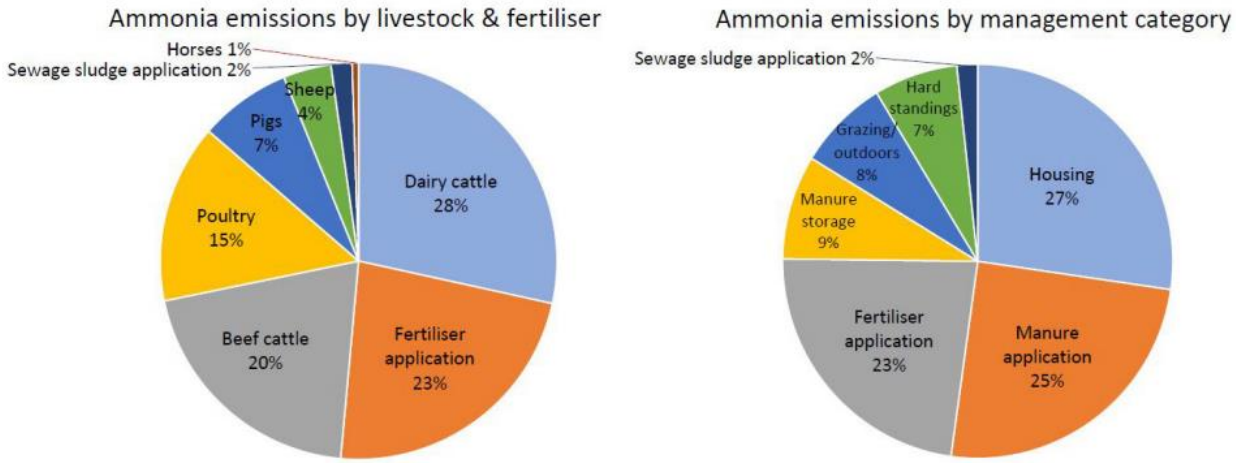


Figure 1: Ammonia emission by livestock and management category *(Source: DEFRA, 2018)*

Ammonia impacts human health directly and indirectly, via its damage to biodiversity. When ammonia emissions combine with pollution from industry and transport, fine particulate matter is formed and can be transported significant distances. (Other sources of particulate matter from intensive poultry farming may include feed delivery, storage and transport, dusty wastes and vehicle movements). When inhaled, particulate matter can contribute to various chronic conditions such as heart attacks, cerebrovascular disease, chronic obstructive pulmonary disease (COPD), asthma and lung cancer. The health effects of inhalable particulate matter are well documented (WHO, 2013). They are due to exposure over both the short term (hours, days) and long term (months, years) and include:

• Respiratory and cardiovascular morbidity, such as asthma, other respiratory symptoms and increased in hospital admissions;

• Mortality from cardiovascular and respiratory diseases and from lung cancer.

Susceptible groups with pre-existing lung or heart disease, as well as elderly people and children, are particularly vulnerable. Exposure to particulate matter affects lung development in children, including reduced lung growth and a deficit in long-term lung function. There is no evidence of a safe level of exposure or a threshold below which no adverse health effects occur. The exposure is ubiquitous and involuntary, increasing the significance of this determinant of health (WHO, 2011).

When deposited on land, ammonia can acidify soils and freshwaters. The extra nitrogen can increase the growth of some species (such as rough grasses and nettles), which out-compete other species (such as lichens, mosses, and herb species), resulting in habitat loss. Agricultural run-off can cause accumulation of nutrients in freshwater sources, the proliferation of algae, loss of oxygen and toxicity to aquatic life.

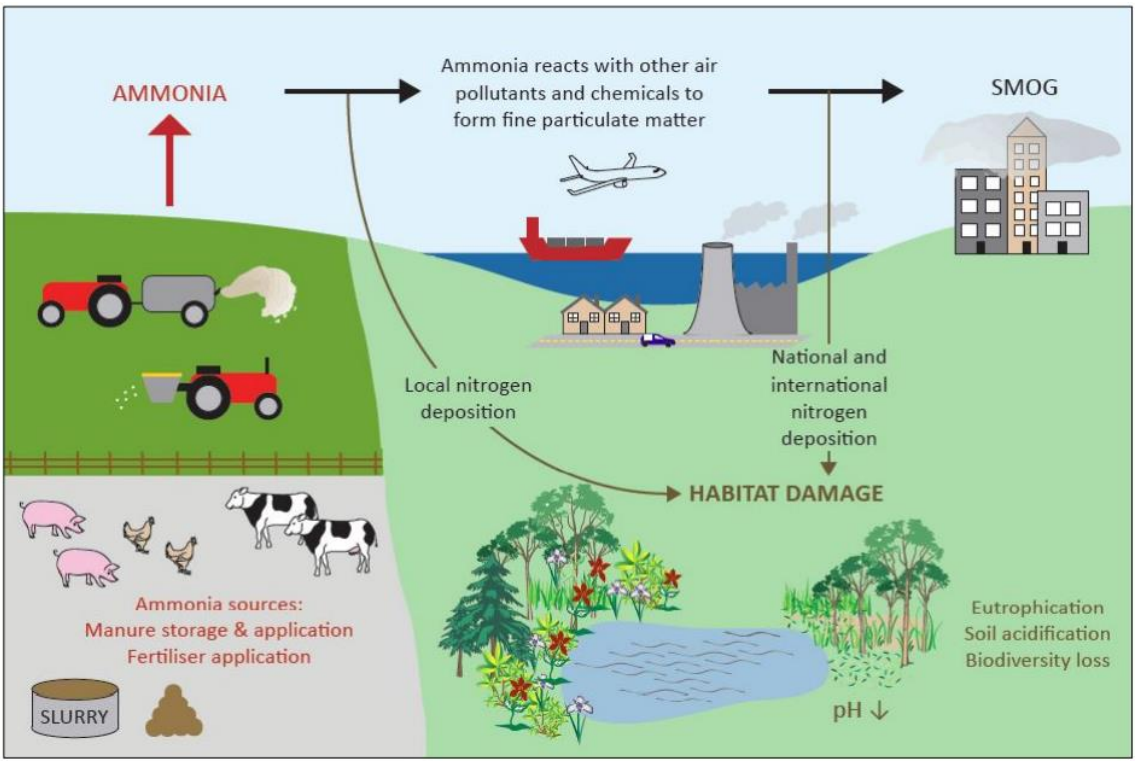


Figure 2. Routes of ammonia pollution from agriculture *(Source: DEFRA, 2018)*

The United Nations Environment Programme, the United Nations Convention on Biological Diversity and the World Health Organization have recognised the fundamental role of biodiversity in human health and wellbeing. The term 'natural capital' is often used to describe elements of the natural environment that provide valuable goods and services to people (see figure 3).

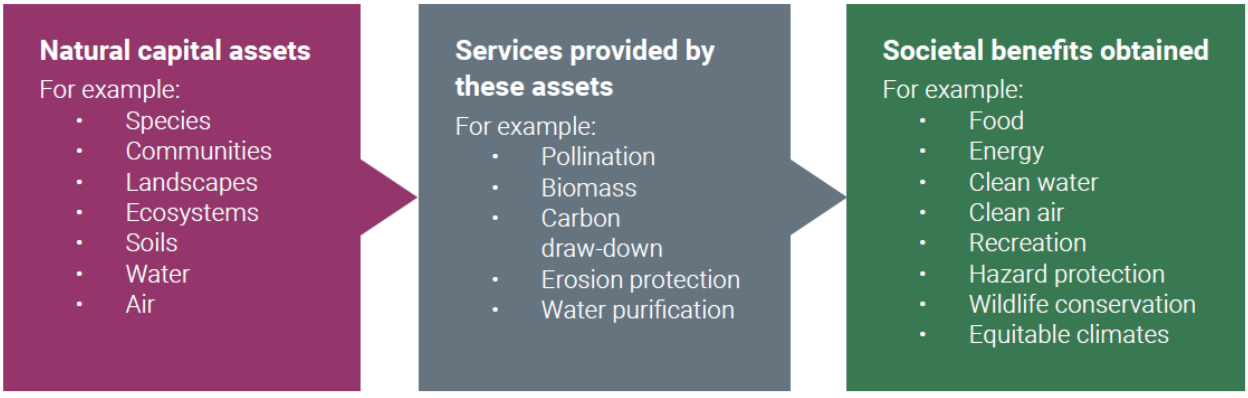


Figure 3: How natural capital contributes to human health *(Source: Guthrie et al. 2018)*

The impacts of biodiversity loss to human health are complex and difficult to quantify, but available evidence suggests that adherence to stringent control measures and local monitoring of air and water quality are necessary.

The importance of regulation and compliance is similarly stressed by the former Health Protection Agency in its conclusion that *'it is unlikely that ammonia emissions from a well-run and regulated farm will be sufficient to cause ill health'* (HPA, 2006, p.2.)

2. Zoonotic pathogens

Campylobacter

It is estimated that there are 700,000 cases and over 100 deaths in the UK each year due to *Campylobacter* infection (CIWF, 2013). Poultry are the main source of *Campylobacter* infection and are estimated to be responsible for up to 80% of cases in the EU. The biggest risk is chicken meat consumption.

A risk factor for intensively farmed poultry is the practice of 'thinning'. At five weeks of age, around 30% of animals are often removed from farm units for slaughter. Infection can be introduced during catching of the birds by people and machines coming in from outside. Acute stress (for example due to catching and transport) can reduce the levels of protective bacteria in the intestines and increase the growth and shedding of *Campylobacter*. The dense living conditions are conducive to rapid spread of the infection (CIWF, 2013).

Chickens reared for meat in intensive farms are often selected to grow quickly. Slower-growing breeds are generally healthier and may be at lower risk of *Campylobacter* infection (Bull, 2008).

Past work has shown that *Campylobacter* control is possible for intensively farmed poultry by strict observance of biosecurity by farm staff (Gibbens, 2001). However, The prevalence of Campylobacter spp. in the fresh chicken at retail in the UK was found to be 56 % in a 2017 survey and 7 % of samples had > 1000 cfu per g chicken skin (defined as highly contaminated chicken) (PHE, 2019).

Avian Influenza

Sometimes referred to as 'bird-flu', this highly contagious viral disease affects the respiratory, digestive and/or nervous system of many species of birds. Avian influenza has the potential to cause rapid and widespread mortality in poultry. Usually, influenza infection in poultry causes mild disease, referred to as low pathogenicity avian influenza (LPAI), but two subtypes (H5 and H7) can mutate to a highly pathogenic form (high pathogenicity avian influenza, HPAI) in poultry. At the time of writing (January 2021), over 70 cases of H5N1 have been detected in the UK this season (DEFRA, 2022)

The UK Health Security Agency (UKHSA) has said that avian influenza is primarily a disease of birds and the risk to the general public's health is very low. However, one human case has been identified in the UK this year (UKHSA, 2021). The Food Standards Agency has said that on the basis of the current scientific evidence, avian influenza poses a very low food safety risk for UK consumers.

Control zones have been established to control the spread of the virus and are centred on the infected premises. DEFRA provides a UK-wide map of active Control Zones. The measures required within control zones include:

- Keeping a logbook of people entering the premises;
- Biosecurity measures on and off the premises; and
- Restrictions on moving eggs, poultry, and other captive birds or mammals within or outside the zone.

Avian viruses are not usually transmitted from poultry to people, but the occurrence seems to be on the increase in line with increasing numbers of reported outbreaks in poultry. Evidence suggests that in intensive poultry farms, factors such as genetic selection for productivity, stress, crowding, lack of sunlight, inadequate ventilation and sanitation are likely

to provide an ideal opportunity for avian flu to spread and mutate, with potential human public health consequences (HSI, 2011).

3. Anti-microbial resistance

Antibiotics are used extensively in intensive poultry farming to prevent infections and promote growth. Wide scale use of antibiotics encourages the development of resistance that can spread to affect humans and animals alike. The close proximity of poultry in intensive farming environments provides ideal conditions for drug-resistant bacteria to be transferred between thousands of animals.

Antibiotic-resistant bacteria of farm-animal origin can pass to humans in a number of ways, principally on food, but also by direct contact and through the environment (e.g. agricultural run-off). Resistant bacteria can and also pass from humans to farm animals. Here they can multiply and acquire additional resistance genes, then pass back to humans.

The resistant farm-animal bacteria can contribute to higher levels of resistance in human infections in two main ways:

- They can directly cause an infection in humans, and this infection will be antibiotic-resistant.

- They can colonise the human gut (and other sites) without causing an infection, and pass on copies of their resistance genes to bacteria already living in the human gut. The bacteria receiving the resistance genes may subsequently cause an infection at a later date (e.g. a urinary-tract infection). In this case, the pathogen will be of human origin, but its resistance will originate from the farm use of antibiotics (O'Neill, 2016).

There is substantial evidence that antimicrobial resistance in foodborne Salmonella and Campylobacter infections in humans are linked to antibiotic (flouroquinolones) use in intensively farmed animals, resulting in increased illness severity and risk of death (WHO, 2011). Evidence is also mounting that a significant proportion of the resistance in *E. coli* causing urinary-tract and blood-poisoning infections in humans is of farm-animal origin (e.g. ASOA, 2014).

The issue of antibiotic use in agriculture and its impact on drug resistance has been recognised by the WHO as part of its Global Action Plan, requiring its member countries to develop National Action Plans to tackle AMR which incorporate considerations of animal usage. It has also been recognised by both the UN's Food and Agriculture Organization (FAO) and the World Organisation for Animal Health (OIE).

The WHO similarly said in its 2011 report on foodborne antibiotic resistance: '*Since this resistance has no ecological, sectoral or geographical borders, its appearance in one sector or country affects resistance in other sectors and countries. National authorities, veterinarians, physicians, patients and farmers all have key roles in preserving the power of antibiotics. The prevention and containment of antibiotic resistance therefore requires addressing all risk factors for the development and spread of antibiotic resistance across the full spectrum of conditions, sectors, settings (from health care to use in food-animal production) and countries'* (WHO, 2011).

4. Additional issues

Caffyn (2021) has conducted social science research within Herefordshire and Shropshire to explore people's concerns about and experiences of intensive poultry farms. Her research methods included interviews with a large number of stakeholders (farmers, planners, environmental agencies, objectors, decision makers and tourism). She also analysed policy and planning application documentation.

Caffyn (2021) found that between 2011 and 2019 there were over 30 planning applications for intensive chicken farms in Herefordshire and Shropshire which were heavily contested. An analysis of three highly contested cases found that the **top** concerns raised by residents were:

- Smell/odour impacts
- Traffic impacts – volume, noise and safety
- Visual impacts on the landscape and views
- Pollution of local rivers
- Impacts on the local tourism economy
- Noise impacts
- Biodiversity impacts

Additional concerns raised were:

- Air pollution and health
- Antimicrobial resistance
- Animal welfare
- Lack of scrutiny/fairness in planning procedures
- Reduced property values

It should be noted that many of these concerns may link to an increase of stress levels for local residents and to an associated deterioration of mental health and well-being. This may apply to both the fear of a successful application and to the experience of living near to a farm. While the mental health and well-being of Herefordshire residents is average or above average compared to the UK as a whole, large numbers (19,300) already live with a common mental health condition (Herefordshire Council, 2022) and the recent Covid-19 pandemic is likely to have had adverse impacts on mental health-and welling across the county (Herefordshire Council, 2021.)

Caffyn (2021) expressed concerns that Environmental Agency permits are never refused and yet farmers are able to use these as 'proof' that the farm will not cause pollution. As intensive poultry farms are defined as agricultural they may avoid policies which would prohibit similar industrial development in green-field sites. Limited monitoring of air and water means that pollution usually can't be traced back to its original source and therefore may not be adequately dealt with.

Summary

This overview summarises some of the most commonly researched elements of intensive poultry farming in relation to their health impacts. Whilst occupational studies clearly demonstrate that intensive poultry farm exposure is harmful to health, further research is required to accurately quantify community health impacts. It is also important to establish whether current mitigation measures are sufficient to protect health in Herefordshire, where there is a very high density of intensive poultry farms. Herefordshire, along with neighbouring Shropshire and Powys have very high numbers of intensive poultry farms in close proximity and the cumulative impacts of the resulting pollutants on health has not been studied.

Social insight work conducted locally indicates that the health impacts most commonly cited in the literature, do not cover a number of concerns raised by local residents. For example, sensory issues such as noise, pollution and unsightliness, which have the potential to detrimentally affect wellbeing. There may also be an effect of these stressors on livelihoods, particularly in the hospitality industry.

Intensively farmed poultry provides an affordable source of protein in the UK. However, the potential health impacts of intensive poultry farming in Herefordshire are broad. Some of these impacts (e.g. those caused by air pollutants) may be restricted to the local community and the workforce. However, the UK-wide consumption of poultry from Herefordshire could affect health on a national level via zoonotic disease. Indeed, there could be global implications for health when the impact of widespread anti-biotic use and emerging resistance is taken into consideration.

This presents an opportunity to protect health in Herefordshire and further afield. It is vital that water and air quality is continuously monitored in Herefordshire to gain an understanding of the current environmental burden of existing intensive poultry farms and evidence-based mitigation measures must be adopted. Thorough health impact assessments should supplement every planning application, and these should take into account both the widely published health determinants and those raised by residents. They must also consider the cumulative impact of the increasing number of intensive poultry farms in the area.

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Appendix 2

Intensive Poultry Farming: Scale of potential health impacts and regulatory oversight for associated health protection functions

Scale of health impact	Source	Potential Impacts	Organisations protecting health	Functions
Individual (occupational)	Farming chemicals Vapours (e.g. ammonia) Bioaerasols Particulate matter Pathogen exposure Ergonomic risks	Respiratory and cardiovascular health Allergies Zoonotic disease Anti-microbial resistance Injury Musculo-skeletal disorders	Health and Safety Executive	Produces guidance for employers
			Employers	Legally obliged to follow guidance in line with the Control of Substances Hazardous to Health Regulations 2002 (COSHH)
Local	Air and water pollution (e.g. ammonia, particulate matter, bio-aerosols, phosphates, farm chemicals) Biodiversity loss Noise Odour Pathogen exposure Inappropriate anti-biotic use	Respiratory and cardiovascular health Zoonotic disease Anti-microbial resistance Reduced income Reduced quality of life	Environment Agency	Regulates intensive poultry farms. Issues permits to farms with >40,000 birds
			Department for the environment, food and rural affairs (DEFRA)	Produces codes of practice for rearing poultry following the 2007 Welfare of Farmed Animals Regulations. Provides guidance on measuring environmental impact locally.
			Local Authority – Environmental Health	Investigates complaints for intensive poultry farms where they are too small for a permit, i.e. farms with < 40,000 birds
			Animal Health team within the Trading Standards Service	Avian influenza controls on behalf of Defra who are the lead agency. This includes avian influenza prevention zones checks.
			Local Authority - Planning	Undertakes environmental impact assessments when determining planning applications where there are > 85,000 broilers or > 60,000 hens.

				Review evidence and engage with a wide range of sources to inform planning application decisions
			Local Authority – Public Health	Provide public health input informing health impact assessments to supplement planning procedures
National	Consumption Pathogen exposure Inappropriate anti-biotic use	Food-borne zoonotic disease (e.g. Campylobacter, Salmonella) Infectious zoonotic disease (e.g. avian flu) Anti-microbial resistance	UK Health Security Agency (UKHSA)	UKHSA has a duty to take such steps as Secretary of State considers appropriate to protect the health of the public in England (Section 2A of the National Health Service Act 2006) Surveillance/monitoring of notifiable diseases and provision of health protection advice
			Food Standards Agency (FSA)	Produces guidance setting out the hygiene controls and regulations that those producing *poultry* for consumption in the UK must adhere to
			Department of Health and Social Care	Produced the UK strategy and action plan to tackle anti-microbial resistance
			Drinking Water Inspectorate (DWI)	Regulation and enforcement of water quality at any water treatment works where there may be contamination of a potable supply from the river Wye's water quality due to pollution from IPUs or spreading of manure.
			Environment Agency (EA)	Regulation and enforcement of any known pollution of a watercourse which may result from a spillage of manure from an IPU or slurry from other livestock installations.

			Department of Farming and Rural Affairs (Defra)	Monitors national avian influenza outbreaks and, working with the APHA, will declare national protection orders and 3km protection zones around known outbreak areas, such as an IPU. Defra and the APHA will then coordinate all on-site culling, cleansing and disposal of the carcases.
Global	Inappropriate anti-biotic use	Anti-microbial resistance		The issue of antibiotic use in agriculture and its impact on drug resistance has been recognised by the WHO as part of its Global Action Plan, requiring its member countries to develop National Action Plans to tackle AMR which incorporate considerations of animal usage. It has also been recognised by both the UN's Food and Agriculture Organization (FAO) and the World Organisation for Animal Health (OIE).

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for people and wildlife

Environment Agency

Dear Mr Willimont,

RE: Request for information under the Freedom of Information Act 2000 (FOIA) / Environmental Information Regulations 2004 (EIR)

Thank you for your request for information sent to Grace Wight, relating to the Intensive Poultry Units (IPUs) received on 01 March 2022.

We respond to requests for information that we hold under the Freedom of Information Act 2000 (FoIA) and the associated Environmental Information Regulations 2004 (EIR).

I understand the information requested will help inform a meeting due to take place on 21 March 2022, so we have attempted to provide you with as much information as possible. We have indicated where we can provide you with more information, so please let us know if it is required.

Information we hold

- *How many permitted IPU installations are there in Herefordshire?*

There are 78 permitted poultry sites in Herefordshire. Please note some of these sites will be pre-operational / not built.

Further details of the installations can be found at: Environmental Permitting Regulations – Installations (data.gov.uk), although this does not give the number of birds, however does give addresses of IPU installations.

- *How many birds in total are in these IPU installations (we know there are 16m at any one time in the county from Animal Health records but many will be in IPUs < 40k birds)?*

We have estimated this to be approximately 16,791,506. This is a best estimate that we can provide before 21 March 2022, as some sites will:

- • have varied their permits to increase numbers
- • be pre operational or not built yet and/or,
- • not necessarily be stocking at their permitted maximum.

If you would like a more accurate figure please let us know as we will need more time to provide this.

- How many inspections of these IPU premises have there been in 2021/22 so far and are all due to be inspected?

The number of EA inspections in Herefordshire during 2021/22 to date is 13. This is a combination of on-site and remote inspections. Additional inspections will have also been carried out by EA trained Certification Bodies at sites that operate under the assurance scheme. Certification Bodies are commercial companies that carry out assurance scheme assessments, such as those under Red Tractor Assurance. Please let us know if you require the number of inspections carried out by our partners.

Sites are programmed to be inspected by EA officers every 3 years. Sites in the Assurance Scheme are inspected by their appointed certification body annually, with an inspection scheduled by the EA every third year. During 2021/22 our inspections have been compromised by COVID, Avian Influenza and lack of resources.

- Do the EA permitting officers liaise with those concerned with agricultural compliance and therefore the application of manure to land?

EA permitting officers are not required to liaise with agricultural officers regarding manure application. A Manure Management Plan is only required where manure is applied to operator owned / controlled land.

There is an ongoing Poultry Litter Project which is looking at the application of poultry manures to land in the Wye catchment. As part of this project, permitted poultry sites are being contacted and asked to supply information regarding manure production, records of imported and exported manures, nutrient planning and application and soil test results.

Please refer to Open Government Licence which explains the permitted use of this information.

Information Withheld

We are unable to provide you with all of the following information:
- What types of enforcement action have been taken against any permitted IPU in the year 2021/22 so far?

- Presuming enforcement action has been taken, how many enforcement notices have been served?

We can confirm that no notices have been served to date. However there is ongoing enforcement action at one site in Herefordshire. We are unable to discuss this further until this has concluded.

As a public body we are required under the Freedom of Information Act/Environmental Information Regulations to give reasons for this refusal. We also need to show that we have considered the Public Interest balance between refusal and disclosure. You can find the details in the Appendix attached.

Reduce the request

We want to be as open as possible in answering requests, and to help people obtain the information they are looking for. Unfortunately, the amount of information you have requested below is very substantial.

- How many complaints concerning these IPU premises have there been in 2021/22 so far?

Gathering it together would therefore be likely to involve a significant cost and diversion of resources from our other work.

In these situations the legislation allows us to consider refusing requests as ‘manifestly unreasonable’ under EIR and/or ‘above the appropriate limit’ under FOIA. We estimate that it would take 78 hours to comply with your request in its current form. This is based on officer’s time required to search and retrieve the complaint data for each IPU site in Herefordshire.

In order to help us bring your request within reasonable bounds, would you be able to reduce the scope of your request to focus on the precise information that you are seeking e.g.

• specific IPU sites,
• search radius for each site (e.g. 0.5km),

We wanted to give you an opportunity to reconsider your request and describe more precisely the information you wish to have. If you are unable to reduce the request, then we will have to consider it in accordance with our obligations under FOI and EIR.

As we are required to respond to your request by 30 March 2022, we would be grateful to hear from you as soon as possible as to how we should proceed.

Rights of Appeal

If you are not satisfied you can contact us within 2 calendar months to ask for our decision to be reviewed. We shall review our response to your request and give you our decision in writing within 40 working days.
If you are still not satisfied following this, you can raise a concern with the Information Commissioner, who is the statutory regulator for Freedom of Information and the Environmental Information Regulations. The contact details are:

Information Commissioner’s Office
Wycliffe House
Water Lane
Wilmslow
Cheshire
SK9 5AF
Tel: 0303 123 1113
Website: http://ico.org.uk

Yours sincerely

For further information please contact the Customers & Engagement team on
Tel. 02084 747856

Direct e-mail:- enquiries_westmids@environment-agency.gov.uk

Appendix

Relevant exceptions
The exceptions that apply to the withheld information is:
EIR Regulation 12(5)(b) applies because disclosure would adversely affect the course of justice, the ability of a person to receive a fair trial or the ability of a public authority to conduct an inquiry of a criminal or disciplinary nature, specifically with this information there is a need to protect confidential information linked to ongoing enforcement action.

The Public Interest Test

We have weighed the public interest factors in favour of maintaining the exceptions and find that they outweigh the public interest factors in disclosing the information. In carrying out the public interest test we have considered:

1. Factors in favour of releasing the information:

The Environment Agency would only withhold information if it is sure that disclosure would cause substantial harm. In this case, we consider that release of the information would more likely than not adversely affect the course of justice and the ability of a person to have a fair trial for the reasons set out below.

We believe that there is a general need to promote accountability and transparency in the way we regulate sites and how decisions are taken with regards to enforcement action. This is so that the public can assess how we are taking decisions that affect them and that decision-making and the spending of public money is done in an open manner. However, as enforcement action has commenced there is a strong public interest in withholding information that could prejudice potential proceedings in the future. Evidence should not be disclosed to the world and large and released in accordance with the criminal procedural rules of disclosure.

We acknowledge there has been a high level of public participation in the debate regarding the impact IPU sites are having on the River Wye. Release of this information would increase knowledge about environmental incidents and help to deter/prevent commission of offences. This in turn helps to maintain a sustainable environment which is in the public interest.

2. Factors in favour of withholding the information:

Disclosure of the information requested, outside any legal proceedings, would adversely affect the ability of the suspect to receive a fair trial. Information that is likely to be relied upon as evidence should not be disclosed to the world at large under the freedom of information legislation as a defendant in legal proceedings could seek to have those proceedings stayed under the abuse of process argument on the basis that it would be impossible for them to have a fair trial with the evidence already being in the public domain.

There is a strong public interest in withholding information that would compromise our ability to take enforcement action. Releasing the information at this stage may attract unwarranted scrutiny, which would impede our ability to take enforcement action effectively, without improper outside influence.

The withheld information is not already public. Where an investigation reveals that there have been breaches in statute or regulations, there is a public interest in bringing a prosecution and not disclosing evidence into the public domain whilst criminal proceedings are ongoing, as this could prejudice the course of justice.

Information which is collected for the sole purpose of an investigation by a regulator should not be made available to the world at large where there is a process for disclosure of information by way of the court proceedings. Placing this information in the public domain outside the legal process is likely to be unfair and undermine any proceedings.

As indicated, upon assessing the factors in the public interest test, we have assessed that in relation to the exception relating to an adverse effect on the course of justice, we find that the factors in favour of withholding information outweigh the public interest factors in disclosing information.

E&B National and Environment Management - Manure management

1 Income streams: in order to get some idea of what enforcement could be reasonably expected with the income received please provide:

- Income from IPU permits: initial and annual.

In the case of intensive pig and poultry farms (IPU's as you have referred to them) the income is primarily derived from operator application fees and annual subsistence charges for their Environmental Permitting Regulations (EPR) permit. These have been set and agreed with HM Government. The application fee for an intensive farming permit is currently set at a minimum of £8,020 (there are additional charges for site specific assessments). The annual subsistence fee is currently £2386, or £1444 for a farm that's a member of the Environment Agency's Pig and Poultry Assurance Scheme. The application fee pays for our National Permitting Service to process and assess an application prior to issue and the subsistence fee pays for the subsequent regulation.

- Best estimate on what the EA spend on processing, regulating and enforcing IPU permits to protect the environment.

The subsistence fee is allocated to cover both support (business planning, health and safety, legal services etc.) and direct services. Support services provide benefits to our entire organisation and therefore all funding streams contribute. In the case of the West Midlands area team, they receive c.£150k per annum from this income for direct regulation of the EPR pig and poultry sector. However, more recently we have successfully made bids to Government for additional funding to support agricultural work because the impacts of the sector are significant. The West Midlands has been recognised as a priority area and part of this Defra allocation, approx. £20,000 is being used to fund 0.6 FTE, to investigate the life cycle of poultry manure from farms on the Wye, from auditing the farm of production to the place of spreading/disposal. This funding began last year and will be in place for the next 3 years.

2 Manure management

- How much manure plus litter is generated by this sector?

We are working on trying to establish this at the moment but do not have an accurate figure at present

- Are manure management plans regularly checked? Yes

- What EA activity is there to ensure manure is safely managed to stop run off into watercourses?

Checks on manure application records to ensure applications of manures are in line with regulations and do not pose a risk of pollution

- Are the records of movements of manure off site ever checked? If so, how many such checks have been made in the last reporting period. Yes

3 Best available technology: this is a rapidly moving field

- What activity is there to improve standards and to ensure plant remains in adequate working condition once the initial permit has been granted?

For permitted farms, one of the permit condition requirements is to have an environmental management system. This oversees the management of the farm and includes the requirement to have an inspection and maintenance schedule. All structures and plant on the site must be checked at least annually and many operators will check plant more frequently than this as part of day to day operations. The inspection and maintenance schedule and the state of maintenance on the farm is checked as part of a compliance inspection.

- Do plants have to upgrade periodically or can they stick with the BAT set up granted when their permit was first approved indefinitely?

A farm must meet BAT, as set out in the latest BAT conclusions. BAT conclusions are periodically updated and when this happens sites are required to check that they meet any new standards. The BAT conclusions for the intensive rearing of poultry or pigs were issued in February 2017. New farms then had to meet these BAT standards; existing farms had 4 years to ensure new standards were met. The Environment Agency carried out a permit review and varied all permits that needed to be updated to incorporate the new requirements. Now that we have left the EU the way that BAT is derived and implemented is being considered and developed.

- Are there –say – 10 year reviews to check if set ups are fit for purpose with regard to BAT? If so, do they have regulatory force?

Under the EU there was a requirement to carry out a permit review within 4 years of the publication of any BAT conclusions. The process for carrying out a review now that we have left the EU is being considered.

- What does the EA do to ensure that its permitted plants are reaching current BAT? Or is the situation that the EA do not actively move operators towards current BAT and that the main driver for improvement is the need to apply for planning application for major changes?

Working closely together, the Environment Agency, Scottish Environment Protection Agency, Natural Resources Wales and the Northern Ireland Environment Agency carried out an assessment of the BAT conclusions after their publication in 2017 and produced an Interpretation document. This describes how each BAT conclusion is already being met or what farmers need to do to meet each BAT conclusion. Using this Interpretation document we then carried out the permit review to ensure farms are meeting current BAT. Compliance with BAT is also assessed during farm inspections.

- Modern in shed monitoring is now extremely sophisticated (e.g. dust, moisture, position of flock and more). What plans are there to include requirements for the following in permits going forward:-
  - better abatements of emissions to air and watercourses. This will be site specific and will depend on the sensitivity of the local environment. Any abatement requirements will be determined during the permit application process.
  - requirement to monitor and report measurements of material leaving the sheds, principally air borne and manure. The requirement to monitor emissions is site specific and will be determined during the permit application process.

4 Public information

The public now expect to be able to access a lot of information on line - company accounts, permits, performance data in annual reports and so on

- What information can the public access with regard to the performance of this extremely large industry, either from the operators or from yourselves? As you may be aware, some company accounts will be available online, but only if they are a limited company - Companies House - GOV.UK (www.gov.uk). The public can request permitting and compliance information for permitted sites through the Environment Agency Public Register - Public registers (data.gov.uk).

- What data on this industry does the EA report each year and where can it be found? Permitted installations are required to report emissions of substances through an annual Pollution Inventory (PI) return. Permitted poultry farms report emissions of ammonia, methane, nitrogen oxides, PM10 and waste, where the quantity exceeds a threshold. This PI data can be found here - Pollution Inventory - data.gov.uk

5 Monitoring and enforcement

The links between ILUs and water pollution are now established beyond reasonable doubt. In the light of this are there:

- Any plans to move to cumulative impact assessment before granting further permits? For the purposes of a permit assessment/determination the Environment Agency carries out in-combination Habitats Regulations Assessment for ammonia where a proposed permitted site lies within 5km of a designated European site. This process includes consultation with Natural England/Natural Resources Wales where required. This assessment is limited to the impact of ammonia emissions to air. This is due to the scope of the permitting regime – the site boundary for permitted pig and poultry farms typically includes the livestock housing, any yard areas and associated infrastructure but does not routinely include adjacent land. Therefore, the spreading of manures and slurry to land (and the associated potential for water quality impacts) is not covered by permitting and instead this is regulated through other existing regulations (NVZ Regulations and Farming Rules for Water).

- Any plans to reduce permit threshold below 40, 000 birds. The EU has recently issued proposals to update the Industrial Emissions Directive. These proposals include revising the livestock thresholds. Any changes in the livestock thresholds in England would be decided by Defra.

- Any plans to mandate monitoring and reporting of key emissions, notably particulates and ammonia, in future applications. There are no plans to introduce this across the sector at the moment. Some farms do have monitoring and reporting requirements, e.g. for ammonia, due to the location of the farm in relation to sensitive sites.

- How many enforcement officers does the EA currently have in our region? And how high a priority for this team is reducing manure run off to watercourses?

6 Complaints

- How many complaints from the public are there per year with regard to manure management and storage in general?
- What EA response standards are in place relating to public incident reports relating to manure – manure piles near streams/uncovered? Eg do the EA promise a response in 10 working days
- What is the threshold for actioning a complaint? If this is not reached is the complainant told there will be no action?
- What information goes back to complainants about response to their complaints?

Please use the following email address for any future correspondence.

Email: Enquiries_Westmids@environment-agency.gov.uk

You may wish to look at http://data.gov.uk to see what other Environment Agency data is available for you online.

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Regards.

[redacted]

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for people and wildlife

Environment Agency

Frequently asked questions

Broiler farms and environmental permits March 2022

Please see below some frequently asked questions previously received in relation to permit applications for broiler farms and our responses, which you may find useful.

What is an Environmental Permit?

Certain activities, that could be harmful to the environment, need an environmental permit to operate. A permit gives the holder permission to carry out certain types of activities at a specific location. It sets conditions which will protect the environment and people's health. If we grant a permit we carry out periodic audits and inspections to check compliance with the permit. We review permit conditions and can change them at any time. We take enforcement action if the permit holder breaks the conditions of their permit.

Is an Environmental Permit the same as planning permission?

Our decision whether to grant an environmental permit is completely separate from the planning process. Planning permission allows a new site to be built. The planning process determines whether the development is an acceptable use of land and considers a broad range of matters such as visual impact, traffic and access, which do not form part of our decision-making process. An environmental permit allows the site to operate once it has been built and regulates emissions from the ongoing activities. A new development will need to have both planning permission and an environmental permit before it can operate. We will only issue a permit if we believe the facility will be designed, constructed and operated in a manner that will not cause significant pollution of the environment or harm to human health.

I have heard that broiler farms can cause problems with flies.

Chickens are on site for approximately 40 days. The permits we issue contain conditions to ensure such a farm is kept as clean and dry as possible through appropriate management practices. Due to the short length of the growing cycle and the way a broiler farm is managed, we would not expect to see an issue with flies. Once the birds have left a farm, all the litter is removed and the sheds are thoroughly cleaned.

In the unlikely event of flies causing annoyance, we will ensure the operator reviews any relevant management practices. In line with permit conditions, they would then submit to us for approval a pest management plan to be implemented on site.

The local council would be the regulating authority if a problem of flies from manure heaps or spreading arose.

What about odour and noise?
The permit would contain conditions that we enforce, ensuring that odour and noise pollution from a broiler farm is kept to a minimum.

Modern broiler farms have to be built using the best available techniques and managed to minimise odour and noise**.** As a regulator, we ensure that any permit holder complies with permit conditions to keep emissions from such a farm, including odour and noise, to a minimum. We will assess any information submitted with applications and ensure that the odour and noise management and control measures are satisfactory for any proposed farm. In some cases, we may require more information to satisfy our requirements, and we would request this from the applicant through a Schedule 5 Notice before making a decision on whether or not to grant a permit.

At certain times of the process, such as cleaning out, it is possible that some odour will be generated. We would require that a broiler farm takes action in accordance with the management and control measures, to reduce these odours as far as possible.

Some noise can be generated by vehicle movements and the operation of ventilation fans on site. Again, we would require that a broiler farm took action to adhere to noise management conditions to reduce the noise generated from site, as far as possible. These actions would need to be appropriate during the day and at night. However, vehicle movement to and from a site is not regulated by us. This would be taken into consideration by the local council whilst determining the planning application.

We would not issue a permit if we considered odour and noise would be at levels that would cause significant pollution off site

However, we do have experience of broiler farms causing issues with odour and noise when the operator is not taking all appropriate measures. If a broiler farm did cause what we perceive to be odour or noise pollution in the local community, we would ensure the operator investigates alternative control measures and carries out necessary actions to prevent future occurrences.

The permit does not cover any pre-operational activities such as noise or odour from construction.

Details of all documentation submitted with permit applications can be viewed electronically and in hard copy. Details of how and where you can view these documents are set out below.

What about pollution to ground water?
It is an environmental offence to cause pollution to ground or surface waters. Environmental Permits have specific conditions to further enforce against polluting emissions to water or land.

What about waste from the site?
All waste produced from the broiler farm will be regulated by the sites Environmental Permit. The permit contains specific conditions requiring the efficient use of raw materials and minimisation of waste produced by the activities on site.

Do broiler farms spread and store manure on the fields?
Where a broiler farm sends used litter off site, records must be kept showing who has taken the manure and what quantities have been taken. The permit requires that each recipient of the manure agrees to spread the manure in accordance with the Code of Good Agricultural Practice. All amenity issues for spreading or storage of waste off site would be dealt with by the local council.

Although an environmental permit will not regulate the spreading or storing of manure on fields outside of the permitted area, we would expect all manure spreading to be done in accordance with the Code of Good Agricultural Practice and also in compliance with the Nitrate Vulnerable Zone regulations.

Further information on manure spreading and storing can be found here
https://www.gov.uk/guidance/storing-organic-manures-in-nitrate-vulnerable-zones

What about bioaerosols?
As part of our determination of the permit application we consult Public Health England and the local Director of Public Health to ensure that there will be no harm to human health as a result of any proposed activity. Their response would be taken into consideration when making our final decision on whether or not to grant a permit.

What about emissions from the biomass boilers?
If biomass boilers are used on site to heat poultry sheds, the fuel burnt would be clean/virgin wood. We would assess the potential impact of exhaust emissions (PM10s and NOX) on human health and the environment as part of our determination of the permit.

We must decide whether to grant or refuse an environmental permit under the Environmental Permitting (England and Wales) Regulations 2010. We will only grant a permit if the operator applying has shown that the proposed facility meets the requirements of UK and European laws in how it will be designed and run. We will not grant a permit if we believe it is likely to cause significant pollution to the environment or harm people's health.

Do these sites produce much dust?
The use of Best Available Techniques and good practice will ensure dust is kept to a minimum. Emissions of dust would be regulated by us, through the permit. In the event of dust causing pollution, we would require the operator to undertake a review of a site's activities, produce a management plan to be agreed with us and carry out necessary actions to prevent future occurrences.

Is lighting considered as part of the permit?
Lighting is not considered as part of the environmental permit other than with regards to energy use and efficiency.

What about proximity to local residents?
Our guidance states that if there are sensitive receptors within 400 metres of a site then we would expect the operator to have robust Management Plans for odour and noise.

Animal Welfare
Animal welfare is not dealt with by Environmental Permitting Regulations. The operator must comply with appropriate animal welfare standards in its design and operation of a site.

What happens if there are problems with a site?
If a site does not adhere to the management and control measures in place, such as those relating to odour, dust and noise or does not comply with the permit, we will investigate. We will work with the operator to ensure compliance with the permit requirements. In the event of any breaches, we may take action in line with our published Enforcement and Sanctions guidance.

Any incidents or complaints about a site can be made to us on our 24/7 incident hotline 0800 807060.

How you can contribute to us making the best decision
Once we have accepted an application, we put it on our public register, which is held in our local offices and the offices of the relevant council. We will always consult on applications for new bespoke permits and invite people and organisations to comment.

Where can I get further information from?
You can find information about Environmental Permits at

https://www.gov.uk/topic/environmental-management/environmental-permits

For further information on our intensive farming guidance please visit our website at

https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit

Appendix 5

Response data collated from emails sent to the council in relation to public opinion on IPUs and their impact on the county.

Total true responses = 64

The following is a number and % breakdown of the complaints

29	(45%)	smell nuisance
11	(17%)	dust nuisance
17	(27%)	animal welfare
34	(53%)	river water quality and habitat destruction
12	(19%)	traffic
2	(3%)	smoke nuisance
6	(9%)	noise nuisance
2	(3%)	cleaning chemicals
1	(2%)	fly nuisance
1	(2%)	risk of zoonotic infection
7	(11%)	antimicrobial resistance
8	(13%)	Avian influenza

The following is a number and % breakdown of the alleged impact to human health:

9	(14%)	Asthma, COPD or lung dysfunction
14	(22%)	Mental wellbeing
5	(8%)	Infection from bathing or swimming in the Wye
2	(3%)	Stress caused by intimidation from farming community / neighbours

The following is a number and % breakdown of positive comments:

2	(3%)	Creates employment opportunities in the county
2	(3%)	Reduces the need/dependency on imported food

Appendix 5b

Emails received to residentfeedback@herefordshire.gov.uk

17.02 – 18.04

The following is small sample of quotes taken from resident feedback in relation to intensive poultry farming in the county. It has been broken down into recurring themes.

Smell nuisance

"Early evening a disgusting smell emanates from the unit. This is particularly bad in the summer and lingers on for a few hours. It is impossible to enjoy our garden as we would like, and we must keep our windows closed so the stench does not enter our home. On several occasions the stench has been so intense that I have complained to Environmental Health. It smelt like rotting meat, chicken waste and ammonia. I regularly have headaches and have difficulty sleeping because of the lack of fresh air."

"I previously lived in Herefordshire for almost 6 years ... The foul stench when the wind was blowing in the direction of our house, or indeed whenever out for a walk or bike ride was intolerable. It made me feel sick to my stomach and basically it was severely unpleasant going outside some days."

"We live near a chicken farm and honestly if I'd known about the horrific stench this farm lets off frequently, I'd never have bought a house near it. The smell is overpowering and seeps through any gap... I can't put washing out as the smell clings to the clean washing!
When the smell drifts over we can't sit outside...we can't have windows open... it's truly vile."

Dust nuisance

"It is not possible to go anywhere close to the units because the smell and dust are intolerable. In general, I and other neighbours avoid walking near any of the poultry units. Ammonia from the poultry units has caused severe damage to the band of ancient oaks in the adjoining woodland. This area is now dominated by holly (which can withstand the pollution) and is often covered in poultry dust."

Animal welfare

"I am vehemently opposed to these mass types of factory units. They are not farms, they are industrial, vile, cruel machines… They are nothing less than a prison for millions of sentient beings who never get to move around or see the light of day. In comparison, I have lived and kept my horses on smallholdings where free range chickens live and the difference is incomparable. I got to know of birds who were sociable and affectionate, constantly moving around and reaping benefits in terms of aiding with composting of horse manure piles, and gardens."

"My husband and I cannot bear the fact that these chickens are kept and treated in such terrible conditions, it's absolutely inhumane and we should not allow it to happen. This affects me particularly deeply and I have to battle the depression which it causes. When I see or follow the awful trucks carrying so many chickens it causes crying and nausea. For me personally the emotional aspect is very hard to deal with and affects my mental health."

"The horrors of the life and death of intensively reared chickens – the hormone-induced unhealthy body structure, the confinement, the lack of opportunity for normal social behaviour, and the vileness of the production line at Avara – make me miserable. On lovely sunny days, my enjoyment of our glorious countryside is often spoiled as I recall the dark secret hidden away of the chickens deprived of their right to a normal life."

River water quality and habitat destruction

"I have been a fisherman on the river wye for 35years. The river used to be clean and full of ranunculus weed, the insects would fill the air all summer, the fish thrived and so did the swans and kingfishers. The last 5 years and in particular the last 3 years I effectively look at a dead river in the summer. The weed gone, the fly hatches tiny and the kingfishers few and far between. The river runs green because of the chicken excrement that runs into the river and its tributaries. I no longer stand in the river without waders, the stones are covered in a brown algae (contributed to by sewage works) smothering the eggs of fish. The cormorants and goosander flocks plunder the small fish that managed to make it, as they have no weed to hide and feed in. It's no exaggeration to say the river is dying in front of my eyes, as proven through tests and via legal cases and admittance by huge producers of chickens."

Traffic

"The traffic on the lanes around our home have become increasing dangerous to the point my son is too scared to walk down some of them because of the fear of meeting one of the huge vehicles that go back and forth from these IPUs. We have had to climb into the hedge on many occasions so they can pass us because the lanes simply are not wide enough for these huge trucks and tractors. These vehicles show no regard for the residents and while having a new water main put into our property I witnessed one of them drive straight through the road closed sign smashing all the protection to our new water pipe and all of the cones and barriers. I reported this and put them back out across the road only to find an hour later another one of the lorries going to the IPU had done exactly the same with no regard to the damage to our property. The large artic trucks going to the IPU near us have hit down stone walls of residents and create so much dust when they fly around the lanes that we cannot even go out in our garden, especially with the respiratory problems my son has.

"The lorries from the existing IPU unit located near us had stipulations in the planning application that they must not operate during unsocial hours. This is not enforced and my worry is that the already noisy disturbances in the early hours of the morning will increase even more. We are subject to being woken up by trucks going to the IPU at 3am, 4am, 5am, and 6am. How can this be allowed? It wakes our entire family up and then my son struggles at school because he is being woken throughout the night by artic trucks."

Smoke nuisance

"We moved to this area to enjoy clean air free from pollution but instead our senses are assaulted on a regular basis from the noxious fumes emitted from the IPUs in our area."

Noise nuisance

"There is frequent noise from the nearby development, which goes on for days at a time and can be heard from long distances. The sound echoes over the hill and can be heard along surrounding stretches. The noises include the delivery of feed, which goes on for hours at a time, the cleaning out of the buildings entailing the use of pressure washers and vehicles with reversing beepers. There is a constant sense of living next to a busy factory. One of the biggest disturbances is from the moving around and preparation of timber for the biomass boilers."

Cleaning chemicals

"There is also the pollution of the soil, air and water – not just phosphates, nitrates and ammonia but also whatever other chemicals are used to clean the sheds. We believe this has killed our rivers and ruined our soils but it is likely that it has also killed trees, hedges, wildlife and so must have an impact on our health."

Fly nuisance

"This dumping of untreated chicken waste is done on a regular basis by farmers in the locality. The sewage is then spread on the fields before the planting of a crop such as potatoes, and the smell doesn't disappear for weeks. Flies are attracted to the waste matter, and appear on our windows in hundreds, making it again very difficult to have windows open."

"Mounds of chicken manure are piled in the field next to our home ready for spreading. Sometimes this will stay in situ for weeks, festering an ever-increasing miasma of ammonia and we have deepening concerns of risk to health, particularly respiratory, I am 70 and my wife is 77. When it rains, a brown liquid seeps from the mound and finds its way into the nearby waterway which would inevitably contaminate not just the surrounding area but eventually the Wye River. Flies breed and proliferate in such numbers that thousands will amass on the west wall and windows of our house, particularly at sunset."

Risk of zoonotic infection

"Because of the industrialization of agriculture and animal production, a growing number of residents in livestock-dense areas do not have a farming background. This population may be more susceptible to farm-related illnesses, especially to livestock-related zoonotic infections, as they have no or limited immunity to specific zoonotic pathogens."

Antimicrobial resistance

"*It is concerning that it is understood that the poultry are routinely dosed with antibiotics at a time when resistance to antibiotics is becoming an ever-greater issue."*

"Another concern is the routine use of antibiotics in factory farming. As far as I'm aware, there is no research on the levels of antibiotics in the manure, in the land on which it is spread, or the crops grown on that land."
"*We are concerned that the genetic modification used to maximise profits means they are growing huge, heavy upper bodies very quickly and are likely suffering from severe health problems, including heart failure and difficulty breathing in the hot, acrid environment. We are also upset to know that these birds are gassed or face a throat-cutting machine before being plunged into scalding-hot water."*

Avian influenza

"There is the existential threat of a bird flu outbreak which could cross the species barrier, the ever-present danger of respiratory problems resulting. With such unhealthy intensive farming of poultry and the release of dangerous particulates in the air it will be just a matter of time before a serious outbreak occurs."

Alleged Impact to Human Health:

Asthma, COPD or lung dysfunction
"I suffer from asthma. I have found a significant link between the smell of poultry manure in the air and an aggravation in breathing difficulty. I believe this is due to the spreading of the manure, and from the units themselves. When "the smell' is in the air, I experience an immediate tightening in my chest, significant enough to need at least one and sometimes two doses of inhaler."

"After making representation about the planning application for chicken sheds at a local farm in 2017 I have certainly noticed that my asthma and general lung health has not been as good as I had been used to before the sheds were installed. We had been promised that

advance warning would be sent to residents when the sheds were cleared out, but this has not happened at all which is disappointing. When the sheds are cleared out the smell is absolutely dreadful and in the summer months prevents me being able to garden or relax in my garden for the period affected… As a lifelong and full time asthmatic I have been similarly concerned about the impact it is having on my health and this in turn has impacted my mental health and ability to enjoy being outside - no warnings are given as to when it can happen.

Mental wellbeing

"The impact on my (and I suspect many other Herefordshire residents') mental wellbeing is being significantly affected by the impact of the poultry farms on the environment. The benefits of exercise and of enjoying the natural beauty of the county are all compromised if we cannot breathe, swim in or enjoy the landscape and river without seeing the evidence of the seemingly unstoppable air, land and water pollution the poultry industry is causing. I don't think the widespread despair this is causing in the people of Herefordshire can be underestimated."

"Last summer I was shocked at the zero visibility in the River Wye, all I could see was cloudy green, at best to the tips of my fingers. I come from a rowing background and remember rowing as far as Belmont Golf Club and sitting watching the fish as we turned the boats. We only had a mile stretch of water during the summer due to the river height and the amount of weed on the riverbed. I can't say whether the weeds still grow as I can't see the river bed these days.

My health hasn't been impacted but my wellbeing has, it's devastating to see what has happened to the River Wye and hopefully there will be a speedy reversal of whatever has caused this travesty."

Infection from bathing or swimming in the Wye

"Not only have I witnessed first-hand the pollution that intensive poultry is having on river and wildlife, I taste it, I feel it on my skin. My eyes and skin burn, my throat is sore. I choose to swim in the sections where the poultry farms are, as I monitor the wildlife above and below water and also note what's going on in the riverbed. I see the riverbed dying, the swans starving, the salmon and eels decline rapidly, the protected water-crowfoot plant disappear."

"I have kayaked on the Wye since 1970 when I started as a youth canoe slalom paddler… Paddling on rapids means you have water splashing in your face all the time, so some must get ingested. I have often got a bad stomach and take a tablet every day for a stomach ulcer. I have no evidence this is from river pollution."

"I am very anxious about the pollution to our watercourses caused by run-off from fields dressed with chicken manure. The eutrophication is having a very serious impact on former site of special scientific interest habitats and the wider environment.
I used to get a great deal of enjoyment from wild swimming in safe areas of our large rivers. Due to the pollution, it is no longer safe, so I have lost that connection with nature and the health and welfare benefits conferred."

Stress caused by intimidation from farming community / neighbours

"Our mental health has taken a battering over the course of fighting the planning application of a local farm IPU expansion. Not only do we have to constantly spend hours writing essays about why no more IPUs should be allowed, because of the overwhelming evidence against them, but we have to try to run a family and work in highly stressful jobs. We have also had to deal with abuse from the friends and colleagues of the applicants of these IPUs, making

us anxious to leave our home at times, to the point we feel like we should sell our home and move because of the distress it has caused. We are made to feel intimidated and unwelcome by those who support these units in the countryside of Herefordshire. Surely you as a council should be encouraging young families to move to the area not away!"

Creates employment opportunities in the county

"Having poultry in the country creates a lot of jobs and employment which attracts people to them and welfare issues better directed at improving sewage works as I believe dumped raw sewage straight into rivers is a greater problem than poultry."
"I have a young family and I want them to have the opportunity of working locally and not having to move away to find jobs, as I don't want our beautiful county to become a retirement county, I want us to be an all-inclusive county for all ages and in order to do that we need industries that employ, such as the poultry industry, which require people to look after the animals, cleaning or processing the birds in our local factory. To me I love the fact Herefordshire can be a diverse county and we need the poultry industry to enable us to sustain this and offer local jobs."

Reduces the need/dependency on imported food

"Having locally grown, environmentally friendly poultry grown to high welfare standards has got to be more beneficial than imported food, better to the environment and everyone's health and wellbeing. Living in the countryside it gives me great comfort that the food I eat is locally produced and that local people can get work on their doorstep."
"I love the fact that we can produce good quality locally where we know the welfare standards are of high quality. When I am out shopping, I take pride in the fact I can pick up local produce and it is good. I want my family and locals to have the choice of working locally if that is what they want."

POSITION STATEMENT (DECEMBER 2006)

INTENSIVE FARMING

Introduction
The Health Protection Agency (the Agency) supports Primary Care Trusts (PCTs) and Local Health Boards (LHBs) in their role as 'Statutory Consultees' for the Pollution Prevention Control (PPC) regime. Statutory Consultees are considered to have special knowledge or expertise. Guidance on PPC is available at: http://www.hpa.org.uk/hpa/chemicals/IPPC.htm

Intensive Farming is subject to regulation under PPC Sector 6.02. These installations are likely to be of a low public health impact. While a large number of applications (over 1000) are expected, the information on which to base a health response will be extremely limited as this sector does not have a history of similar environmental regulation. Furthermore, the Regulator will be adopting a streamlined approach with this sector and will not be requiring an extensive amount of information pre-permit issue. Moreover, if monitoring and detailed risk assessment is necessary this is likely to be undertaken after the statutory health response is required.

Consequently, the Agency's Chemicals Hazards and Poisons Division have produced this position statement on the public health consequences of these processes in order to help inform the debate. It is also worth acknowledging that most applications will relate to existing installations.

About the Sector
PPC applies to larger pig and poultry farms with capacity for more than:

- 750 sows
- 2,000 production pigs over 30 kg
- 40,000 poultry (includes chickens, layers, pullets, turkeys, ducks, guinea fowl and quail)

Pigs reared outdoors are excluded from PPC, but free-range poultry (egg-laying and chickens reared for meat) are included. A permit to operate will cover all aspects of farm management, from feed delivery to manure management. Animal welfare is not covered by PPC.

The Environment Agency has produced a general guidance document for this sector[1] along with separate guidance for odour[2] and noise[3].

1 Integrated Pollution Prevention and Control (IPPC): Intensive Farming How to comply Guidance for intensive pig and poultry farmers April 2006. Available at: http://www.environment-agency.gov.uk/commondata/acrobat/ippc_comply_0406_1397535.pdf
2 Odour Management at Intensive Livestock Installations. Available at: http://www.environment-agency.gov.uk/commondata/manguidance_1056765.pdf
3 Noise Management at Intensive Livestock Installations. Available at: http://www.npauk.net/ds_portal/library/IPPC%20Noise%20Guidance.pdf#search='Noise%20Management%20at%20Intensive%20Livestock%20Installations

Pollution Potential

Pig and poultry installations may affect the environment through a number of ways including fugitive emissions to air, discharges to water, manure management and nuisance issues.

Fugitive Emissions to Air

Pig and poultry farms have the potential to release a number of pollutants to air but the Agency would expect operational and permit conditions to minimise fugitive emissions to air from the installation.

Ammonia
Ammonia may be emitted from livestock and from manure, litter and slurry and may potentially impact on local people or vegetation (permits may be refused if critical loads to the environment are exceeded). The health effects of exposure to ammonia at low levels include cough, phlegm, headaches, nausea, wheezing, breathing difficulties and asthma.

However, it is unlikely that ammonia emissions from a well-run and regulated farm will be sufficient to cause ill health. Levels of ammonia will decrease rapidly once diluted in ambient air and operational requirements should ensure that emissions are kept as low as is reasonably possible. Proper construction and operation of farm buildings, appropriate management of manure and slurry, and management of protein levels in feed/feeding cycles will all serve to minimise ammonia emissions. Furthermore, in exceptional circumstances ammonia scrubbers may be installed to reduce ammonia emission by dissolving the gas in water. All these measures will also reduce odour emissions from the unit.

The need for monitoring of ammonia will be decided by the Regulator depending on the distance to sensitive receptors, complaint history and level of emissions. This will be decided on a case-by-case basis and any existing monitoring data should be included in the application.

Bioaerosols
Bioaerosols are airborne particles that contain living organisms, fragments, toxins, and waste products. Possible health effects include exposure to infectious diseases, allergic reactions, respiratory symptoms and lung function impairment[4].

Clearly, intensive farming has the potential to generate bioaerosols. Recent research in the United States found that those living up to 150 metres downwind of an intensive swine farming installation could be exposed to multi-drug resistant organisms[5]. However, current information is limited and the potential public health issues arising from bioaerosols from intensive farming need further evaluation. Such information is necessary when the Regulator has to make decisions such as the proximity of sensitive receptors to sites. It is likely that the dispersion of bioaerosols from intensive farming sites will be dependant on environmental circumstances such as local topography and prevailing weather conditions. Mitigation measures addressing occupational health of workers will also contribute to the protection of local communities.

4 Douwes, J. *et al* (2003) Review of Bioaerosol Health Effects and Exposure Assessment: Progress and
Prospects. Ann. Occup. Hyg.; 47(3), 187-200.
5 Gibbs S. G *et a*l (2006) Isolation of Antibiotic-Resistant Bacteria from the Air Plume Downwind of a Swine
Confined or Concentrated Feeding Operation. Environmental Health Perspectives; 14(7), 1032-1037.

Given the very limited direct evidence of bioaerosol emissions from intensive farming we have considered information on bioaerosol generation from large scale composting facilities. Composting sites are known to produce considerable quantities of bioaerosols and when permitting these industries the Regulator has prescribed a minimum distance of 250 metres from local communities[6]. Exceptions to this 'limit' are allowed if effective mitigation techniques are employed. This limit is based on published studies which indicate that bioaerosols are generally reduced to background levels within 250 metres of the facility, although it is accepted that under certain circumstances, such as stable atmospheric conditions, bioaerosol concentrations may occasionally not be reduced to background levels within 250 metres. We anticipate that further information on the potential of intensive farming industries to generate bioaerosols will become available over the next few years and we would expect this information to be incorporated into future reviews of PPC permits.

Particulate Matter
The potential for particles to cause health effects is related to their size. Dust emitted from intensive farming may include fine particles with an aerodynamic diameter of less than or equal to 10 µm termed PM10). This size fraction of inhaled particles may penetrate the respiratory system beyond the larynx. Agriculture in the UK may be a significant source of PM10 with an estimated national contribution ranging between five to fifteen percent [7],[8],[9], with poultry houses responsible for some five percent of UK emissions. Both long and short-term exposure to ambient levels of particles (including PM10) are associated with respiratory and cardiovascular illness and mortality10. People with pre-existing lung and heart disease, the elderly and children are particularly sensitive to particulate air pollution. For the most part, people will not notice any serious or lasting ill health effects from levels of particles commonly experienced in the UK.

Sources of PM10 within the intensive farming industry may include feed delivery, storage and transport, dusty wastes and vehicle movements. It is possible that large farms may make a substantial contribution to local PM10 levels but in such circumstances we would expect Local
Authorities to consider farms within their local air quality review and assessment.

The Agency would expect that the use of Best Available Techniques (BAT) will minimise the amount of dust released. On-site mitigation measures addressing occupational health of workers will also reduce off site emissions. It is recommended that the Regulator act on any dust complaints and, if necessary, seek advice on the risk to health from the local PCT.

6 The Composting Association and Health and Safety Laboratory (2003) Research Report 130 -
Occupational and environmental exposure to bioaerosols from composts and potential health effects – A critical review of published data. Report produced for the Health and Safety Executive.
7 Atmospheric emissions of particulates from agriculture: a scoping study, MAFF research report, WA 0802,
2000.
8 Takain H. *et al* (1998) Concentrations and Emissions of Airborne Dust in Livestock Buildings in Northern
Europe. J. Agric. Eng. Res; 70, 59-77.
9 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. A consultation document on options for further improvements in air quality, April 2006.
10 COMEAP (1998). Quantification of the Effects of Air pollution on Health in the United Kingdom.
Department of Health Committee on the Medical Effects of Air Pollutants. The Stationary Office, London.

We would expect further data on the impact of intensive farming industries on local air quality to become available over the next few years, particularly once these processes become regulated under PPC. Consequently we recommend that the Regulator will consider any new data in future reviews of PPC permits.

Emissions to Water
The potential impact to water should be low since emissions to ground or surface water should fully comply with the regulations and limits set out in Groundwater Regulations 1998 and the European Groundwater Directive (80/68/EEC). In addition to compliance with domestic regulations for surface and groundwater, the Regulator must ensure that any emissions to sewer from the installation are within consent limits.

Correct storage of liquid feeds, fuel oil, pesticides and veterinary medicines in secured and bunded areas will further reduce the potential for spillages and pollution of water courses. The Operator should also maintain records of any chemicals used. This should apply to the annual quantities used and the quantities stored at any given point in time.

Manure management
We would expect that the design, construction and management of manure and slurry storage will prevent or minimise emissions and that this will be controlled through standard permit conditions. As part of the permit, we understand that the applicant will be required to draw, maintain and review a manure management plan detailing what and where substances will be applied to land. Manure can contain a range of zoonotic pathogens and incorrect storage can encourage the development of large fly populations that can have nuisance or disease transmission potential.

Nuisance Issues
Intensive farming sites may occasionally present nuisance issues, such as odour, noise, vermin and insect infestation. The Regulator should ensure there is “no reasonable cause for annoyance” beyond the boundary of the site. Any substantiated complaints should be properly investigated and, if necessary, changes in operations may be required as part of a site’s improvement plan.

The applicant may need to produce an odour management plan if there are local communities within 400 metres of the site boundary and/or if the installation has a history of substantiated odour-related complaints. This plan should be completed before permit issue and should detail the odour problems of the installation, the actions to be taken to resolve these issues and a suitable timescale for implementation. Furthermore, an odour impact assessment will be carried out if an impact assessment is required under planning or if the applicant has failed to control odour emissions and abatement is required.

Where necessary the applicant should produce a management plan for verifying and responding to complaints about odour and noise. Noise should be appropriately assessed by the Regulator and local authority, who are also statutory consultees to this application.

Conclusion
Intensive farms may cause pollution but provided they comply with modern regulatory requirements any pollutants to air, water and land are unlikely to cause serious or lasting ill health in local communities. The Agency, not least through its role in advising PCTs and

LHBs, will continue to work with Regulators to ensure that this sector does not contribute significantly to ill-health.

Appendix 7

Health, Care and Wellbeing Scrutiny Committee (formerly Adults and Wellbeing Scrutiny Committee)

The Impact of the Intensive Poultry Industry on Human Health and Wellbeing Task and Finish group – Scoping Document

Title of review	The Impact of the Intensive Poultry Industry on Human Health and Wellbeing
Scope	
Reason for review	To consider the potential health and wellbeing impacts on humans of the intensive poultry industry.
Links to the corporate plan	The review contributes to the following ambitions contained in the Herefordshire County Plan 2020-2024: • Strengthen communities to ensure everyone lives well and safely together
Summary of the review and terms of reference	Summary: • To review published literature to assess the strength of existing scientific evidence, the potential health impacts identified by this evidence and where such impacts might occur; and • To examine whether health data held by or available to Herefordshire Council and key health partners is sufficiently granular to allow for analysis and identification of identified potential impacts in Herefordshire. • To understand what work might be taking place nationally, or is planned, to gather data and examine health impacts. • To understand relevant health functions of the council and how such health powers could be utilised to address health impacts.
	Terms of Reference: The review will: • Receive and consider national and regional air and water pollution statistics as it relates to intensive poultry farming. • Receive available details on environmental impact of intensive poultry in Herefordshire, and consequent impact on human health. • Receive and consider pathways to improvement of intensive poultry farming methods to help mitigate health hazards. • Receive detail of any work that might be taking place or is planned nationally to consider risk and determine any health impacts. • Receive detail of relevant health powers of the council that could be utilised to address any risk or health impacts identified.

	Membership: Cllrs Norman, Shaw, Summers and Marsh
What will NOT be included	• Consideration of the impact of the consumption of intensively reared poultry and poultry products • Consideration of other impacts of intensive poultry units as these are outside the remit of the parent committee.
Potential outcomes	• An understanding of the current published evidence on the potential human health impacts of the industry; and • An understanding of the ability to identify such impacts in available data for Herefordshire. • Communication with government in respect of ongoing or planned studies in respect of health impacts. • An understanding of the health functions and powers of the Council in respect of the issue.
Key Questions	To consider: • What is known about the impacts of ammonia, nitrogen deposition, phosphates and particulate matter from intensive poultry on human health? • What is known about the consequent deterioration of rural health and living conditions? • What considerations of risk of avian influenza should form part of the review? • What national work is ongoing or planned? • What are the relevant health functions and powers of the council in respect of the issue?
Cabinet Member(s)	Cabinet member health and adult wellbeing
Key stakeholders / Consultees	Internal – Public Health- Herefordshire council Environmental Health- Herefordshire council External Farmers Residents Employers/employees IPUs Avara Cllr Peter Jinman Healthwatch
Potential witnesses	As above
Research Required	• Emissions from intensive poultry and its effect on human health
Potential Visits	Avara Best Practice Farm
Publicity Requirements	Following the conclusion of the Task and Finish group, to report back to the Health, Care and Wellbeing Scrutiny Committee (formerly Adults and Wellbeing Scrutiny Committee).

Outline Timetable:	
Activity	*Timescale*
Approve scoping document, appoint chairperson and other members	Committee meeting 6 September 2021

Suggested activity for the group, subject to approval at the first meeting	
Meeting One – confirm terms of reference, programme of consultation/research/provisional witnesses/meeting dates	3 February 2022
Meeting Two – undertake and/or review progress on consultation / research / witness testimony/receive available data	24 February 2022
Meeting Three – undertake and/or review progress on consultation / research / witness testimony/receive available data	01 March 2022
Meeting Three – undertake and/or review progress on consultation / research / witness testimony/receive available data	21 March 2022
Meeting Three – undertake and/or review progress on consultation / research / witness testimony/receive available data	24 March 2022
Meeting Six – complete any outstanding consultation / research / witness sessions and frame recommendations to be reported back to committee/identify what gaps exist in available data	11 April 2022
Draft Report for review	14 April 2022
Finalise recommendations and report.	28 April 2022
Present final report to Care, Health and Wellbeing Scrutiny Committee	TBC

Herefordshire Council

Outline Timetable: ORIGINAL	
Activity	*Timescale*
Approve scoping document, appoint chairperson and other members	Committee meeting 6 September 2021
Suggested activity for the group, subject to approval at the first meeting	
Meeting One – confirm terms of reference, programme of consultation/research/provisional witnesses/meeting dates	3 February 2022
Meeting Two – undertake and/or review progress on consultation / research / witness testimony/receive available data	24 February 2022
Meeting Three – complete any outstanding consultation / research / witness sessions and frame recommendations to be reported back to committee/identify what gaps exist in available data	01 March 2022
Draft Report for review	14 April 2022
Present final report to Adults and Wellbeing Scrutiny Committee	TBC

Members –	
Chair	Cllr Felicity Norman
Support Members	Cllr Trish Marsh, Cllr David Summers, and Cllr Nigel Shaw
Co-optees	None
Support Officers	Dr Frances Howie - Public Health Marc Willimont - Public Protection Joanna Morley - Democratic Services Simon Cann - Democratic Services