

Environment Agency permitting decisions

Bespoke permit

We have decided to issue the permit for Biogas Poultry Farm operated by Mr Mark Bates.

The permit number is [EPR/ZP3830EU/A001](#).

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Key issues – Description of activities, Ammonia assessment (SSSIs, LWS & LNR), Biomass Boilers, Odour Management Plan, Industrial Emissions Directive and Groundwater & Soil Monitoring
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses to the initial application
- Annex 3 the newspaper advertising and web publicising responses from members of the public following the notification of our draft decision

Key issues of the decision

Description of activities

The installation will be operated by Mr Mark Bates and comprise sixteen poultry houses, numbered 1 to 16, each housing a maximum of 39,600 broilers. The total capacity of the installation will be 590,400 broiler places.

All houses are ventilated by high velocity roof fans with an emission point higher than 5.5 metres above ground level and an efflux speed no less than 11 metres per second. All houses also have gable end fans, although these are operated infrequently to maintain temperature, typically in the summer months.

At the start of the cycle the sheds are pre-warmed using biomass boilers (one 199kW boiler per shed). The biomass boilers will use only virgin wood, straw or miscanthus as a fuel. This will never be mixed with, or replaced by, waste. Spent litter is exported from site by approved contractors to one of three recovery routes:

- 1)t
to supply the adjacent AD plant as a feed stock to generate power,
- 2)e
exported off site for land spreading, or
- 3)t
transported to either Thetford or Eye power station to be used for power regeneration.

Ammonia Emission Impact Assessment – SSSIs

The following trigger thresholds have been applied for the assessment of Sites of Special Scientific Interest (SSSI's). If the Process Contribution (PC) is below 20% of the relevant critical level (CLe) or critical load (CLo) then the farm can be permitted with no further assessment. Where this threshold is exceeded an in-combination assessment and/or detailed modelling may be required.

Screening using the Ammonia Screening Tool (v4.4) has indicated that the PC for Wilsford & Rauceby SSSI is predicted to be less than 20% Critical Level for ammonia. Therefore it is possible to conclude no damage. The results of the ammonia screening tool v4.4 are given in the tables below.

Table 1 - Ammonia Emissions

Name of SSSI	Ammonia Cle ($\mu\text{g}/\text{m}^3$)	PC ($\mu\text{g}/\text{m}^3$)	PC as % of Critical level
Wilsford & Rauceby SSSI	$1\mu\text{g}/\text{m}^3$ *	0.075	7.5%

* A precautionary level of $1\mu\text{g}/\text{m}^3$ has been used during the screen. Where the precautionary level of $1\mu\text{g}/\text{m}^3$ is used, and the process contribution is assessed to be less than the 20% insignificance threshold in this circumstance it is not necessary to further consider Nitrogen Deposition or Acidification Critical Load values. In these cases the $1\mu\text{g}/\text{m}^3$ level used has not been confirmed, but it is precautionary.

Ammonia Emission Impact Assessment – LWS and LNR.

There are 2 Local Wildlife Sites (LWS) and 1 Local Nature Reserve within 2 km of Biogas Farm. The following trigger thresholds have been applied for the assessment of these sites.

1. If PC is < 100% of relevant Critical Level or Load, then the farm can be permitted (H1 or ammonia screening tool)
2. If further modelling shows PC <100%, then the farm can be permitted.

For the following sites this farm has been screened out at Stage 1, as set out above, using results of the Ammonia Screening Tool version 4.4.

Screening using Ammonia Screening Tool 4.4 has indicated that emissions from Biogas Farm will only have a potential impact on sites with a critical level of $1\mu\text{g}/\text{m}^3$ if they are within 940m of the emission source. Screening indicates that beyond this distance, the Process Contribution of ammonia at conservation sites is predicted to be less than $1\mu\text{g}/\text{m}^3$. $1\mu\text{g}/\text{m}^3$ is 100% of the $1\mu\text{g}/\text{m}^3$ critical level, and therefore beyond this distance the PC is unlikely to cause damage to any features of the Habitats site. In this case all local wildlife sites below are beyond this distance.

Table 2 – distance from source

Site	Distance (m)
Lollycocks Field LNR	1746
Lollycocks Field LWS	1746
Sleaford Meadows LWS	2168

The PC at these sites has been screened as unlikely to cause damage to any features of the Habitats site. It is possible to conclude no significant pollution will occur at these sites and no further assessment is required.

No further assessment is required.

Biomass boilers

An assessment has been undertaken by the Environment Agency to screen sixteen 199kW biomass boilers, each one used to provide heat to a single poultry house.

The operator will be constructing two cottages for accommodating employees of the farm. As they will be inhabited, a screening assessment was undertaken to assess the potential impacts on human health from the biomass boilers at these receptors.

The cottages will be situated at the following National Grid References:

- TF 06768 47823; and
- TF 06768 47804

The biomass boilers were screened with the following input parameters:

Flue diameter	0.2m
Stack height (from ground level)	6m
Adjacent Building heights	5.5m to eaves
Flue gas exit minimum temperature	70degC
Thermal input in MW or kW	199kW/Boiler all identical
Exit velocity in m/sec	4m/s
NO _x concentration in mg/Nm ³	100mg/m3
CO concentration in mg/Nm ³	13.3 mg/m3
PM ₁₀ (dust) concentration in mg/Nm ³	17mg/m3
O ₂ concentration in %	6%
The exact grid references of the stacks	
House	Grid Reference
1	TF 06804 47774
2	TF 06804 47802
3	TF 06804 47829
4	TF 06804 47857
5	TF 06804 47885
6	TF 06804 47912
7	TF 06804 47940
8	TF 06913 47774
9	TF 06913 47802
10	TF 06913 47829
11	TF 06913 47857
12	TF 06913 47885
13	TF 06913 47912
14	TF 06913 47940
15	TF 07017 47789
16	TF 07045 47789
The grid reference of the centre of the farm	TF 06902 47813

These boilers were assessed using the Air Quality Modelling and Assessment Unit (AQMAU) screening tool version 4, in accordance with Environment Agency guidance H1 Environmental Risk assessment Annex (f) Air Emissions.

The AQMAU screening tool was used to assess the impact of carbon monoxide (CO), nitrogen dioxide (NO₂) and particulate (PM₁₀) emissions from the proposed boiler units. Sulphur dioxide (SO₂) has not been assessed due to the boiler fuel being clean woodchip which is likely to contain very little or no sulphur. CO results have produced zero (insignificant) values when compared with the relevant Environmental Standard, and therefore no further assessment has been carried out.

Process contributions can be considered insignificant if:

- The short term process contribution is <10% of the short term environmental standard; and
- The long term process contribution is <1% of the long term environmental standard.

The results highlighted in red in the following table are process contributions (PCs) that as a percentage of the relevant environmental standard cannot be considered insignificant.

Pollutant	Term	Modelled PC µg/m ³	ENVIRONMENTAL STANDARD µg/m ³	PC % of ENVIRONMENTAL STANDARD
NO ₂	Short	13.45	200	7
NO ₂	Long	4.43	40	11
PM10	Short	4.18	50	8
PM10	Long	1.4	40	4

The following PCs cannot therefore be considered as insignificant:

- NO₂ (long term), and
- PM₁₀ (long term)

Therefore, we need to take background concentrations into consideration to examine whether a PC is going to contribute significantly to a possible exceedance of its environmental standard in this circumstance. PC plus background is described as the predicted environmental concentration (PEC).

Long term emissions are considered unlikely to give rise to an exceedance of an environmental standard where:

$PC_{\text{long term}} + \text{background concentration} < 70\% \text{ of the environmental standard.}$

All PEC values in the table below are less than 70% of the environmental standard and therefore screen out from requiring further assessment.

Pollutant	Term	ENVIRONMENTAL STANDARD $\mu\text{g}/\text{m}^3$	Background concentration*	PEC	PEC % of ENVIRONMENTAL STANDARD
NO ₂	Long	40	14.01	18.43	46
PM10	Long	40	19.66	21.06	53

*Background concentration taken from Defra Local Air Quality Management 2010 background maps (<http://laqm.defra.gov.uk/maps/maps2010.html>)

Therefore, all emissions from the biomass boilers on the site screen out from needing further detailed assessment, as they are unlikely to cause a breach of any Environmental Quality Standard or EAL, in accordance with our H1 Assessment methodology.

Odour Management Plan (OMP)

Our guidance (*Intensive farming 'How to comply' version 2, January 2010, Odour management at intensive livestock installations*) states that odour must be considered where:

- there are sensitive receptors (neighbours) located within 400m of the installation*; and/or
- the installation has a history of substantiated odour related complaints within the last three years.

*The distance of 400m is taken from Local Authority planning guidance.

The nearest sensitive receptors to this proposed installation are located 700 metres south of the site (Northfield Farm) and 800 metres east of the site (Moor Farm). When consulted, the Local Authority did not raise any concerns about potential odour emissions from this installation.

Despite the distance to sensitive receptors being greater than 400m and the lack of odour concerns, the operator has chosen to provide an Odour Management Plan (OMP) as part of this permit application.

The plan was assessed by the Environment Agency in line with the following current guidance documents:

- Appendix 4 of How to Comply with your environmental permit for Intensive Farming <http://publications.environment-agency.gov.uk/pdf/GEHO0110BRSC-E-E.pdf>
- H4 Odour Management – How to comply with your environmental permit (April 2012) <http://publications.environment-agency.gov.uk/pdf/GEHO0411BTQM-e-e.pdf>

- Intensive farming application form guidance/supporting documents (February 2012) –Appendix 9 Odour Management Plan; Table A1 Odour risk assessment and management plan
<http://publications.environment-agency.gov.uk/PDF/GEHO0212BULJ-E-E.pdf>
- Industry code of good practice checklists –
<http://www.nfuonline.com/assets/14807>

After initial assessment of the OMP, the operator was required to review and update the OMP to reflect the requirements of the above guidance documents. The operator submitted a revised OMP (received on 2/06/2014), which was re-assessed by the Environment Agency. We are satisfied that (given the distance to receptors) the odour management and control measures employed on site are satisfactory for the proposals.

Features of the Odour Management Plan

The OMP detailed management procedures for the following aspects of the farming activity:

- Manufacture / selection of feed
- Feed delivery / storage
- Ventilation
- Litter conditions and management
- Carcass disposal
- Fluctuations in stocking density
- Management of drinking water systems
- Destocking of birds
- Clean out / litter removal
- Wash down and disinfection
- Dirty water management

In addition the OMP covered the following further measures:

- on farm monitoring and recording of activities, for continual improvement
- the Operator's own complaints procedure: logging, investigating and resolution of complaints
- community engagement
- odour monitoring to assist identification of odour sources
- odour reduction through the process of partial destocking

Odour conditions within the permit

The Operator is required to operate the site in accordance with their OMP, and is committed to periodically reviewing it to ensure its continued suitability for this installation.

The OMP includes suitable measures to reduce the risk of odour from the site. This plan is incorporated as an operating requirement of the permit through its inclusion in table S1.2 Operating techniques in Schedule 1 of the permit. The operator must carry out their activities in accordance with these operating techniques. If activities at the site give rise to pollution, we can request a revised OMP from the operator using our powers under condition 2.3.1(b) of the permit

The following condition is contained within the permit, also relating to odour:

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

The Environment Agency monitors the Operator's complaints records as part of compliance and routine incident response commitments.

Odour mitigation

The permit requirements include an OMP which the Environment Agency believes is appropriate to control odour release risk from the installation. The OMP details specific control measures which will be used to manage odour risk at the site.

The operator is aware that if odour complaints arise and are substantiated then they would need to take steps to address the issues. This could include additional odour abatement measures, partial de-stocking of the sheds (in line with contractual requirements) and ultimately revocation of the permit if odour remained an issue.

Industrial Emissions Directive (IED)

The Environmental Permitting (England and Wales) (Amendment) Regulations 2013 were made on the 20 February and came into force on 27 February. These Regulations transpose the requirements of the Industrial Emissions Directive (IED).

This permit implements the requirements of the EU Directive on Industrial Emissions.

Groundwater and soil monitoring

As a result of the requirements of the Industrial Emissions Directive, all permits are now required to contain a condition relating to protection of soil, groundwater and groundwater monitoring. However, the Environment Agency's H5 Guidance states that it is only necessary for the operator to take samples of soil or groundwater and measure levels of contamination where there is evidence that there is, or could be existing contamination and:

- The environmental risk assessment has identified that the same contaminants are a particular hazard; or
- The environmental risk assessment has identified that the same contaminants are a hazard and the risk assessment has identified a possible pathway to land or groundwater.

H5 Guidance further states that it is **not essential for the Operator** to take samples of soil or groundwater and measure levels of contamination where:

- The environmental risk assessment identifies no hazards to land or groundwater; or
- Where the environmental risk assessment identifies only limited hazards to land and groundwater and there is no reason to believe that there could be historic contamination by those substances that present the hazard; or
- Where the environmental risk assessment identifies hazards to land and groundwater but there is evidence that there is no historic contamination by those substances that pose the hazard.

The Site Condition Report (SCR) for Biogas Farm (dated January 2014) demonstrates that there are no hazards or likely pathway to land or groundwater and no historic contamination on site that may present a hazard from the same contaminants. **Therefore, on the basis of the risk assessment presented in the SCR, we accept that they have not provided base line reference data for the soil and groundwater at the site at this stage.**

Annex 1: decision checklist

This document should be read in conjunction with the Duly Making checklist, the application and supporting information and permit/ notice.

Aspect considered	Justification / Detail	Criteria met
		Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to consultation and web publicising	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application. This permit meets the requirements of the Industrial Emissions Directive (IED) – see Key Issues section for details	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Site condition report	The operator has provided a description of the condition of the site.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED–guidance and templates (H5).	
Biodiversity, Heritage, Landscape and Nature Conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat .</p> <p>A full assessment of the application and its potential to affect the site has been carried out as part of the permitting process. We consider that the application will not affect the features of the site – see Key Issues section for more information.</p> <p>Formal consultation has been carried out with Natural England in accordance with our Operational Instruction 84_07: an Appendix 4 was saved to file for audit only on 10/04/14.</p>	✓
Environmental Risk Assessment and operating techniques		
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p>	✓
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.</p> <p>The Operational techniques used to operate this site are as follows:</p> <ul style="list-style-type: none"> • housing will be well insulated and have a damp proof course; • drinkers and troughs are designed to prevent leakage; • litter will be kept loose and friable; • the site will be operated in accordance with the control measures stated in the Odour Management Plan (May 2014) • the biomass boilers are used to ensure temperature should meet health and welfare needs for the age and number of birds; • the fuel is derived from virgin timber; and • the biomass boiler appliance and it's installation 	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>meets the technical criteria to be eligible for the Renewable Heat Incentive.</p> <p>The proposed techniques for priorities for control are in line with the benchmark levels contained in the SGN EPR6.09 and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions.</p>	
The permit conditions		
Raw materials	<p>We have specified limits and controls on the use of raw materials and fuels.</p> <p>We have specified that only virgin timber (including wood chips and pellets), straw, miscanthus or a combination of these can be used as fuel for the biomass boiler units. These materials are never to be mixed with, or replaced by, waste.</p>	✓
Pre-operational conditions	<p>Based on the information in the application, we consider that we need to impose a pre-operational condition.</p> <ul style="list-style-type: none"> The Operator has not yet chosen the exact biomass boiler which they will install, and therefore are unable to provide proof that the boiler and its installation have Renewable Heat Incentive (RHI) certification. A pre-operational condition has been included requiring the operator to submit this proof prior to operating the boiler. 	✓
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These descriptions are specified in the Operating Techniques table in the permit.</p>	✓
Operator Competence		
Environment management system	<p>There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.</p>	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
Relevant convictions	<p>The National Enforcement Database has been checked to ensure that all relevant convictions have been declared.</p> <p>No relevant convictions were found.</p> <p>The operator satisfies the criteria in RGN 5 on Operator Competence.</p>	✓

Annex 2: the consultation and web publicising responses to the initial application

The Application has been advertised and consulted upon in accordance with the Environment Agency's Public Participation Statement.

Copies of the application were sent to the following Consultee organisations:

- The Health & Safety Executive (HSE)
- Local Authority: North Kesteven Planning team
- Local Authority: North Kesteven District Council Environmental Protection team

Summary of responses to consultation, web publication and the way in which we have taken these into account in the determination process.

Response received from
The Health & Safety Executive (HSE) on 10/03/14
Brief summary of issues raised
No comments to make
Summary of actions taken or show how this has been covered
No action necessary

Response received from
North Kesteven Planning team on 10/04/14
Brief summary of issues raised
No objections to make
Summary of actions taken or show how this has been covered
No action necessary

A copy of the application was also sent to the North Kesteven District Council Environmental Protection team for their consultation, but no response was received.

The proposal was publicised on the Environment Agency website from 05/03/14 to 03/04/14, but no representations from members of the public have been received as a result of this consultation.

Annex 3: The newspaper advertising and web publicising responses from members of the public following the notification of our draft decision

Our draft decision to grant the permit was publicised on our website and in the Sleaford Standard newspaper, between 02/07/14 and 30/07/14. The draft permit notice and the draft decision document were both made available to view on our website and at relevant Public Registers.

We received no responses at this further stage of consultation, and no new information relevant to our decision.