

Environment Agency Permitting decisions

Variation

We have decided to issue the variation for King Rudding Poultry Farm operated by H Barker & Son Limited.

The variation number is EPR/RP3231MR/V003

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
- Annex 1 the decision checklist

Key issues of the decision

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).

Amendments have been made to the conditions of this permit so that it now 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 condition 3.1.2 relating to groundwater and soil 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 for King Ridding Poultry Farm (dated 21/09/2006) demonstrated that the hazards to land or groundwater have been mitigated/minimised such that there is little likelihood of pollution and there is no evidence of historic contamination on site. Therefore, although this condition is included in the permit, no groundwater monitoring will be required at this installation as a result.

Biomass boiler

The applicant is varying their permit to include four biomass boilers with a rated thermal input of 0.735MW.

In line with the Environment Agency's May 2013 document "Biomass boilers on EPR Intensive Farms", an assessment has been undertaken to consider the environmental impact of the proposed addition of the biomass boilers.

This guidance states that the Environment Agency has assessed the pollution risks and have concluded that air emissions from small biomass boilers are not likely to pose a significant risk to the environment or human health providing certain conditions are met. Therefore a quantitative assessment of air emissions will not be required where:

- the fuel will be derived from virgin timber, miscanthus or straw, and;

- the biomass boiler appliance and installation meet the technical criteria to be eligible for the Renewable Heat Incentive, and;
- the aggregate boiler net rated thermal input is:
 - A. less than 0.5MWth, or;
 - B. less than 1MWth where the stack height is greater than 1 metre above the roof level of adjacent buildings (where there are no adjacent buildings, the stack height must be a minimum of 3 metres above ground), and there are:
 - no Special Areas of Conservation, Special Protection Areas, Ramsar sites or Sites of Special Scientific Interest within 500 metres of the emission point(s);
 - no National Nature Reserves, Local Nature Reserves, ancient woodlands or local wildlife sites within 100 metres of the emission point(s), or;
 - C. less than 2MWth where, in addition to the above criteria for less than 1MWth boilers, there are:
 - no sensitive receptors within 150 metres of the emission point.

The aggregate boilers net rated thermal input on King Rudding Poultry Farm is 0.735MWth. The boilers do not meet the above criteria B and C as the stack height for all boilers are less than 1 metre above the roof level of adjacent buildings, and boilers 1 and 2 are within 150m of a sensitive human receptor.

As the biomass boilers on poultry units do not meet the above criteria they cannot be considered as insignificant in regards to the risk to the environment or human health. Therefore further assessment was required. An assessment has been undertaken by the Environment Agency to screen biomass boilers 1 and 2 (247.5kW) and biomass boilers 3 and 4 (487.5kW) with the following input parameters:

Flue diameter	0.25 m
Stack height (from ground level)	4.5 m
Adjacent Building heights	4.5 m
Flue nominal load temperature	180°C
Flue minimum temperature	155°C
Thermal input (boilers 1 &2)	123.75 kW per boiler
Thermal input (boilers 3 &4)	243.75 kW per boiler
Exit velocity (boilers 1 &2)	2.01 m/s
Exit velocity (boilers 3 &4)	4.02 m/s
NO _x concentration in mg/Nm ³	255 mg/Nm ³
PM ₁₀ (dust) concentration in mg/Nm ³	51 mg/Nm ³
The exact grid reference(s) of the stack(s)	Boiler House 1 = 464372, 43734 Boiler House 2 = 464372, 437342 Boiler House 3 = 464246, 437144 Boiler House 4 = 464222, 437182

The Air Quality Monitoring and Assessment Unit (AQMAU) screening tool has been run for Nitrogen Dioxide (NO₂) and Particulates (PM₁₀), to assess the emissions' impacts on human sensitive receptors at SE 64300 37345.

Sulphur Dioxide (SO₂) has not been assessed due to the boiler fuel being clean woodchip which would contain very little or no sulphur. CO results have produced zero values and therefore no further assessment has been carried out.

Process Contributions (PC)

For NO₂, the short term Air Quality Standard (AQS) is 200 µg/m³ and for long term, 40 µg/m³. Process contribution significance thresholds are 10% of the AQS for short term and 1% for long term. For PM₁₀, the short term AQS is 50 µg/m³ and for long term, 40 µg/m³. Process contribution significance thresholds are 10% of the AQS for short term and 1% for long term.

The results highlighted in blue are process contributions (PCs) that are not insignificant as a percentage of the relevant AQS.

Results Table 1

Pollutant	Term	PC µg/m ^{3*}	PC µg/m ^{3**}	PC µg/m ³	AQS µg/m ³	PC %age of AQS
NO ₂	Short	11.3	13.5	24.4	200	12.2
NO ₂	Long	2.8	2.7	5.5	40	13.75
PM ₁₀	Short	1.6	1.3	2.9	50	5.8
PM ₁₀	Long	0.56	0.55	1.11	40	2.7

Predicted Environmental Contributions (PEC)

As long term and short term PCs for NO₂ and long term PC for PM₁₀ are not insignificant, we must take background concentrations into consideration to examine whether a PC is going to contribute significantly to a possible exceedance of its AQS. PC plus background is known as predicted environmental concentration (PEC).

The background maps held on the DEFRA website were used to obtain relevant background concentrations.

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

$$PC_{(long\ term)} + background\ concentration < 70\% \text{ of the AQS}$$

Short term emissions are considered unlikely to give rise to an exceedance of an AQS where:

$$PC_{(short\ term)} < 20\% (AQS_{(short\ term)} - 2 * background\ concentration_{(long\ term)})$$

Results Table 2

Pollutant	Term	PC µg/m3	AQS µg/m3	Background µg/m3	PEC as % of AQS	20%(AQS-2* Background Long Term) µg/m3
NO ₂	Short	24.4	200	9.23	21.43	36.31
NO ₂	Long	5.5	40	9.23	59.9	-
PM ₁₀	Long	1.11	40	15.60	41.78	-

All PEC values for long term emissions in the table above are less than 70% of the AQS and therefore screen out from requiring further assessment.

The short term emissions for NO₂ in the table is less than 20% of the Headroom (i.e. AQS – 2 X Background (long term)) and therefore screen out from requiring further assessment.

We are satisfied that the emissions from biomass boilers do not have a significant risk to the environment or to human health.

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
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.	✓
The site		
Extent of the site of the facility	<p>The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility.</p> <p>A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.</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 proposed techniques for priorities for control are in line with the techniques contained in the SGN EPR6.09 "How to comply with your Environmental Permit for Intensive Farming, version 2" and we consider them to represent appropriate techniques for the facility.</p>	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
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), miscanthus or straw shall be used as a fuel for the biomass boiler. These materials are never to be mixed with, or replaced by, waste.</p>	✓
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.</p> <p>The decision was taken in accordance with RGN 5 on Operator Competence.</p>	✓