Environment Agency permitting decisions

Variation

We have decided to issue the variation for Windyridge Farm Poultry Unit operated by P Eggleston & Son.

The variation number is EPR/HP3337MQ/V002.

The permit number is EPR/HP3337MQ.

This was applied for and determined as a substantial variation.

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; and
- 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
- Annex 2: the consultation and web publicising responses

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 IED.

This permit implements the requirements of the European Union 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 Windyridge Farm Poultry Unit (dated April 2015) 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.**

Biomass boilers

An assessment has been undertaken by the Environment Agency to screen three biomass boilers, with the following input parameters:

Table 1 Details for two 221.1 kW biomass boilers

Flue diameter	250 mm
Stack height (from ground level)	6 metres
Adjacent Building heights	5 metres
Flue nominal load temperature	190°c
Flue minimum temperature	70°c
Thermal input in MW or kW per hour	2 x 221.1kW boiler
Exit velocity in m/sec	2.37 m/sec
NO_x concentration in mg/Nm^3	142 mg/Nm^3 at 10% 0_2
CO concentration in mg/Nm^3	193 mg/Nm^3 at 10% 0_2
PM_{10} (dust) concentration in mg/Nm^3	27 mg/Nm^3 at 10% 0_2
O_2 concentration in mg/Nm^3	4.5 – 7.0 mg/Nm^3
The exact grid reference(s) of the stack(s)	460500, 326281 and 460471, 326290
The exact grid reference of the centre of the farm	SK 604 262 (460476, 326228)
Fuel type	Wood Pellet (automatic feed)

Table 2 Details for one 501 kW biomass boiler

Flue diameter	300 mm
Stack height (from ground level)	6 metres
Adjacent Building heights	5 metres
Flue nominal load temperature	180°c
Flue minimum temperature	100°c
Thermal input in MW or kW per hour	1 x 501kW boiler
Exit velocity in m/sec	3.9 m/sec
NO_x concentration in mg/Nm^3	69 mg/Nm^3 at 10% 0_2
CO concentration in mg/Nm^3	344mg/Nm^3 at 10% 0_2
PM_{10} (dust) concentration in mg/Nm^3	42mg/Nm^3 at 10% 0_2
O_2 concentration in mg/Nm^3	10.2 mg/Nm^3
The exact grid reference(s) of the stack(s)	460471, 326228
The exact grid reference of the centre of the farm	SK 604 262 (460476, 326228)
Fuel type	Wood Pellet (automatic feed)

The Air Quality Monitoring and Assessment Unit (AQMAU) screening tool has been run for Carbon Monoxide (CO), Nitrogen Dioxide (NO_2) and Particulates (PM_{10}).

The impact has also been assessed at the receptors listed in table 3.

Table 3 Nearby receptors

Receptor	Grid reference
Windyridge Farmhouse	460531, 326240
Hillcrest Farm	460350, 326020
The Oakland	460279, 326553
Brookland Farm	460910, 326430

Sulphur Dioxide (SO_2) has not been assessed due to the boiler fuel being clean woodchip which would contain very little or no sulphur. The results for CO show that PC is 0% of the AQS therefore the results have not been presented and no further assessment is required.

Process Contributions (PC) and Predicted Environmental Concentrations (PEC)

Process contribution (PC) significance thresholds are 10% of the AQS for short term and 1% for long term.

If the PC is 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:

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

NO_2

For NO_2 the short term Air Quality Standard (AQS) is 200 µg/m^3 and for long term, 40 µg/m^3. The results for the impact of NO_2 are shown in tables 4 and 5.

Table 4 Impact of NO_2 at the point of maximum impact on the grid

Pollutant	Averaging time	PC µg/m^3	AQS µg/m^3	PC % age of AQS	PEC %age of AQS
NO_2	Short term	15.2	200	8	-
NO_2	Long term	5.1	40	1.3	54

Table 5 Impact of NO_2 at receptors

Receptor	Pollutant	Averaging time	PC µg/m^3	AQS µg/m^3	PC %age of AQS	PEC %age of AQS
Brookland Farm	NO_2	Short term	6.0	200	3	-
	NO_2	Long term	0.33	40	1	-
Windyridge Farmhouse	NO_2	Short term	12.0	200	6	-
	NO_2	Long term	1.9	40	5	46
Hillcrest Farm	NO_2	Short term	5.7	200	3	-
	NO_2	Long term	0.26	40	1	-
The Oakland	NO_2	Short term	3.7	200	2	-
	NO_2	Long term	0.13	40	0	-

Table 4 shows that the annual mean NO_2 for long term emissions is not insignificant when considering just the PC. Table 5 shows that the annual mean NO_2 for long term emissions is not insignificant at Windyridge Farmhouse. Therefore, we must consider the PEC.

In both cases the PEC for long term NO_2 is less than 70% of the AQS therefore screens out from requiring further assessment.

PM_{10}

For PM_{10} the short term Air Quality Standard (AQS) is 50 µg/m^3 and for long term, 40 µg/m^3. The results for the impact of PM_{10} are shown in tables 6 and 7.

Table 6 Impact of PM_{10} at the point of maximum impact on the grid

Pollutant	Averaging time	PC µg/m^3	AQS µg/m^3	PC % age of AQS	PEC %age of AQS
PM_{10}	Short term	2.7	50	5	-
PM_{10}	Long term	1.2	40	3	52

Table 7 Impact of PM_{10} at receptors

	Pollutant	Averaging time	PC µg/m^3	AQS µg/m^3	PC %age of AQS	PEC %age of AQS
Brookland Farm	PM_{10}	Short term	0.22	50	0	-
	PM_{10}	Long term	0.088	40	0	-
Windyridge Farmhouse	PM_{10}	Short term	1.3	50	3	-
	PM_{10}	Long term	0.65	40	2	51
Hillcrest Farm	PM_{10}	Short term	0.28	50	1	-
	PM_{10}	Long term	0.074	40	0	-
The Oakland	PM_{10}	Short term	0.085	50	0	-
	PM_{10}	Long term	0.035	40	0	-

Table 6 shows that the annual mean PM_{10} for long term emissions is not insignificant when considering just the PC. Table 7 shows that the annual mean PM_{10} for long

term emissions is not insignificant at Windyridge Farmhouse. Therefore, we must consider the PEC.

In both cases the PEC for long term NO_2 is less than 70% of the AQS therefore screens out from requiring further assessment.

Ammonia emissions

There are no Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Ramsar sites located within 10 kilometres of the installation.

There are no Sites of Special Scientific Interest (SSSI) located within 5 km of the installation.

There are 17 Local Wildlife Sites (LWS) within 2 km of the installation.

Ammonia assessment – LWS

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 (version 4.4) has indicated that emissions from Windyridge Farm will only have a potential impact on sites with a critical level of 1 µg/m^3 if they are within 627 metres of the emission source. Screening indicates that beyond this distance, the PC at conservation sites is less than 1 µg/m^3. 1 µg/m^3 is 100% of the 1 µg/m^3 CLe and therefore beyond this distance the PC is insignificant. In this case 16 LWS are beyond this distance as shown in table 8.

Table 8 Distance of LWS from source

Site	Distance (m)
Wayside	1,917
Intake Wood, Costock	1,864
Rempstone Pond	1,750
Thorpe in the Glebe Pond	776
Thorpe in the Glebe Meadow	812
Woodside Farm Grassland 1	1,251
Woodside Farm Orchard	987
Field Farm	2,006
Woodside Farm Pond, Thorpe	1,232
Willoughby on the Wolds Stream Grassland	1,415
Wysall West Grassland	1,579

Site	Distance (m)
Thorpe in the Glebe Plantation Grassland	1,385
Thorpe in the Glebe Boundary Grassland	978
Woodside Farm Grassland	989
Thorpe Plantation	1,392
Kingston Brook, Willoughby	1,735

The PC at these sites has been screened as insignificant. It is possible to conclude no significant pollution will occur at these sites and no further assessment is required.
For Costock Road LWS this farm has been screened out, using the ammonia screening tool (version 4.4). The predicted PC on the LWS for ammonia, acid and nitrogen deposition from the application site are under the 100% significance threshold and can be screened out as having no likely significant effect. The results are shown in tables 9 to 11.

Table 9 Ammonia emissions

Site	Critical level ammonia µg/m^3	Predicted PC µg/m^3	PC % of critical level
Costock Road (iii)	3*	1.247	41.6

*CLe 3 applied as no protected lichen or bryophytes species were found when checking easimap layer

Table 10 Nitrogen deposition

Site	Critical load kg N/ha/yr [1]	Predicted PC kg N/ha/yr	PC % of critical load
Costock Road (iii)	10*	6.474	64.7

Note [1] Critical load values taken from APIS website (www.apis.ac.uk) – 16/03/15

Table 11 Acid deposition

Site	Critical load keq/ha/yr [1]	Predicted PC keq/ha/yr	PC % of critical load
Costock Road (iii)	2.59	0.462	17.8

Note [1] Critical load values taken from APIS website (www.apis.ac.uk) – 16/03/15

No further assessment is required.

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.	✓
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. 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	The application is within the relevant distance criteria of sites of nature conservation. In accordance with the Environment Agency's Air Quality Technical Advisory Guidance 14: "for combustion plants under 5MW, no habitats assessment is required due to	✓

Aspect considered	Justification / Detail	Criteria met Yes
	the size of combustion plant". Therefore this proposal is considered acceptable and no further assessment is required.	
Environmental Risk Assessment and operating techniques		
Environmental risk	We have carried out a risk assessment on behalf of the operator. See Key Issues section for further explanation.	✓
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The proposed techniques for priorities for control are in line with the benchmark levels contained in the Sector Guidance Note EPR6.09 and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs.	✓
The permit conditions		
Updating permit conditions during consolidation	We have updated previous permit conditions to those in the new generic permit template as part of permit consolidation. The new conditions have the same meaning as those in the previous permit. The operator has agreed that the new conditions are acceptable.	✓
Raw materials	We have specified limits and controls on the use of raw materials and fuels. 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 boilers. These materials are never to be mixed with or replaced by waste.	✓
Incorporating the application	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. These descriptions are specified in the Operating Techniques table in the permit.	✓
Operator Competence		
Environment management system	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	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	Competence.	
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

Annex 2: Consultation and web publicising responses

1) Local Authority – Environmental Health

Response received on 02/07/15 from
Environmental Health – Rushcliffe Borough Council
Brief summary of issues raised
The Environmental Health Officer is aware of odour complaints, the most recent being in 2008. They requested a copy of the biomass screening assessment of the site to ensure that the biomass boilers do not cause an exceedance of the air quality objectives.
Summary of actions taken or show how this has been covered
We sent a summary of the biomass boiler assessment which is discussed in detail in the key issues section of this document. Regarding odour, the operator has an odour management plan which has been revised for this variation and been incorporated into the operating techniques, table S1.2.

2) Public Health England

Response received on 03/07/15 from
Public Health England
Brief summary of issues raised
The main issues of potential public health significance are emissions to air of bioaerosols and dust including particulate matter and ammonia. It is considered that the residual risk is low. It is assumed that the installation will comply with the requirements of the permit, all relevant domestic and European legislation and will use Best Available Techniques (BAT).
Summary of actions taken or show how this has been covered
No action required.