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From: [redacted]
Sent: 06 March 2023 09:52
To: [redacted]
Cc: [redacted]
Subject: Response to Schedule 5 Notice response 07/02/23

Hi Steve

As discussed earlier, we have now had an opportunity to assess the information submitted on 07/02/23 and we are unable to verify the claims made with regards to the heat exchangers and indirect heating being able to reduce odour. We therefore do not currently accept these measures as being able to reduce odour emissions from the farm.

The information provided claims that the presence of heat exchangers will result in a 33% reduction in odour when compared to a house which does not have a heat exchanger. We do not believe there is sufficient data to support the assertion that heat exchangers confer this odour reduction benefit. One of the documents ('Report on the emission measurements in a broiler house with heat exchanger as well as a reference house') provided states *'the available data cannot be loaded enough to certify a reduction by this percentage'*. The document itself seems to suggest that data can't be wholly relied upon as it can't be certified; it is only one study from 2012, which only covers a period over February and March of that year. To determine any impact of utilising heat exchangers to reduce odour, it would be prudent to have available a much larger and comprehensive data set, covering representative data across winter and summer months of a least a full calendar year. We are not aware of any direct evidence that heat exchangers reduce odour.

Furthermore, the information also supplied in the document titled 'Heat Exchanger Earny Type 40.000 Heat recovery efficiency under practical conditions DLG-Test report 6140F' only seems to have been done over winter months (December – April), and given the primary purpose of heat exchangers (that is to warm incoming air using the heat recovered from the indoor air, and to recover heat to minimise energy consumption), that is understandable. This document makes only one reference to odour and that is in the 'construction type' section and does not provide any data regarding odour reduction.

There are other concerns with regards to the information presented. The document titled 'Big Dutchman International, Heat Exchanger Earny Type 40.00, Heat recovery efficiency under practical conditions' focuses overwhelmingly on the ability of the plant to recover heat and states '*after 14 to 18 days of growing the HE was set to standby mode due to an energetically optimised operating mode via the control unit; the heat exchanger functioned on a reduced ventilation level*'. It appears as though the heat exchanger is only really being used to any great degree up until day 18 to improve conditions within the building.

With regards to indirect heating systems, whilst anecdotal evidence would suggest a move to indirect heating could result in reduction in odour arisings due to the likely improvements to in-house conditions, we are not aware of any current evidence that supports this and none has been provided with the application. We are also not aware of any current information/evidence for combined use of heat exchangers and indirect heating and the implications for ammonia or odour emissions.

Moreover, we have examined the Best Available Techniques (BAT) Reference Document for the Intensive Rearing of Poultry or Pigs (JRC107189_IRPP_Bref_2017_published (2).pdf) and there is no reference to heat exchangers being used as a method for reducing odour. Sections 4.5.5.1 and 4.6.4.2.2 mentions heat exchangers for ammonia reduction but nothing on odour. Furthermore, in section 4.10 of this document, which details techniques for the reduction of odour emissions, there is no reference to the usage of heat exchangers. The BAT Conclusions for the Intensive Rearing of Poultry or Pigs (EUR-Lex - 32017D0302 - EN - EUR-Lex (europa.eu)) document also makes no specific mention of heat exchangers as an odour control measure.

Further information therefore needs to be provided evidencing that heat exchangers and indirect heating will reduce odour emissions based on data in the form of odour units (in line with MCERTS standard BS EN 13725), for specific Installation, bird type and housing conditions, addressing the point raised above. Alternatively, please provide different contingency measures, which will be implemented, should the need arise, to reduce odour emissions. These measures should be submitted alongside robust evidence of their viability.

Please provide a response by 20/03/23. As discussed, I'm on leave Monday 13 March – Friday 17 March, inclusive. In my absence you can contact [redacted] should you need to.

Kind regards

[redacted]

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[redacted]