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Office of Licensing, Climate and Resourse Use, Environmental Protection Agency, P.O. Box 3000, Johnstown Castle Estate, Co. Wexford

16th March 2023

Re: Doon Farm Enterprises Ltd. ~ Licence Application P1024-02

Dear Sir/Madam,

I refer to previous Agency correspondence of 17th November 2022. Please find the response to the issues raised outlined below;

1. Planning permission: It is noted that the final grants of planning permission have been included in the licence application for a number of planning permissions for the installation (e.g. planning permission refs: 07/1368 and 19/601471).

With regards to all <u>other</u> relevant planning permissions for the activity at the installation, (e.g. planning permission refs. 19/00609, 16/601143, 11/349, and 96/574), you are required to submit:

a) A copy of Tipperary County Council's final grant of planning permission for <u>each</u> planning permission granted.

Please find enclosed a copy of decisions as requested. 96/574 pending and will be submitted upon receipt.

- 2. Best Available Techniques (BAT): It is noted that the documentation regarding BAT has not been fully completed. The responses provided to address compliance with BAT 10 and 30 are not acceptable with regards to the Commission Implementing Decision (CID) document for the Intensive Rearing of Poultry or Pigs (2010/75/EU, Feb 2017). You are required to:
 - a) Regarding BAT 10 (reduction of noise emissions), provide specific details regarding the technique, or the combination of the techniques that will be used, and BAT 10 (c) is applicable and implemented.

 BAT 10 b, d and e to be considered as part of any maintenance/upgrade programme.
 - b) Regarding BAT 30 (ammonia emissions from pig houses), provide specific details regarding the technique, or the combination of the techniques that will be used.
 - i. Specifically reference the techniques which will be utilised onsite (i.e. a, b, c, etc.).
 - Please refer to responses to points (iii) and (iv) below.

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- ii. Provide sufficient detail to clarify how the measures to be implemented will comply with the specific BAT techniques referenced.
- Please refer to responses to points (iii) and (iv) below.
 - iii. Where applicable, differentiate between the techniques being proposed for the existing houses/tanks and the new house/tanks.

Existing Houses / Tanks 1-20 (excl. 2.1 & 10.1)

- BAT 30 a (0) to be implemented in houses 1-20 inclusive.
- Deep pit in conjunction with an additional mitigation measure nutritional management techniques (low protein diets)

Existing Houses / Tanks A, B, 2.1 & 10.1

- Addressed under point (iv) below.
 - iv. It is noted that the further information received 22 October 2022 refers to frequent slurry removal to an external store as the BAT 30 technique to be utilised in the new pig houses. Where any new organic fertiliser (slurry) storage tank(s) are to be provided at the installation to satisfy any proposal for frequent slurry removal:
 - 1. provide confirmation that frequent slurry removal will be retrofitted in the two new houses to meet the specifications outlined in the CID/BREF documents
- It is proposed to install frequent slurry removal and/or slurry cooling in Houses A, B, 2.1 & 10.1). Same is currently being reviewed and may result in slurry cooling being installed in all aforementioned houses, as the preferred mitigation option.
 - 2. provide confirmation from the planning authority that planning permission is in place or is not required; and
- As per S.I. 600 of 2001 as amended;
 - "Development under other enactments.
 - 7. (1) Works consisting of or incidental to the carrying out of development referred to in section 86(8) of the Environmental Protection Agency Act 1992 (No.7 of 1992), as amended for the purpose of giving effect to a condition attached to a licence or revised licence granted by the Environmental Protection Agency under Part IV of the said Act shall be exempted development. "
 - 3. update all other relevant sections of the application, including but not limited to, the site plan, organic fertiliser storage capacity, emissions to air, EIS and NIS.
- NO revisions are currently proposed to the site plan. Should ancillary storage be proposed an updated site plan, and storage capacity calculations incorporating same will be submitted to the Agency.
- The NIS as submitted has been based on mitigation due to low protein diets, but has not relied on mitigation due to improved housing / manure storage. Any improvements in this area will only reduce ammonia emissions further.

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- 3. Boilers: In relation to boilers for the activity, it is noted that no reference is made to boilers in the application. It is further noted that the site plan includes a boiler room. It is unclear as to the number and type of boilers installed or to be installed onsite.
 - a) Complete Section 7.4.1 of the application form. All required details in the tables must be submitted as well as a full assessment of the impact of any main emissions. In relation to any minor emissions, the response must include a detailed specification for the boilers including their thermal input. The applicant should ensure all emissions are correctly classified as either main/minor and correctly numbered in accordance with Agency guidance:
 - b) Confirm the total number and location of boilers (existing and/or proposed) for the activity onsite;
 - i. Update the relevant layout plan to outline the location of any boilers;
 - ii. Confirm the quantity of fuel estimated to be used onsite annually for the activity; and
 - iii. Provide details of the capacity, location, bunding and protection of any existing/proposed fuel storage facilities onsite.

There are no boilers / ancillary fuel storage facilities on site

- 4. Ammonia and odour emissions: It is noted that calculations of emissions of ammonia and odour associated with the activity have not been provided. The revised site plan lists the pig type to be housed in the majority of the animal houses, but some have been omitted. It is further noted in your correspondence received 22 October 2021 that low crude protein feed is to be utilised throughout; and that frequent slurry removal is to be implemented in the two new animal houses ref. A and B.
 - a) Update the site plan where necessary ensuring that all building housing animals have a unique identifying label. It is noted that two of the structures have been labelled as "08".
 - Please refer to revised site plan enclosed.
 - b) Provide details of the pig type(s) to be houses in animal houses ref. 6, 7 and 10.1.
 - Please refer to response to point c below.
 - c) In tabular format, provide a breakdown of the capacity, in terms of animal numbers by pig type, for <u>each</u> of the animal houses associated with the activity (i.e. all animal houses). Ensure the relevant house number is quoted as per the revised site plan.
 - 400 Dry sows- are in buildings (A)= 120. (O1)=80. (02 & 2.1)=200
 - 100 Farrowing sows buildings 7,6,5 and 3
 - 80-100 maiden gilts- in building 15
 - 2500 weaners in buildings 5,6,7,8,9,10 and 10.1
 - 3400 Finishers are in buildings- 13,14,16,17,18,19,20 and house B



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d) Provide details, for each pig type, of the existing and proposed crude protein percentage of the feed used and proposed to be used onsite.

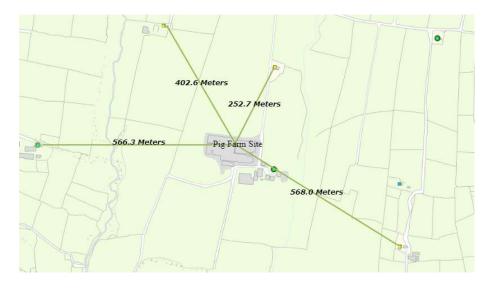
Please refer to typical diet spec.'s below

Dry sows Existing 14.6-15 % Cp
 Proposed 12% C.P
 100 Farrowing
 Existing 19 % Cp
 Proposed 16% C.P
 Weaner to Finisher
 Existing 18.5% CP
 Proposed 15-15.5% CP

- e) Provide calculations of the ammonia and odour emissions estimated to be generated by the existing activity.
- Please refer to response to points 5 and 6.
 - f) Provide calculations of the ammonia and odour emissions estimated to be generated by the activity when the proposed BAT techniques have been incorporated onsite. Any reductions associated with the use of low protein feed and/or frequent slurry removal to be installed in the two new animal houses should be factored into the calculated emissions from the activity.
- Please refer to response to points 5 and 6.
- 5. Odour Assessment: The EPA recently published an odour screening tool and "Instruction note for the assessment of odour emissions from intensive agriculture pig installations". The odour screening tool and instruction note can be found on the Agency's website at the following link: https://www.epa.ie/publications/licensing--permitting/industrial/ied/instruction-note-and-screening-tool-for-the-assessment-of-odour-emissions-from-i.php.

The EPA's odour screening tool has indicated that odour levels may exceed 3 OUe/m³ at nearby sensitive receptors. This is the odour benchmark for a new (unlicensed) installation.

a) Provide a map showing the location and distance from the installation boundary to the closest sensitive receptors. The map should also highlight which sensitive receptors are family dwellings, and which are third party dwellings.





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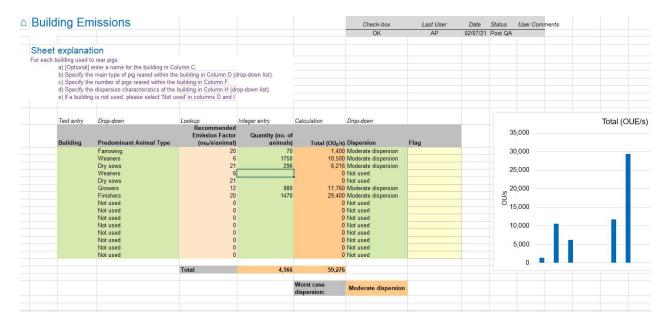
- b) Provide an assessment of the odour emissions from the activity and the impact on local residents. The required odour impact assessment should be undertaken in line with the approach outlined in the above-mentioned document and tool.
- c) The assessment should be supported by use of a model to predict odour concentrations at the sensitive receptors in the vicinity of the installation. The assessment should, as appropriate, identify odour reduction/mitigation measures.

Odour Concentrations have been predicted using the E.P.A. Screenig tool.

Please note that stock numbers entered in this tool have been corrected to take account of low protein diets only and do not factor in any improvements in manure storage/animal housing that may be implemented.

Please refer to Screenshots from E.P.A. Odour Modelling tool as detailed below. The closest residential location (Which is the applicant's dwelling) is in excess of 250m from the farm. As per the odour impact assessment carried out the predicted odour impact is anticipated to be <5 OUE/m³ at this location.

The closest third party location is >400m with the next 2 in excess of 550m. Of these three locations one has worked on the farm for a significant number of years, while the other 2 relate to farmers who utilise / have utilised organic fertiliser from this farm.

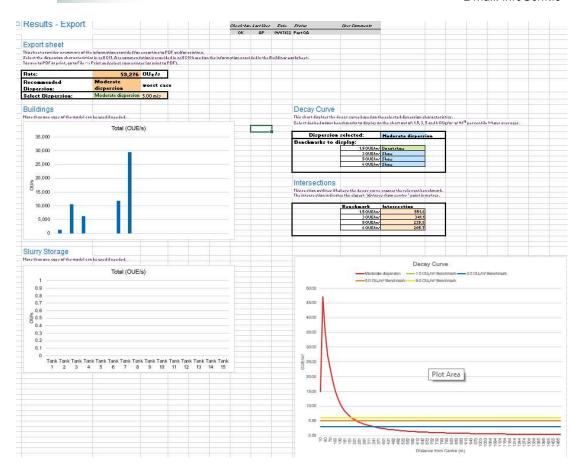




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Intersections			
This section outlines if	where the decay curve	crosses the relevant be	enchmark.
The intersection indica	tes the closest 'distanc	e from centre' point in m	netres.
	Benchmark	Intersection	
	1.5 OUE/m ³	551.8	
	3 OUE/m³	341.1	
	5 OUE/m³	235.8	
	6 OUE/m³	205.7	
		*	

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- 6. Appropriate Assessment: With regards to Appropriate Assessment, and the Natura Impact Statement (NIS) received 22 October 2021, the Agency is of the opinion that insufficient evidence has been provided to demonstrate that there will be no significant effects on European sites due to ammonia emissions from the installation, either individually or in combination with other plans or projects. You are required to update and re-submit the NIS taking account of the requirements below and any other relevant points outlined in this letter:
 - a) Only the legally permitted stock onsite (e.g. ≤750 sows and ≤2,000 production pigs in an integrated unit) may be considered as part of the background ammonia concentration or used when demonstrating a reduction in ammonia emissions due to the implementation of mitigation measures relative to the existing installation.

This has been factored into the NIS as completed.

b) Provide SCAIL / site specific modelling to demonstrate that there will be no impact on European sites. The CID and associated BREF should be referred to in relation to this. Where no impact on European sites cannot be demonstrated through SCAIL, site specific modelling may be more appropriate.

Please refer to NIS enclosed.

c) Where multiple ammonia mitigation measures are to be used in combination (i.e. Reduced crude protein in feed and reduced feed crude protein), 100% of the impact may only be applied for the first mitigation measure. Only 50% of the impact of a second measure may be applied.

For the purposes of the NIS only low protein diets have been taken account of. It is appreciated that additional mitigation will be applied to manure storage in houses A and B, however this has not yet been factored in.

In any event same will only reduce potential emissions further. The NIS as completed presents a worst case scenario.

d) Have reference to the EPA's guidance document "Assessment of the impact of ammonia and nitrogen on Natura 2000 sites from Intensive Agriculture Installations": https://www.epa.ie/publications/licensing--permitting/industrial/ied/Assessment-of-Impact-of--Ammonia-and-Nitrogen-on-Natura-sites-from-Intensive-Agericulture-Installations.pdf.

Please refer to enclosed revised NIS.

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- 7. Environmental Impact Statement (EIS): With regards to the EIS:
 - a) The assessments of potential impacts from the activity on air, and fauna and flora are not complete. Provide revised assessments to include the potential impacts of ammonia on air, and on fauna and flora; and
 - **Impact on Air:** The pig farm is long established on this site and has operated successfully and without complaint for many years.

<u>Odour -</u> The proposed customer farmlands and pig farm are non-urban based, the rural residents are accustomed to agricultural smells such as animal manure spreading, silage and silage effluent spreading. The rural location of the site of the proposed development and the nature of the existing (and previously approved / currently authorised) activities on the farm, well isolated from neighbouring dwellings and potential odour sensitive locations makes this an ideal site for the purposes of the proposed development. All practicable steps, such as landscaping, management routines etc., have/will be planned for and will be taken so as to minimise odour from the site. Its rural setting and location distant from local residences will ensure no effect on Human Health/Population. This development will have no significant adverse affect on climate. The closest third party dwelling to the proposed site, is located c. 400m north west of the farm.

The standard of management required for the existing / proposed farm is high, and will be improved by the improvement in site infrastructure, and the operation of the proposed development, and its integration with the existing farming activities will benefit from the experience gained in the existing pig farm.

The houses will be continuously cleaned, the manure removed on a regular basis, stocked at optimum levels and adequately ventilated, ensuring minimal odour emissions. Should technical advances be made in odour reduction the applicant will adopt any economically viable practices. Potential odour emissions from the proposed development will be minimised due to the improved manure management and storage facilities/practices which are and will be implemented as a result of the upgrading of the proposed development to be completed, in line with licence requirements, and additional improvements in feed formulation to minimise potential odour impacts.

All lands currently identified for the receipt of manure from the proposed development are tillage lands, be they Wheat, Barley, Potatoes etc., or grassland, and all farmers will be advised that in order to minimise any potential adverse environmental impact and to ensure that they get maximum fertiliser benefit from the organic fertiliser, that all manure from this farm should be stored, managed and applied in accordance with S.I. 113 of 2022, as amended.

Odour nuisance will be minimised and surface and ground waters protected by, using the correct application rates, even application, spreading at the correct times under suitable conditions and strict adherence to cordon sanitaires and Good Practice for manure spreading. This fertiliser planning will result in fertiliser substitution, not addition, and all farmers will be advised that Low Emission Spreading Systems (LESS) should be implemented, to minimise odours and ammonia emissions and maximise the fertiliser value/uptake by the crop.

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In addition to the mitigation measures previously referred the applicant will recommend to all customer farmers that organic fertiliser from this farm should not be applied to lands adjacent to neighbouring dwellings/potential odour sensitive locations. A recommended set back distance of 100 meters from an isolated dwelling and/or 200 meters from a potential odour sensitive area/group of dwellings will be recommended.

The potential odour emissions from the proposed farm have been calculated using the E.P.A. publication "Instruction Note regarding Odour Emissions for Intensive agriculture Pig Installations, pig performance and provides additional detail regarding the application of applicable mitigation measures), as follows,

Recommended odour emission rate

(CUL/s/pig)

Sows
2:
Farrowing Sows
20
Weaners
6
Growers
12
Finishers
20

Table 3: Odour emission factors for the different pig types used in the screening tool.

As part of these assessments, a total of 3 third party residences have been identified within c. 400 - 575 m of the existing farm. The odour impact assessment was completed based on the potential impact of the proposed development incorporating the proposed operational and management practices to be employed on the farm, including measures to minimise odour, incl. low protein diets (but excluding any revised housing/manure storage measures as these have not yet been finalised).

For the site layout all third party dwellings (incl. house No. 1, the applicant's dwelling) are at or below the $50u/m^3$.

Ammonia (& Nitrogen) Emissions

Significant atmospheric emissions arising from agricultural developments can have negative impacts upon designated sites and their sensitive vegetation communities. Some vegetation communities are most sensitive to the effects of ammonia and nitrogen deposition than others. In general, communities containing notable bryophyte communities are the most sensitive and have a lower critical load for ammonia of $1 \mu g/m^3$. Less sensitive habitats have a critical load of $3 \mu g/m^3$.

In order to correctly assess the potential impacts of the operation of the farm on the Natura 2000 sites, atmospheric modelling of the proposed development was undertaken using Scail Agriculture

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modelling software. The overall purpose of this screening report was to quantify the ammonia and nitrogen levels at the ecologically sensitive areas in the vicinity of the proposed pig farm. The predicted impacts can then be compared to an appropriate criterion and graphically illustrated in the form of "contours of equal concentration" or isopleths which are superimposed on base maps.

Using scail, the projected ammonia and nitrogen emissions from the proposed development and baseline levels were modelled using details such as animals per house and the ventilation proposed.

The model provided the annual average ammonia concentrations at the closest Natura 2000 ecologically sensitive sites and determined the potential impact of the increase in activity above the E.P.A. Licence threshold level. The results obtained are presented in the tables below and provides an assessment of the process contribution for ammonia on the Natura 2000 sites arising from the proposed licensing of this development.

These have been reviewed and are discussed in more detail in the accompanying NIS.

Impact on Flora and Fauna

Biodiversity - Flora and Fauna

(a) Site and immediate area

As previously described the site and adjoining area are a pig farm site and / or agricultural lands immediately adjacent to same that have been intensively managed over a long number of years. The area of the proposed site forms part of the existing landholding owned/farmed by the applicant. The area of the proposed site is currently intensively managed agricultural grass lands, and as such the flora and fauna associated with this site has developed in this context.

The majority of the land in the surrounding area is used for grass/arable based agricultural production. The flora and fauna associated with this site has developed accordingly as the site has been managed over the years. There are no specific unique habitats on, or adjacent to this site that require specific protection, and/or are likely to be adversely impacted by the proposed development. This proposed development is not anticipated to adversely impact, either directly or indirectly on any NHA, SAC, and/or SPA.

The application site is not within or adjacent to any site that has been designated for nature conservation purposes. The site is dominated by buildings and artificial surfaces (the existing buildings and hard surfaces).

An examination of the website of the National Biodiversity Data Centre revealed that there are no records for the presence of any protected mammal species from within the relevant one km² (R9706) of this proposed development.

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(b) Customer farmlands

All organic fertiliser from this farm will be allocated for use in accordance with S.I. 113 of 2022, as amended. This legislation which is applicable to all farmers in the country with regard to the application of organic and inorganic fertilisers places certain requirements on farmers with regard to the application of organic fertilisers. In order to prevent any adverse impact on flora and fauna in the area the following practices are to be implemented,

- Organic Fertiliser from this farm is not to be allocated to areas of woodland/scrubland habitat.
- Organic Fertiliser from this farm is not to be allocated within 10m of hedgerows.
- Organic Fertiliser from this farm is not to be allocated within 5m of a watercourse or 20 m of a lake shoreline
- Organic fertiliser from this farm is not to be applied to areas where it is likely to adversely impact on a N.H.A., S.A.C. and/or S.P.A, or other such sensitive area.
- Organic fertiliser from this farm is not to be applied within 10 m of an archaeological feature.

There should be no negative impact on the flora and fauna of the area from activities associated with this development. It will be advised to the customer farmers that organic fertiliser spreading operations be carried out in accordance with Codes of Good Practice.

Biodiversity - Special Policy Areas

(A) Nationally Designated Environmental Areas

The proposed development is to be completed on an existing pig farm site and a significant distance from the any Natura 2000 site and it is not expected to have any adverse affect on the conservation of these areas and the flora and fauna contained therein for the following reasons,

- The proposed development is located a significant distance away from any such areas, as identified in the County Development Plan, and pig farming activities have been carried out on this site to date without any adverse impact on the designated areas.
- The provision of a substantial amount of excess slurry storage capacity well above the 6 month minimum requirement will ensure that organic fertiliser is managed to the highest possible standard on the pig farm site.
- Collection of all soiled water in manure storage tanks.
- Movement of animals on solid or slatted passageway with manure storage tank underneath.
- All organic fertiliser arising from this farm is to be allocated to lands in accordance with S.I. 113 of 2022, as amended.
- Low Protein diets and compliance with BAT requirements (to include slurry cooling and/or frequent removal of slurry)

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Due to the location of the proposed pig farm site, located away from such areas it will not have an adverse environmental impact on same. All customer farmlands proposed for the receipt of manure from this farm will allocate organic fertiliser in accordance with S.I. 113 of 2022, as amended so as to ensure that there is no significant adverse impact on any of these areas.

> <u>AMMONIA</u>

The ammonia levels were assessed in areas of specific interest in relation to vegetation. Same has been addressed further in the NIS submitted with this application

• Application of Organic Fertiliser

Inappropriate application of fertiliser (organic or inorganic) can lead to deleterious impacts upon the receiving waters in local catchments and it can result in eutrophication, algal blooms, fish kills and loss of biodiversity. Impacts can affect both surface water and groundwater. In response to this, specific regulations, known as EUROPEAN COMMUNITIES (GOOD AGRICULTURAL PRACTICE FOR PROTECTION OF WATERS) REGULATIONS (currently SI 113 of 2022, as amended) have been implemented over the last c. 15+ years, to address these risks.

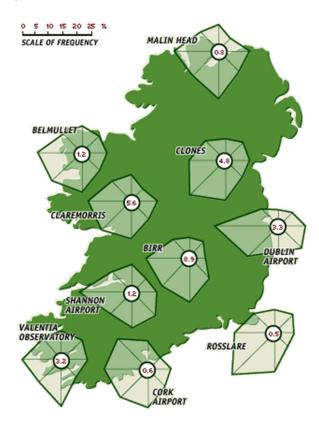
These regulations apply to all customer farmers, and make specific provision to the manner, amount, timing and conditions associated with the application of fertiliser to land and all associated requirements pertaining to same. These requirements are routinely updated (at least every 4 years) to respond directly to trends in water quality, and advances in agricultural practices, and the requirements therein are the appropriate measures that govern the customer farmers when applying organic fertiliser from this farm (existing and proposed) to their lands as an alternative to other/chemical fertiliser. The re-distribution of organic fertiliser nutrients from farms such as this to farms lacking in fertiliser nutrients is an important part of the Agricultural cyclical economy and the local redistribution of nutrients should be should be prioritised and encouraged in preference to imported chemical nutrients.

The customer farmers will use the manure from this development on their agricultural lands as an organic fertiliser to replace existing fertiliser sources, <u>as part of a fertiliser substitution programme</u> (<u>organic for inorganic/chemical</u>) with no increase in the overall level of nutrients applied and in line with fertiliser application limits prescribed by S.I. 113 of 2022, as amended. These lands are identified to the DAFM by customer farmers on an annual basis for agricultural purposes. All farmers will be advised that Low Emission Spreading Systems (LESS) should be / are required to be implemented, to minimise odours and ammonia emissions and maximise the fertiliser value/uptake by the crop.

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b) The assessment of potential impacts from the activity on climatic factors is not complete. Provide an assessment of the potential impacts on climatic factors (climate).

Climate information is useful for predicting the likely impacts that the farm operation and the application of manure in the area will have upon the residents. Wind direction at the site is critical to odour movements and rainfall is critical factor in the application of manure. The prevailing wind in the is southwesterly.



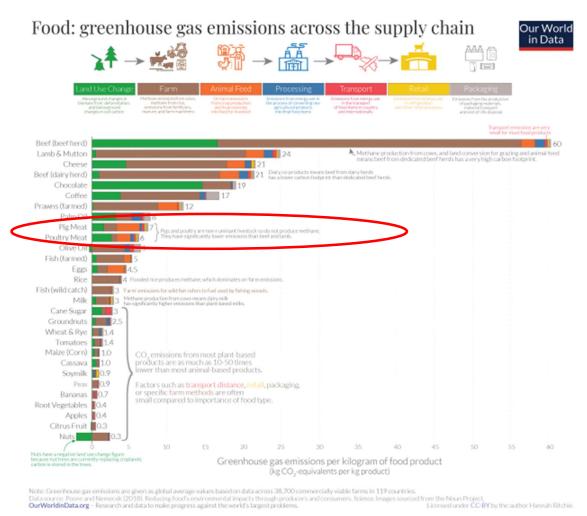
Large livestock populations and nitrogen inputs to soil generate one-third of all greenhouse gases in Ireland. The amount of *methane* emitted by livestock is a lot higher for ruminants such as cattle and sheep versus non-ruminants such as poultry/pigs. This is as a result of the different digestive systems.

As can be seen from the table below, the GHC emissions from mono-gastric animals such as pigs and poultry is significantly less than ruminants, albeit that a majority of the GHG from ruminant agriculture (i.e. CH4) is eventually absorbed by plants etc. to be eaten by ruminants to carry on the cycle (Carbon Cycle).

 N_2O emissions can be divided into three areas,

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- Direct from agricultural soils and from agricultural production systems.
- Indirect emissions which take place after nitrogen is lost from the field
- Emissions resulting from agricultural burning.



Source http:// https://ourworldindata.org/food-choice-vs-eating-local

Any additional customer farmers will be advised that in order to minimise any potential adverse environmental impact including odour/emissions, and to ensure that they get maximum fertiliser benefit from the organic fertiliser, that all manure from this farm should be stored, managed and applied in accordance with S.I. 113 of 2022, as amended, and with Low emission spreading



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techniques and/or incorporated/ploughed into the soil as soon as practicable after application, where possible. As a result this farm will have no significant effect on the climate in the area.

As the pigs will be maintained in a controlled environment within the proposed development, the operation of the farm is not directly significantly susceptible to climate change, however climate change may impact on energy use associated with ventilation systems to maintain a controlled environment within the house relative to outside climatic conditions, and, may have implications for feed supply to feed the pigs, due to impact on crop yields etc.

In addition to the above, please also provide an updated non-technical summary (Application Form, and EIS where applicable) to reflect the information provided in your reply, insofar as that information impinges on the non-technical summary.

No revisions are required to the non-technical summary.

If you require any additional information please contact this office.

Yours Sincerely,

Paraic Fay

Paraic Fay B.Agr.Sc.