Hewitt Farming Ltd.- Heads Inn:- (PPC Application for new permit)

HI 13. Non- Technical Summary

Hewitt Farming presently have two poultry houses, end to end separated by a Central Service Area at (East Park) They are designed and equipped for free range egg production from a total of 64,000 birds. Both houses are operated on an 'aviary' system. The houses take 16 week old pullets and subsequent egg- laying will be for approx. 55-60 weeks, after which the birds are cleared out and a new batch introduced after thorough cleansing of the poultry houses.

The Houses are designed by Big Dutchman International, a reputable company in the provision of units for free range egg production.

The proposed new site at Heads Inn would replicate the arrangements at East Park.

Construction

The concrete floors will be protected from water ingress by the placement of an impermeable damp-course and supported at the south side of the houses (in the free range area) by an interceptor drain, cutting off all drainage from higher ground and diverting it away from the buildings. This helps maintain a depressed local water table in the vicinity of the 2 houses at all times and especially winter.

All walls and roofs will be insulated to retain heat but also minimise condensation.

Previous PPC control experience exists at East Park.

The 2 houses will be served by manure belt that collects from under the perches, drinking and feeding locations and nest boxes which is the majority of the surface. These will provide capture for the majority of manure / dropping within he buildings.

Sensors around each individual house record climatic conditions which are fed into the unit computer system and this determines operation of fans to create optimal conditions for the hens and keeps litter dry but not dusty. Target level is 60-65% dry matter.

Eggs are conveyed to a central service area where they are packed and go off site for processing.

No food mixing occurs on site. All feed is from accredited sources, the composition of which changes twice over the campaign period. These are adjusted to provide the perfect diet and also minimises waste and especially minimises Nitrogen and Phosphorus loss to the environment. In particular, minimum nitrogen loss means ammonia production is also reduced.

Mains water supplies the site and the pressure is reduced before serving nipple drinkers which is recognised as good practice for avoiding water loss and potential wetting of litter. They will be regularly set at the right height for the birds o drink without spilling.

All aspects of building design supported by management systems will minimise the impact on the *aerial, land and water environments*.

Manure

Manure is removed from the houses regularly, (2-3 x / week) and delivered by conveyor to a trailer parked just outside the sheds. Manure is then taken off the permitted site and applied to (other) farmers' fields using good agricultural practice and both timing and quantities consistent with their manure and fertiliser management plans.

Birds

Bird mortalities are attended to immediately and carcases frozen before collection and removal by a registered by-product company (probably rendering.)

Site cleaning.

At the end of campaigns, the birds will be removed and the houses cleaned physically of manure / litter before being washed, sterilised and recommissioned.

Washings are collected in a sealed tank and muck / manure / litter retained dry for removal off site and used as part of the farm nutrient budgeting plan. Excess to requirements is sold to adjacent farms. As demand outstrips production no stockpiling takes place.

Rain water treatment

Roof water, drainage from the concrete pads around the site and drainage from under the scratch area will drain to a series of *swales* for treatment. Their design aims for organic matter to be absorbed and treated / digested on the grass whilst treated / purified water passes slowly through the base and banks. Only high rainfall events will incur an overflow to the local watercourse. Monitoring of this system will be undertaken routinely and visual monitoring of the final discharge from the site will be undertaken in times of storm event.

To date, the land being considered for free range, extending to 32 Ha, has been used for the production of grass and grazing, along with some limited rotational crops. All of these activities will have incurred routine application of fertilisers whereas future use as free-range will not require this approach. Instant fertilisation by ranging hens will be the only nutrient addition.

Beyond the scratch area, the free range land will be planted with trees / bushes for birds to spend the daylight hours in. These increase health and animal husbandry as well as reducing loss from predation. During months when trees are in leaf, transpiration will contribute to maintaining a dry habitat for the flock. When mature and the tree canopy is closed, the cover will also act to support other plantations aimed at absorbing particulates and ammonia.

Environmental Overview

The environmental overview is shared between BH Construction and BH Farming. Both seek to reduce their carbon footprint through conservation of energy, capturing energy and harnessing it and using natural and other resources wisely.

In fulfilling those principles, there are close links to the various business strands, using synergies throughout the businesses and seeking to improve the overall environment where opportunity arises.

The proposal to build an additional Free Range Egg unit to the north of the construction & fabrication plant has taken particular cognisance of the proximity of Carnwath Moss and their existing farm at Heads Inn where the closure of a 540 head dairy farm has significantly offset the additional generation of ammonia. Within the immediate area of the Carnwath SSSI there will therefore be a net reduction of ammonia. Pre- discussions with both SEPA and Nature Scotland took place to establish this jointly agreed position.

New FRE Farm

The FR egg farm commissioned in 2018 at East Park incorporated all the latest developments in minimising ammonia production and release to the atmosphere through the poultry diet, humidity control, water management, house insulation and careful control to maintain a dry atmosphere within the houses. As a consequence of this SEPA attributed a low Ammonia emission factor to the ammonia exhausted to the air in their annual environmental returns for 2019.(SPRI)

Two years on, the industry best practice has moved on even further and there are additional opportunities of maintaining dry litter such as *exhaust gas heat re-capture* and *ground source heating*, both of which will incur minimal energy input for the environmental improvement gained.

Heads InnDairy Farm (former)

One of the significant changes in land management which is likely to provide a net reduction in ammonia release, is the closure of Heads Inn Farm in Carnwath village. The site remains

under Hewitt Farming ownership but the termination of milking there has already been completed as part of the overall farming strategy.

The site had 180 dairy cows and approx. 360 followers. The latter went into replacing the milk herd or put into the chain for beef production. This number was stable throughout the year. Operations of that site included the storage and management of silage and slurry in an above ground slurry tank and spread onto the fields associated with the farm; principally those alongside Carnwath Burn and adjacent to Carnwath Moss. Spreading was with a conventional slurry tanker with splash plate, so much of the ammonia associated with these materials will have been exposed to air disturbance before resting at field level. The lack of clean water separation will have extended the number of occasions that slurry / roof water was spread onto land and not all of it would have been at the optimal time of year. Fields would have been on a conventional rotation so during summer stock would have been grazing and depositing directly to those fields. All fields were adjacent to Carnwath Moss.

As part of the overall application of nutrients, field deposition and aerial emissions, methods and quantities were all at odds with the *nutrient poor objectives* desired for the management of Carnwath Moss.

Importantly, to improve the company's overall impact on the environment, a comparison of the historic emissions (now terminated) from Heads Inn Farm was compared with those proposed to be added at the free range egg unit. It is believed that this will be significantly reduced and both location and methods of all nitrogen release will be improved.

These realistic estimates were discussed and agreed to by a joint discussion between Hewitt farming, SEPA and Nature Scotland.(formerly SNH) **(HI S/D 13 Pre-application discussions)**

<u>Proposed Heads Inn FRE Poultry Unit</u>

Unlike the dairy farm, the proposed FRE farm has the capacity to control most of the environment except the ranging of birds. All litter and manure will be maintained in a dry state so most of the nitrogen will be retained up until application to fields rather than be lost as ammonia. All material will be taken off the site and used mainly on farms remote from the farm and Carnwath Moss.

Over the past two years the Centre for Ecology and Hydrology, in partnership with Forestry Research, (Forestry Commission) have worked on the production of guidelines for tree planting around farms to increase the amount of ammonia that is captured on the farmstead and reduce its release beyond the farm boundary into the general environment and particularly, looking at reducing the quantity of Nitrogen added to 'background' . Not only does this encourage the reduction of ammonia from adding to already high background levels in the air and manage it within the site, but it also increases the production of local biomass (nitrogen conversion) and generates an environment which is positive for bird welfare. (See www.farmtreestoair.ceh.ac.uk)

HI Map 2b and 5a identify where trees are proposed to planted, both on the FRE site and just outside it.

A planting plan is to be developed by the Woodland Trust.

Site	Benefits to Farm business	Benefits to Carnwath Moss	Benefits to environment (general)	Dis-benefits
Tree planting Woods	Timber for fuel for BHC site (continuous cover)	Protection to west and interception of N species including ammonia.	(i)Ammonia absorption and conversion to biomass. (ii)Renewable energy source. (iii)River flow buffering capacity during storm events. (iv)Biodiversity increase	Reduction in water table if close to Carnwath Moss. Hydraulic continuity unlikely given distance and intervening soil type.
Shelter belts at gable ends	Prevention of odour and particulates migrating from site. Additional cover for birds ranging.	Benefit for air quality (NH_3) migrating westwards during easterly air flow conditions.	(i)Removal of particulates and ammonia derived from extraction fans. (ii)Reduction of residual ammonia (released from sheds) adding to general air quality deterioration. (background)	None All designed to maximise benefits established by though *farmtreestoair* modelling
Area of range planted up	Flock welfare and egg production. Biomass for fuel when mature and require thinning and re-planting. (sustainable tree cover and wood supply.)	(i) Absorption of ammonia (NH_3) by foliage. (ii) Absorption of N as NO_3 from soil and conversion into tree biomass from droppings on range. (less washed out to surface waters including Carnwath Burn catchment. Reduced N cf. historic land use on catchment and N application.	Absorption of ammonia by foliage. Absorption of N as NO_3 and conversion into tree biomass from droppings on range. (less washed out to surface waters. Some enhanced biodiversity	None. All designed to maximise benefits though *farmtreestoair* modelling