

## Intensive Poultry Unit (IPU) - Broiler Production Output 1,000,000 birds/per year

(IPU broiler sites adhering to DEFRA's Welfare of Farmed Animals Regs 2007 Schedule 5A, for stocking densities in excess of 33kg/square metre and upto 39kg/square metre)

Common input variables					
No. of birds to be reared per cycle	141,000	No. of vehicles needed to supply chicks per cycle	2	Average food consumption per bird (kg)	4.01
Duration of rearing cycle (days)	38	Proportion of birds 'thinned' each cycle	0.3	Density of feed (kg per cubic metre)	720
Turn-around - i.e. days between cycles	10	Number of birds per vehicle	6,690	Tonnage - feed delivery	28
Internal floor area of each rearing shed (m <sup>2</sup> )	1,641	Mortality rate of birds prior to harvest	0.051	Average daily manure production per bird (kg)	0.06
No. of sheds	3	No. of vehicles to remove dead birds per cycle	7	Assumed cubic metre volume of vehicle removing waste	14
Average capacity of HGV (tonnes)	27	Average capacity of waste removal tanker (litres)	11,000	No. of gas deliveries per cycle	2

Common values required	
No. of cycles per year	7.6
No. of birds to be reared per year	1,072,188
Total floor area of sheds (m <sup>2</sup> )	4,923
Number of rearing days	289

### Delivery of chicks at start of each cycle

No. of vehicles per year	16
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### Removal of dead birds during rearing cycle

No. of birds lost to mortality per cycle	7,191
No. of birds lost to mortality per year	54,682
No. of vehicles per year	53

### Removal of birds during rearing cycle - thinning

No. of birds removed through thinning - per cycle	42,300
No. of birds removed through thinning - per year	321,656
No. of vehicles per year	48

### Removal of mature birds at end of cycle

No. of birds reared to final harvest per cycle (less thinning & dead)	91,509
No. of birds reared to final harvest per year	695,850
No. of vehicles per year	104

### Delivery of feed

Total feed requirement per year (kg)	4,299,472
Feed requirement per year (tonnes)	4,299

#### Volume:

Total volume of feed (cubic metre)	5,971
Average volume of 28 tons of feed (m <sup>3</sup> )	39
No. of vehicles per year based on volume	154

### Removal of manure / waste bedding

Waste bedding material per year based on 2" bedding depth (tonnes)	185
Total waste per year (tonnes) - manure only	2,445
Total waste per year (tonnes) - manure + 2" bedding	2,630

#### Volume:

Total waste per year (lbs) - manure only	5,379,000
Total waste per year (lbs) - manure + 2" bedding	5,786,786
Total waste per year (cubic ft) - manure only	153,686
Total waste per year (cubic ft) - manure + 2" bedding	165,337
Total waste per year (cubic metre) - manure only	4,391
Total waste per year (cubic metre) - manure + 2" bedding	4,724
No. vehicles per year - manure only	314
No. vehicles per year - manure + 2" bedding	338

### Delivery of straw/bedding

Bedding requirements per cycle (tonnes) for 2" depth of bedding	24
Bedding requirements per year at 2" depth (tonnes)	185
Average capacity of vehicle (bales)	36
No. (230kg) bales needed per cycle for 2" depth	106
No. vehicles per cycle	3
No. of vehicles per year	23

### Delivery of propane gas for heating of sheds

No. of vehicles per year	16
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### Removal of waste cleaning water

Estimated water requirements for cleaning between cycles (litres/m <sup>2</sup> )	6.8
Waste water produced per cleaning cycle (litres)	33,476
Total waste water produced per year (litres)	254,560
No. of vehicles per year	24

### Miscellaneous staff journeys (cars & vans)

Staff journeys (annual)	654
Catcher teams - assumed 2 visits per cycle (thinning & harvest) & 3 teams	48
Cleaner team - assumed 1 visit per cycle & 3 teams	24
Vet/inspector visits (annual)	31
Engineer / maintenance visits (annual)	30
Management visits (annual)	52
No. of vehicles per year	839

### Sub-Totals (operations) - HGVs / tractors

Total vehicles per year (HGVs / tractors)	776
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### Sub-Totals - staff journeys

Total for year	839
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### Not considered

Construction traffic

### Total vehicles and movements

Total vehicles for year	1,615
<b>Total movements for year (in/out)</b>	<b>3,231</b>

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### Common input variables

No. of birds to be reared per cycle	As per Parker Planning statement
Duration of rearing cycle (days)	As per Parker Planning statement
Turn-around - i.e. days between cycles	As per Parker Planning statement
Internal floor area of each rearing shed (m <sup>2</sup> )	Based on shed dimensions of 91.5m x 18.3m and 2% reduction to account for wall thickness and entrance area

### Delivery of chicks at start of each cycle

No. of vehicles needed to supply chicks per cycle	As per HTTC Transport statement
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### Removal of birds during rearing cycle - thinning

Proportion of birds 'thinned' each cycle	Malvern Hills 16/00113/Ful Review of Transport Assessment 3.9.4
Average weight of birds removed at thinning (kg) - day 31-32	Assumed value
Average capacity of vehicle (tonnes)	Vehicle assumption is 44 t 6 axle articulated HGV, payload assumed at
Number of birds per vehicle	Derived from applicant's transport statement ( number of birds per HGV vehicle) NB. 141,000 birds less 0.051 mortality = 133,809/20 vehicles = 6,690 birds per vehicle
No. of vehicles per year	Assume near full load capacity due to smaller size birds

### Removal of dead birds during rearing cycle

Mortality rate of birds prior to harvest	<a href="https://www.rspca.org.uk/documents/1494939/7712578/Everyone%27s+a+winner+chicken+report+%28PDF+590KB%29.pdf/d7079dbf-30a5-f240-285e-1086668f02e9?t=1554205296757">https://www.rspca.org.uk/documents/1494939/7712578/Everyone%27s+a+winner+chicken+report+%28PDF+590KB%29.pdf/d7079dbf-30a5-f240-285e-1086668f02e9?t=1554205296757</a>
Mean weight of dead birds (kg)	Assumed value
Total weight of dead birds per cycle (tonnes)	
No. of vehicles to remove dead birds per cycle	Birds required to be removed on a weekly basis (weeks 2-6) SEE HTTC report Thorndon
No. of vehicles per year	LGVs of either 3.5 or 7.5 t

### Removal of mature birds at end of cycle

Average weight of birds at end of cycle (kg)	<a href="https://www.gov.uk/government/statistics/poultry-and-poultry-meat-statistics">https://www.gov.uk/government/statistics/poultry-and-poultry-meat-statistics</a>
Total weight of birds harvested per year (tonnes)	
Average capacity of vehicle (tonnes)	Vehicle assumption is 44 t 6 axle articulated HGV, payload assumed at 28t.

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### Delivery of straw/bedding

Internal floor area of each rearing shed (m <sup>2</sup> )	Based on shed dimensions of 91.5m x 18.3m and 2% reduction to account for wall thickness and entrance area	
Bedding requirements per cycle (tonnes) for 1" depth of bedding	Based on 230kg maxi bale giving a coverage of 1000 sq. feet to a depth of 1 inch.	<a href="https://www.chapmansqualitybedding.co.uk/poultry">https://www.chapmansqualitybedding.co.uk/poultry</a>
Bedding requirements per year at 2" depth (tonnes)	E 3.3 The floor of the house must be completely covered in litter e) be an average minimum depth of 5cm to allow for the dilution of faeces	<a href="https://www.berspcaassured.org.uk/media/1086/rspca-standards-chickens-nov2013.pdf">https://www.berspcaassured.org.uk/media/1086/rspca-standards-chickens-nov2013.pdf</a>
Average capacity of vehicle (tonnes)	Lorry assumption should be 44 tonne 6 axle articulated HGV and also 26 tonne fixed 3 axle HGV – payloads 28 tonnes/15 tonnes respectively	
Average capacity of vehicle (bales)	DC/19/2195/FUL Parker Planning letter dated 13th August 2020	

### Delivery of feed

Average food consumption per bird (kg)	FCR 1.8 x Average live weight 2.23kg = 4.01kg	<a href="https://www.rspca.org.uk/documents/1494939/7712578/Everyone%27s+a+winner+chicken+report+%28PDF+590KB%29.pdf/d7079dbf-30a5-f240-285e-1086668f02e9?t=1554205296757">https://www.rspca.org.uk/documents/1494939/7712578/Everyone%27s+a+winner+chicken+report+%28PDF+590KB%29.pdf/d7079dbf-30a5-f240-285e-1086668f02e9?t=1554205296757</a>
Feed requirement per year (tonnes)	NB No allowance made for bird mortalities / thinning, so represents maximum value	
<b>Feed Volume:</b>		
Density of feed (kg per cubic metre)		<a href="https://thefarmingforum.co.uk/index.php?threads/cubic-meter-weights.28047/">https://thefarmingforum.co.uk/index.php?threads/cubic-meter-weights.28047/</a>
Average volume of 28 tons of feed (m3)	Vehicle assumption is 44 tonne 6 axle articulated HGV – payload 28 tonnes	
No. of vehicles per year based on volume	Based on volumetric conversion	
Total vehicle movements per year (in/out as separate journeys)	Based on volumetric conversion	

### Removal of manure / waste bedding

No. of days birds being reared each year	Based on 7 day turnaround between cycles	
Average daily manure production per bird (kg)	Based on Nitrate Pollution Prevention Regulations which categorise chickens raised for meat produce 0.06kg manure daily.	<a href="https://www.legislation.gov.uk/uksi/2015/668/schedule/1/made">https://www.legislation.gov.uk/uksi/2015/668/schedule/1/made</a>
Waste bedding material per year based on 2" bedding depth (tonnes)	Estimate not adjusted for moisture , waste feed, so minimum value	
Total waste per year (tonnes) - manure only	NB No allowance made for bird mortalities, so represents maximum value	
Average capacity of vehicle (tonnes)	Both 44 tonne HGV (27 tonne payload*) and 16 tonne tractor/trailer might be used - value to be adjusted accordingly (as per Thorndon application).	*Agent's email to East Suffolk Council concerning Shadingfield case dated 13/8/20

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### Waste Volume:

Total waste per year (lbs) - manure only	Based on 1 tonne = 1000kg = 2200lbs
Total waste per year (cubic ft) - manure only	Based on volume assumption: 35 cubic feet = 1 cubic metre and 35lbs = 1 cubic foot
Total waste per year (cubic metre) - manure only	Total cubic ft/35 cubic ft = cubic metre

### Removal of waste cleaning water

Estimated water requirements for cleaning between cycles (litres/m<sup>2</sup>)

<https://www.daera-ni.gov.uk/sites/default/files/publications/doe/pollution-guidance-operators-preparing-an-agricultural-water-audit-IPPC-farming-installations-2011.pdf>

Average capacity of waste removal tanker (litres) Current best guess

### Delivery of propane gas for heating of sheds

No. of gas deliveries per cycle Assumed value

### Miscellaneous staff journeys (cars and vans)

Staff journeys (annual)	Twice per day x 290 (crop days) 1 x per day non crop days
Catcher teams - assumed 2 visits per cycle (thinning & harvest) & teams	2 visits x 8 cycles by 1 team per shed
Cleaner team - assumed 1 visit per cycle & teams	1 visit x 8 cycles by 1 team per shed

<https://acss.food.gov.uk/sites/default/files/multimedia/pdfs/poultrycatchreview.pdf>