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Appendix 1 - 2015 Agricultural Census Data

13 Land Use

13.1 Executive Summary

1. Agriculture is the primary land use of the study area of the proposed Tyrone – Cavan Interconnector, and therefore this assessment is primarily focused on agronomy. Within this document the terms “Land Use” and “Agronomy” are interchangeable.
2. There will overall be an imperceptible impact to Land Use as a result of the proposed Tyrone - Cavan Interconnector. There will be an imperceptible or slight adverse impact to 96% of the affected land parcels during construction and operational phases. There will be a major adverse impact to one land parcel, which is due to the construction of the substation. The affected landowner has been consulted with and will be compensated for the loss of land.
3. There are 12,000 kilometres of 400 kV OHL throughout the UK and Ireland¹. There is no evidence of significant impacts on farming activities along these lines. There is no evidence of any significant impact on animal welfare or crop production under 400 kV OHLs. It has been assessed that there will be no significant impact to normal and safe agricultural practices in the area around or under the proposed overhead line and towers.
4. Impacts on agriculture and business in the area have also been assessed. Only 3% of farms experience moderate adverse impacts and 1% of farms experience major adverse impacts. Four chicken sheds have been granted planning permission since the Tyrone-Cavan Interconnector was submitted for planning and, which could be affected by the Tyrone-Cavan Interconnector. None have been built. One would have moderate adverse impacts and another would have major adverse impacts. There will be major adverse impacts on one willow plantation. As identified in the Statement of Case, these impacts are outweighed by the overriding national and regional need for the Tyrone-Cavan Interconnector.

1 <http://www.cigre.org/var/cigre/storage/original/application/f61d0ebd5531fcbcd39ef222fc7e8948.pdf>

13.2 About the Author

5. The Land Use impact assessment of the proposed Tyrone - Cavan Interconnector was undertaken by Mr Con Curtin (B.Agrsc), an Agricultural Consultant with Curtin Agricultural Consultants Ltd, based in Kilkenny.
6. Mr Curtin is an agricultural consultant with over 28 years' experience having worked for three years with ADAS in the UK, and since 1990 as an agricultural consultant in Southern Ireland. He has an undergraduate degree in Agricultural Science from University College Dublin and he has a Level 6 Certificate in Agricultural Land Drainage.
7. Mr Curtin has prepared Land Use Impact Statements for linear developments such as railway schemes and major roads schemes (16 No. since 1998). He has prepared the Land Use Impact Statement for the North - South 400kV Interconnection Development in Counties Meath, Cavan and Monaghan. He has carried out land damage assessments for Bord Gais along gas pipelines in Northern Ireland and the Republic of Ireland.
8. Mr Fay Lagan separately addresses the Community Amenity aspects of the project. This is presented in Technical Report 12.

13.3 Policy and Guidance Informing Assessment

9. Policy and Guidance Information is contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (pages 530 - 531) and the Statement of Case that has been prepared for the proposed Tyrone – Cavan Interconnector.

13.4 Summary of Documents

10. This technical report summarises and incorporates by reference the content of the documents submitted in support of the planning applications for the proposed Tyrone - Cavan Interconnector in respect of land use. The relevant documents are:
 - Volume 2, Chapter 14 of the Consolidated Environmental Statement, Community Amenity and Land Use (pages 526 - 549);

- Consolidated Environmental Statement Addendum – Volume 2 – Section 5.3.8 – Cumulative Assessment;
 - Consolidated Environmental Statement Addendum – Volume 2 – Section 6.9 – Transboundary Assessment;
 - Appendix 14A – Agronomy and Summary of Individual Land Parcel Impacts – Volume 3, the Consolidated Environmental Statement;
 - Figures supporting Chapter 14 of the Environmental Statement are contained in Volume 4 of the Consolidated Environmental Statement at A3 size:
 - Figure 14.10 – Affected Agricultural Land Parcels (Sheets 1 to 10).
 - Figure 6.1 Selected Agricultural Land Parcels of the Environmental Statement Addendum.
 - Agronomy Sections (4.3, 5.3, 6.3, 8.1, 8.2, 8.3 and 8.4) of Partial Undergrounding Report, Appendix 10.2, Volume 3 of the Environmental Statement Addendum.
11. This technical report must therefore be read in conjunction with the Consolidated ES and its Addendum, and not as a standalone document.
12. In a general sense all EIA documentation is interrelated and, particularly with respect to the interaction of impacts, all the EIA documents would be relevant. For clarity the documents the author considers to be the key documents are summarised above. The reader should form his or her own view on what documents within the EIA and its Addendum are relevant, and key, to the topic under consideration.
13. In the interest of readability these documents are not reproduced in full in this technical report.
- 13.5 Further Environmental Information for the Purposes of the Inquiry**
14. Since the publication of the Consolidated ES and its Addendum, the following environmental information has become available, and is presented to the inquiry for the purposes of the inquiry. Accordingly, and by virtue of Regulation 23(6) of the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2015 the requirements of paragraphs (4) and (5) of the said Regulation 23 do not apply.

15. The Department for Agriculture and Rural Development (DARD) has recently been incorporated into the Department of the Agriculture, Environment and Rural Affairs (DAERA) and therefore anywhere reference is made to DARD within the Documents referred to in Section 13.4 above, this should be replaced with DAERA.
16. In 2015 the Single Farm Payment Scheme and Less Favoured Area Compensation Allowance Scheme were replaced by the Basic Payment Scheme and Areas of Natural Constraint Scheme. There are no changes in impacts on Land Use due to the introduction of these Area Based Schemes.
17. The statistics in Section 14.3.1 of Appendix 14A Volume 3, of the Consolidated Environmental Statement are based on 2012 Census of Agriculture. When the 2015 Census of Agriculture is compared there is no change in evaluation of the existing environment (see Appendix 1 of this document).

13.6 Scope of the Assessment

18. This is a summary of the information contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (pages 526 -528).
19. The Land Use impact assessment evaluates potential impacts on agricultural and horticultural land parcels and commercial tree plantations within 60m of the centreline of the proposed Tyrone - Cavan Interconnector, access tracks crossing agricultural land and the area of the proposed substation in Turleenan.

13.7 Consultation Responses

20. The pre submission consultation for the assessment is presented in detail in the Consolidated ES Chapter 6 Scoping and Consultation (pages 151 - 156).
21. In May 2013 DARD responded to questions in relation to land eligibility under towers and the impact of hedgerow removal on the Single Farm Payment (now the Basic Farm Payment since 2015). DARD stated that the land under towers would be eligible for Single Farm Payment if grazed. DARD responded that the farmer would be in compliance with the GAEC / Cross Compliance requirement to maintain hedgerows

provided that the removal of the hedgerow is part of the planning permission for the proposed Tyrone - Cavan Interconnector.

22. The Land Use impact assessment has assumed it is likely that the land at the base of the towers is not available for grazing, and therefore is not eligible for Basic Farm Payment. It is possible that the area could be used; however for the purposes of this assessment a likely worst case assessment of the loss of funding has been applied.

13.8 Methodology and Surveys

23. This is a summary of the information contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (pages 526 – 528) and Section 14.2 of Appendix 14A, Volume 3 of the Consolidated ES.
24. The impact assessment methodology involves describing the sensitivity of the land parcels and assessing the magnitude of predicted impacts. Referring to both the sensitivity of the receiving environment and magnitude of impact, the significance of impact to affected land parcels is predicted based on the criteria as set out in section 14.2.3 of Appendix 14A Volume 3, the Consolidated Environmental Statement.
25. The assessment has been based on road side surveys conducted in February – April 2013 and from late August 2013 – early September 2013. In addition, aerial mapping, Land Registry boundary data and DARD Statistics were examined.

13.9 Assessment Overview

26. This is a summary of the information contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (pages 539 - 543) and Section 14.5 of Appendix 14A, Volume 3 of the Consolidated ES.
27. The assessment considers the construction phase impacts and the operational phase impacts separately, with and without mitigation.
28. The decommissioning of the proposed Tyrone – Cavan Interconnector is assessed in Chapter 1 of the Consolidated ES Addendum (page 5). The effects of decommissioning would be temporary and of a similar scale to or less than the construction phase, as

described and assessed in the Consolidated ES. Similar mitigation measures as described for the construction stage in the Consolidated ES should be again implemented to ensure the minimisation or elimination of any environmental impacts.

13.10 Baseline Conditions

29. This is a summary of the information contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (pages 531 – 532) and as set out in Sections 14.3.1 and 14.3.3 of Appendix 14A, Volume 3 of the Consolidated ES. The land use environment along the proposed Tyrone - Cavan Interconnector is typical of that which is represented by the national statistics for County Armagh and County Tyrone. There are 181 land parcels within the land use study area with a combined area of approximately 1,770 hectares.
30. Two percent of land parcels are categorised as having very high sensitivity - one orchard (Ref No 40 in Figure 14.10/3, Consolidated ES), one equine enterprise (Ref No 091 in Figure 14.10/7, Consolidated ES), one bio remedial willow plantation (Ref No 100 in Figure 14.10/7, Consolidated ES) and one forestry plantation (Ref No 1028 in Figure 14.10/8, Consolidated ES).
31. Seven percent of land parcels are categorised as having high sensitivity – one orchard (Ref No 021 in Figure 14.10/2, Consolidated ES) and 12 dairy farms.
32. 91% are categorised as having medium sensitivity. These are mainly beef, sheep, tillage or mixed grassland and tillage.
33. Approximately 90% are grassland farms; approximately 7% of these are dairy farms and the remainder are a mixture of beef and sheep.

13.11 Assessment of Impacts without Proposed Mitigation

34. This is a summary of the information contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (pages 539 - 543) and Section 14.5 of Appendix 14A, Volume 3 of the Consolidated ES.

13.11.1 Construction Phase Impacts

35. The construction phase of the entire development is scheduled for a 36 month period. However, the construction phase on any one farm will rarely exceed 6 months and during this time the construction activity on the farm will not exceed 29 working days over the construction stages in total for each tower constructed.
36. The construction of each tower in the overhead line will be undertaken in five general stages, according to the following sequence, on a rolling programme of estimated durations: These stages are not necessarily consecutive due to the work required at adjoining tower bases and construction process. For example 21 days curing time will be required between stages 2-3. Likewise between stages 3-4 periods of time will lapse to allow for constructing the suspension towers between each angle tower. This could typically be 2-4 months. Final land reinstatement can be up to a year following the completion of all works allowing for ground consolidation and reseeded land damage.
- Stage 1 – Preparatory Site Work (1 – 7 working days);
 - Stage 2 – Tower Foundations (3 – 6 working days);
 - Stage 3 – Tower Assembly and Erection (3 – 4 working days);
 - Stage 4 – Conductor/ Insulator Installation (7 working days); and,
 - Stage 5 – Reinstatement of Land (1 – 5 working days).
37. The construction of the substation, two 275kV towers and access road in Turleenan will have a direct impact on two land parcels (Ref. Nos 001 and 1036 in Figure 14.10/1, Consolidated ES). A non-agricultural dwelling and yard will also be demolished. The house and yard are owned by NIE Networks and not occupied. An option to purchase the affected land parcels for the substation has been agreed with the landowner. The substation site will also be enclosed within the proposed perimeter fence. The construction of two terminal towers within the substation site will require the existing 275 kV Overhead Line to be diverted temporarily. This will cause an impact to two land parcels adjoining the proposed substation site (Ref Nos 1082 and 1083). Within the Agronomy Study Area, one hundred and two towers will be constructed on 79 land parcels and impacts will arise from temporary access routes, guarding locations, stringing sites and undergrounding trenches.

38. The magnitude of pre-mitigation construction phase impacts is set out in Section 14.5.2 and summarised in Table 14.6 and Annex 14.1 of Appendix 14A, Volume 3 of the Consolidated ES. Without mitigation there will be an overall high potential magnitude of impact due to the potential to increase on-farm livestock disease levels, due to the potential for straying livestock and other on-farm disturbance, due to short-medium term damage to land at construction sites and along access routes and due to impact to land drainage where tower sites are excavated. The potential construction impacts would result in a moderate adverse impact overall on land use along the proposed Tyrone - Cavan Interconnector because 91% of land parcels are medium sensitivity².

13.11.2 Operational Phase Impacts

39. The magnitude of pre mitigation construction phase impacts is set out in Section 14.5.3, Table 14.7 and Annex 14.1 of Appendix 14A, Volume 3 of the Consolidated ES. Without mitigation there will be an overall low or very low magnitude of impact due to the presence of the proposed Tyrone - Cavan Interconnector. This would result in a slight adverse impact overall on land use along the proposed Tyrone - Cavan Interconnector when operational impacts only are considered.

13.12 Proposed Mitigation

40. Mitigation measures in relation to Land Use are presented in Section 14.5.1, Volume 2 of the Consolidated ES, they are as follows:
- Proposed mitigation measures for the willow plantation area are dealt with in Technical Report 14 (Socio-economics);
 - The affected landowners will be compensated for the loss of land;
 - The site of the proposed substation will be fenced off prior to construction to ensure that the construction activities within the site have no impact on adjoining farm land;

² As set out in Appendix 14A, Volume 3 of the Consolidated ES a high magnitude impact on a medium sensitivity receptor will generally result in a moderate impact.

- An access officer will be appointed by the contractor to liaise with the landowners along the line route and ensure that their requirements for entry are met so far as is possible;
- The applicant will ensure that land owners have reasonable access to all parts of their farm during the construction phase to minimise or eliminate temporary farm fragmentation impacts;
- Hedgerows and drains/ditches will be reinstated after completion of works as identified in Chapter 5 of the Consolidate;
- Disease protocols will be adhered to and the applicant will comply with any DAERA/Defra regulation pertaining to animal or plant diseases;
- Before surveying commences the land owners will be met and a pre-survey interview will be completed. The purpose of this interview will be to ask the land owner to notify the applicant of any animal diseases and other risks which may arise from dangerous livestock (e.g. bulls);
- Farmers will be notified at least one week in advance of any works commencing on their farms. The contractor will make all reasonable efforts to accommodate the farmers grazing and cropping programmes and reschedule works if practical to do so;
- The applicant will ensure that disinfection facilities are available to all work crews if required;
- Only personnel with clean footwear and machines with clean wheels will be allowed to enter farms;
- Appropriate fencing will be erected to exclude livestock from sites of construction and to keep livestock within farm boundaries;
- If pile driving is required, owners of livestock in adjoining fields will be notified in advance. This will allow land owners with sensitive livestock (e.g. blood stock) to take precautions such as moving these animals away from the piling site to a quieter part of the farm or to house them;
- Land drains which may be potentially affected during tower foundation excavations and excavations for undergrounding will be redirected and/or reconnected in a manner that maintains existing land drainage. Before surveying commences the pre-survey interview with land owners will identify location of drains;

- Where top soil is stripped it will be back filled on the same surface. All disturbed field surfaces will be reinstated. These works may be carried out by the land owner, the contractor or an agreed third party, as agreed with the land owner;
- Concrete will be mixed off-site and imported to the site. The pouring of concrete for tower bases will take place within a designated area using a geosynthetic material to prevent concrete runoff into the surrounding soil. Any soil contaminated by concrete spillage will be removed to an approved waste facility;
- If water is being pumped from a construction site, a water filtration system will be utilised to minimise impacts on water sources;
- The applicant will employ a team to monitor the operation phase of the project and ensure that safety procedures are adhered to;
- Disease protocols will be adhered to during maintenance works; and,
- The applicant will provide safety information directly to all affected land owners.

13.13 Assessment of Impacts with Proposed Mitigation

41. This is a summary of the information contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (pages 539 - 543) and Sections 14.7 and 14.8 of Appendix 14A, Volume 3 of the Consolidated ES.

13.13.1 Construction Phase Impacts with mitigation

42. The significance of post mitigation construction phase impacts is set out in Section 14.7, Table 14.8 and Annex 14.1 of Appendix 14A, Volume 3 of the Consolidated ES. The construction phase impacts to land parcels are outlined in the table below:

Significance Category	Construction Phase Impacts	
	Number of land parcels	% of total
Imperceptible	108	60
Slight Adverse	65	36
Moderate Adverse	6	3

Significance Category	Construction Phase Impacts	
	Number of land parcels	% of total
Major Adverse	2	1

43. There will be one major adverse impact to land parcel Ref No 001 and one moderate adverse impact to land parcel Ref No 1083 both of which are at the site of the proposed substation in Turleenan (Figure 14.10/1). An option to purchase the affected land parcels for the substation has been agreed with the landowner. There will be another major adverse construction impact to land parcel Ref No 100 (Figure 14.10/7) and four moderate adverse impacts on land parcels Ref Nos 101, 039, 045 and 091 (Figures 14.10/7, 10/3, 10/3 and 10/7 respectively) due to the construction of towers and stringing of the overhead line.

13.13.2 Operational Phase Impacts with mitigation

44. The significance of post mitigation operational phase impacts is set out in Section 14.6.1 of Volume 2 of the Consolidated ES and in Section 14.8, Table 14.9 and Annex 14.1 of Appendix 14A, Volume 3 of the Consolidated ES. The operational (or residual) impacts are considered under three headings:
- Residual Impacts on a National and Regional Level (Section 14.8.1 of Appendix 14A, Volume 3 of the Consolidated ES);
 - Residual Impacts on along the proposed Tyrone - Cavan Interconnector i.e. within the study area as a whole (Section 14.8.2 of Appendix 14A, Volume 3 of the Consolidated ES);
 - Residual Impacts on Individual Land Parcels (Section 14.8.3 of Appendix 14A, Volume 3 of the Consolidated ES).
45. The residual impacts on agriculture in Northern Ireland will be imperceptible due to the loss of approximately 26 hectares under the towers and substation and short – medium impacts on a further approximately 26 hectares of land that is required only during the construction phase.

46. The land use study area is comprised of approximately 1,767 hectares. The above losses equate to approximately 1.5% of the study area being lost to the towers and the substation site and a further 1.5% of the study area having short – medium term damage during the construction phase. This represents an imperceptible impact on the study area.
47. The operational phase impacts to land parcels are outlined in the table below:

Significance Category	Operational Phase (Residual) Impacts	
	Number of land parcels	% of total
Imperceptible	140	77.5
Slight Adverse	35	19
Moderate Adverse	5	3
Major Adverse	1	0.5

48. There will be one major adverse residual impact to land parcel Ref No 001 and one moderate adverse residual impact to land parcel Ref No 1036 both of which are at the site of the proposed substation in Turleenan (Figure 14.10/1, Consolidated ES). There will be four moderate adverse residual impacts on land parcels Reference Nos 005, 040, 068 and 100 (Figures 14.10/1, 14/3, 14/5 and 14/7 respectively, Consolidated ES) due to the operation and maintenance of the overhead line.

13.14 Cumulative Impacts

49. This is a summary of information that is contained in Chapter 5 (pages 75 -76) of the Consolidated ES Addendum. A further assessment of cumulative effects is outlined in the Joint Environmental Report for the proposed Interconnector project (i.e. the project in Northern Ireland and Ireland). This is contained in Volume 3 Appendix 2.1 of the Consolidated ES Addendum.
50. There are currently four planning permissions for chicken sheds directly under the proposed overhead line. If these developments were to be constructed:

- i. There would be imperceptible impacts on the construction and operation of chicken sheds on land parcels Ref Nos 100 (Figure 14.10/7, Consolidated ES) and 1085 (Figure 14.10/7, Consolidated ES) (planning Ref Nos O/2009/0804/F and O/2009/0805/F) because the overhead line would not overhang the buildings.
 - ii. There would be a Moderate Adverse impact on the construction and operation of chicken sheds on land parcel 090 (Figure 14.10/7, Consolidated ES) due to the location of the conductors over the buildings (planning Ref No O/2009/0807/F).
 - iii. There would be a major adverse impact on the construction and operation of chicken sheds on land parcel 045 (Figure 14.10/3, Consolidated ES) because tower 22 is located within the footprint of the chicken sheds (planning Ref No M/2008/0143/F - permission expired in May 2013).
51. The cumulative impact of the Tamnamore to Omagh overhead line, located approximately 1.6km north east of Tower 10 is imperceptible. Other developments will not have a significant cumulative impact on Land Use because of the distance and scale of the proposals.

13.15 Transboundary Impacts

52. This is a summary of the information that is contained in Chapter 6 (page 85) of the Consolidated ES Addendum. A further assessment of transboundary effects is outlined in the Joint Environmental Report for the proposed Interconnector project. This is contained in Volume 3 Appendix 2.1 of the Consolidated ES Addendum.
53. For the assessment of transboundary impacts the immediate border section of the proposed Tyrone - Cavan Interconnector, between towers 102 and 107, was examined because this is where any possible transboundary impacts are likely to occur. Within sixty metres of the centreline along this border section there are four land parcels within Northern Ireland (ref Nos 165, 176, 177 and 145/166 – Figure 14.10/10, Consolidated ES) and seven land parcels within Ireland (ref Nos LCT-001, LCT-002, LCT-003, LCT-004, LCT-005, LCT-007 and LCT-008A). Of the seven land parcels south of the border

within Ireland, farm yard land parcel LCT-008A is located within 25 metres of the proposed Tyrone – Cavan interconnector. The transboundary impact to land parcel LCT-008A is Slight Adverse.

13.16 Response to Third Party and Statutory Consultee Submissions

54. Between 2009 and 2012, there were approximately 6,000 third party submissions made in relation to the proposed Tyrone - Cavan Interconnector. These were reviewed and taken into account in the writing of the Consolidated ES. Following the publication of that document in 2013, from May 2013 to May 2015, 2,957 third party submissions were made - of which 1,316 related to community amenity and land use issues. All submissions that were made have been taken into account in the writing of the Consolidated ES Addendum.
55. Between May 2015 and November 2016, there have been 594 third party submissions and of these 125 submissions made reference to community amenity and land use issues. The key land use issues raised by objectors relate to disruption due to construction, concerns about animal welfare, impacts on farm viability and diversity, loss of agricultural land and impacts from the towers and overhead lines to farming practices during operation and impacts to land value.
56. The issue of land value is dealt with in the Statement of Case for this project.
57. The submissions did not raise any material considerations or any issues that were not dealt within the Consolidated ES and Addendum. The issues raised by the submissions are examined, analysed and evaluated in Chapter 14 of the Consolidated ES (Volume 2).
58. No statutory consultee had identified any issues with agriculture.

13.17 Events Since the Addendum

59. Since the publication of the Consolidated ES and its Addendum, the following environmental information has become available, and is presented to the inquiry for the purposes of the inquiry. Accordingly, and by virtue of Regulation 23(6) of the Planning

(Environmental Impact Assessment) Regulations (Northern Ireland) 2015 the requirements of paragraphs (4) and (5) of the said Regulation 23 do not apply.

60. As outlined in the Statement of Case and in Construction Technical Report (No. 4), alternative access is required to Tower 40 because of the construction of a chicken shed. Two alternative access tracks are described and assessed in the Construction Technical Report (No. 4). An assessment in terms of land use for the alternative access tracks is included in that Technical Report.
61. The Department for Agriculture and Rural Development (DARD) has recently been incorporated into the Department of the Agriculture, Environment and Rural Affairs (DAERA) and therefore anywhere reference is made to DARD within the Documents referred to in Section 13.4 above, this should be replaced with DAERA.
62. In 2015 the Single Farm Payment Scheme and Less Favoured Area Compensation Allowance Scheme were replaced by the Basic Payment Scheme and Areas of Natural Constraint Scheme. There are no changes in impacts on Land Use due to the introduction of these Area Based Schemes.
63. The statistics in Section 14.3.1 of Appendix 14A Volume 3, the Consolidated Environmental Statement are based on 2012 Census of Agriculture. When the 2015 Census of Agriculture is compared there is no change in evaluation of the existing environment (see Appendix 1 of this document).
64. Confirmatory aerial surveys of the entire proposed Tyrone – Cavan Interconnector (proposed substation area and 500m either side of the overhead line centreline, which includes the proposed access tracks) were undertaken in October 2016. This photography was reviewed in terms of the land use baseline conditions and nothing of note was detected.

13.18 Summary and Conclusions

65. This is a summary of the information contained in the Consolidated ES, Chapter 14 – Community Amenity and Land Use (page 548), Section Annex 14.1 of Appendix 14A, Volume 3 of the Consolidated ES.

66. There are thousands of kilometres of 400 kV OHL throughout the UK and Southern Ireland. There is no evidence of significant impacts on farming activities along these lines. There is no evidence of any significant impact on animal welfare or crop production under 400 kV OHLs.
67. The areas of land directly affected by the construction are relatively small being less than 0.1% of the combined area of County Armagh and County Tyrone and 3%³ of the Land Use study area. Approx. 50% of the land directly affected will be re-instated resulting in a permanent restriction on approximately 1.5% of the study area.
68. The Study Area is less than 1% of the area of Counties Armagh and Tyrone and therefore the construction and operation disturbance to farming will not be significant on a National and Regional basis. Within the Study Area, after mitigation, there will be an imperceptible or slight adverse impact to 96% of the affected land parcels during construction and operation phases. The moderate impact to 3% of land parcels will mean that although there will be considerable operational changes required to the management of the land parcel the existing land use can continue. The major adverse residual impact to one land parcel is due to the permanent reduction in land area due to the construction of the substation. The proposed Tyrone - Cavan Interconnector causes one Slight Adverse Transboundary impact to land parcel Ref No LCT-008A (located directly south of land parcel 145/166 in Figure 14.10/10).
69. There is the potential to cause one major adverse cumulative impact to land parcel 045, one moderate adverse cumulative impact to land parcel 090 and imperceptible cumulative impacts to land parcels 100 and 1085 if currently planned chicken house developments go ahead along the alignment of the proposed Tyrone - Cavan Interconnector. However this can easily be avoided by relocating the chicken houses on alternative land on these land parcels.
70. Impacts on agriculture and business in the area have also been assessed. Only 3% of farms experience moderate adverse impacts and 1% of farms experience major adverse impacts. There are four chicken shed applications that have been granted planning permission since the Tyrone-Cavan Interconnector was submitted for planning which

³ Approx. 52ha directly affected within a study area of approx. 1,767 ha)

could be are affected by the Tyrone-Cavan Interconnector. None of these chicken sheds have been built. One would experience moderate adverse impacts and another would experience major adverse impacts. There will be also be major adverse impacts on one willow plantation. As identified in the Statement of Case, these impacts are outweighed by the overriding national and regional need for the Tyrone-Cavan Interconnector.

Appendix 1

Enterprise Type	Combined Statistics for the 2 counties (70% Armagh / 30% Tyrone)		Northern Ireland (% of farms)	
	2011 ⁴	2015 ⁵	2011	2015
Grassland - Cattle & Sheep	78	78	77.5	78.5
Grassland – Dairy	9.5	10	11	11
Cereals & other combinable crops	2	2.5	2.5	3
Mixed (crops and livestock)	2	2	2.5	2.5
Other (including equine, pigs & poultry & horticulture)	8.5	7.5	6.5	5
Commercial Forestry & Tree Plantations	-		-	-
Average farm size (Ha)	31	31	40	40

⁴ 2012 Census of Agriculture referred to in Table 14.5 of Appendix 14A, part 4 of Volume 3 of the Consolidated ES.

⁵ 2015 Census of Agriculture – data for 2014.