12 MATERIAL ASSETS – GENERAL

12.1 INTRODUCTION

1 This chapter presents an evaluation of the proposed development as set out in Chapter 6, **Volume 3B** of the Environmental Impact Statement (EIS), in relation to Material Assets - General.

2 Chapter 6, **Volume 3B** of the EIS describes the full nature and extent of the proposed development including elements of the OHL design and the towers. It provides a factual description, on a section by section basis, of the entire line route. The principal construction works proposed as part of the development are set out in Chapter 7, **Volume 3B** of the EIS.

3 The information contained within this chapter is concerned with material assets of the Meath Study Area (MSA) as defined in Chapter 5, **Volume 3B** of the EIS, specifically focusing on:

- Utilities: Gas Pipeline, Electricity Lines and Telecoms;
- Aviation: Airfields and Ballooning; and
- Waste.

4 In this chapter the existing environment is examined with regards to current utilities, aviation and waste infrastructure; potential impacts on the surrounding environment resulting from the proposed development are evaluated and appropriate mitigation measures are proposed.

5 This chapter should be read in conjunction with Chapters 6 and 7, **Volume 3B** of the EIS and **Chapters 6**, **7**, **8** and **11** of this volume of the EIS.

12.2 METHODOLOGY

6 This section of the EIS has been prepared in accordance with relevant EU and Irish Legislation and guidance, including the requirements of Annex IV of the EIA Directive and in accordance with Schedule 6 of the *Planning and Development Regulations 2001* (as amended) and conforms to the relevant requirements as specified therein.

7 The following guidelines were referred to while preparing this appraisal:

- Environmental Protection Agency (EPA) (2002). *Guidelines on the Information to be contained in Environmental Statements;*

- EPA (2003). *Advice Notes on Current Practice (in the preparation of Environmental Impact Statements*; and

- Department of the Environment Community and Local Government (2013) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessments*.

8 The scope of the appraisal is based on a review of legislation, guidance documents, other EISs, feedback from public consultation, consultation with prescribed bodies, consultation with An Bord Pleanála (the Board), the Irish Aviation Authority (IAA) and on a consideration of the likelihood for significant impacts arising, having regard to the nature of the receiving environment and the nature and extent of the proposed development.

9 The scoping opinion received from the Board (refer to Appendix 1.3, **Volume 3B Appendices** of the EIS) identified the following issues as being relevant to this chapter of the EIS:

- Identify the enhancements to existing electricity network infrastructure;

- Information on the likely effects on public utilities and services along the route corridor and in particular any proposed re-routing of overhead electricity lines ; and

- Assessment of potential impacts on aviation transport, including impacts on Trim Airfield.

10 This section sets out how the appraisal of material assets, specifically utilities, aviation and waste were evaluated for the proposed development. The objective of this chapter is to identify existing utility, aviation and waste infrastructure and determine whether these features place constraints on the proposed development. Impacts during construction, operation and decommissioning that the proposed development may have on utilities, aviation and waste infrastructure are examined and mitigation measures which may be required to minimise any adverse impacts of the proposed development are identified and considered (refer to **Sections 12.5** and **12.6**).

11 The evaluation is based on the fact that existing best practices in design, construction and operation are employed for the proposed development as set out in this EIS.

12.3 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

12 This section describes the characteristics of the proposed development and indicates how the material assets are affected by the proposed development.

13 The main potential impacts on waste infrastructure and utilities occur during the construction phase and details of said impacts are included in **Section 12.5**.

14 The main potential impacts on aviation and ballooning occur during the operation phase, details of said impacts are included in **Section 12.5** and mitigation measures must take account of the long term nature of transmission infrastructure.

12.4 EXISTING ENVIRONMENT

12.4.1 Evaluation of Baseline – Utilities

12.4.1.1 Gas Pipelines

15 There are a number of gas pipelines in the MSA, particularly around the main settlements of Navan, Trim, Dunshaughlin, Kells and Kingscourt.

16 There are also a network of gas pipelines which connect these settlements including the following:

- From Rathoath to Dunshaughlin;
- Dunshaughlin passing approximately 1km to the north of the village of Summerhill toward the village of Rathmoylan;
- Trim to Navan; and
- Ardee towards Kingscourt, Lisnagrow and Mullagh.

17 This information is contained the *Final Re-evaluation Report* (April 2013) and a map illustrating the constraints within the MSA is presented in Appendix D of that report (refer to Appendix 1.1, **Volume 3B Appendices** of the EIS**)**.

12.4.1.2 Electricity Lines and Telecoms

18 There are a number of existing overhead electricity lines located throughout the MSA, which include both transmission and distribution lines. The most significant electricity lines in the MSA are the Oldstreet to Woodland 400 kV OHL, located to the south of the MSA and the Flagford-Louth 220 kV OHL which runs in an east-west direction to the south of Kingscourt.

19 There are a number of other existing OHL 220 kV lines in the MSA namely Louth to Gorman and Gorman to Maynooth. There are three 110 kV OHLs which cross the MSA north of Navan, Gorman to Meath Hill, Gorman to Navan and Arva to Navan. There are also a number of medium voltage 38 kV OHLs crossing the MSA.

20 Overall in the MSA there are approximately 359km of existing medium and high voltage overhead electricity lines (161km of 38 kV, 101km of 110 kV, 93km of 220 kV and 4km of 400 kV).

21 In addition there are thousands of kilometres of low voltage (20 kV and 10 kV) and telephone OHLs in the MSA.

22 This information is contained the *Final Re-evaluation Report* (April 2013) and a map illustrating the constraints within the MSA is presented in Appendix D of that report (refer to Appendix 1.1, **Volume 3B Appendices** of the EIS**)**.

12.4.2 Evaluation of Baseline – Aviation

12.4.2.1 Airfields

23 There are three licensed airfields in the MSA; Trim Airfield, Trevet Airfield and Athboy Airfield. The IAA has indicated that there are a number of unlicensed airfields and landing strips in the MSA.

24 The nearest airfield to the proposed line route is Trim Airfield, which is located in Dunganny, Trim, Co. Meath, approximately 4km north-west of Trim and 1.2km from the OHL. Trim Airfield is 15 minutes flying time from the coast (Irish Sea) and a similar flying time from Dublin Airport. The airfield is open from 10.00a.m. until sunset, the end of Visual Flight Rules (VFR). Aircraft are not permitted to take-off before 10am without the permission of the operator. The single runway (10/28) is a grass strip, 560m long and 12m wide, see **Figure 12.1**, www.trimflyingclub.ie.

Figure 12.1: Trim Airfield Grass Runway

25 Pilots need to consider their aircraft's take-off performance when using the runways at Trim, wet or long grass will reduce take-off and landing performance. Pilots are encouraged to avoid overflying any settlements at low level. Pilots taking off on Runway 10 should avoid flying over the farm house on the far side of the river. Pilots taking off on Runway 28 must avoid flying over the house located behind the trees and to the left of the climb out from 28. **Figure 12.2**, www.trimflyingclub.ie, shows the desired circuit pattern for Runway 28, with the objective of avoiding flying into the area marked in red, which can happen on the climb-out or on the cross-wind leg.

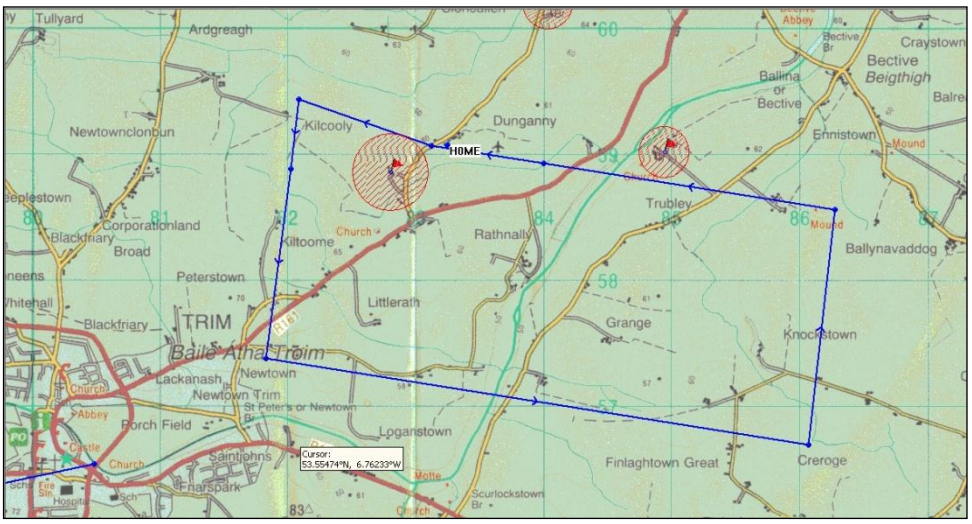

Figure 12.2: Desired Circuit Pattern for Runway 28

12.4.2.2 Ballooning

26 A company called Irish Balloon Flights Ltd. operate in the Trim area, flying from a number of launch sites, including Trim Castle, Athboy, Slane, the Hill of Tara and others depending on the wind direction on the day of the flight. They fly from Trim most midweek and Sunday evenings during the summer months (www.balloons.ie).

27 Irish Balloon Flights Ltd. has a significant volume of balloon flight traffic, see **Figure 12.3**, an image displaying recent balloon flight paths in the Trim area.

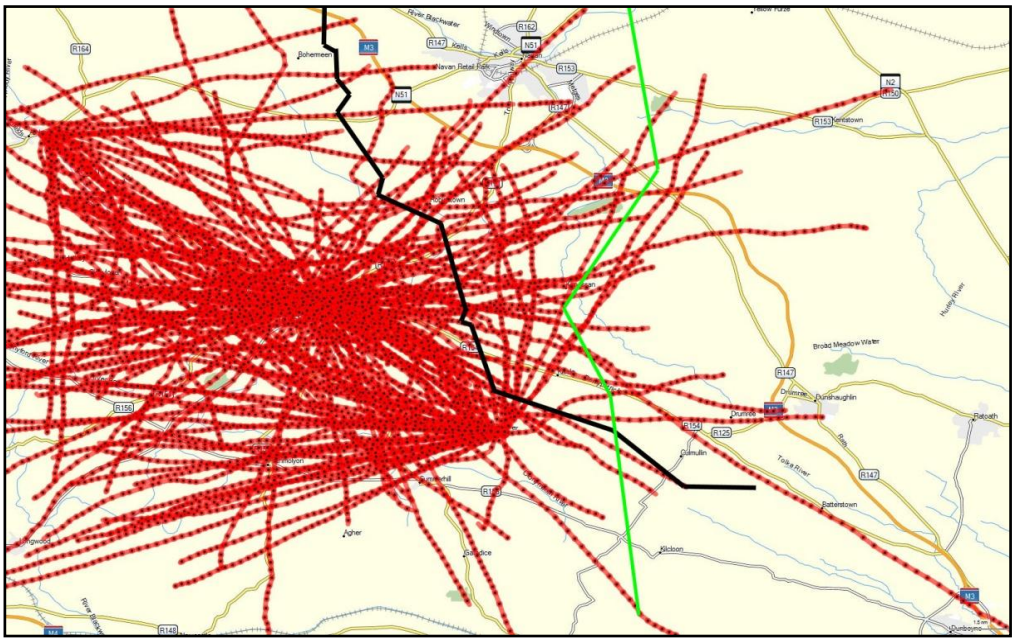

Figure 12.3: Balloon Flight Paths in the Trim area

12.4.3 Evaluation of Baseline – Waste

28 In the MSA there are no EPA licensed waste facilities within 500m of the OHL. A list of the waste management facilities in the MSA can be found in **Appendix 7.2, Volume 3D Appendices** of the EIS.

12.5 POTENTIAL IMPACTS

29 During the preparation of this EIS, an evaluation of the likely significant effects of all aspects of the proposed development has been undertaken.

30 The material asset impacts of the proposed development are divided between the construction and the operational phases of the proposed development.

12.5.1 Do Nothing

31 In the 'Do Nothing' Scenario, the OHL will not proceed and the baseline material asset environment, save for the potential for general development outside of the scope of this project, will remain unchanged. The existing environment remains the same and no material assets are impacted.

12.5.2 Construction Phase

32 The construction programme is anticipated to last approximately 3 years from commencement of site works (refer to Chapter 7, **Volume 3B** of the EIS for further details on construction). The construction of the OHL will be undertaken in five general stages, according to the following sequence, on a rolling programme of estimated durations:

- Stage 1 – Preparatory Site Work and Preliminary Reinstatement;
- Stage 2 – Tower Foundations;
- Stage 3 – Tower Assembly and Erection;
- Stage 4 – Conductor / Insulator Installation; and
- Stage 5 – Final Reinstatement of Land.

33 The construction phase will have potential impacts on utilities and waste. It will be a requirement of the contractor appointed to construct the proposed development, to prepare a detailed *Construction Environment Management Plan* (CEMP) prior to the commencement of construction operations. The objective of this plan will be to minimise the impact caused by the construction stage of the proposed development. Refer to Appendix 7.1 of **Volume 3B Appendices** of the EIS for an outline CEMP.

12.5.2.1 Gas Pipelines

34 Gas pipelines traverse the proposed line route at least twice.

12.5.2.2 Electricity Lines and Telecoms

35 There are a number of existing electricity and telecom lines which will be crossed by the proposed development.

36 The proposed development crosses two existing electricity high voltage OHLs:

- Arva to Navan 110 kV OHL; and
- Gorman to Maynooth 220 kV OHL.

37 For further details on the crossing of overhead lines, refer to the *North-South 400 kV Interconnection Development Identification and Resolution of Conflicts with Existing Overhead Line Infrastructure* included as, **Appendix 7.3, Volume 3B Appendices,** of the EIS.

12.5.2.3 Construction Waste

38 As with any infrastructure project there will be excavated material during the construction of the proposed development, specifically in relation to the tower foundations. Typically 34m^3 of excess soil will be excavated at each intermediate tower location with approximately 230m^3 of excess soil excavated from angle towers. A worst case scenario would be that all excavated material (14,200m^3 for all the towers in MSA) would be sent off-site to a licensed / permitted waste recovery facility / landfill.

39 Timber waste will be generated from hedge rows, tree lines and forestry to clear open space for OHL development.

40 The proposed extension works at Woodland Substation will involve the production of waste material. The construction of the substation will result in approximately 3,500m^3 of excavated material, which will have to be removed off site to licensed disposal facilities.

12.5.3 Operational Phase

41 The operational phase will have potential impacts on aviation and the potential to generate a negligible amount of waste.

12.5.3.1 Operational Waste

42 It is envisaged that little waste will arise from the operational phase of the proposed development. Waste generated in the operational phase will include light cleaning waste. arising in maintenance and cleaning operations, the replacement of lighting units as required, oils arising from occasional maintenance activities and packaging materials.

12.5.3.2 Aviation

12.5.3.2.1 Airfields

43 Aircraft operating at Trim Airfield will pass in the vicinity of Towers 355, 356 and 357. Prior to the application for planning approval being made, the views of the prescribed authority for aircraft safety, the Irish Aviation Authority (IAA) were sought and the following is an extract from correspondence dated the 18.09.2013:

> *"As far as aerodromes are concerned, Trim aerodrome is mentioned in the project proposals, and Aircraft operating there will pass in the vicinity of Tower numbers 355, 356 and 357. If the towers are to be the maximum height of 43 metres, the maximum line height will be approximately 104 metres OD. Over these wires, the Approach and Take-off surfaces (the relevant Obstacle Limitation Surfaces for the aerodrome) for the runway at Trim will be at approximately 130 metres OD. Although the lines will be below the obstacle limitation surfaces for the aerodrome, making them more conspicuous through the fitting of marker spheres should be considered between Towers 355 and 357.*
>
> *On this subject, where power transmission lines cross rivers and watercourses, similar marker spheres are often fitted. This is usually claimed to be for aircraft, but it is usually to help prevent large birds, in particular swans, form colliding with the lines."*

44 This shows that the proposed development does not provide an obstacle for aircraft operating at Trim Airfield. With the towers at a maximum height of 43m in this area, the maximum line height will be approximately 104m OD and this is 26m below the relevant Obstacle Limitation Surfaces for the airfield, which is 130m OD. The IAA confirmed that the OHLs will be below the obstacle limitation surface for Trim Airfield.

45 This position was also confirmed by a study carried out by Rod Fewings an independent aviation expert employed by TOBIN at the line routing stage, refer to **Appendix 12.1, Volume 3D Appendices** of the EIS.

12.5.3.2.2 Ballooning

46 Ballooning is an activity regulated by the IAA. Again, prior to the application for planning approval being made, the views of the prescribed authority, the IAA were sought in relation to ballooning activity and the following is an extract from correspondence dated the 24.10.2013:

> "*Balloon flights are only permitted / possible in particular weather conditions – light winds and good visibility. Balloon pilots have to take account of numerous hazards in their vicinity, including any power lines. They have to plan their launch*

point / flight to avoid known hazards. The potential presence of power lines in this area will have to be considered by the balloon pilots as part of their flight planning. They are permitted to fly over the powerlines, but have to avoid launching or landing in their proximity. The tracks show regular overflights of Trim town (see **Figure 12.3**)*, which is also an unsuitable landing site, but does not prevent their operations.*

In my opinion, the balloonists will have to consider the presence of the proposed 400 KV interconnector in the vicinity of their intended operation, but there already are numerous hazards in the area including various other electricity and telecom lines. The ballooning activity should not be a reason to prevent changes to the existing landscape, including the construction of power transmission lines."

47 This clearly shows that the ballooning activity should not prevent construction of the proposed 400 kV OHL. The power line will have to be considered by the balloon pilots for launching and landing, but as stated by the IAA balloon pilots are allowed fly over power lines.

12.5.4 Decommissioning

48 The proposed development will become a permanent part of the transmission infrastructure. The expected lifespan of the development is in the region of 50 to 80 years. This will be achieved by routine maintenance and replacement of hardware as required. There are no plans for the decommissioning of the overhead line (OHL). In the event that part of, or the entire proposed infrastructure is to be decommissioned, all towers, equipment and material to be decommissioned will be removed off site and the land reinstated. Impacts would be expected to be less than during the construction phase and would be of short term duration.

12.6 MITIGATION MEASURES

49 The construction methods carried out by the ESB and its contractors will be in line with international best practice and will fully comply with relevant health and safety.

50 It will be a requirement of the contractor appointed to construct the proposed development to prepare a detailed CEMP prior to the commencement of construction operations. The CEMP will include method statements and work programmes that provide more detailed phasing of work based on the methodologies described in Chapter 7, **Volume 3B** of the EIS and the mitigation measures contained in this EIS. An outline CEMP is included in Appendix 7.1, **Volume 3B Appendices** of the EIS. The objective of this plan will be to minimise the impact caused by the construction stage of the proposed development.

12.6.1 Construction Phase

12.6.1.1 Electricity Lines and Telecoms

51 A site specific risk assessment must be completed where the crossing of existing electricity and telecom services is necessary. Consultation will take place with service providers prior to any construction works in the proximity of existing telecoms services likely to be impacted, as required.

52 Refer to **Section 12.5.2.2** for details on where the crossing of existing OHL and telecom services is necessary during construction, maximum efforts will be made to minimise disruption to the service. Extreme caution will be exercised during the construction of towers to ensure no cables will be disturbed. Care will be taken when stringing conductors. Certain obstacles along a straight have to be guarded such as road / railway crossings and other OHLs by way of temporary guard poles (refer to Chapter 7, **Volume 3B** of the EIS for further details on construction).

12.6.1.2 Gas Pipeline

53 A pre-construction survey will be undertaken during the construction phase, including ground investigations, to confirm the conditions which are anticipated to be encountered.

54 The survey will confirm the conclusions set out herein as to the presence or absence of gas infrastructure in the construction areas. This is a standard requirement for all construction projects.

12.6.1.3 Waste

12.6.1.3.1 Legislation

55 All waste arising during the construction and operational phases will be managed and disposed of in a way that ensures compliance with the provisions of the following legislation:

- *Waste Management Act 1996 (as amended);*
    - *Waste Management (Amendment) Act 2001* [S.I. No. 36/2001]*;*
    - *Protection of the Environment Act 2003* [S.I. No. 27/2003]; and
    - *Environment (Miscellaneous Provisions) Act 2011* [S.I. No. 20/2011].
- *European Communities (Waste Directive) Regulations 2011* [S.I. No. 126/20011];

- *Waste Management (Facility Permit and Registration Regulations) 2007* [S.I. No. 821/2007];
- *Waste Management (Facility Permit and Registration Regulations) 2008* [S.I. No. 86/2008];
- *Waste Management (Collection Permit) Regulations 2007* [S.I. No. 820/2007];
- *Waste Management (Collection Permit) (Amendment)* Regulations 2008 [S.I. No 87/2008];
- Department of Environment, Community and Local Government (2006) *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects*; and
- Meath County Council. *Waste Management Plan for the North East Region 2005-2010.*

56 Waste management will be carried out in accordance with *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects* (2006) produced by the Department of Environment, Community and Local Government (DoECLGs).

57 A requirement of the *Waste Management (Facility Permit and Registration) Regulations 2007 and 2008* is to obtain a Certificate of Registration if excavated material is being disposed or recovered. The extract from the regulations is as follows:

> "*Classes of activity subject to registration with a local authority or the agency. Recovery of excavation or dredge spoil, comprising natural materials of clay, silt, sand, gravel or stone and which comes within the meaning of inert waste, through deposition for the purposes of the improvement or development of land and the total quantity of waste recovered at the site shall not exceed 25,000 tonnes*."

12.6.1.3.2 Construction Waste Management Plan

58 A (CWMP) (which will form part of the CEMP) will be implemented to minimise waste and ensure correct handling and disposal of construction waste streams in accordance with the *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of the Environment*, July 2006. The key principles underlying the plan will be to minimise waste generation and to segregate waste at source.

59 Facilities for segregation of waste will be made available to optimise reuse and recycling of construction waste and correct disposal of domestic waste. On-site segregation of waste will be provided by the contractor using skips for timber, steel, general waste and recyclables.

60 The measures proposed below shall be incorporated into this plan and shall be the minimum level of mitigation to be included in CWMP:

- Disposal of construction waste will be to licensed / permitted disposal facilities;
- Regulations in relation to waste management will be adhered to;
- Excavated material will be re-used on site where appropriate and where it is possible to do so;
- Other waste generated will be removed off site by licensed contractors for appropriate treatment / disposal or recycling at licensed facilities;
- Soil material will be tested regularly by a qualified company prior to removal to ensure material is inert;
- Where applicable, temporary site sanitary facilities will be connected to a holding tank which will be pumped out as required and disposed of in an appropriate manner to a licensed disposal facility;
- Fuels or chemicals stored on site will be stored in an enclosed, bunded unit and located a safe distance from mobile generators or electrical equipment;
- Hazardous waste oils and oil contained material will be stored in designated bins and disposed of by a licensed hazardous waste contractor;
- Spill kit bags / bins will be made available at sites and in relevant vehicles, should a spill occur; and
- Portable bunds will be used when refuelling to avoid fuel spills.

Top Soil

61 All topsoil excavated in the construction of tower foundations will be reinstated where possible. Where practical and appropriate, excavated subsoil will be used for associated construction and landscaping purposes on site. This will allow the material to be beneficially reused and would have no traffic implications or waste disposal to an outside site. Due to the relatively small footprint of each tower, there will not be a large amount of subsoil excavated at each tower. Typically 34m^3 of excess soil will be excavated at each intermediate tower location with

approximately 230m^3 of excess soil excavated from angle towers. Where the excavated material will not be used onsite, all surplus soils will be transported to a licensed waste recovery facility and / or landfill, refer to **Appendix 7.2, Volume 3D Appendices** of the EIS.

62 In the unlikely event that any soil / subsoil is deemed to be contaminated it will be stored separately from the inert soil / subsoil and it will be sampled and tested. The materiaI will be appropriately classified as non-hazardous or hazardous in accordance with EU Council Decision 2003/33/EC which establishes the criteria for the acceptance of waste at landfills, before being transported to an appropriately licensed facility by permitted contractors. The transport of materials will be carried out by contractors licensed under the *Waste Management (Collection Permit) Regulations 2007 as amended*.

Waste Steel, Copper and Aluminium

63 Waste steel, copper and aluminium will be stored separately in a metal skip and recycled using a licensed waste company and recycling facility. Other construction waste will include excess material, damaged material, waste timber and packaging waste will be stored in designated skips / bins on site for collection by a licensed waste contactor.

Hazardous Waste

64 Waste oils and oil contained material will be stored in designated bins and disposed of by a licensed hazardous waste contractor.

General Waste

65 General domestic type waste consisting of mixed food waste and food packaging, polystyrene, cardboard and plastic etc. will be generated during construction works by construction workers at the tower sites and stringing areas. This waste will be brought back to the construction material storage yard where it will be segregated correctly and placed in designated skips / bins for collection by a licensed waste contractor.

Foul Effluent

66 Temporary facilities will be provided for construction works at tower locations. The Contractor will provide chemical toilets / holding tank and provide for regular collection by a licensed company for discharge to the nearest local authority sewage treatment plant.

Timber

67 Qualified and certified timber contractors will recover / dispose of all timber waste arising from clearing hedgerows, tree lines and forestry (refer to **Chapter 6**, of this volume of the EIS for further details on the flora and fauna impacts).

12.6.2 Operational Phase

12.6.2.1 Waste

68 Light waste generated in the operational phase of the proposed development arising in maintenance and cleaning operations, replacement of lighting units as required, oils arising from occasional maintenance activities and packaging materials, will be removed off site by licensed contractors for appropriate recovery / disposal at licensed facilities.

12.6.2.2 Airfields

69 The proposed line route has been selected taking into account the presence of Trim Airfield and the relevant obstacle limitation surfaces for the aerodrome.

70 Landing aircraft using Runway 28 would need to be visually aware of where the towers are located and a formal approach procedure of *'visual contact of towers / cables required before starting field approach'* should be introduced, even though there is a clear margin between the top of the towers and the obstacle limitation surface. The OHLs will be below the obstacle limitation surfaces for Trim Airfield, but they will be made more conspicuous through the fitting of marker spheres between Towers 355 and 357.

71 Consultation with the IAA was sought to identify the type of marker spheres to be used and the following is an extract from correspondence dated the 08.01.2014:

> *"International aviation regulations have defined the marker spheres in the following paragraphs;*
>
> *5.4.3.8 A marker displayed on an overhead wire, cable, etc., should be spherical and have a diameter not less than 60 cm.*
>
> *5.4.3.9 The spacing between two consecutive markers or between a marker and a supporting tower should be appropriate to the diameter of the marker, but in no case should the spacing exceed:*
>
> *a) 30 m where the marker diameter is 60 cm progressively increasing with the diameter of the marker to,*

b) 35 m where the marker diameter is 80 cm and further progressively increasing to a maximum of,

c) 40 m where the marker diameter is at least 130 cm.

Where multiple wires, cables, etc. are involved a marker should be located not lower than the level of the highest wire at the point marked.

5.4.3.10 A marker should be of one colour. When installed, white and red or white and orange markers should be displayed alternately. The colour selected should contrast with the background against which it will be seen.

Where marker spheres are proposed for aviation purposes, they will have to conform to these standards".

72 The landscape consultants propose fitting 60cm diameter spheres at 30m intervals alternating orange and white colours, refer to **Chapter 11** of this volume of the EIS.

12.6.2.3 Ballooning

73 Consultation with the IAA, clearly indicated that ballooning activity should not be a reason to prevent changes to the existing landscape, including the construction of overhead power lines.

74 The potential presence of all power lines in this area will have to be considered by the balloon pilots as part of their flight planning. The OHL will have to be taken into account by the balloon pilots for launching and landing, but as stated by the IAA balloon pilots are allowed fly over power lines.

12.7 RESIDUAL IMPACTS

12.7.1 Gas Pipelines

75 Adherence to the mitigation measures will ensure there are no residual impacts associated with the proposed development.

12.7.2 Electricity Lines & Telecoms

76 Adherence to the mitigation measures will ensure there are no residual impacts associated with the proposed development.

12.7.3 Airfields

77 Adherence to the mitigation measures will ensure there are no residual impacts associated with the proposed development.

12.7.4 Ballooning

78 Adherence to the mitigation measures will ensure there are no residual impacts associated with the proposed development.

12.7.5 Waste

79 To manage construction waste, the main contractor will be required to develop, implement and maintain a CEMP during the construction works. The main contractors will be required to minimise waste and to segregate waste at source. An outline CEMP has been included in **Appendix 7.1, Volume 3B** of the EIS, and forms part of the application documentation. All relevant mitigation measures set out in the EIS are included in the outline CEMP and will be incorporated into the final CEMP.

80 The main waste arising, inert soil, will be reused for onsite purposes. Where the excavated material will not be used onsite, all surplus soils will be transported to a licensed waste recovery facility and / or landfill, this ensures the provisions of the *Waste Management Act 1996* and subsequent amendments and regulations and any of the relevant local authorities *Waste Management Plans.*

81 All other waste generated from construction activities will be sent to licensed waste recovery facilities, where possible. It is envisaged that the fraction of waste arising from the proposed development which will be sent to landfill will be minimal consisting only of the residual fraction of the domestic type waste generated by the construction workers which cannot be recovered. All other materials such paper, plastic, glass etc. will be segregated and recycled.

82 Following good waste management practices it is not expected that waste arising from the proposed development will give rise to any significant impacts.

12.8 INTERRELATIONSHIPS BETWEEN ENVIRONMENTAL FACTORS

83 The use of aviation marker spheres on the line between Towers 355 and 357 may increase the visual impact of the alignment; refer to **Chapter 11** of this volume of the EIS. This location corresponds with one of the most sensitive locations identified along the alignment of the proposed development, where towers are visible from Bective Bridge looking along the river Boyne.

84 The use of aviation marker spheres on the line between Towers 355 and 357 will negate the need for swan diverters on this section of the OHL, refer to **Chapter 6** of this volume of the EIS.

85 This chapter should be read in conjunction with Chapters 6 and 7 of **Volume 3B** of the EIS and **Chapters 6**, **7**, **8** and **11** of this volume of the EIS, for a full understanding of the main interactions between these environmental topics.

12.9 CONCLUSIONS

86 The proposed development does not provide an obstacle for aircraft operating at Trim Airfield and the IAA confirmed that the OHLs will be below the obstacle limitation surface for Trim Airfield. The IAA also confirmed that ballooning activity should not be a reason to prevent changes to the existing landscape, including the construction of power transmission lines.

87 The mitigation measures to be outlined in the CEMP (refer to Appendix 7.1, **Volume 3B Appendices** of the EIS for an outline CEMP) will be implemented as part of the construction management. It is considered that the operation of the proposed development will have no significant impacts and adherence to the mitigation measures will ensure there are no residual impacts associated with the proposed development.