Appendix 9.1:

Outline Construction Environmental Management Plan (Revised 2015)

SONI
Tyrone Cavan Interconnector
The current. The future.

Appendix 9.1: Outline Construction Environmental Management Plan

(Revised 2015)

Contents

1.1 Executive Summary

1. The Outline Construction Environmental Management Plan (CEMP) has been updated in line with the change of applicant name from NIE to SONI and to include additional construction mitigation measures outlined in the Consolidated ES Addendum (2015).

2. As part of SONI's operational licence it is responsible for the planning of the proposed Tyrone - Cavan Interconnector. On completion of the planning phase of the project responsibility for the project will be handed to NIE. As the project proponent, NIE will have ultimate responsibility for the implementation of the CEMP and will work to ensure that the activities of its contractors are conducted in accordance with the mitigation measures set out in the Consolidated ES and Addendum and the conditions in the planning permission.

3. The contractor (who will be instructed by NIE) will be required to comply with mitigation measures outlined on the Consolidated ES and Addendum, which will be contractually enforced.

4. The Consolidated ES and Addendum have been prepared, inter alia, in order to outline the proposed mitigation measures which will be used to eliminate or minimise the impacts of the proposed Tyrone – Cavan Interconnector. The construction and operational phase for the substation, towers, overhead line and associated works has been assessed within the assessment chapters of the Consolidated ES and Addendum and mitigation measures proposed. These measures have been included in this Outline CEMP.

5. This Outline CEMP will be a key part of the construction contract to ensure that all mitigation measures, which are considered necessary to protect the environment, prior to construction, during construction and/or during operation of the proposed Tyrone – Cavan Interconnector, are fulfilled. NIE shall be responsible for ensuring that the contractor manages the construction activities in accordance with this Outline CEMP. The contractor will prepare a CEMP which is in accordance with the Outline CEMP to ensure that construction delivers the mitigation measures set out within this Consolidated ES and Addendum.

6. Objectives and measures are also included for the management, design and construction of the project to control the material impact of construction insofar as it may affect the natural environment and the natural environment, local residents and the public in the vicinity of the construction works. In order to achieve this, NIE and its contractor will adopt the objectives and control measures set out in this Outline CEMP with respect to:

   - Water Environment;
   - Soils, Geology and Groundwater;
   - Ecology;
   - Noise;
   - Cultural Heritage;
   - Landscape and Visual;
   - Community Amenity and Land Use;
   - Socio- Economics;
   - Telecommunications and Aviation Assets;
   - Flood Risk;
   - Transport;
   - Haulage Route Assessment (Addendum chapter);
   - Air and Climate Change (Addendum chapter).

1.2 Introduction

1.2.1 Purpose of a Construction Environmental Management Plan

7. The main purpose of a CEMP is to:

- Provide a mechanism for ensuring that measures to mitigate potentially adverse environmental impacts are implemented;
- Ensure that good construction practices are adopted throughout the construction of the proposed Tyrone - Cavan Interconnector;
- Allow for prompt response if any unacceptable adverse impacts are identified, with the provision of appropriate avoidance/and or mitigation measures as required in accordance with the Consolidated ES and Addendum;
- Provide a framework for compliance auditing and inspection to enable NIE to be assured that its aims with respect to environmental performance are being met.

1.2.2 The Proposed Tyrone - Cavan Interconnector

8. The proposed Tyrone - Cavan Interconnector is summarised below:

- The Proposed Substation: the construction and operation of a new 275kV / 400kV (source) substation at Turleenan townland, north-east of Moy, County Tyrone (hereafter referred to as the substation);
- The 275kV Towers: the removal of an existing 275kV suspension tower and the construction and operation of two new 275kV terminal towers, including the temporary diversion of the 275kV line, to provide for connection of the Turleenan substation to NIE's existing 275kV line;
- The 400kV Towers and Overhead Line: the construction and operation of a single circuit 400kV overhead transmission line supported by 102 towers for a distance of some 34.1km , from the source substation (at Turleenan) to a border crossing between the townlands of Doohat or Crossreagh, County Armagh and Lemgare, County Monaghan, where it will tie into the future ESB network. The overhead line will continue on in the Republic of Ireland with all further towers being proposed by EirGrid for placement within that jurisdiction. However, owing to geographic border definitions in the immediate area of the border crossing, there will be 200m of line oversail in the Northern Ireland townland of Crossbane; and,
- Associated Works: Works to include site levelling, site preparation works, modifying existing access points, construction of new access points, construction of new access lanes, construction of working areas, stringing areas, guarding, site boundary fencing, related mitigation works, formation of access tracks and other associated works at the substation and at the tower locations.

1.2.3 Construction Period and Stages

1.2.3.1 Construction Period

9. The construction period for the proposed Tyrone - Cavan Interconnector is anticipated to be up to three years from the start of the site works.

1.2.3.2 Overview of Overhead Line Construction Stages

10. The construction of the overhead line will be undertaken in five general stages, according to the following sequence, on a rolling programme of estimated durations:

- Stage 1 – Preparatory Site Work (1 - 7 days);
- Stage 2 - Tower Foundations (3 – 6 days);
- Stage 3 - Tower Assembly and Erection (3 – 4 days);
- Stage 4 - Conductor/ Insulator Installation (7 days); and,
- Stage 5 – Reinstatement of Land (1 - 5 days).

1.2.3.3 Overview of Substation Construction Stages

11. The substation construction can be split into seven stages:

- Site Entrance;
- Access Roads;
- Site Clearance, Landscaping and Preparation of Bund Construction;
- Install Drainage and Ducting;
- Construction of Roads and Bases within the Site;
- Installation of Equipment and Construction of Buildings; and,
- Completion of Access Road and Entrance, Including Final Surfacing.

1.3 Overview of Project Environmental Management

1.3.1 Environmental Management Principles

12. SONI views managing the environmental impact of its activities as an essential part of its business and is committed to a programme of environmental improvement.

13. SONI has an Environmental Policy which underscores the high priority that the company accords to environmental issues and sets goals for continual environmental improvements.

14. The policy framework commits the company to work to protect the environment and apply ways of minimising environmental impacts. Selected principles from the policy of immediate relevance to the proposed Tyrone - Cavan Interconnector are:

- To mitigate the impact of activities on the environment and develop procedures to prevent or abate any forms of pollution
- To promote the efficient use of resources and energy;
- To control waste management and recycling in a manner that reduces burden on landfill and maximises our reuse of materials;
- To commit, where possible, to environmentally sustainable procurement principles, and to encourage those principles throughout the supply chain.

15. The contractor (who will be instructed by NIE) will be required to comply with the principles of SONI's Environmental Policy and undertake this project in an environmentally sensitive manner and in particular (which will be contractually enforced) to:

- Meet the requirements of all relevant legislation, codes of practice and standards as identified in the Consolidated ES and Addendum;
- Limit the adverse environmental impacts as identified in the Consolidated ES and Addendum.

1.3.2 CEMP Development Responsibilities

16. As part of SONI's operational licence it is responsible for the planning of the proposed Tyrone - Cavan Interconnector. On completion of the planning phase of the project responsibility for the project will be handed to NIE. As the project proponent, NIE will have ultimate responsibility for the implementation of the CEMP and will work to ensure that the activities of its contractors are conducted in accordance with the mitigation measures set out in the Consolidated ES and Addendum and the conditions in the planning permission.

17. The CEMP will set out the arrangements for preventing, mitigating and controlling environmental issues and impacts by those carrying out the work and all others who may be affected by it, in accordance with the measures set out within this Outline CEMP.

18. The Contractor employed to undertake the construction of the proposed Tyrone - Cavan Interconnector will be responsible under legislation and the Contract, for minimising and controlling the potential environmental impacts of all Contract activities.

1.4 Project Environmental Mitigation

1.4.1 Overview

19. The main purpose of the Consolidated ES and Addendum is to identify environmental impacts with a view to avoiding, minimising or reducing them, particularly at the planning and design phase of the project. Project environmental mitigation will be detailed through the preparation of the CEMP in accordance with this Outline CEMP and Consolidated ES and Addendum.

20. Electricity transmission construction and reinstatement techniques that minimise environmental impacts are well established and when properly executed are unlikely to lead to any significant adverse long-term impacts. The techniques are identified within the Consolidated ES and Addendum which sets out the construction proposals with specific mitigation measures contained in the specialist chapters. Those measures are identified within this Outline CEMP.

21. All mitigation measures used during construction will be consistent with the measures set out in the Consolidated ES and Addendum and this document.

1.4.2 Construction Environmental Management Plan

22. The CEMP will contain :

- A statement of the environmental aims and policy objectives of the project;
- Relevant legislation and regulations that must be complied with;
- The real and potential environmental effects as identified in the ES;
- A schedule of environmental mitigation measures;
- Roles and responsibilities of key individuals;
- Environmental awareness training programmes;
- Environmental monitoring programmes and monitoring specifications;
- Inspection and auditing programmes; and,
- Reporting programmes and procedures.

1.4.3 Consultations

23. A range of consultations have been undertaken as part of the EIA with statutory and non-statutory bodies in order to ascertain the interests and concerns of key Consultees and authorities. The consultations provided useful information for formulating constraints avoidance and mitigation measures to be implemented to help reduce the impacts of greatest significance.

24. Consultation with relevant organisations will continue throughout all stages of the project and will focus on construction and mitigation measures to ensure that all necessary consents and licences are obtained.

25. The Contractor will be responsible for keeping a record of all of its consultations with statutory and non-statutory organisations including those with an environmental conservation mandate and for copying all correspondence (sent and received) and

meeting notes to NIE. It will be the Contractor's responsibility to prepare and update the consultation record.

26. Communication channels will be established and recorded within the CEMP to ensure that good relations are maintained with all parties potentially affected by the project. NIE and the Contractor will liaise with local communities, landowners and other interested parties.

27. The results of ongoing and future consultations will feed into the development of the CEMP including detailed restoration proposals and working method statements, consistent with measures set out in this Outline CEMP.

28. By way of example of the purpose of consultations, in recent consultations (2012), RSPB referred to Barn Owl Surveys and recommended that responsibility for appropriate surveys at a pre–works stage, in suitable nesting habitat such as at Artasooly Wood, is placed with the ecological clerk of works. These measures will be implemented by NIE.

1.4.4 Environmental Legislation, Policy and Guidance

29. There are numerous standards that will be incorporated into the CEMP to ensure that the potential environmental effects of the project are addressed. Issues relating to health and safety will be addressed in a separate Health and Safety Plan. Environmental management throughout the life of the Tyrone – Cavan 400kV Interconnector project will be dictated by a number of requirements including those:

- Prescribed in existing legislation (including the need for other licenses or permits);
- Established under industry codes of good practices;
- Contained within NIE Environmental Policy Statement and the requirements of ISO 14001;

1.4.5 Environmental Roles and Responsibilities

30. A Project Team organisational chart will be incorporated into the CEMP by the Contractor for the construction phase of the works.

31. It is an NIE requirement that there be a dedicated Environmental Officer attached to the NIE Project Team and an Environmental Representative with responsibility for environmental issues within the Contractor team identified prior to commencement of works.

1.4.5.2 Northern Ireland Electricity Environmental Management Team

32. The NIE Project Manager is supported on environmental issues by the NIE Environmental Officer. Environmental issues will be dealt with in accordance with NIE's Health, Safety & Environmental Procedures.

33. The NIE Project Manager is also supported by the following personnel:

- Land Agent;
- Wayleave Officer;
- Communications Advisor;
- Project Engineers; and
- Senior Transmission Inspectors.

1.4.5.3 Contractor's Environmental Management Team

34. The Contractor will for the contract, provide descriptions of the role of the Contractor's Environmental Representative and supporting staff, giving details of their specific environmental responsibilities and duties.

35. The descriptive roles, responsibilities and duties of these individuals will be duly incorporated into the CEMP. Any change of personnel will be subject to prior approval by the NIE Project Manager. In particular the Contractor will provide the names of the Contractor Environmental Representative and those environmental staff that may be available for monitoring, inspection and auditing with their relevant qualifications.

36. It is a NIE requirement that the contractor appoints as a minimum:

- An Environmental Representative dedicated to the project who has relevant Environmental and Transmission construction experience; and be available until complete reinstatement of the project has been achieved;
- An environmental Incident Response Team comprising as a minimum 2 trained people and an excavator based on the site and available during all construction hours;
- The Contractor shall also make available adequate spill kits, portable bunds and gas cages throughout the construction phase of the project.

1.4.6 Environmental Training and Awareness

37. The NIE Environmental Officer will support the NIE Project Manager in managing the provision of environmental training for NIE project personnel in accordance with ISO 14001 System Training Procedure.

38. The Contractor will:

- Be responsible for providing and recording induction training at the commencement of and throughout the construction phase of the project for the construction workforce;
- Be responsible for providing ongoing environmental awareness training and 'tailgate/toolbox talks' as appropriate for the work being conducted throughout the project;
- Maintain a record of all training provided and undertaken by all site staff;
- Prepare a Tyrone – Cavan 400kV Interconnector booklet containing the project's environmental rules and bullet points summarising good practice. This booklet will be submitted to the NIE Project Manager for review prior to the commencement of the construction phase and upon acceptance, will be issued to all site operatives and staff working on the project; and,
- Produce a 'Foreman's folder' containing site rules, the above mentioned booklet, environmental tailgate/toolbox talks, key environmental constraints; emergency response and reporting procedures and contact details; waste management procedures and the like relating to the project. The folder will be provided for all foremen working across the project as it is understood multiple teams may be working in different locations at the same time.

1.4.7 Site Waste Management Plan

39. The Contractor will develop a Site Waste Management Plan and procedures that will address the requirements set out in:

- The requirements of the Consolidated ES and Addendum;

- This Outline Construction Environmental Management Plan;
- The NIE Environmental Policy Statement on Waste Management; and,
- All current Local and National, International and Transfrontier waste management legislative obligations.

1.4.8 CEMP Environmental Management Procedures

40. The Contractor must set out within the CEMP procedures for managing, controlling and monitoring the environmental issues of the Project. The contractual requirement will require that the construction phase for this project will not start until the CEMP has been accepted by the NIE Project Manager or his nominee.

1.4.9 Documentation Retention for inspection

41. The Contractor is to retain the following documentation on site to be made available for audit and inspection by NIE and those persons authorised by NIE or any relevant regulatory authority:

- Relevant Environmental Procedures;
- Details of any protected land sites to be encountered during the works;
- Licenses associated with waste management and disposal;
- Waste transfer documents;
- Authorisation(s) for Consent to Discharge (as required).
- Construction Method statements;
- Tailgate/toolbox talks;
- Training Records
- Relevant Material Safety Data Sheets, (MSDS).

1.4.10 Audits and Inspections

42. Before construction commences, the Contractor will produce a programme of construction audits and inspections. This will include weekly and monthly inspections and a full audit at least once during the life of the project. The actual frequency will be agreed by the Contract Manager in conjunction with NIE Environmental Officer.

43. The Contractor will ensure that his schedule of internal audits and inspections covers the planning, design, site surveys/studies, and site investigation and construction phases. The Contractor is responsible for site environmental inspections and audits in accordance with the arrangements detailed in his Environmental Management System where relevant.

- The Contractor will detail arrangements for inspections and auditing (including sub-contractors); the preparation of checklists;
- The proposed inspection/audit programme;
- The reporting of non-compliances to NIE; and,

- Arrangements to ensure the close-out of actions.

44. All audit reports will be copied to NIE'S Project Management Team within 3 days of completing an audit.

45. The Contractor must demonstrate how the provisions of the CEMP are being complied with to NIE satisfaction. This will include a programme of monthly audits and daily site inspections by the Contractor's environmental staff.

46. NIE will reassure itself that the Contractor is complying with the CEMP by instigating inspection and monitoring and will conduct inspections to ensure that good environmental practice is being followed in all working areas

47. In addition to inspection, the CEMP and the Construction Team may be formally audited for environmental compliance

48. Both inspection and auditing results will play an important part in reviewing and updating the CEMP as the project develops.

49. NIE will undertake audits and inspections of its contractors' Environmental Management Systems.

1.4.11 Project Environmental Mitigation Measures

Table 21.1 of Chapter 21 of the Consolidated ES is replicated below and identifies the location, the construction mitigation measures, the timing of implementation of those measures and the monitoring requirements for each construction impact identified within the Consolidated ES for which NIE will be responsible.

The table has been updated to include construction mitigation measures from the Consolidated ES Addendum with regard to the haulage route assessment and air and climate change.

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
GENERAL CONSTRUCTION						
5.1	Substation	Noise mitigation of transformers	The transformers will be immediately south of the GIS building. They will be connected via underground cabling and will be contained by 12.5m high wall barriers on three sides. This is a fire protection and noise mitigation measure	Construction phase	None	
5.2	Substation	Mitigation of the drainage for the proposed substation site (hardstanding area and access road)	The drainage for the proposed substation site (hardstanding area and access road) has been designed in accordance with the Sustainable Drainage Systems (SuDS) principles and the Construction Industry Research and Information Association (CIRIA) SuDS Manual 2007. A three stage treatment to ensure water quality has been designed.	Construction and operational phases	Ongoing	
5.3	General	Mitigation of the existing field drainage systems (e.g. piped drainage pipes)	If existing drainage is discovered at the location of a tower foundation, typically this drainage will be removed from the tower foundation construction area. New drainage trenches will be dug on one or as many sides of foundation as required, or alternatively a number of drains can be replaced by a larger single drain inserted, which bisects the tower foundation. Any new drainage is based on a new site specific drainage design that will be completed by the appointed contractor and in agreement with the affected landowner(s)	Construction phase	None	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
WATER ENVIRONMENT (CHAPTER 8)						
8.1	Towers 20, 21, 33, 44, 48, 68, 78, 81, and 87	Reinstatement of ephemeral drainage ditch impacted during construction of the tower	Pre-construction survey to record existing conditions. Landscape proposals to reinstate ditch following completion of the works.	Following installation of the tower.	None.	Not applicable.
8.2	All construction sites	To prevent water pollution	Construction will be undertaken in accordance with best practice guidance, and any consents and licences required by regulatory bodies. Site specific mitigation measures will be developed following a risk assessment to be completed during detailed design. Section 8.5 of the Consolidated ES sets out a palette of mitigation measures that can be adopted to ensure that pollution does not occur.	During construction.	A monitoring strategy has been proposed during construction.	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
8.3	All construction sites	To prevent water pollution	A Pollution Prevention Plan, including an emergency response procedure, will be prepared. Any vehicles used on site will well maintained and checked daily. Drip trays will be fitted to static plant and biodegradable oil used. Spill kits will be stored on site and staff trained in their use. Concrete will be batched offsite. Fuel will be stored and refuelling activities will only take place in designated areas of the working areas. Concrete washing activities will also only take place in the working areas and wash waters collected for appropriate disposal offsite at a licensed land fill.	During construction.	A monitoring strategy has been proposed during construction.	
SOILS, GEOLOGY AND GROUNDWATER (CHAPTER 9)						
9.1	Construction area	Minimise impacts to soils	Controlling working practices, for example, by minimising land take to that required for the construction process; avoiding repetitive handling of soils; minimising vehicle movements off-road; and minimising the size of stockpiles to reduce compaction of soils. Re-instatement of soils to their original location, wherever practical.	Construction Phase	None	None
9.2	Construction area	Prevent spread of Potato Wart Disease (PWD).	NIE would contact DARD regarding the safe disposal or replacement of soils affected by Potato Wart Disease (PWD). Where off-site removal of infested soil is unavoidable, NIE would seek advice on the selection of suitable disposal sites and agree a methodology for the works prior to the issue of the necessary movement licence, which would include the measures to be adopted to prevent the spread of the disease. Even if affected soils are not removed off-site, NIE will agree with the Contractors measures to minimise the risk of spreading of the disease, such as cleaning the wheels of all lorries leaving the construction areas prior to accessing the public road and cleaning of all tools and earth-moving equipment after use in infested areas to avoid carrying infested soil onto unaffected agricultural land.	Construction Phase	None	None

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
9.3	Construction area	Effective treatment of spoil material	NIE would ensure that a methodology would be agreed for the disposal of all spoil arising from the excavations and that any disposal of the spoil on agricultural land would not be carried out without the benefit of appropriate permissions from the statutory authority (DOE and DARD).	Construction Phase	None	None
9.4	General	Dealing with unexpected contaminated land	Specific proposals would be prepared, following the granting of planning permission to facilitate the management of any contaminated material unexpectedly excavated as part of the construction of the development.	Pre-construction	None	None
9.5	Water well survey study area (approximately 300m from the tower locations).	Minimising impact to private water supplies	A water well survey would be carried out over an area approximately 300m from each tower location where dewatering will be required. If private wells, boreholes or springs are present in the survey area, an assessment would be carried out of the likely impact of dewatering pumping on the source and the need for the provision of a temporary alternative supply for the period of dewatering. Should the assessment show that there is a risk of derogation of an existing water supply source, a replacement supply would be provided. This may consist of the provision of a temporary supply, such as a water bowser, to ensure a continued water supply to properties.	Construction Phase	Monitoring required during construction	None
9.6	Substation	Controlling storage of materials	Impacts on groundwater following construction of the proposed Tyrone - Cavan Interconnector would be limited to issues associated with the storage and use of contaminants (i.e. oils and fuels) at the proposed substation. Provided that these substances are stored and used in accordance with standard guidelines and practices, potential risks to groundwater and surface water quality would be negligible.	Operational phase	Ongoing to ensure compliance	None

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
9.7	Substation	Minimise groundwater deterioration from sewage and foul water disposal	Use of septic tank soakaway. The soakaway drains will be appropriately located to allow attenuation of contaminants in the underlying unsaturated zone. There will be a minimum 2m of unsaturated ground below the soakaway drains.	Operational phase	None	None
9.8	Construction area	Minimise impacts from dewatering	(See Water Environmental Mitigation (Chapter 8) for details)	Pre - construction and Construction Phase	Ongoing during preconstruction and construction.	None
ECOLOGY (CHAPTER 10)						
10.1	General	To minimise impacts to Hedgerows and scattered trees	Works in the vicinity of trees should conform to BS 5837:2012, Trees in relation to design, demolition and construction- Recommendations. Hedgerows will be protected by scaffolding when conductors are drawn between towers. Where hedgerows in the vicinity of towers are to be lowered, a height of at least 2m should be retained in order to maintain bat flightlines. Minimal lengths of hedgerow should be removed where this is essential, and gaps should be replanted with native species following the works. Wherever possible, hedgerow trees will be pollarded rather than removed. New hedges of equal length planted where hedgerows removed (or donation made to conservation charity to plant replacement trees)			
10.2		To minimise impacts to Fen	Trampling and the use of machinery on saturated, quaking surfaces will be avoided.			

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
10.3		To minimise impacts to Breeding birds	Any removal/reduction of hedgerow trees, cutting of hedgerows and clearing of scrub will take place outside the bird-nesting period, which in Northern Ireland is generally taken as March to August inclusive. This will apply to both the construction and operational (line maintenance) phases. Potential bird nesting habitat in close proximity to works that take place between March and August should be checked by a competent ecologist to ensure that there will be no adverse impact on protected bird species.			
10.4		To minimise impacts to Wintering birds	Attachment of clearly visible markers on overhead lines posing a high collision risk. To be fitted to the earth line (highest line) between T30 and T43.			
10.5		To minimise impacts to Bats	A dusk and dawn bat survey will be carried out at potential roosts immediately prior to demolition/felling. If bats are found work will be suspended until consultation with NIEA. If bats are found after/during demolition/ felling work must be stopped until consultation with NIEA. Felling of potential roosting trees will be carried out in the presence of a licensed bat worker following best practice guidelines. 100 new bat boxes provided to mitigate for loss of potential tree roosts. Hedgerow replacement to compensate for loss of foraging habitat although all hedgerows will be cut to only 2m keeping commuting integrity intact.			

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
10.6		To minimise impacts to Badgers	Any excavations left unattended overnight should be either covered or ramped in at least one location to allow mammals to avoid becoming trapped. Repeat badger surveys will be carried out within 100m of the development immediately prior to the commencement of work. If setts are found work will be suspended until consultation with NIEA.			
10.7		To minimise impacts to Otter	Any excavations left unattended overnight should be either covered or ramped in at least one location to allow mammals to avoid becoming trapped.			
10.8		To minimise impacts to Irish hare	Any excavations left unattended overnight should be either covered or ramped in at least one location to allow mammals to avoid becoming trapped.			

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
10.9		To minimise impacts to Fish/Watercourses	Waters high in suspended solids produced as a result of de-watering during the excavation and construction of tower bases should be contained and treated prior to discharge. Treatment will be provided to intercept surface water draining from the substation site, and will intercept any suspended solids prior to discharge of water to a watercourse. The contractor will be required to provide a method statement designed to prevent adverse impacts on rivers and other watercourses. Tower locations will be sufficiently remote from watercourse channels, to ensure that work practices do not result in bank damage, and care will be taken to prevent ingress of silt into watercourses. Where crossing of watercourses for construction access is unavoidable, an initial draw-line will be flown across major rivers, which will then be used for winching the operational conductors to the tower position. The initial draw-line will be thrown across narrow watercourses, and a similar procedure followed.			
10.10		To minimise impacts to Smooth newt	Waters high in suspended solids produced as a result of de-watering during the excavation and construction of tower bases should be contained and treated prior to discharge. Treatment will be provided to intercept surface water draining from the substation site, and will intercept any suspended solids prior to discharge of water to a watercourse. The contractor will be required to provide a method statement designed to prevent adverse impacts on rivers and other watercourses. Tower locations will be sufficiently remote from watercourse channels, to ensure that work practices do not result in bank damage, and care will be taken to prevent ingress of silt into watercourses. Where crossing of watercourses for construction access is unavoidable, an initial draw-line will be flown across major rivers, which will then be used for winching the operational conductors to the tower position. The initial draw-line will be thrown across narrow watercourses, and a similar procedure followed.			

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
10.11		To minimise impacts to White clawed crayfish	Waters high in suspended solids produced as a result of de-watering during the excavation and construction of tower bases should be contained and treated prior to discharge. Treatment will be provided to intercept surface water draining from the substation site, and will intercept any suspended solids prior to discharge of water to a watercourse. The contractor will be required to provide a method statement designed to prevent adverse impacts on rivers and other watercourses. Tower locations will be sufficiently remote from watercourse channels, to ensure that work practices do not result in bank damage, and care will be taken to prevent ingress of silt into watercourses. Where crossing of watercourses for construction access is unavoidable, an initial draw-line will be flown across major rivers, which will then be used for winching the operational conductors to the tower position. The initial draw-line will be thrown across narrow watercourses, and a similar procedure followed.			
NOISE AND VIBRATION (CHAPTER 11)						
11.1	Development wide	To not exceed threshold values for airborne sound generated by construction activities at nearest noise sensitive receptors	Adopt best practice for construction of the substation and towers and limit hours of working	Construction	Occasional monitoring using type 2 Sound level meter at noise sensitive receptors.	Threshold for significant effects based on BS5228:2009

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
11.2	Development wide	To not exceed threshold values for ground borne vibration generated by construction activities at nearest noise sensitive receptors	Adopt best practice for construction of the substation and towers and limit hours of working	Construction	Occasional monitoring- vibration levels during construction phase will fall to typical ambient levels given separation distances	Threshold for significant effects based on BS5228:2009 and BS7385:1993
11.3	Development wide	To meet WHO Guidelines on Community noise	Limited number of HGV movements per hour or daily basis near to dwellings on haul routes	Construction	N/A	Assessed using haul road method in BS5228:2009. Takes account of HGV movements/ speed/distance from receptor
11.4	Development wide	To not exceed threshold values for noise and vibration under BS4142:1997, BS8233:1999, WHO Guidelines on Community Noise 1999 and BS5228:2009/BS7385:1993	Substation has significant attenuation due to structure and distance to nearest noise sensitive receptors	Operational	N/A.	External noise targets based on lowest recorded background noise levels near to the proposed substation

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
11.5	Development wide	To not exceed threshold values for noise and vibration under BS4142:1997, BS8233:1999, WHO Guidelines on Community Noise 1999 and BS5228:2009/BS7385:1993	Substation has significant attenuation due to structure and distance to nearest noise sensitive receptors	Operational	N/A.	External noise targets based on lowest recorded background noise levels near to the proposed substation
CULTURAL HERITAGE (CHAPTER 12)						
12.1	Development wide	To record any previously unrecorded archaeological remains.	Archaeological watching brief	Construction	Ongoing	
12.2	Site 71 (Near to Tower 91)	To ensure protection of the rath	Fence off prior to construction	Construction	During set-up and intermittently.	
LANDSCAPE AND VISUAL (CHAPTER 13)						
13.1	Substation site	Minimise landscape and visual impacts	Landscape proposals (including earth mounding) are proposed at the substation site. Proposed planting would be implemented in the first planting season following completion of the earth works Plant species chosen would be fast growing native species to complement existing planting in the local area. The planting would be protected by rabbit proof fencing and would be subject to a management program to ensure objectives are met.	Construction Phase	Ongoing maintenance	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
13.2	Substation	Minimise landscape and visual impacts	Complete earth mounding and planting prior to the installation of substation components. Provide the minimum height of bunds to immediately screen the lower construction elements. Grade new landforms gradually into existing surrounding levels. New planting to complement existing visual character - use indigenous hedge and trees along with fast growing nurse and climax trees. Minimise the use of roadside signs relating to the completed development. All metal security fencing would be finished in galvanised/painted grey. Other field enclosures would be timber post with appropriate galvanised wire, and planted with local hedge and tree species, to match existing. Security lighting will be activated by movement sensors only and will be located to minimise lighting spillage and pollution on the local area. Reflective finishes on all construction elements have been avoided. To further reduce the visual impact, the buildings have been designed to complement the building appearance and character local to the area, with particular regard to their scale, form and finish, as detailed in Chapter 5 of the Consolidated ES.	Construction and Operational Phase	Ongoing maintenance	
13.3	Tower Working Areas	Restoration of affected vegetation post construction	At the end of the construction process, land affected by the working areas would be fully reinstated as pasture or planted to replace any vegetation lost as a result of the works. Care would be taken to ensure there would be no remaining areas of compacted land. Any fencing and/or hedging removed to accommodate working areas or access tracks would be replaced to an equivalent or better quality in keeping with the rural landscape upon completion of the construction period.	Construction Phase	Five year maintenance period (to be agreed with landowner)	
13.4	Temporary access tracks	Restoration of affected vegetation post construction	Temporary access tracks and track-ways would be reinstated following construction.	Construction Phase	Five year maintenance period (to be agreed with landowner)	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
13.5	Temporary Access Widening and Visibility Splays	Restoration of affected vegetation post construction	If it is determined by the Department that temporary traffic measures are not to be used, existing accesses could be temporarily enlarged to accommodate the larger types of construction vehicles. The area of affected vegetation would be reinstated.	Construction Phase	Five year maintenance period (to be agreed with landowner)	
13.6	Temporary Low Voltage crossings	Restoration of affected vegetation post construction	There are 18 existing electricity lines to be undergrounded, which will be undertaken by open trench. This will result in an impact to 89m of hedgerows and treelines, which will be reinstated post construction	Construction Phase	Five year maintenance period (to be agreed with landowner)	
13.7	Permanent Tower Bases	Restoration of affected vegetation post construction	The permanently affected area of the towers is smaller than the required construction area. Of the area affected by construction, roughly 66% can be reinstated post construction. It is possible for vegetation including hedgerows to grow under each of the proposed towers; however as worst case it has been assumed that 296m of hedgerows and treelines and 3 trees will be permanently lost	Construction Phase	Five year maintenance period (to be agreed with landowner)	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
13.8	Permanent area adjacent to the overhead line	Restoration of affected vegetation during operational phase	All vegetation adjacent to the conductors with the potential to fall onto the conductors will be trimmed to ensure safety clearances. This will form part of the ongoing maintenance of the proposed Tyrone - Cavan Interconnector. This is standard practice and is done for all existing overhead lines. Less trimming will be required further from the conductors as there will be less potential for falling vegetation onto the overhead line. The trimming regime will involve a scalloping or profiling effect which will minimise the effect on vegetation. It is assumed that an area of 30m from the edge of the conductors (on either side) will be required to be examined for falling hazards. The level of trimming required will be directly related to the distance from the overhead line and the height of the vegetation - i.e. the further from the overhead line, the less vegetation that is required to be trimmed. The vast majority of this vegetation within the 30m zone will be unaffected because of its height and distance from the overhead line but for safety reasons, any branches, etc with the potential to fall on the overhead line will be trimmed. Hedgerows within the 30m zone are currently regularly maintained by landowners to an approximate height of between 1m and 3m and so will not require further trimming.	Operational Phase	Ongoing maintenance	
COMMUNITY AMENITY AND LAND USE (CHAPTER 14)						
14.1	Construction phase	Minimise traffic disruption to residential, commercial and community facilities	Maintain access to residential, commercial and community facilities during construction including recreational routes such as walking and cycling routes.	Construction phase	None	See Chapter 18
14.2	Construction phase	Minimise disruption to road using community events	Roads to be maintained during construction and to be left in a condition suitable for current road use community events (e.g. road bowls). Liaison will be undertaken with community groups as appropriate to ensure mitigation of any disturbance to access.	Construction phase	None	
14.3	Construction phase	Minimise disruption to existing services	Interruptions to electrical and telephone lines should be kept to a minimum with notice given to the affected users.	Construction phase	None	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
14.4	Construction phase	Fencing of substation site to prevent disruption	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.	Construction phase	None	
14.5	Construction phase	Landowner Liaison	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	Construction phase	None	
14.6	Construction phase	Maintain access to agricultural land	NIE 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. Where existing access roads are affected or fenced off, NIE will make all reasonable efforts to provide alternative access.	Construction phase	None	
14.7	Construction phase	Reinstatement of Hedgerows and drains/ditches	Hedgerows and drains/ditches should be reinstated after completion of works as far as is practical	Construction phase	None	
14.8	Construction phase	Follow disease protocols	Disease protocols will be adhered to and NIE will comply with any DARD 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 is to ask the land owner to notify NIE of any animal diseases and other risks which may arise from dangerous livestock (e.g. bulls);	Construction phase	None	
14.9	Construction phase	Landowner Notification	Farmers will be notified at least 1 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.	Construction phase	None	
14.10	Construction phase	Agronomy pre-condition	An agronomy pre-condition survey will be carried out	Construction phase	None	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
14.11	Construction phase	Fencing of construction areas to prevent disruption	Appropriate fencing will be erected to exclude livestock from sites of construction and to keep livestock within farm boundaries	Construction phase	None	
14.12	Construction phase	Minimise impact of rock breaking or pilling ,if required	Where rock breaking or pilling are required, owners of livestock in adjoining fields will be notified in advance.	Construction phase	None	
14.13	Construction phase	Minimise impacts to land drains	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	Construction phase	None	
14.14	Construction phase	Minimise impacts to soil	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. Works will not be carried out following extreme rainfall to minimise damage to soil surface and minimise run-off risks. All soil disturbance works and remedies will comply with agreements made with land owners	Construction phase	None	
14.15	Construction phase	Minimise impacts from concrete	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	Construction phase	None	
14.16	Construction phase	Minimise impacts from pumped water	If water is being pumped from a construction site, a water filtration system will be utilised to minimise impacts on water sources.	Construction phase	None	
14.17	Construction and Operational phase	Ensure Health and Safety	NIE will provide safety information directly to all affected land owners. Anti-climbing platforms will be installed on all towers to prevent people climbing the towers	Construction phase	None	
14.18	Construction and Operational phase	Minimise impacts to electric fences	In rare cases where electric fences induce an electrical current, electric fence filters will be installed	Construction phase	None	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
SOCIO-ECONOMICS (CHAPTER 15)						
15.1	Construction and Operational phase	Minimise impacts to the Linwoods bioremediation area	Mitigation measures will be required to minimise the impact to the bioremediation area. Further consultations will be required with the owner and operator of the area. It may be possible to accommodate the normal harvesting operation within the construction timetable in order to minimise losses. If this is not possible, compensation will be required for the loss of the value of the crop. In terms of the effluent treatment, consultations with the owner and operator in order to determine the layout of the pipe network and what remedial works will be required during construction and the operation of the proposed Tyrone - Cavan Interconnector. The consultations will also be needed to determine the nature of the effluent material, the rate of production from the facility, rate of discharge and the current condition of the treatment system. It is likely that alterations will be required to the pipe network, which is currently laid above ground along the rows of planted willow. If there is not capacity in the treatment system to accommodate a reduction in the willow area, alternative treatment will have to be agreed with the owner and operator (e.g. off site treatment by tanker) or compensation agreed.	Construction and Operational phase	None	
TELECOMMUNICATIONS AND AVIATION ASSETS (CHAPTER 16)						
16.1	Construction and Operational phase	To ensure no impacts to TV and radio reception	In the unlikely event of interference arising, adjustments to the orientation of the aerial of the radio or television or a similar solution should remedy the problem. No mitigation is proposed as part of this EIA.	Construction and Operational phase	Monitoring through any public complaints to NIE.	This has been assessed to be unlikely to occur.

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
16.2	Construction and Operational phase	To ensure no impacts to aviation	Prior to construction, the Defence Geographic Agency (DGA) (the body responsible for maintaining the aviation mapping database for the CAA and MoD) will be provided with detailed mapping of the proposed Tyrone - Cavan Interconnector. (both construction and operation phase details). The Irish Aviation Authority will also be informed.	Construction and Operational phase	None	
FLOOD RISK ASSESSMENT (CHAPTER 17)						
17.1	Substation	Prevent increased runoff rates and volume	Implement Surface Water Management Strategy	During Construction	None	
17.2	All Construction Locations	Prevent increase flood risk during construction from dewatering activities	During flooding events, dewatering activities to be ceased to avoid increased discharges	During construction	None	
17.3	All Construction Locations	Prevent loss of floodplain	Ensure that any excavated material is not stored within the floodplain	During construction	None	
TRANSPORT (CHAPTER 18)						
18.1	Entrance to 31 No. listed access tracks.	Traffic Management measures	Traffic Management measures at site access - 31No. access tracks including AT2, AT10, AT14, AT20, AT24-25, AT26, AT29, AT33, AT35, AT43, AT45, AT47A, AT48A, AT49, AT51, AT52, AT52SL, AT54, AT67, AT71SL2A, AT74SL2, AT76, AT80, AT86, AT87B, AT88, AT89, AT90, AT93-94, AT99 and AT100.	Construction Phase	None	
18.2	Entrance to 5 No. listed access tracks and to feeder road	Traffic Management measures	Traffic Management measures required at site access and also en route to the access from the feeder road - 5No.access tracks including AT75, AT97, AT98, AT102A and AT102B.	Construction Phase	None	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
18.3	Entrance to17 No. listed access tracks.	Access widening	Access requires widening to accommodate construction vehicles - 17No. access tracks including AT7, AT13, AT18, AT19, AT30, AT34, AT41-42, AT50, AT78A, AT78B, AT79, AT81, AT82, AT83A, AT83B, AT84 and AT91.	Construction Phase	None	
18.4	Entrance to 3 No. listed access tracks and to feeder road	Access widening and traffic management measures	Access requires widening to accommodate construction vehicles and traffic management measures required en route to the access from the feeder road - 3No. access tracks including AT74A, AT74SL1 and AT74SL2	Construction Phase	None	
18.5	Entrance to 101 listed access tracks (all proposed)	Access widening in-line with DCAN 15 advice	If it is determined by the Department of the Environment that temporary traffic measures are not to be used and existing accesses should be temporarily enlarged to DCAN 15 standards, then measures 18.1 to 18.4 will be superseded by this mitigation measure - 18.5. The low-loaders could enter the proposed sites and make deliveries off the public road network without requiring road or lane closures. The area required for the temporarily enlarging the existing accesses has been identified and included within the planning application boundary. Where the accesses are required to be widened to accommodate construction machinery, vegetation will be cleared and any affected services and drainage will be amended to ensure normal operation during the construction phase.	Construction Phase	None	
18.6	General	Construction Traffic Management Plan	Prior to construction, a Construction Traffic Management Plan would be prepared and submitted to Roads Service for consideration following consultation with other stakeholders such as the Police Service of Northern Ireland. An outline plan has been drawn up at this stage; see Annex 10 of Annex 12 of Appendix 18A. However, the appointed contractor would finalise this traffic management plan with Roads Service and adhere to its detailed during the construction of the line.	Construction Phase	None	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
18.7	General	Travel Plan Framework	Notwithstanding a Travel Plan Framework has been developed, which includes measures related to the proposed substation. The measures include providing a staff notice board detailing sustainable transport modes and all HGVs visiting the site will be provided with information regarding suitable 'haul routes' before undertaking their journeys.	Operational Phase	Ongoing to ensure effectiveness	
HAULAGE ROUTE ASSESSMENT (Consolidated ES Addendum)						
AH1	General	Traffic Management Plan	Plan the movement of the abnormal load for a Sunday when the road network is typically at its quietest;	Construction Phase	Ongoing to ensure effectiveness	
AH2	General	Traffic Management Plan	Appropriate Police or contractor escort to accompany movement of the abnormal load to be agreed with the local authorities and police where appropriate;	Construction Phase	Ongoing to ensure effectiveness	
AH3	General	Traffic Management Plan	Identification and advanced notification to key stakeholders(those who may be greatly impacted by the load movement);	Construction Phase	Ongoing to ensure effectiveness	
AH4	General	Traffic Management Plan	Advanced notification to the general public warning of the abnormal load transport movement;	Construction Phase	Ongoing to ensure effectiveness	
AH5	General	Traffic Management Plan	Informative road signage warning other users of traffic movements;	Construction Phase	Ongoing to ensure effectiveness	
AH6	General	Traffic Management Plan	Specific timing of the movement outside of peak traffic hours and avoiding specific events that may be impacted adversely;	Construction Phase	Ongoing to ensure effectiveness	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
AH7	General	Traffic Management Plan	Identification of locations on the route where the load may be stopped or directed to one side of the carriageway to allow traffic to pass;	Construction Phase	Ongoing to ensure effectiveness	
AH8	General	Traffic Management Plan	Identification of diversionary routes for road users with approximate timings to specific (key) destinations;	Construction Phase	Ongoing to ensure effectiveness	
AIR AND CLIMATE CHANGE (Consolidated ES Addendum)						
AA1	General	Traffic Management Plan	Specific diversions for A29 north and south bound traffic avoiding the village of Moy where the A29 will be temporarily blocked for potentially 24 hrs; and,	Construction Phase	Ongoing to ensure effectiveness	
AA2	General	Communication	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary, and the regional office contact information.	Construction and operational phases	Ongoing	
AA3	General	Site Management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. Make the complaints log available to the local authority when asked. Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.	Construction and operational phases	Ongoing	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
AA4	General	Monitoring	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby to monitor dust and record inspection results. Carry out regular site inspections to monitor compliance with the CEMP and record inspection results. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Construction and operational phases	Ongoing	
AA5	General	Preparation	Plan site layout so that machinery and dust causing activities should be located away from receptors as far as is possible. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any permanent stockpiles on site. Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period Avoid site runoff of water or mud. Keep site fencing, barriers and scaffolding clean using wet methods. Remove materials that have a potential to produce dust from site as soon as possible. Cover, seed or fence long-term stockpiles to prevent wind whipping.	Construction and operational phases	Ongoing	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
AA6	General	Operating Vehicles	Ensure all vehicles switch off engines when stationary with no idling vehicles. Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	Construction and operational phases	Ongoing	
AA7	General	General Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction. Ensure an adequate water supply on the site for effective dust suppression. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Construction and operational phases	Ongoing	
AA8	General	Demolition	Ensure effective water suppression is used during demolition operations. Bag and remove any biological debris or damp down such material before demolition.	Construction phase		
AA9	General	Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian or mulches where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Only remove the cover in small areas during work and not all at once	Construction and operational phases	Ongoing	

Item	Location	Mitigation Objective and Commitment	Mitigation Measure	Timing of Mitigation Measure	Monitoring Requirements	Comment
AA10	General	Construction	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	Construction phase		
AA11	General	Trackout	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. Avoid dry sweeping of large areas. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. Record all inspections of haul routes and any subsequent action in a site log book. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Construction and operational phases	Ongoing	

ENDS