Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Assessment Report

SP ENERGY NETWORKS

Assessment Report

Proposed Longannet – Kincardine 275kV Overhead Line Diversion

March 2015

Environmental Designworks

Contents

Figures

Summary

ScottishPower, through its subsidiary SP Transmission plc (SPT) proposes to divert the existing 275kV overhead line (OHL) to the east of the settlement of Kincardine in Fife. The proposed diversion is needed to allow consented housing and industrial development to be constructed on land currently crossed by the grid connection from Longannet Power Station.

In brief, the Landscape and Visual Assessment found that the overall effect on landscape and visual amenity of the proposed overhead line diversion would be minor adverse and not significant in terms of the adopted criteria.

There will be a minor effect on landscape features associated with the permanent removal of agricultural land associated with the three new tower bases and reduction in the height of young woodland to the west of the diversion to accommodate for required safety clearances. The effect on the local landscape character is considered to be minor to negligible.

Open views of the proposed diversion will be afforded from: the Listed Building of Inch House and adjacent property located to the immediate north; Fife Coastal Path; and residential properties forming the eastern edge of the settlement of Kincardine. The change in visual amenity for these receptors is considered to range from moderate adverse to major beneficial. For the majority of receptors in the wider surrounding area including the settlement of Kincardine and south of the Firth of Forth the change in visual amenity will be minor.

The Ecology Assessment found little evidence that protected species and habitats are present in the area of the proposed diversion. The Firth of Forth Site of Special Scientific Interest, Special Protection Area (SPA) and Ramsar site is located on the southern side of the estuary. During surveys undertaken from October 2014 to January 2015, curlew was the most frequently recorded SPA species observed in the fields near the proposed diversion, with a peak count of twenty-three birds. Flocks of lapwings were recorded on two occasions, and a single redshank and flock of pink-footed geese were recorded on one occasion. Overall, it was found that very few SPA species used the site.

Measures designed to mitigate potential ecological effects have been identified in the Ecology Assessment and concludes that the proposed diversion will not have a significant effect on the SPA, or any of the species for which it is noted, either alone or in combination with other plans or projects.

The Cultural Heritage Assessment identified eighteen cultural heritage assets within the Inner Study Area. No certain direct impacts on upstanding remains are predicted and the likelihood of any cultural heritage assets being disturbed by the proposed development is considered to be moderate to minor. Mitigation to offset any potential direct effects on these assets has been provided. No significant indirect impacts are predicted on the settings of cultural heritage assets within the wider landscape.

The Hydrological Assessment predicts that there will be no detectable change to the hydrological environment as a result of the proposed development.

The Assessment Report concludes that the proposed overhead diversion will have no significant environmental effects, and suitable mitigation measures have been identified which will be implemented and enforced.

Project Need

1.1 ScottishPower, through its subsidiary SP Transmission plc (SPT) proposes to divert a 1.2km length of the existing 275kV overhead line (OHL) known as 'YG Route' to the immediate east of Kincardine, which connects Longannet Power Station to Kincardine 275kV substation. (Figure 1.1). The proposed diversion to the south of the A985 will require the construction of three new towers and the dismantling of existing towers YG007-YG009. The proposed diversion is needed to allow consented development to be constructed on land, which the existing OHL crosses.

1.2 SP Transmission is responsible for electricity transmission in the South of Scotland, and as an electricity transmission licence holder is required "to develop and maintain an efficient, co-ordinated and economical system of electricity transmission[1]".

Legislative Framework

1.3 The legal provisions applying to the development of overhead lines in Scotland are principally the Electricity Act 1989 and the Electricity Works (EIA)(Scotland) Regulations 2000. All transmission licence holders are required under Section 9 of the Electricity Act to take account of the following factors in formulating any relevant proposals: -

a) "to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and,

b) to do what he reasonably can to mitigate any effect the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects"

1.4 Scottish Power interprets the words "reasonably can" to mean that it should make every effort to mitigate the environmental effects, whilst bearing in mind the technical constraints imposed by overhead transmission line technology, and its duties under Section 9 of the Electricity Act. In summary, SPT needs to balance technical, economic and environmental considerations as part of the process of developing proposals for grid connections.

Statutory Consent

1.5 The proposed diversion route is located beyond the 100m allowance provided for under The Overhead Lines (Exemption)(Scotland) Regulations 2013. As such, the proposed OHL diversion will be subject to an application for consent to Scottish Ministers under Section 37 of the Electricity Act 1989. The Ministers are required to consult with the Planning Authority within whose area the proposed application is located. For the proposed diversion this will be Fife Council from whom deemed planning consent will be sought under Section 57 (2) of the Town and Country Planning (Scotland) Act 1997.

[1] as defined in the Electricity Act 1989 (as amended by the Utilities Act 2000)

Purpose of the Report

1.6 The purpose of this Report is to provide a review of the potential environmental effects of the proposed development and is organised into the following Chapters: -

Chapter 2: Proposed Development
Chapter 3: Landscape and Visual Assessment
Chapter 4: Ecology Assessment
Chapter 5: Cultural Heritage Assessment
Chapter 6: Hydrology Assessment
Chapter 7: Conclusion

1.7 At the back of the Assessment Report are References and a Glossary. Further supporting information for the Assessment Chapters is provided in the accompanying Technical Appendices Report.

Evaluation of Significance

1.8 The Assessment Report provides a detailed description of the aspects of the environment likely to be affected by the development. This covers direct effects and any indirect, secondary or cumulative effects of the development.

1.9 In assessing whether an effect is significant, reference has been made, where appropriate, to criteria on which the evaluation is based. These may include legal standards, policy guidance or accepted practice, and are identified as appropriate in the Assessments. Consideration has also been given to the views expressed by statutory agencies and other organisations that have been consulted.

1.10 For the purpose of this Assessment, the relative significance of effects is assessed using the following terms: -

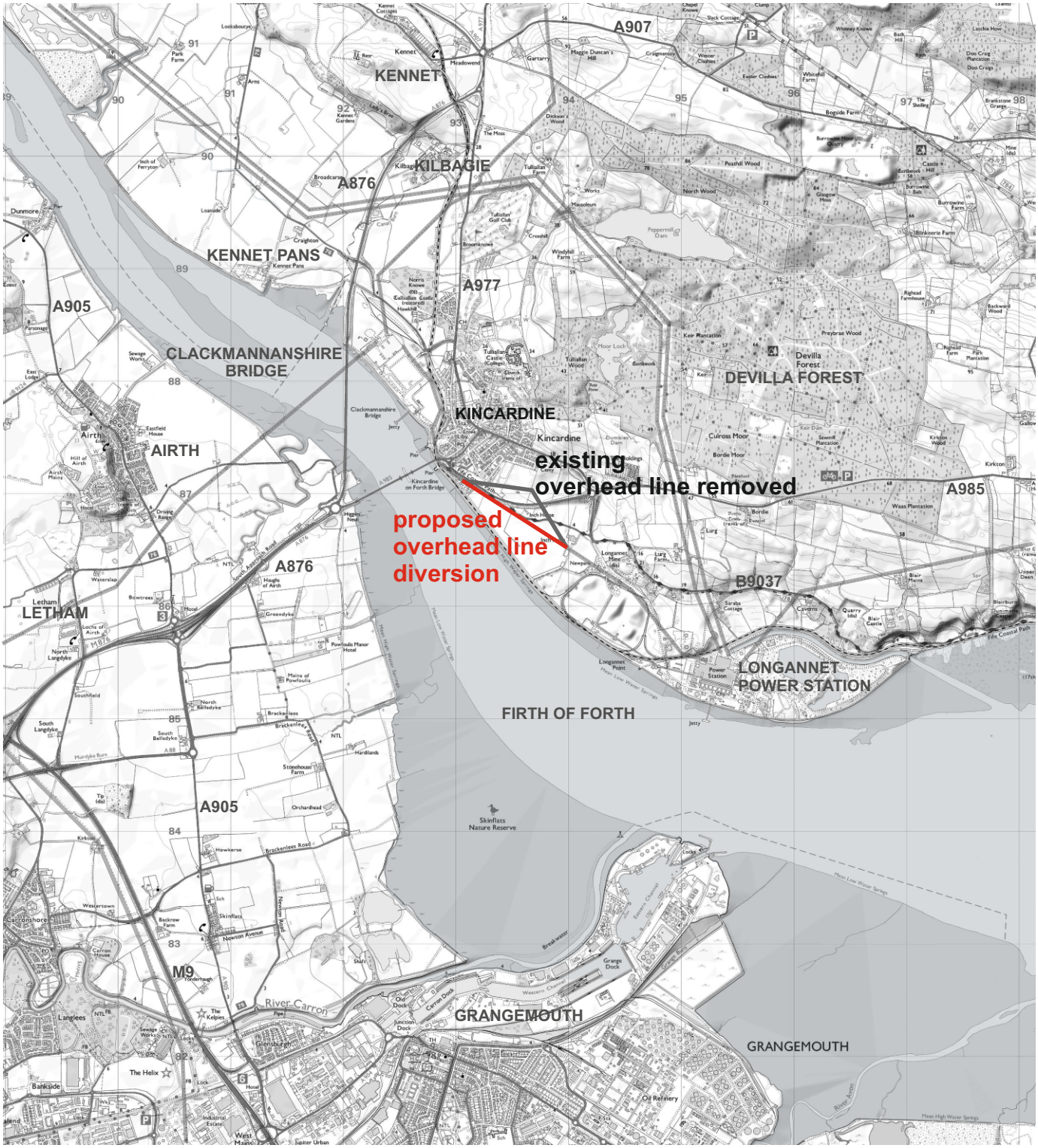
Major - a fundamental change to the environment.
Moderate - a material but non-fundamental change to the environment.
Minor - a detectable but non-material change to the environment.
None - no detectable change to the environment.

1.11 Any effect of the proposed development assessed as **"major"** or **"moderate"** (in terms of the criteria above) would be considered to be **"significant"** within the terms of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000. Any effect assessed as **"minor"** would not be considered as **"significant"** within the terms of these Regulations.

Project Team

1.12 This Document has been prepared for SP Transmission (SPT) by Environmental Designworks, an environmental planning and landscape design practice, with specialist input from: SP EnergyNetworks on the characteristics of the project and technical issues; CFA Archaeology Ltd; BSG Ecology; and Golder Associates.

1.13 If you would like any further information or to discuss any aspect of the proposed development, please contact: Debbie Olson. Environmental Planner either by email: dolson@scottishpower.com or by post to: Ochil House, 10 Technology Avenue, Hamilton International Technology Park, Glasgow G72 OHT.



0 4km

figure 1.1

Title:
Location of Proposed Overhead Line Diversion

Project:
Proposed Longannet - Kincardine 275kV Overhead Line Diversion

Scale: 1:50,000 @ A4

Date: Jan 2015

SP EnergyNetworks

Environmental Designworks
Landscape Architecture + Planning

Proposed Overhead Line Diversion

2.1 The construction of proposed housing and industrial buildings to the east of Kincardine requires that the existing 275kV overhead line (OHL) be diverted to accommodate for the proposed development. The proposed overhead line diversion will require the construction of 900m of new 275kV overhead line comprising of 3 new towers, YG007R-YG009R as indicated in Figure 2.1[2]. On completion of the proposed diversion, 1.2 km of existing 275kV OHL will be dismantled involving the removal of three existing towers, YG007-YG009.

Proposed Overhead Line Design

Choice of Support and Components

2.2 The overhead line diversion will be constructed of lattice steel towers of L8(C) design operating at a voltage of 275kV. This design of support for the proposed development has been chosen to meet the following requirements:

- requirement for a 275kV double circuit line.
- keep a similar profile in comparison to the existing OHL route and other lattice steel towers in the area.

2.3 The standard height of a 275kV L8(C) design lattice steel tower above ground is 46m. The maximum height for the proposed diversion is 50.2m. This height provides the necessary mid-span clearance between the conductors and ensures statutory safety clearances are met. The normal span between steel lattice towers of 275kV design is 350m and it is expected that the spacing of the new towers will fall within this limit.

2.4 The tower members will be fabricated mainly from hot dipped galvanised mild and high yield steel and painted at intervals of approximately 15 to 20 years for continued protection against corrosion. The steelwork is assembled using galvanised high yield steel bolts with nuts and locking devices.

2.5 The double circuit line comprises three separate phases attached to both sides of the tower cross arms. There is also an earth wire required to protect the line from lightning strike and fault conditions, and this is located at the top of the towers. Insulators are supported on the tower cross arm and prevent electric current from crossing to the tower. These are made from porcelain, glass or modern composite materials.

2.6 All towers are designed structurally to carry the maximum working loads imposed by conductors, insulators and fittings, together with the loadings induced by wind and ice on all of the line components. These applied loadings are further multiplied by specific factors of safety.

Maintenance

2.7 The majority of components of overhead lines are maintenance free. Working conditions in which a line operates and the effects of the environment on exposed elements do give rise to corrosion, wear, deterioration and fatigue after many years in service. Regular inspection

[2] Proposed Tower coordinates: YG007 x293746 y686674; YG008 x293508 y686826; YG009 x293280 y686959.

identifies any unacceptable deterioration at an early stage, so action can be taken to maintain a high level of security and safety on all components in accordance with the Electricity Supply Regulations.

Operational Life

2.8 Depending on the severity of pollution and local weather conditions, experience indicates that a new overhead line of this type would require refurbishment after approximately 40 years, at that time it is likely conductors, insulators and fittings would be replaced. The life span of towers is approximately 80 years.

Overhead Line Construction

2.9 The construction of the proposed OHL diversion and dismantling of the existing route will be procured by SPT through a "design and build" contract. This will require the specialist Contractor to comply with the requirements set out in this Assessment Report and any conditions or other restrictions placed upon the Section 37 consent.

2.10 Construction contractors will be required to maintain low noise levels for the duration of the works. This may require using sufficiently silenced machinery or other methods as outlined in BS5228: 2009[3].

Construction Environmental Management Plan

2.11 A Construction Environmental Management Plan (CEMP) in conjunction with SPT's Construction, Health, Safety and Welfare requirements will control all potential environmental effects of the construction works.

2.12 The CEMP controls and guides working practices during construction to minimise the environmental effects of the proposed development such as: implementation timescales; detailed design measures to safeguard sensitive habitats and species; further surveys as required before commencing works etc. The document will also incorporate SNH and SEPA guidelines by reflecting current best practice in protecting the environment during the works.

2.13 The CEMP will be produced on the outcomes of this Assessment Report. The Construction Method Statements will describe the nature of works proposed and the environmental protection measures being applied in accordance with the CEMP to ensure all activities are carried out to minimise the environmental effects. It will also incorporate any consent conditions imposed by Scottish Ministers and Fife Council.

Programme

2.14 The construction programme for the proposed overhead line diversion is scheduled to take place over a 7 month period following the granting of statutory consents to proceed with the works and all necessary land purchase/ wayleave arrangements have been concluded.

2.15 Prior to starting works on site, SPT will undertake further detailed consultations with those directly affected by the development to ensure all effects during construction are minimised.

[3] BS5228: Noise Control on Construction and Open Sites and Vibration

Pre-Construction Activities

2.16 Prior to commencing the construction of the overhead line, a precision ground survey will be carried out to determine the ground profile along the centre of the line route and for 7m on either side where the ground profile slopes across the line route. This ensures that the location selected for towers and their relationship with each other comply with the technical limits laid down for maximum span lengths, maximum sum of adjacent spans and safe clearance to live conductors. In the final siting of towers further consideration is given to the detailed environmental effects as outlined in the CEMP and requirements of the landowners.

2.17 Where the route of the line passes over or is in close proximity to trees that could infringe safe clearance to 'live' conductors, the tree must be felled or pruned prior to the construction. Any trees felled as part of the proposed development wayleave will adhere to the mitigation measures as listed in this Assessment Report and the CEMP.

Method

2.18 The overhead line will be constructed following traditional methods. The bulk of the construction work will take place at the proposed tower sites where excavations are required for the concrete foundations on which the tower is supported. The towers are then formed by the installation of steel lattice sections fabricated off site from galvanised steel sections and connected to the pre-placed foundations. On completion of the tower, the insulators and conductors are fitted prior to preparation for energizing the line.

Sequence

2.19 Overhead line construction follows a standard sequence of activities as outlined below:

- agree and prepare temporary access routes;
- excavate tower foundations;
- delivery of tower steelwork and erect towers;
- undergrounding or diversion of lower voltage lines where necessary for safety clearances;
- delivery of conductor drums and stringing equipment;
- insulator and conductor stringing;
- dismantle redundant overhead line; and
- reinstate tower sites and temporary access routes.

2.20 For a double circuit steel lattice tower line an allowance of six weeks for tower foundation works and six weeks for tower construction is expected for this project. The existing overhead line will remain in place until the deviated section of overhead line is commissioned.

Land Use and Access During Construction

2.21 A temporary compound and storage area will be required for the duration of the construction works. Temporary vehicular access of not more than 5m width is also required to every tower site.

2.22 The storage area and detailed access routes will be agreed with the landowner with the aim of avoiding/ reducing any environmental effects and causing the least disturbance to current landuse and management practices. Once delineated, all temporary access routes will be clearly demarcated and adhered to for the duration of the works.

2.23 At the tower sites an approximate area of 30m by 30m is required for construction and a 5m wide tract under the route, for conductor stringing. This area will be demarcated to limit construction activities to this area.

Services

2.24 The proposed transmission line may cross underground pipelines and services. In these locations all requirements of the appropriate authority will be adhered to, both at the detailed design stage when locating individual towers and ensuring minimum clearances are provided, and at the construction stage by complying with relevant Codes of Practice and adopting Safe Working Procedures and Operations.

2.25 The proposed development will involve the dismantling of the existing OHL across the A985 which will require protective scaffolding and netting to be erected as a precautionary safety measure when undertaking the works.

Tower Construction and Stringing

2.26 The construction of a steel tower requires an excavation to allow the steel foundation braces to be positioned and the concrete foundations to be formed. All concrete will be imported to site ready mixed. Following the setting of the concrete foundations, the tower bases are then backfilled and consolidated in layers, normally with the original materials. Excavated topsoil is reserved for the top layer reinstatement and temporarily stored in accordance with BS 4428. Any surplus subsoil or rock will be removed from the site in accordance with the site Waste Management Plan.

2.27 The foundation type and design for the proposed towers will be confirmed following detailed soil investigations at each location. Where foundations are excavated, the dimensions will depend on both the tower type and the ground conditions, but typically be between 16m^2 by 4m deep for suspension, or line, towers and 25m^2 by 5m deep for tension, or angle, towers. For the proposed diversion, the ground conditions indicate that special mini-piled, auger foundations maybe required. These generally require less ground disturbance but a greater volume of concrete. This method involves the drilling of several holes for each tower leg which are then reinforced with steel before being concreted.

2.28 The tower steelwork connection points to foundations are known as ‘stubs’ and these are located and fixed in place by means of a pile cap at each tower leg position. The tower body is then constructed from galvanised lattice steel sections pre-fabricated off site and assembled on site to a pre-determined pattern using a crane or derrick rig to hoist the steelwork into position.

2.29 On completion of all the towers, the intermediate towers are fitted with insulator supports. Running blocks are fitted to the bottom of the insulator support and the conductor is fitted using the ‘Continuous Tension Stringing’ method which ensures the conductors are held aloft at all times and do not touch the ground or any other structure.

2.30 Drums of conductor and a tensioner with a hydraulic brake are located at one end of the line section, with the pulling winch at the other. The conductor is joined to a single, heavy-duty pilot wire and drawn through the section, one conductor at a time, under constant tension. During stringing, radio communication is maintained between the operators of the pulling

winch, the tensioner, hydraulic brake and intermediate observation points so the pulling can be stopped if problems arise. Drums of conductors are delivered as close as possible to the angle or tension poles site from which the conductors are pulled.

2.31 The basic transport used for tower construction is a general-purpose cross-country vehicle with four-wheel drive weighing some 6 tonnes and incorporating a lifting device. If necessary, tractors adapted to carry such loads are used to transport drums to the tower site.

Tower Dismantling

2.32 The towers being replaced will be dismantled, cut up into sections and removed from site for recycling. The tower foundations will be reduced in height to 1 metre below ground level and the remaining foundation left in situ. The ground levels local to the tower site will then be reinstated.

Completion

2.33 Tower construction will be completed with the reinstatement of ground around the new and dismantled towers, access routes and construction compound in accordance with the CEMP and as agreed with the landowner. For the proposed overhead line diversion, the ground will be restored and returned to productive agricultural use.

Resources used in Construction and Operation

2.34 The number of people involved in the construction works will vary depending on site activities. This number may peak at 20 people for short periods of time during critical activities.

2.35 The construction workers will require a temporary compound for welfare facilities and for the storage of construction materials and mechanical plant. A suitable site and construction works compound will be located in the vicinity of the proposed diversion in agreement with the landowner.

2.36 The compound will comprise temporary office accommodation, mess huts, storage cabins, waste disposal skips, toilets and washing facilities together with a laydown area for delivered materials and a small car park.

2.37 Any waste emanating from the site works will be collected in predetermined areas on site and disposed of off-site to a licensed site in accordance with the Waste Management Plan. All foul waste from the temporary site accommodation will be collected on site and removed periodically by a licensed contractor.

2.38 The overhead line towers are primarily formed from galvanised steel lattice sections and the conductor is normally manufactured in steel and aluminium, all of which are able to be recycled at the end of their operational life. Other components and fittings such as glass insulators will also normally be recycled. In summary, the majority of the towers to be dismantled for the proposed diversion, will be recycled or reused.

Infrastructure Location Allowance

2.39 A detailed technical study has been undertaken in order to develop the proposed development footprint upon which the assessments are based. However, it is anticipated that, post consent, it may be necessary, and desirable, on environmental and technical grounds, to refine the final

vertical and horizontal profile of conductors and tower positions and the lines of access tracks to reflect the following:

- pre-construction confirmation of dynamic environmental conditions e.g. the location of protected species;
- more detailed technical survey information, particularly for unconfirmed ground conditions;
- to provide further scope for the effective mitigation of any likely environmental impacts;
- any minor alterations requested by landowners.

2.40 To ensure that the final positions of the OHL towers are not varied to such a degree as to cause an increase in the likely significant environmental impacts outlined in this Assessment Report, an Infrastructure Location Allowance (ILA) is proposed. This would permit the siting of a tower to be adjusted within a 50m radius of the indicative tower locations and a 50m tolerance either side of the temporary access routes.

2.41 Implementation of the ILA would be controlled through the proposed Construction Environmental Management Plan (CEMP). Should a request to vary a tower or access track position within the ILA be raised, the relevant environmental baseline surveys undertaken to inform this report would be reviewed in the first instance as these surveys extend beyond the proposed 50m ILA tolerance. Should this review identify any potential issues, further environmental advice would then be sought from the appropriate specialists. A procedure for notifying relevant statutory consultees of proposed ILA movements would also be agreed with these bodies prior to construction commencing.

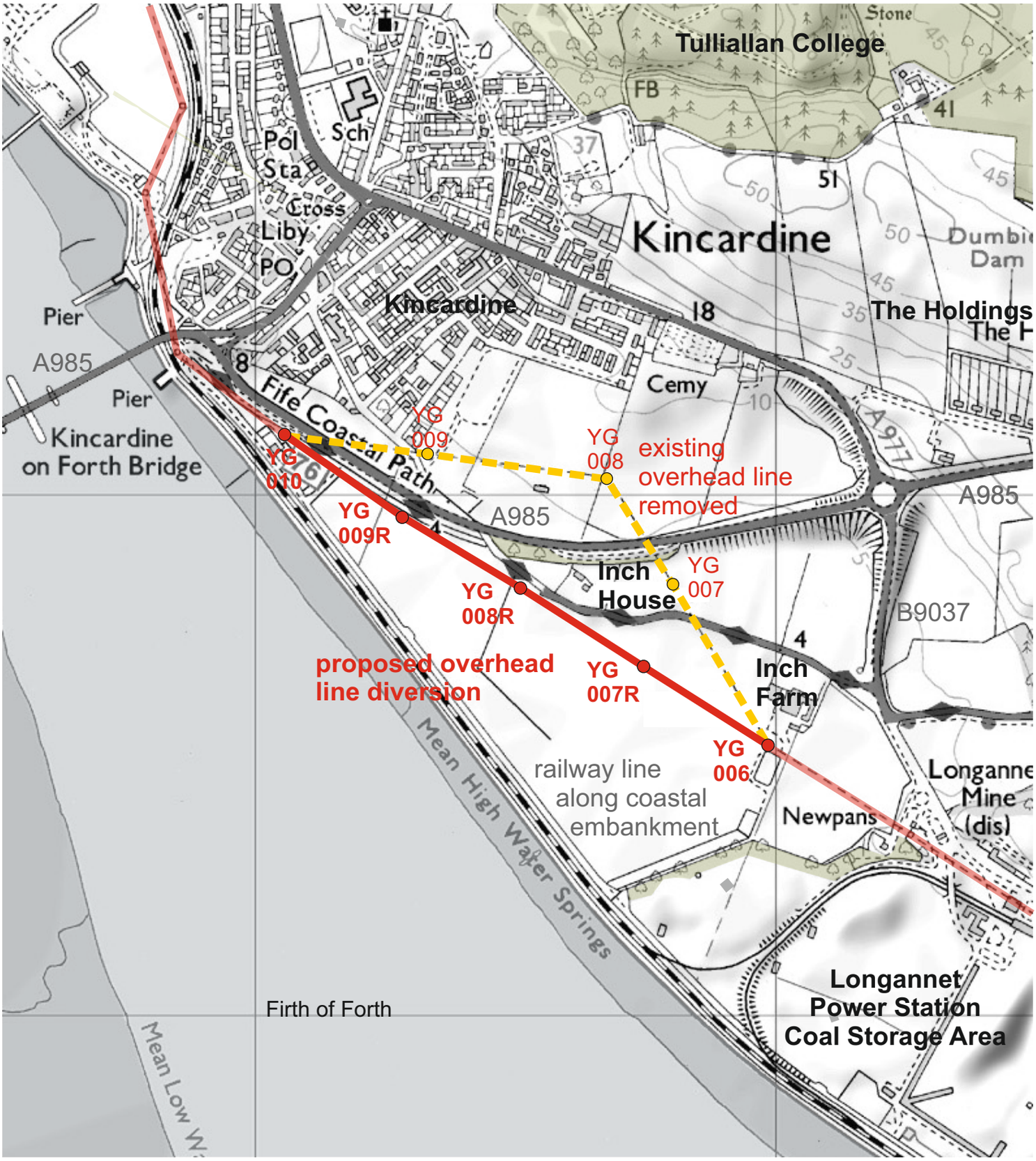


figure 2.1

Title:
Proposed Diversion at Inch Farm

Project:
Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: 1:10,000 @ A4

Date: Mar 2015

O 50 100 200 400m

Environmental Designworks
Landscape Architecture + Planning

Introduction

3.1 This Chapter provides an assessment of the potential effects on landscape and visual amenity arising from the proposed overhead line diversion to the east of Kincardine. The Landscape and Visual Impact Assessment (LVIA) provides a description of the landscape and visual baseline conditions, and qualitative assessment of the predicted changes to the baseline associated with the construction and subsequent operation of the overhead line diversion.

Scope and Methodology

3.2 The scope of the assessment covers a 5km study area encompassing the proposed overhead line diversion between the existing towers YG006 and YG010. Review of the scale of the proposed development, initial site survey and professional judgement determined that this study area was appropriate for the LVIA.

3.3 The technical scope is to assess the potential effects of the proposed development on landscape features, the landscape character, and visual amenity afforded from within the geographical area of the assessment. This assessment considers the construction phase of the proposed works (i.e. construction of the towers and overhead line) and the operational phase.

3.4 Good practice as described in the "Guidelines for Landscape and Visual Impact Assessment" (LI, IEMA, 2013) has been followed in undertaking the appraisal of the potential effects on landscape and visual amenity arising from the proposed development.

3.5 The adopted methodology and approach is outlined in Technical Appendix 1.1 and summarised below: -

Baseline Survey and Analysis

- Site and Surroundings: Collation and review of baseline information covering key features of the physical environment, planning allocation, natural and cultural heritage of the site and surroundings.

- Landscape and Features: The character, condition and value of the landscape are determined through a combination of desk and field study. Relevant designations are identified from a review of planning policies and other designations relating to the area.

- Existing Visibility and Visual Amenity: Visibility, visual amenity and potential visual receptors are identified, for example, residential properties, public footpaths, transport routes, key viewpoints, etc. The visual baseline including extent of visibility is determined by using a combination of specialist computer mapping and site fieldwork.

Impact Assessment

- Landscape and Visual Effects: These are reviewed and identified with reference to: the potential sources of effect of the proposed development; sensitivity of the landscape and visual resources (nature of receptors); and magnitude of change to the existing landscape and visual environment (nature of effects).

- Evaluation of Significance of Effects: Provides an assessment of the likely significance of effects reviewed with reference to landscape features, character, views and visual amenity. The different thresholds of significance of effect are determined through professional judgement and evaluation of the environmental sensitivity of the location or receptor and the nature or magnitude of effect, and are described using the terms Major, Moderate, Minor or None.

3.6 The relative significance of landscape and visual effects is summarised below:
- Major - a fundamental change to the environment.
- Moderate - a material but non-fundamental change to the environment.
- Minor - a detectable but non-material change to the environment.
- None- no detectable change to the environment.

Policy Context

3.7 The main planning policies and guidance relevant to the landscape and visual assessment of the proposed development have been reviewed and referenced. Key planning guidance particular to the landscape and visual assessment is outlined below.

<u>European</u>

3.8 The UK Government signed and ratified the European Landscape Convention (ELC) in 2006. The ELC is a Council of Europe treaty whose purpose is to promote landscape protection, management and sustainable planning. In ratifying the ELC, the UK government has signaled its intention to promote the good management of all landscapes. The ELC defines landscape as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"[4], and in summary makes clear that all landscapes require consideration and care.

<u>National</u>

3.9 National planning policy on landscape and natural heritage is set out in Scottish Planning Policy[5] (SPP) and is supported by Planning Advice Note (PAN) 60 Planning for Natural Heritage.

3.10 SPP notes that the planning system should "facilitate positive change whilst maintaining and enhancing distinctive landscape character"[6], and "the siting and design of development should take account of local landscape character."[7]

<u>Development Plans</u>

3.11 The following development plans setting out regional and local plan policies cover the Study Area: -
- SESplan. Adopted 2013
- Dunfermline and West Fife Local Plan. Adopted 2012
- FIFEplan. Proposed 2014

[4] The European Landscape Convention opened for signature in Florence in October 2000

[5] SPP 2014

[6] SPP 2014 para 194 p 45

[7] SPP 2014 para 202 p 47

- Falkirk Council Structure Plan. Adopted 2007
- Clackmannanshire and Stirling Structure Plan. Adopted 2002 as altered
- Falkirk Council Local Plan. Adopted 2010
- Clackmannanshire Local Plan. Adopted 2004 as altered

3.12 Fife Council is currently preparing a single Local Development Plan(LDP) named FIFEplan to replace the adopted Dunfermline and West Local Plan, which covers the proposed overhead line diversion. Together with the strategic development plans of TAYplan and SESplan this will form the future statutory development plan. Final consultation concluded in December 2014 and the LDP is expected to be adopted in 2016.

3.13 Proposed Local Development Plans have also been prepared for Falkirk and Clackmannanshire in 2013 to replace the existing adopted Structure and Local Plans. Following submission to Scottish Ministers, the new LDPs are likely to adopted in 2015/ 2016.

SESplan

3.14 A partnership of six local authorities including Fife has prepared the South East Scotland Plan (SESplan), which was adopted in 2013. The vision of the Strategic Development Plan is that "By 2032 the Edinburgh City Region is a healthier, more prosperous and sustainable place which continues to be internationally recognised as an outstanding area in which to live, work and do business" [8].

3.15 Policy 1B requires that Local Plans ensure that there are no significant adverse impacts on international, national and local designated sites nature conservation and heritage sites including Areas of Great Landscape Value and Gardens and Designed Landscapes, and "have regard to the need to improve the quality of life on local communities by conserving and enhancing the natural and built environment to create more healthy and attractive places to live".[9]

Dunfermline and West Fife Local Plan

3.16 The adopted Dunfermline and West Fife Local Plan covers the proposed diversion and immediate surroundings. The Falkirk Local Plan covers the land to the south of the Firth of Forth, and the Clackmannan Local Plan covers the study area to the west. Relevant planning policy extracts have been placed in Technical Appendix 1.2.

3.17 "Planning for regeneration, whilst protecting the countryside from inappropriate development, is the principal theme"[10] of Dunfermline and West Fife Local Plan. Strategic land allocations are proposed in the Local Plan, which is noted, "will help to attract new investment and jobs. New housing will provide good quality and affordable homes for local families and contribute to improving and supporting the provision of local shopping, health and community facilities".[11]

3.18 With reference to strategic land allocations and quality in the built environment, the Local Plan states, "The pattern of towns, villages and hamlets across the Local Plan area is an integral

[8] SESplan (2013) p4

[9] SESplan (2013) p14

[10] Dunfermline and West Fife Local Plan (2012) para 2.16 p 12.

[11] Dunfermline and West Fife Local Plan (2012) para 2.17 p 12.

part of the area's character in addition to its inherent environmental assets. Local Plan proposals for new development take account of these features with a view to protecting the overall environmental quality. The Fife Landscape Character Assessment and the 2008 Fife Local Landscape Designations Review have both informed the Local Plan."[12] The Local Plan indicates where suitable infill development opportunities have been identified in existing settlements.

3.19 The existing overhead line (Towers YG 007, 008 and 009) to the north of the A985 and east of Inch House is located within the Kincardine Eastern Expansion Area in the adopted Local Plan. The strategic land allocation Proposal KCD 002 and 003 provides for approximately 350 houses on the existing fields to the immediate east of Kincardine settlement. To the south of the A985 and east of Inch House the existing fields are allocated under KCD006 for long term specialist industry (energy). The preferred uses on this site are noted to be business, general industry and storage/ distribution.

3.20 Outline planning consent was granted for housing and a business park in the Kincardine Eastern Expansion Area in 2007 (07/00252/PPP) and the associated legal agreement concluded in 2010. As part of the planning consent the relocation of the overhead line through the proposed housing and industrial development sites is required (i.e. existing towers YG 007, 008 and 009). An application for the extension time for submission of further details to address the reserved matters of the planning consent has since been submitted together with modification of the planning obligation[13].

3.21 The proposed overhead line diversion located south of Walker Street is outwith the settlement envelope indicated in the Local Plan. With reference to safeguarding and improving the environment, Policy E1 notes that "outwith the settlement limits as defined by towns and villages envelopes shown on the Proposals Map, development will only be permitted where it is in accordance with Policies E15-29"[14]. The settlement boundary is noted to "prevent the unplanned outward expansion of settlements into the countryside".

3.22 Policy 15 outlines the requirements for the support of any development in the countryside and notes this needs to be "of a scale and nature compatible with surrounding uses; … well located in respect of available infrastructure and contribute to the need for any improved infrastructure". The background to this Policy notes, "The protection and enhancement of the built, natural and historic qualities of the countryside are important considerations and these attributes must be maintained and enhanced wherever possible…Policy E19 (Local Landscape Areas) and the Fife Landscape Character Assessment will be important considerations in the determination of planning applications".[15]

3.23 Local Plan Policy 27 protects the undeveloped coast unless the proposal meets a number of requirements. The background reasoning for the Policy notes "the developed coast has been defined as settlements with a population greater than 2000 and where there is existing large-

[12] Dunfermline and West Fife Local Plan (2012) para 2.55 p 21.

[13] 14/03756/PPP &14/03148/OBL

[14] Dunfermline and West Fife Local Plan (2012)p.174

[15] Dunfermline and West Fife Local Plan (2012)p.185

scale development for industry, tourism and recreation outwith the settlement limits".[16] With reference to this criterion the proposed overhead line diversion is located within an area of developed coast.

3.24 The nearest Local Landscape Areas protected by Policy E19 are located approximately 4km to the east of Kincardine, to the west and east of Culross.

Proposed FIFEplan 2014

3.25 Policy 1 of the proposed FIFEplan sets out the development principles against which all development proposals will be determined and is supported by fourteen further policies. Relevant to the proposed development is Policy 7 Development in the Countryside, which notes that development must "be of a scale and nature compatible with surrounding uses" and "not result in an overall reduction in the landscape and environmental quality of the area"[17]. Policy 10 requires that development proposals must demonstrate that they will not lead to a significant detrimental impact on amenity in relation to "the visual impact of the development on the surrounding area".[18] Policy 13 requires development proposals protect or enhance natural heritage and access assets including "local landscape areas" and "landscape character and views".[19] The built and historic environment is protected by Policy 14 and includes Gardens and Designed Landscapes.

Consented Development

3.26 Current consented development in the surrounding area includes the following of particular note in terms of proximity and scale:

- Planning consent granted in accordance with the adopted Local Plan east of Kincardine to the north of the A865 and east of Inch House for mixed use development comprising 350 residential units, business park, public open space, and community uses in 2007/2010.

Baseline Conditions

Information

3.27 Baseline information has been collected from a review of published documents, maps and site visits. Specifically, the following has been undertaken:

- desk review of environmental data, designations and policies relating to the study area;
- site appraisal of potential landscape and visual receptors within the study area;
- reference to the Landscape Character Assessments by Scottish Natural Heritage (SNH);
- information available from: Development Plans covering the study area; Scotland's Environment database; SNH Database; Historic Scotland Pastmap; Fife, Falkirk, Clackmannanshire Council Core Paths Information; and the National Map Library for Scotland.

3.28 Information regarding environmental features and sensitivities of the proposed development site and surrounding area is indicated in Figure 3.1 and summarised below.

[16] Dunfermline and West Fife Local Plan (2012)p.196

[17] FIFEplan (2014) p219

[18] FIFEplan (2014) p229

[19] FIFEplan (2014) p241

Landscape Features and Character Baseline

3.29 The landform of the proposed development site is flat, low lying, level ground below 5.0 m AOD contained by a coastal defence embankment to the south and alignment of Walker Street to the north. A stone retaining wall accommodates for the change in ground level between the proposed development site and local access road. Further north, the A985 is on embankment, which rises to the east to join Longannet Roundabout. Beyond, the land gently rises to an undulating ridge of low hills, which parallel the coastline at around 50-60m AOD. To the south a coastal defence barrier demarcates the Firth of Forth coastline, which is approximately 2-3m above the surrounding land. South of the Firth of Forth is a similar level coastal strip, which rises to the south west to the Hill of Airth at 33m AOD.

3.30 The landcover of the proposed development site is arable fields. At Inch House there is a distinctive group of mature Sycamore trees approximately 20m in height. The trees are aligned along a stone wall forming the boundary to the house and adjacent single storey property named The Sycamores to the west. To the north along the boundary of the A985 is young mixed woodland and shrub planting. To the east mature woodland forms the boundary to Longannet Power Station. To the south are scattered trees and scrub vegetation along the coastal embankment. Vertical railway signal markers identify the alignment of the railway along the top of the embankment. Between the fields and embankment is a small transmission structure enclosed by fencing and double wood pole with transformer. To the west is young mixed woodland and shrub planting now reaching approximately 4-8m in height containing the sewage works

3.31 The landuse of the proposed development site is agriculture with the settlement of Kincardine located to the north west. To the immediate north is Inch House and adjacent residential property to the west. Inch Farm is located to the east and comprises of a large timber yard and barns, with a terrace of cottages located to the east. Further east is Longannet Power Station with associated coal storage areas. To the south is the railway line along which long trainloads regularly deliver coal to the power station. To the west is a sewage works.

3.32 The existing overhead line crosses fields to the north of the A985 bounded by housing forming the existing edge of Kincardine and Tulliallan cemetery to the north. This agricultural land is to be developed for housing. To the east of Inch House the existing overhead line crosses a field, which is to be developed for industrial use.

3.33 A number of public footpaths and cycleways follow the coastline and cross the coastal plain to the rising foothills. In the immediate vicinity of the proposed development site, the Fife Coastal Route long distance footpath and cycleway follows the alignment of Walker Street, which forms the access to Inch Farm and House. Another footpath follows the western boundary of Longannet Power Station and parallels the coastal embankment and railway to the south. To the north an extensive network of paths extends through the grounds of Tulliallan Castle and adjacent Devilla Forest.

3.34 There are a number of designated nature conservation and heritage sites in the surrounding area. Inch House located to the immediate north of the proposed development site is designated a Listed Building Category B. This two storey property with attic dormers is located to the immediate south of the A985 and faces south west. A stone wall encompasses the property with evergreen hedging in parts. Mature Sycamore trees are located along the

southern and western boundaries. Views from the frontage are enclosed and afforded primarily along the alignment of the front gate and from the upper floors of the property. This view encompasses the coastal embankment and railway line, and to the west the bridges and Forth Crossing Towers.

3.35 Approximately 1km to the north of the proposed development site is the Garden and Designed Landscape of Tulliallan encompassing Tulliallan Castle. To the east another Garden and Designed Landscape encompassing Dunimarie Castle is located near the historic conservation village of Culross.

3.36 On the south side of the Firth of Forth a Special Protection Area, Ramsar Wetland of International Importance and Site of Special Scientific Interest protect overwintering estuarine bird populations. This international and nationally important site also protects the coastline around Culross to the east and Kennet Pans to the west. To the west the historic core of Kincardine is designated a Conservation Area and Kincardine on Forth Bridge is designated a Listed Building Category A.

3.37 Scottish Natural Heritage (SNH) has undertaken a series of Regional Landscape Character Assessments covering the whole of Scotland following established guidance[20]. The SNH Landscape Assessment divides the landscape into a number of Landscape Character Types and Areas, and provides guidance and advice as to how development could be accommodated in the landscape.

3.38 The landscape character of the proposed development site and surrounding study area is described in the following documents: -

- Fife Landscape Character Assessment (LCA) (DTA, 1998)
- Central Region Stirling to Grangemouth LCA (DTA, 1998)
- Clackmannanshire LCA (ASH, 1997)
- Central Region LCA (ASH, 1996)

3.39 The proposed diversion is covered by the Fife Landscape Character Assessment (DTA, 1998) and located in the “Coastal Flats” Landscape Character Type (LCT). This landscape type is described as “low lying, open, large scale”[21] and that “high voltage power lines are dominant features in the Kincardine area radiating out from the Power Stations”.[22]

3.40 The landscape guidelines for the Coastal Flats LCT notes with reference to “Other Development and Structures”, the aim to: “Ensure any new road or other major engineering works are carefully sited and designed to minimise their landscape and visual impact”.[23]

3.41 The strip of land to the south of the coastal embankment is described as the “Other Intertidal Shores” LCT which comprises “the intertidal mudflats, sands, shingle and rock between mean,

[20] Landuse Consultants (1991) Landscape Assessment Principles and Practice & Countryside Commission (1993) Landscape Assessment Guidance (CCP423).

[21] Fife Landscape Character Assessment (DTA, 1998) p 89

[22] Fife Landscape Character Assessment (DTA, 1998) para C15.16 p92

[23] Fife Landscape Character Assessment (DTA, 1998) p 145

high and low watermarks"[24]. It is noted in the detailed description of this LCT, that "views are invariably extensive in the seaward direction and landward are generally towards the Cliffs, Braes, Coastal Hills or Coastal Terraces"[25]. The Firth of Forth is also noted as a LCT.

3.42 The key characteristics and features of the Coastal Flats, Intertidal Shores, Firth of Forth LCTs, and relevant guidelines as noted in the LCAs has been extracted and placed in Technical Appendix 1.3.

3.43 The landscape character of the proposed development site is simple and open, with flat low lying man made fields, ditches and embankments encompassed by development and busy infrastructure, with the A985 to the north, power station to the east, railway to the south and Kincardine to the north west. To the south of the coastal embankment and railway the landscape character is more natural with the mudflats and waterscape of the Firth of Forth.

3.44 The wider landscape character encompassing Kincardine is dominated by communication corridors with roads, bridges, railway line, overhead transmission lines, and large scale industrial uses combining to create a range of colours, forms, lights and noise.

3.45 Localised diversity in texture and colour is provided by the following landscape features: clump of mature woodland and stone walls encompassing Inch House and adjacent property; stone retaining wall along Walker Street; mixed woodland and shrubs along the A985 and sewage works to the west; scattered scrub along the coastal embankment and adjacent small structure.

3.46 The agricultural landscape appears productive, well managed and in overall good condition. The site has a certain coherency due to its long-term intensive agricultural use since the reclamation and coastal protection of the land, but has been recently altered with the construction of the A985 Kincardine Bypass, which has divided the geometric pattern of fields forming the eastern edge of Kincardine and Walker Street. This transition of the landscape will continue with the consented development of housing to the north of the A985 and a business park to the east of Inch House.

3.47 No specific planning policies protect the existing landscape character and quality of the area of the proposed overhead line diversion and surroundings. However, the distinct attributes and issues that relate to the Coastal Flats landscape are described in the SNH Landscape Character Assessment.

3.48 The area surrounding the proposed development site is obviously valued by local residents and recreational users of the Fife Coastal Route and cycle route, and nearby pubic footpath.

3.49 In summary, the proposed development site is located within a productive well-managed, settled coastal and industrial landscape. The proposed development site is of well-tended agricultural fields with few landscape features and is located adjacent a landscape in transition associated with proposed development to the north. Overall, it is considered that the landscape features and character of the proposed development site are of **low** sensitivity to change.

[24] Fife Landscape Character Assessment (DTA, 1998) p94

[25] Fife Landscape Character Assessment (DTA, 1998) p94

Views and Visual Baseline

3.50 The visual appraisal of the proposed development site is based on an understanding of the extent of visibility of the proposed development with reference to computer generated information and site survey work, identification of visual receptors, and grading of degrees of visibility.

3.51 The computer-generated Zone of Theoretical Visibility (ZTV) of the proposed development site is shown in Figure 3.2. This indicates extent of theoretical visibility of the proposed overhead line diversion incorporating screening by existing buildings and large woodland blocks[26]. The difference in predicted visibility for the proposed overhead line diversion compared to the existing overhead line is indicated in yellow.

3.52 The ZTV has been reviewed and refined by a site survey of potential visibility, which takes account of localised detailed screening provided for example, by walls, hedges, scattered trees and small woodlands.

3.53 The representative range of viewpoint photographs are located in Figure 3.2 and indicated in Figure 3.3 a-e. The photographs are annotated with key features in the surrounding area.

3.54 The viewpoint photographs were professionally taken in December 2014, as detailed in Technical Appendix 1.4. Deciduous trees were not in leaf and the viewpoint photographs indicate less screening than would be afforded during summer.

Visibility

3.55 To the north, visibility of the proposed development will encompass Inch House Listed Building and adjacent property, the Fife Coastal Path and cycleway along Walker Street, A985, existing fields and proposed housing site, eastern edge of Kincardine including Tulliallan Cemetery and A977. To the north actual views from the footpath along the edge of Tulliallan Garden and Designed Landscape are restricted by the detailed topography and an existing hedgerow on embankment. Distant views of the proposed overhead line are indicated in the ZTV extending approximately 4km to encompass Maggie Duncan's Hill, fields to the north of Tulliallan Farm and part of Tulliallan Golf Course.

3.56 To the east, visibility encompasses existing fields and proposed industrial site to the east of Inch House, The Holdings residential area located on the rising ground to the north of the A985, B9037 leading to Culross and forming the Fife Coastal Path, and public footpath aligned through this area including the footpath along the western edge of Longannet Power Station. Actual views are not afforded from Culross, the Local Landscape Area encompassing the village or Gardens and Designed Landscape of Dunimarie.

3.57 To the south, views of the proposed development site extend approximately 4.5 km across the Firth of Forth to Grangemouth, the flat open fields along the south side of the estuary, the edge of the settlement of Skinflats and M9. Actual views are restricted in this flat coastal area by existing buildings, walls, woodland encompassing Powfoulis Hotel and hedgerow trees.

[26] A standard height of 8m for buildings and 15m for woodland has been adopted for the ZTV. Buildings and tree blocks have been taken from OS 1:25000 map. Existing and proposed tower coordinates as provided by SPEN 3-9-14.

3.58 To the west, views of the proposed development site are afforded from Kincardine on Forth Bridge and Clackmannanshire Bridge. Beyond these crossings there will be limited or no views of the proposed development.

Visual Receptors

3.59 Visual receptors identified in the surrounding area and description of views in relation to the proposed development site are listed in Technical Appendix 1.5. For the purposes of the assessment, visual receptors include residents, visitors, recreational, road users and other groups of viewers (such as those for example with a special interest in cultural heritage), which have the potential to be affected by the proposed development.

3.60 The description of the degree of visibility of the site (or proposed development) from any location has been divided into four categories as follows:

No View: no view or difficult to perceive

Glimpse View: a transient view or distant view of part of the site or development in the context of a wider view

Partial View: a clear view of part of the site or development; a partial view of most of it; or a distant view in which the site or development forms a relatively small proportion of a wider view

Open View: a panoramic view of most of the site or development, occupying most of the field of vision

3.61 Open views of the proposed development site are afforded to the immediate north encompassing residential receptors located in a few scattered properties, eastern edge of Kincardine, The Holdings and recreational users of the Fife Coastal Path, and other footpaths and cycleways in this area. To the east and south open views are afforded by recreational users of the public footpath aligned along the perimeter of Longannet Power station and coastal embankment. To the south of the Firth of Forth, distant partial views are afforded from scattered residential receptors and users of the network of footpaths and cycleways in this flat coastal area.

3.62 Partial and glimpse visibility will be afforded from receptors located within Kincardine settlement to the north, northwest and west, and more distant receptors to the south. To the west of the bridges glimpse and no views will be afforded by receptors located to the north and south of the Firth of Forth.

3.63 From all directions views of the proposed overhead line diversion will also encompass adjacent large-scale industrial buildings and infrastructure located in the surrounding area including: Longannet Power Station, the Forth Crossing and Anchor Towers, Clackmannanshire Bridge, Kincardine on Forth Bridge and overhead lines. More distant views afford a wider panorama, which includes the large-scale industrial development of Grangemouth chemical works. These panoramic views encompass a skyline punctuated by overhead lines and tall chimneys.

3.64 Existing night lighting sources surrounding the proposed development site are dominated by the flashing of the tall Forth Crossing Towers and Longannet Power Station chimney, and Grangemouth chemical works.

3.65 Overall, the extent of visibility is **limited to the north, east and west** and more extensive to the **south**. Open and partial views of the proposed development will be encompass receptors of **high** sensitivity including Inch House and adjacent property, residents on the edge of Kincardine to the north and west, recreational users of the Fife Coastal Path, and public footpath to the east and south of the proposed diversion, and scattered residential properties and network of footpaths to the south of the Firth of Forth.

Potential Effects of Proposed Development

Loss of Landscape Features

3.66 The proposed overhead line diversion comprising of the construction of 3 new towers will necessitate permanent development of a small part of an arable field. During construction this will require an approximate area of 30 x 30m (900 m^2) at each tower; a temporary 5m wide access road; and temporary compound for the contractors and storage of materials.

3.67 The proposed wayleave corridor between the new tower YG 009 and existing tower YG 010 crosses young woodland planted as part of the A985 road construction to the north of the sewage works, which is now reaching approximately 4-8m in height. Some initial pruning of existing woodland may be required during construction and ongoing woodland management to ensure safety clearances are met. No permanent removal of landscape features or re-grading works is envisaged.

3.68 The magnitude of change on landscape features is considered to be **low** during construction reflecting the temporary loss of agricultural land with an overall **minor adverse** significance of effect. During operation of the overhead line, it is considered that the permanent magnitude of change would be **low** associated with the permanent removal of approximately a total of 2700 m^2 or less of agricultural land associated with the three tower bases with a significance of effect of **minor adverse**.

Landscape Character

3.69 The proposed development is located within a productive well-managed agricultural and industrial coastal landscape. The proposed diversion is within an area of landscape transition associated with the recent construction of the A985, and proposed development of housing to the north and industrial development to the east of Inch House.

3.70 Overall, it is considered that the overhead line diversion construction works with the removal and repositioning of towers and operation will have a **low to negligible** magnitude of change upon the landscape character. The proposed diversion on completion is considered to represent a **minor adverse** to **no effect** to the existing landscape character.

Visual Amenity

3.71 Potential views of the proposed development are relatively limited to the north, east and west and more extensive to the south encompassing the flat coastal agricultural land to the south of the Firth of Forth.

3.72 Within the visual envelope, a number of sensitive and less sensitive receptors will have open or partial views or transient views of the proposed diversion. This includes: Inch House Listed Building and adjacent residential property to the immediate north; residential properties forming the north and western edge of Kincardine; group of residential properties on the hillside to the north east; distant scattered residential properties to the south of the Firth of Forth; Fife Coastal Path and other footpaths and cycleways in the surrounding area; the A865, A977 and other minor roads.

3.73 Views in this area encompass the wider industrial coastal landscape comprising of Longannet Power Station, the Forth Crossing and Anchor Towers, and to the south of the Firth of Forth the chemical works at Grangemouth.

3.74 Overall, it is considered that during the construction of the proposed development, the magnitude of change to views and visual amenity will be high for the majority of receptors located within the visual envelope of the proposed diversion. On completion it is considered that the magnitude of change will range from high to low. The magnitude of change will be greatest at the outset when the degree of contrast will be greatest.

3.75 The Viewpoint Photographs are indicated in Figure 3.3 and Photomontages of the proposed diversion are indicated in Figure 3.4 a-d[27]. The visual effect of the proposed development on the identified viewpoints is summarised below with positive beneficial effects underlined and in **bold**. The appraisal of visual effects of the proposed development on receptors with partial of open views and the identified viewpoints is detailed in Technical Appendix 1.6.

3.76 On review, the proposed diversion is considered to have a **moderate adverse** effect on Inch House and adjacent property immediately to the north of the proposed diversion and section of Fife Coastal Path in this area. The visual effect on properties located on the eastern edge of Kincardine is considered to be **major beneficial**. For the majority of the settlement the proposed development is considered to either have a **minor beneficial** or **no effect**. To the north and east, the proposed diversion is considered to have a **minor beneficial** effect. To the south east, south and south west the proposed development is considered to have a **minor adverse** effect.

Table 3.1: Summary of Evaluation of Visual Effects on Selected Viewpoints

Viewpoints	Visual Receptor	Sensitivity	Description of Visibility	Magnitude of Change	Appraisal of Visual Effect
1. Fife Coastal Path/Inch House	Residential, Recreation, Listed Building	high	open	medium	moderate
2. Kincardine Riverside Terrace	Residential	high	open	low	**minor**
3. The Holdings, Westfield	Residential, Public Footpath	high	open	low	**minor**
4. B9037	Public Footpath, Minor Road	high/ low	open	low	**minor**
5. Newpans	Public Footpath	high	open	low	minor

[27] Existing and proposed tower coordinates as provided by SPEN 3-9-14.

Viewpoints	Visual Receptor	Sensitivity	Description of Visibility	Magnitude of Change	Appraisal of Visual Effect
6. Brackenlees Road	Residential, Public Footpath, Cycleway, Minor Road	high	partial/ glimpse	low	minor/ none
7. Skinflats Nature Reserve	Recreation, RSPB LNR	high	partial	low	minor
8. Kincardine of Forth Bridge	Listed Building, A985 Major Road	high/ low	open	low	minor
9. Kincardine Feregait	Recreation, Public Footpath, A977 Major Road	high/ low	partial/ glimpse	low	**minor**/ none

Mitigation Measures during Construction

3.77 The following Landscape Mitigation Measures will inform the Construction Environmental Management Plan (CEMP) for the proposed development during the construction phase, as summarised below:

- The removal of any existing landscape features such as trees and scrub to accommodate the proposed wayleave corridor shall be kept to the absolute practicable minimum.

- All tree works shall be carried out in accordance with BS3998. All retained trees shall be protected during the works in accordance with BS5837.

Mitigation Measures during Operation

3.78 No landscape mitigation measures are proposed in relation to the likely operational effects of the proposed overhead line diversion.

Residual and Cumulative Effects

Summary of Effect on Landscape and Visual Amenity

Effect on Landscape Features and Character

3.79 The sensitivity of the landscape features to change is considered to be low and the magnitude of change low during construction and operation. Overall, the significance of effect upon the immediate local landscape features is judged to be **minor adverse** during construction and operation.

3.80 The sensitivity of the landscape character to change is considered to be low and the magnitude of change low during construction. Overall, the significance of effect upon the landscape character is considered to be minor adverse during construction and **minor adverse to negligible** during operation of the proposed diversion.

Effect on Visual Amenity

3.81 The greatest change in the character of views and visual amenity will be restricted and localised, encompassing sensitive and less sensitive receptors to the immediate north, east, south and west. Views will also change to a lesser extent for more distant receptors located to the south of the Firth of Forth.

3.82 The most sensitive visual receptors with open views of the proposed development are afforded from: the Listed Building of Inch House and adjacent residential property located to the immediate north of the proposed diversion; section of the Fife Coastal Path; and properties

forming the eastern edge of the settlement of Kincardine. The change in visual amenity for these receptors ranges from moderate adverse to major beneficial. For the majority of receptors in the wider surrounding area including the settlement of Kincardine and south of the Firth of Forth, the change in visual amenity will be either minor adverse or minor beneficial.

3.83 The overall significance of visual effect for sensitive receptors is considered to range from major beneficial to major adverse during construction of the proposed diversion, and an overall **minor adverse** effect during operation.

Significance

3.84 The proposed diversion will comprise of the construction of three new towers of approximately 50m height and dismantling of three existing towers. The proposed development is to allow for consented housing development to the north of the A985 and industrial use to the east of Inch House.

3.85 In summary, the overall significance of landscape and visual effects of the proposed development is assessed to range from major beneficial and major adverse during construction. This effect will be temporary and localised.

3.86 On completion, it is assessed that the overall permanent landscape and visual effect of the proposed new development will on balance, be **minor adverse** and not considered to be "significant" in terms of the EIA Regulations.

3.87 The evaluation of significance of landscape and visual effects associated with the proposed diversion is summarised in Table 3.2.

Residual and Cumulative Effects

3.88 There are no additional mitigation measures recommended to reduce the scale of change and subsequent effect over and above those that will be included in the CEMP. Therefore the residual effects are the same as the significance of predicted impact.

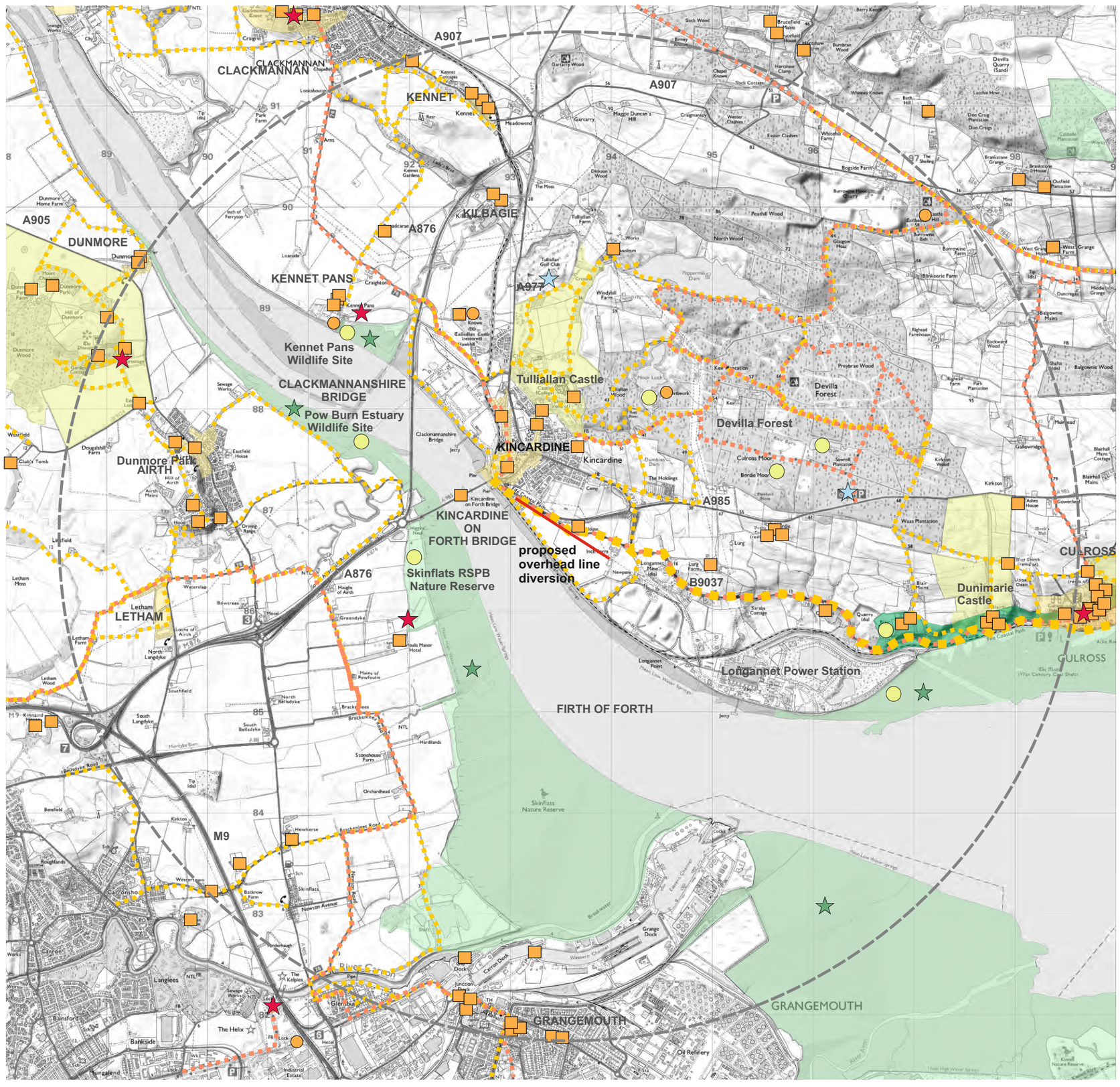
3.89 Overall, there is considered to be a minor landscape and visual change as a result of the proposed diversion so no assessment of cumulative effects is considered necessary.

Table 3.2: Summary of Evaluation of Landscape & Visual Effects

Landscape Receptor	Effect			Significance		
	Sensitivity	Magnitude of Change		Level of Construction Effect	Level of Permanent Effect	Rationale
		Construction	Permanent			
Landscape Features	low	low	low	minor	minor	**Construction:** Loss of agricultural land. Limited pruning of trees/ scrub to form wayleave corridor to west. **Permanent:** Ongoing management of trees to maintain wayleave corridor between Towers YG009R-010
Landscape Character	low	low	low to none	minor	minor to negligible	**Construction:** Alteration of the local appearance and landscape character of the site during construction. **Permanent:** Overhead line located within Coastal Flats agricultural and industrial landscape, and south of consented housing and industrial development.

Visual Receptor	Effect			Significance		
	Sensitivity	Magnitude of Change		Level of Construction Effect	Level of Permanent Effect	Rationale
		Construction	Permanent			
Receptors within Visual Envelope/ Viewpoints 1-9	high-low	high	medium to <u>high</u>	major to **<u>major</u>**	minor	**Construction:** Temporary alteration of available views of the site and character during construction. **Permanent:** Change in character of view and visual amenity. Change ranges from moderate adverse to major beneficial. Overall, on balance considered to be minor adverse.

Note: Positive effects are <u>underlined</u> and in **bold**



Key

- Garden and Designed Landscape
- Local Landscape Area
  Dunfermline & West Local Plan 2012
- Special Protection Area/ Ramsar Site
- Site of Special Scientific Interest
- Wildlife Sites/ Local Nature Reserves
- Conservation Area
- Scheduled Ancient Monument
- Listed Building*
  *not all shown in Conservation Areas
- Area of Archaeological Regional Importance
  Dunfermline & West Local Plan 2012
- Fife Coastal Path
- Public Footpath*
  *information from Core Paths Plan
- Cycle Route
- Visitor Attraction*
  *not designated
- Recreation Attraction
- Study Area 5km Radius

0 1 2 3km

figure 3.1

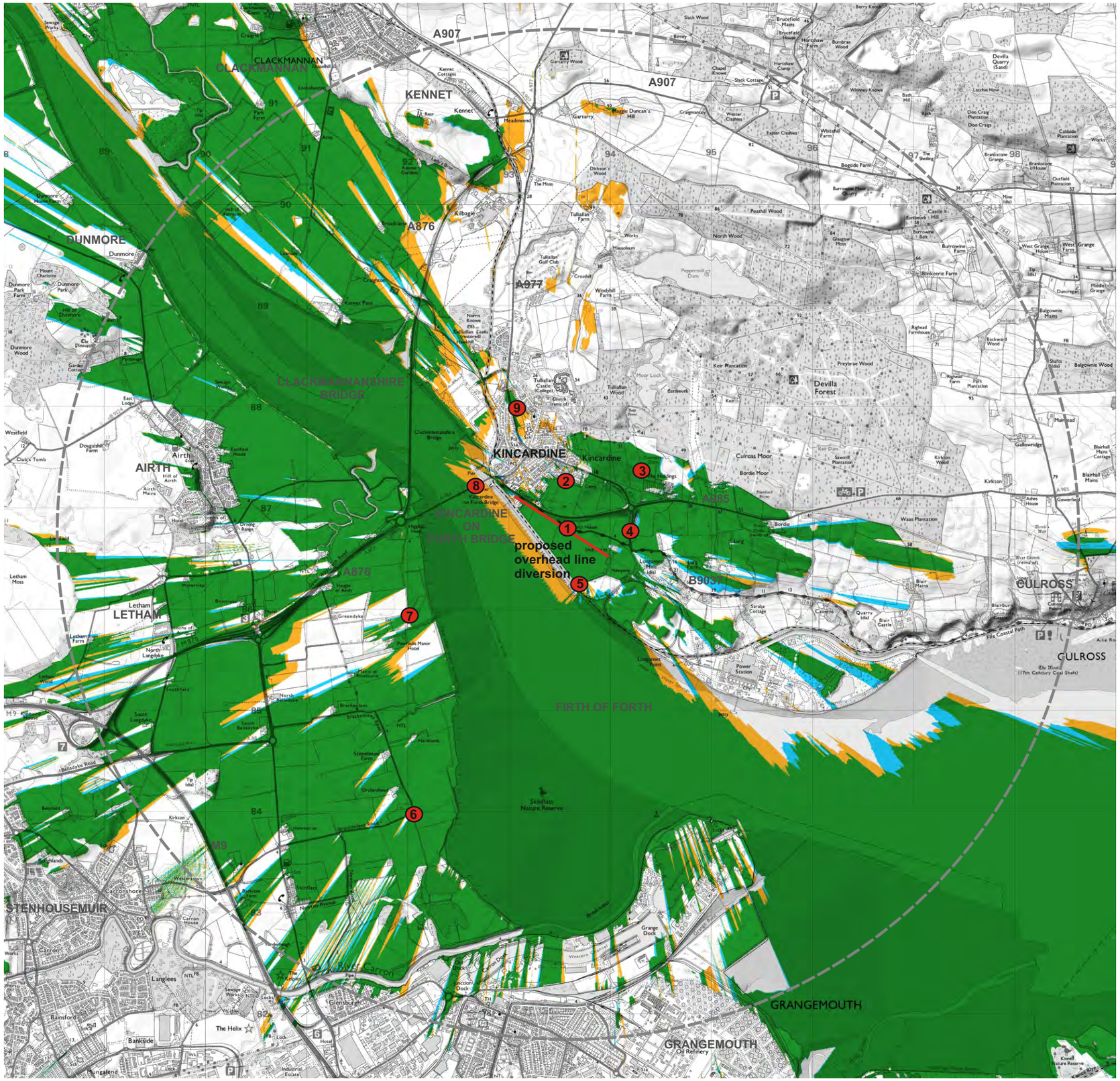
Title:
Designated Areas, Features and Infrastructure

Project:
Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: Bar Scale

Date: Jan 2015

Environmental Designworks
Landscape Architecture + Planning



Key

Zone of Theoretical Visibility Difference with Screening
Buildings at 8m & Large Woodland Blocks at 15m Height

- Zone of Theoretical Visibility of Existing & Proposed Towers
- ZTV Difference_Proposed Towers Only
- ZTV Difference_Existing Towers Only
- Study Area 5km Radius
- Viewpoint Photograph Locations
  1. Fife Coastal Path
  2. Kincardine- Riverside Terrace*
  3. The Holdings
  4. Minor Road to Culross B9037*
  5. Newpans*
  6. Brackenlees Road
  7. Skinflats Local Nature Reserve
  8. Kincardine on Forth Bridge A985*
  9. Kincardine- Recreation Area A977

*Photomontage Location

0 1 2 3km

figure 3.2

Title:
Zone of Theoretical Visibility & Viewpoint Photograph Locations

Project:
Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: Bar Scale

Date: Jan 2015

Environmental Designworks
Landscape Architecture + Planning

Viewpoint 1 (North Sector)_Fife Coastal Path passing Inch House (Walker Street). (Correct viewing distance at A3 print size = 117mm)

Viewpoint 1 (South Sector)_Fife Coastal Path passing Inch House (Walker Street). (Correct viewing distance at A3 print size = 120mm)

figure 3.3a

Title:
Viewpoint Photographs 1-9

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Dec 2014

Environmental Designworks
Landscape Architecture + Planning

Viewpoint 2_Riverside Terrace, Kincardine. (Correct viewing distance at A3 print size = 184mm)

Viewpoint 3_The Holdings, Westfield. (Correct viewing distance at A3 print size = 255mm)

figure 3.3b

Title:
Viewpoint Photographs 1-9

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Dec 2014

Environmental Designworks
Landscape Architecture + Planning

Viewpoint 4_Minor Road to Culross, B9037. (Correct viewing distance at A3 print size = 184mm)

Viewpoint 5_Newpans. (Correct viewing distance at A3 print size = 318mm)

figure 3.3c

Title:
Viewpoint Photographs 1-9

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Dec 2014

Environmental Designworks
Landscape Architecture + Planning

Viewpoint 6_Brackenlees Road. (Correct viewing distance at A3 print size = 187mm)

Viewpoint 7_Skinflats Nature Reserve. (Correct viewing distance at A3 print size = 229mm)

figure 3.3d

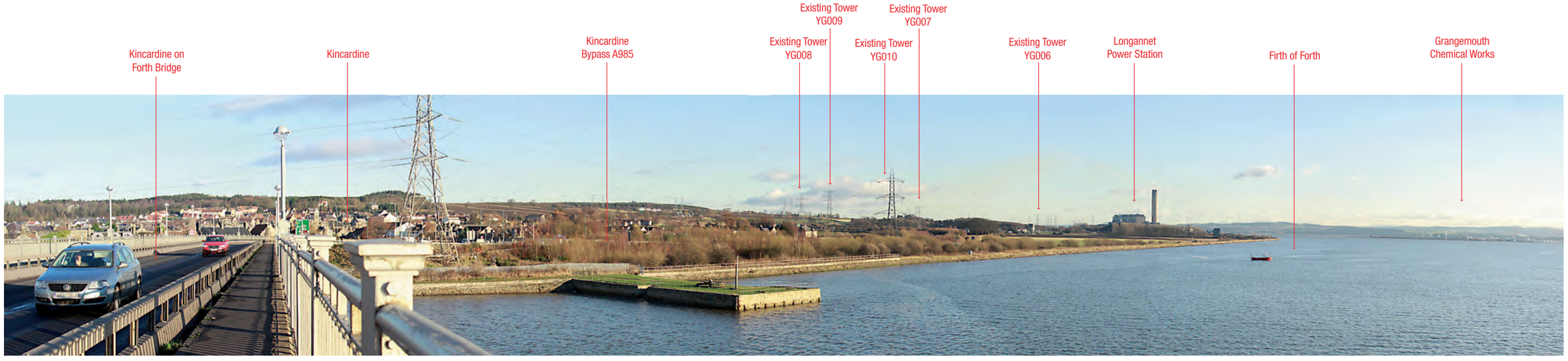
Title:
Viewpoint Photographs 1-9

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Dec 2014

Environmental Designworks
Landscape Architecture + Planning



Viewpoint 8_Kincardine on Forth Bridge A985. (Correct viewing distance at A3 print size = 239mm)

Viewpoint 9_Kincardine, Feregait, A977. (Correct viewing distance at A3 print size = 220mm)

figure 3.3e

Title:
Viewpoint Photographs 1-9

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Dec 2014

Environmental Designworks
Landscape Architecture + Planning

Existing

Viewpoint 2_Riverside Terrace, Kincardine. (Correct viewing distance at A3 print size = 184mm)

Proposed

Viewpoint 2_Riverside Terrace, Kincardine. (Correct viewing distance at A3 print size = 255mm)

figure 3.4a

Title:
Photomontage: Viewpoint 2

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

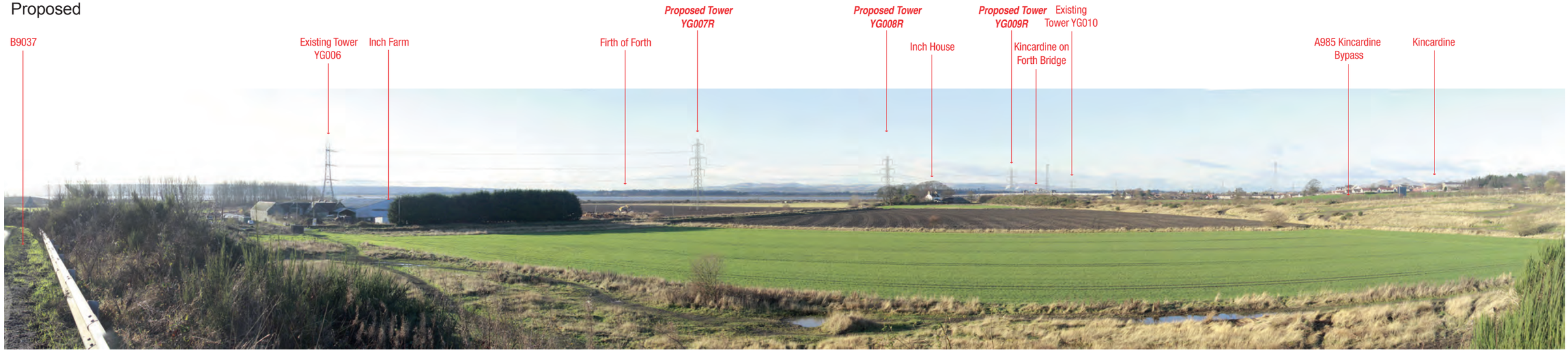
Date: Jan 2015

Environmental Designworks
Landscape Architecture + Planning

Existing

Viewpoint 4_Minor Road to Culross, B9037. (Correct viewing distance at A3 print size = 184mm)

Proposed



Viewpoint 4_Minor Road to Culross, B9037. (Correct viewing distance at A3 print size = 184mm)

figure 3.4b

Title:
Photomontage: Viewpoint 4

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Jan 2015

Environmental Designworks
Landscape Architecture + Planning

Existing

Viewpoint 5_Newpans. (Correct viewing distance at A3 print size = 318mm)

Proposed

Viewpoint 5_Newpans. (Correct viewing distance at A3 print size = 318mm)

figure 3.4c

Title:
Photomontage: Viewpoint 5

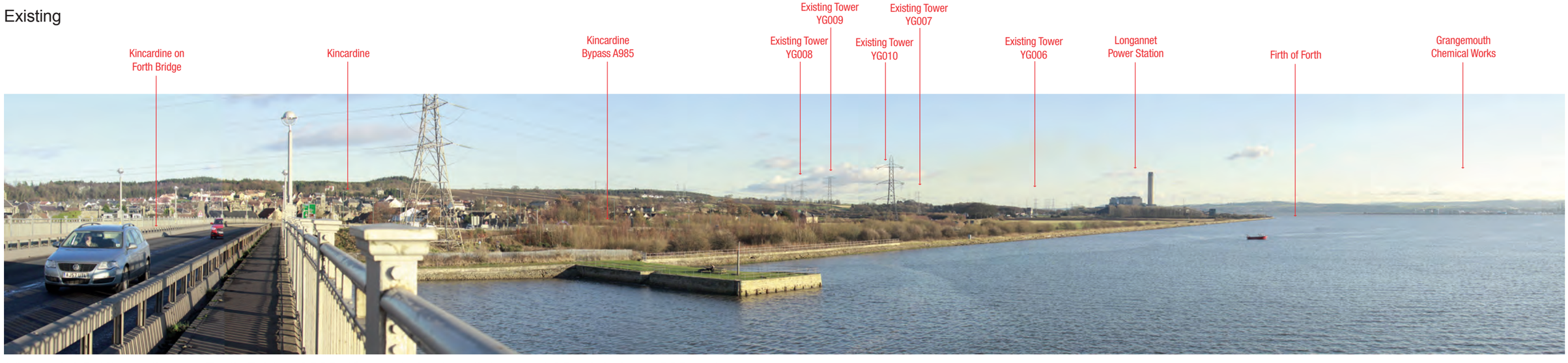
Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Jan 2015

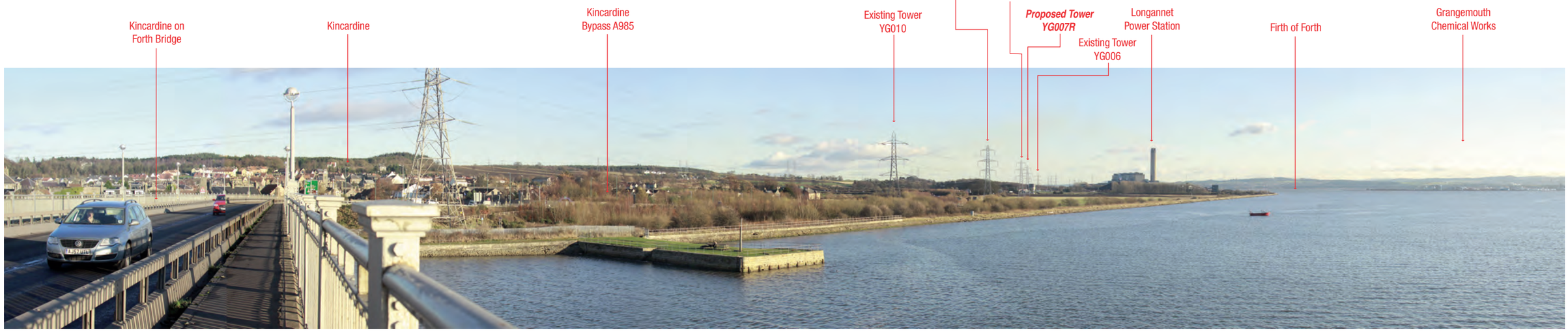
Environmental Designworks
Landscape Architecture + Planning

Existing



Viewpoint 8_Kincardine on Forth Bridge A985. (Correct viewing distance at A3 print size = 239mm)

Proposed



Viewpoint 8_Kincardine on Forth Bridge A985. (Correct viewing distance at A3 print size = 239mm)

figure 3.4d

Title:
Photomontage: Viewpoint 8

Project:
Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Scale: nts

Date: Jan 2015

Environmental Designworks
Landscape Architecture + Planning

Introduction

4.1 This section describes the results of an assessment of the ecological interest of the area that will be affected by the proposed overhead line diversion. The study area includes the existing overhead line route, the proposed diversion route and a buffer area extending at least 200m around these features.

4.2 The study area was surveyed to identify any ecological constraints that will need to be taken into account during the construction of the new overhead line and towers and the dismantling of the redundant towers. In particular the study has focussed on the need to minimise impacts on protected species, habitats and designated sites including bird species associated with the nearby Firth of Forth Special Protection Area (SPA) and Ramsar site.

4.3 Technical Appendix 2.0 provides the detailed survey work and findings supporting the Ecology Assessment.

Scope and Methodology

Desk Study

4.4 A desk study has been undertaken using data obtained from internet sources to establish the location and nature of any statutory designated sites of nature conservation interest located within 2km of the centre of the study area. Historical records have been requested from Fife Nature Records Centre and Fife Bird Club. An aerial photograph of the site and its surroundings was examined to further assist in understanding the context of the site.

Phase 1 Habitat Survey

4.5 A Phase 1 Habitat Survey of the site was undertaken on 25 September 2014 by Paul Lowings and Rike Kroener. The site was visited again on 20 November 2014 by Steven Betts CEnv MCIEEM. The vegetation and land use types present within the site were classified according to the standard JNCC methodology (JNCC, 2010), and a habitat map produced as indicated in Figure 4.1. Target Notes were used to describe the general character of the site and to record any features of ecological interest identified during the survey.

4.6 The surveys were extended to include an assessment of the habitats present to determine their suitability to support protected species. In addition, the following species-specific surveys were undertaken.

Badgers

4.7 The study area was surveyed for signs of badger *Meles meles* activity on 25 September 2014 (see Cresswell et.al.(1990)). Further information was gathered during the site visit on the 20 November 2014.

Bats

4.8 Bat activity transect surveys were carried out on 25 September 2014. A total of two survey transects were used to cover the study area during the survey. This survey was complemented by an assessment of the habitats present to evaluate their suitability for foraging and commuting bats. All trees were assessed to determine their potential to support

roosting bats, and buildings within the study area were also appraised to assess their suitability for roosting bats (Hundt, 2012).

Wintering Birds

4.9 During the period October 2014 to January 2015 the fields within the study area were visited during the high tide period (2 hours before or after high tide[28]) and a point count survey was undertaken for each field which involved monitoring the target field from a vantage point for ten minutes and recording birds that were present. While walking between vantage points the surveyor also scanned all fields for signs of goose feeding activity.

4.10 Point count surveys were also undertaken that covered the northern shore of the River Forth adjacent to the study area. Surveys were undertaken from a pier located at the northern end of the shoreline, providing a clear view of the section of shore adjacent to the study area.

Other Species

4.11 During the walkover survey notes were made of any other notable or protected species that were either identified or could potentially be present based on the habitats present within the site.

Policy Context

4.12 There are a number of national, regional and local planning policies that relate to nature conservation and ecology. Reference to these provides an indication of the likely requirements and expectations of statutory authorities in relation to applications for development and nature conservation and ecology within a given area. A brief outline of the relevant planning policy and guidance that relates to nature conservation and ecology is provided below.

Scottish Planning Policy

4.13 The Scottish Government adopted the revised and updated Scottish Planning Policy (SPP) in 2014. The SPP sets out planning policies including those that relate to the protection of biodiversity. Key policies set out within the SPP that relate specifically to biodiversity are summarised below:

- The Scottish Planning Policy introduces a presumption in favour of development that contributes to sustainable development. This means that policies and decisions should be guided by a number of principles that are set out within the SPP.

- The SPP notes that planning authorities, and all public bodies, have a duty under the Nature Conservation (Scotland) Act 2004 to further the conservation of biodiversity. This duty must be reflected in development plans and development management decisions.

- International, national and locally designated areas and sites as outlined in the SPP should be identified and afforded the appropriate level of protection in development plans. The presence (or potential presence) of a legally protected species is an important consideration in decisions on planning applications.

[28] The period around high water was surveyed as this is the time when birds are most likely to be displaced onto the adjacent fields. At low tide extensive areas of mudflat are exposed and it is likely that waders and wildfowl will preferentially feed in these areas at this time.

- Ancient semi-natural woodland is an irreplaceable resource and, along with other woodlands, hedgerows and individual trees, should be protected from adverse impacts resulting from development.

- Development management decisions should take account of potential effects on landscapes, the natural and water environment, including cumulative effects. Developers should seek to minimise adverse impacts through careful planning and design, considering the services which the natural environment is providing and maximising the potential for enhancement.

Fife Local Development Plan

4.14 Fife Council concluded consultation on the Fife Local Development Plan in December 2014, which is the replacement to Fife's three existing Local Plans, all of which were adopted in 2012. Together with the relevant strategic development plans, it will form the statutory Development Plan for Fife once adopted. The Plan includes the following policies that are considered to be relevant with regard to the protection of ecological features within the study area:

Policy 7: Development in the Countryside. Development in the countryside will only be supported in certain circumstances, which are listed within the policy text.

Policy 13: Natural Environment and Access. Development proposals will only be supported where they protect or enhance natural heritage and access assets including the following, which are relevant in the context of the site:

- Designated sites of international and national importance, including Natura 2000 sites and Sites of Special Scientific Interest;

- Designated sites of local importance, including Local Wildlife Sites, Regionally Important Geological Sites, and Local Landscape Areas;

- Woodlands (including native and other long established woods), and trees and hedgerows that have a landscape, amenity, or nature conservation value;

- Biodiversity in the wider environment; and

- Protected and priority habitats and species.

Where adverse impacts on existing assets are unavoidable we will only support proposals where these impacts will be satisfactorily mitigated.

Scottish Wildlife Legislation

4.15 In Scotland wildlife is afforded protection via a range of legal instruments. The key Acts and Regulations, which have been taken into account throughout this assessment, are as follows:

- Wildlife and Countryside Act 1981 (as amended)

- Nature Conservation (Scotland) Act 2004 (as amended)

- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)

- The Protection of Badgers Act 1992

4.16 Section 1 of the Nature Conservation Scotland Act 2004 states that 'It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions'. To assist with this objective Section 2(4) of the Act sets out the requirement to publish a list of flora and fauna considered to be of principal importance in Scotland.

4.17 The list required under Section 2(4) of the Act has now been published and includes a diverse range of habitats and species, some of which may be present at the Site (www.biodiversityscotland.gov.uk, accessed on 24 November 2014). The measures required to protect these species and habitats are set out in the document 'Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland' (Scottish Executive, 2004).

Baseline Conditions

Desk Study

Statutory Designated Sites

4.18 The only Statutory designated sites within 2km of the proposed overhead line diversion route are the Firth of Forth Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and Ramsar site, the nearest part of which is located on the southern shore of the River Forth, approximately 650m to the south-west of the proposed overhead line diversion route. The Firth of Forth is of importance for a variety of geological and geomorphological features, coastal and terrestrial habitats, vascular plants, invertebrates, breeding, passage and wintering birds.

4.19 Torry Bay Local Nature Reserve (LNR) is located to the south-east of the study area near Longannet Power Station. The reserve is part of a larger area of inter-tidal mud flats extending between Longannet Point and Crombie Point.

Non-statutory Designated Sites

4.20 Two local wildlife sites are present within 2km of the proposed diversion route. Devilla Forest Mires Wildlife Site, which is located approximately 1.5km to the north-east of the study area at its closest point, and Moor Loch Wildlife Site, which is located approximately 1.2km to the north-east.

Habitats

4.21 The fields within which the proposed diversion route is located, together with most of the surrounding fields, are arable farmland used for the production of a variety of different crops. Improved and semi-improved pasture fields are also present. Field boundaries are variously defined by dry stone walls and newly planted hedgerows. There are areas of recent landscape planting that have been established alongside the A985, which was constructed in recent years.

4.22 Elsewhere there is a ditch along a field boundary in the northern part of the study area, and there is another ditch that runs alongside the railway. There are occasional mature and semi-mature trees, most of which are located in the vicinity of Inch House.

Protected Species

4.23 No signs of badger were recorded during the survey and no badger setts are present within the study area.

4.24 Only two species of bat were recorded during the bat activity transect survey that was carried out on 25 September 2014: common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*. During the survey low levels of bat activity were recorded along the boundary of the residential area at the south-east edge of Kincardine, near the line of poplar trees along the southern boundary of the study area and near Inch House. There are few roosting opportunities for bats within the study area, and these are associated with buildings and trees at Inch House and Inch Farm.

4.25 During eight site visits undertaken in October, November and December 2014, and January 2015 very few wintering wildfowl and waders were recorded. The only SPA species recorded within the study area were curlew, oystercatcher, lapwing, redshank, mallard and pink-footed goose. Between 4 and 23 curlews were recorded in a large field in the southern part of the study area on most survey visits. This field was stubble during three of the four visits, but by the time the last survey visit was undertaken it had been ploughed. At this time four curlews were recorded using this field but twenty curlews were recorded in an adjacent field to the south. Lapwing was only recorded in January 2015 when flocks of four and eleven birds were recorded on separate occasions. Only one redshank was observed using a field to the south west of Inch Farm.

4.26 Along the shore of the Firth of Forth peak counts of twenty mallard, four curlew, two redshank and five oystercatchers were recorded. Oystercatchers and mallards were only recorded in this location. Mallards were also recorded along the shore but were not recorded anywhere else within the study area.

4.27 On 25 September 2014 a mixed flock of approximately fifty grey geese and ducks landed in a southerly field within the study area at dusk (a stubble field that has subsequently been ploughed). During the survey on 21 November 2014, fifty pink-footed geese were observed flying over but they did not land within or near the study area. No other geese or wildfowl were recorded within any of the fields within the study area during any of the site visits, and no field signs were found to indicate that geese or wildfowl are regular visitors.

4.28 No other protected or notable species were recorded within or adjacent to the site.

Potential Effects of Proposed Development

4.29 The construction of three new towers and the removal of the existing towers will result in the loss or disturbance of small areas of improved and poor semi-improved grassland and arable land at each tower location, along access routes and where a construction compound is established. No further habitat impacts are anticipated during the operational phase of the development, although engineers may need to occasionally access towers to undertake inspections or repairs and this could result in small-scale localised habitat disturbance.

4.30 No signs of badger activity were found during the site visit and consequently no impacts on badgers are predicted.

4.31 The study area is poor for roosting, commuting and foraging bats. No bat roosts or potential roost sites are present in the vicinity of the existing or the new overhead line routes and therefore no impacts are predicted on roosting bats. The loss of areas of improved and poor semi-improved grassland and arable habitat is not likely to have a significant impact on foraging or commuting bats. As the number of bats using the study area is low, it is considered that there is a low risk of bats colliding with overhead lines.

4.32 The study area was found to support a limited range of common passerine, corvid and raptor bird species. The proposed development has the potential to impact on birds, primarily as a result of visual and noise related disturbance. This may result in the displacement of birds, which is likely to be a temporary impact that lasts for the duration of the construction works.

4.33 The construction of the new towers and the dismantling and removal of the redundant towers has the potential to impact on farmland birds primarily as a result of visual and noise related disturbance. However, the habitats that will be affected are considered to be poor for nesting birds, and so direct impacts on bird nesting sites are considered to be negligible.

4.34 Curlews and lapwings, which are part of the SPA assemblage, were recorded in fields along the proposed overhead line diversion route. However, the birds were all more than 140m from the route, favouring farmland closer to the railway. It is possible that the construction of the new towers could result in the disturbance and/or displacement of curlew and lapwing using this part of the study area. Noise and visual disturbance arising from the presence of people and machinery may cause both species to move away from the working area. The proposed work will only involve the diversion of an existing section of overhead line and so there will not be an increase in the collision risk to birds (the diversion will result in a small reduction in the length of the existing overhead line).

4.35 Oystercatcher and mallard were recorded along the shore of the Firth of Forth and the raised railway embankment will minimise the effects of noise and visual disturbance. Impacts on pink-footed geese and redshank are considered to be unlikely as the survey data indicates that these are infrequent visitors to the study area.

4.36 All of the identified impacts are considered to be **minor** (i.e. a detectable but non-material change to the environment).

Residual and Cumulative Effects

4.37 The Firth of Forth SPA is noted for its wintering wader and wildfowl population and so the identified impacts that are likely to arise during the construction period will be greatest if the work takes place during the winter months. As the construction period is scheduled to last 7 months it is inevitable that some of the works will encroach into the winter period. It is recommended that works commence in the early summer so that they are well progressed by the time that the birds return to the SPA in the autumn. This will provide the birds with the earliest opportunity to become acclimatised to the relocated towers.

4.38 The proposed timing schedule for the work will minimise but not eliminate impacts on SPA birds. However, it is expected that any disturbance arising during the works will only impact on curlews and lapwings, and may result in their displacement to other open habitats within the study area. As curlews and lapwings use the site for resting and preening (lapwings are present very infrequently), any residual displacement impacts are likely to be **minor**.

4.39 It is recommended that habitats are protected by clearly marking out the extent of the working area and briefing contractors to ensure that they remain within the demarked working area. This will ensure that impacts on adjacent habitats are minimised. Residual impacts on habitats are likely to be **minor**.

4.40 Measures designed to protect habitats will also benefit bats by minimising impacts on habitats used for foraging. No residual impacts on bats are anticipated.

4.41 All vegetation clearance work should be carried out outside of the breeding season for birds i.e. April to August. If it is necessary to carry out vegetation clearance during the bird breeding season advice should be sought from a suitably qualified ecologist before work commences. If nesting birds are found to be present then it is likely that the nest site will have to be protected from damage or disturbance until the adults and young have left. It is possible that the proposed works may result in the disturbance and displacement of a small number of farmland birds, but any residual impact is likely to be **minor** due to the poor quality of the habitat and the absence of suitable nest sites.

Habitats Regulations Appraisal

4.42 The ecological impact assessment has concluded that the proposed overhead line diversion will not have a significant effect on the Firth of Forth SPA / Ramsar site nor any of the species for which it is noted. Although curlews and lapwings have been recorded using some of the fields near the proposed overhead line diversion route, their use of the farmland appears to be variable and intermittent. Redshank was only recorded on one occasion and is considered to be an infrequent visitor to the area. Pink-footed geese were recorded on one occasion in a field in the southern part of the study area, but no evidence was found to indicate that this species regularly uses this part of the study area.

4.43 Cumulative impacts have been considered taking into account the following developments:

- East Coast 400kV Reinforcement Project (Blairingone to Kincardine);
- Baseline data collected for the Clackmannanshire Bridge project;
- Kincardine eastern expansion: development of land to the east of Kincardine for housing and industrial use.

4.44 No other plans or projects have been identified in the area, which could potentially impact on the SPA and the birds that are present. It is concluded that the proposed overhead line diversion will not have a significant effect on the SPA, either alone or in combination with other plans or projects, and so the requirement for an “appropriate assessment” is not triggered.

V:\Contracts\Live Contracts\7701-7800\7792 Kincardine\Mapping\02 GIS\01 projects\7792_kincardine.mxd

LEGEND

- Existing power line route
- Proposed power line route
- 1 Target note

Phase 1 habitats

- Broadleaved plantation woodland
- Dense scrub
- SI Semi-improved neutral grassland
- I Improved grassland
- SI Poor semi-improved
- A Arable
- Watercourse
- Species-poor intact hedge
- Stone wall
- Isolated scrub
- Broadleaved tree

figure 4.1

Title:

Phase 1 Habitat Map

Project:

Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: Bar Scale

Date: Jan 2015

Prepared by BSG Ecology Ltd for SPEN

Environmental Designworks
Landscape Architecture + Planning

Introduction

5.1 This chapter considers the likely impacts on archaeology and cultural heritage interests (hereafter heritage assets) of the proposed diversion of the Longannet to Kincardine 275kV overhead line at Kincardine (Proposed Development). It details the results of a desk-based assessment and walk-over field survey carried out for the site (Figure 5.1). The assessment was undertaken by CFA Archaeology Ltd, using information provided by Historic Scotland and the Fife Council Archaeologist.

5.2 The assessment evaluates the likely impacts of the Proposed Development on Scheduled Monuments and other archaeological features, Listed Buildings and other buildings of historic or architectural importance, Conservation Areas, and Inventory Gardens and Designed Landscapes.

5.3 The specific objectives of the assessment were to:

- Identify the cultural heritage baseline within the site;
- Assess the site in terms of its archaeological potential;
- Consider the potential construction (direct) and operational (indirect) effects of the Proposed Development on heritage assets; and,
- Identify measures, where appropriate, to mitigate any predicted adverse impacts.

Scope and Methodology

Baseline Characterisation

5.4 This assessment was conducted in accordance with the Chartered Institute for Archaeologists 'Code of Conduct' (2014) and Standard and Guidance for Historic Environment Desk-based Assessment (2014).

5.5 The cultural heritage study area was divided into two zones – an Inner Study Area and an Outer Study Area, as illustrated on Figures 5.1 and 5.2 respectively.

- Inner Study Area: The potential for construction (direct) impacts upon heritage assets has been considered within a 500m study area centred on both the existing and proposed OHL routes, resulting in an overall study area measuring 1600m long and 800m wide (max) encompassing both the existing and proposed OHL routes (Figure 5.1). This area was considered sufficient to identify cultural heritage assets close to, or within, the Proposed Development footprint. A gazetteer of heritage assets identified within the Study Area is provided in Technical Appendix 3.1.

- Outer Study Area: The consideration of potential operational (indirect) impacts upon the setting of cultural heritage assets uses a study area centred on both the existing and proposed OHL routes and extending 3km out from them. Figure 5.2 shows the existing and proposed OHL routes, together with the locations of heritage assets within the Outer Study Area. This study area was agreed in advance with Historic Scotland (Table 5.1). A list of relevant heritage assets is provided in Technical Appendix 3.2.

Consultation

5.6 Consultation was undertaken with Historic Scotland and the Fife Council Archaeologist (10th November 2014) to provide details of the proposed approach to the assessment and to obtain opinion on the likely impacts on cultural heritage interests from the Proposed Development. Summaries of the consultation responses are set out below in Table 5.1.

Table 5.1: Consultation Responses

Consultee	Issue	How/where this is addressed
Historic Scotland (24.11.2014)	Requested that the impact of the Proposed Development is assessed for all nationally designated heritage assets within the study area. Confirm that the proposed study area for the assessment of the effect of the Proposed Development on the setting of heritage assets is acceptable. Advised that they did not anticipate the Proposed Development would raise any significant concerns for nationally designated heritage assets.	The potential effect of the Proposed Development on the cultural heritage assets is assessed in Paragraphs 5.50 to 5.58.
Historic Scotland (24.11.2014)	Confirmed that there are no sites proposed for scheduling within the study area.	Noted, has no impact on assessment
Fife Council Archaeologist (15.01.2015)	Confirmed that the proposed study area for the assessment is acceptable.	Details of the cultural heritage study area are set out above in Paragraph 5.5
	Advised that the Proposed Development would have minimal effect on the cultural heritage.	The potential effect of the Proposed Development on the cultural heritage assets is assessed in Paragraphs 5.50 to 5.58.
	Noted that the land in which the existing overhead line currently crosses and the area in which the Proposed Development would be located is an area of reclaimed land. The land was reclaimed in the 18th/19th century through drainage of the saltmarsh, agricultural cultivation and backfilling with material from other mossland areas.	The overall archaeological potential of the Proposed Development Area is assessed in Paragraphs 5.41 to 5.44.
	Requested that the visual impact of the Proposed Development on cultural heritage assets be assessed.	The potential effect of the Proposed Development on the setting of cultural heritage assets is assessed in Paragraphs 5.52 to 5.58; Table 5.6 and Technical Appendix 3.2.

Desk-based Study

5.7 Up-to-date information was obtained from appropriate sources on the locations and extents of heritage assets with statutory protection and non-statutory designations both within the Inner Study Area and the Outer Study Area:

- Details of the locations and extents of Scheduled Monuments, Listed Buildings, and Inventory Gardens and Inventory Designed Landscapes, Conservation Areas were

downloaded, in GIS, from the Historic Scotland Data Warehouse (available at: http://hsewsf.sedsh.gov.uk/gisdl.html, accessed November 2014).

- Information on known heritage assets within the Inner Study Area was obtained from the Fife Council's Historic Environment Record (HER) in November 2014.

- Additional information on the character and condition of known archaeological sites and features within the Inner Study Area was obtained from Canmore, the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) database (available at: http://pastmap.org.uk/; accessed November 2014).

- Ordnance Survey maps (1866 to 1981) and other historic maps held by the Map Library of the National Library of Scotland were examined to provide information on sites or features of potential historic environment interest and on historic land-use development within the Inner Study Area.

- An assessment was made of vertical aerial photograph collections held by the RCAHMS. Sorties dating from 1946 to 1988 were examined for the Inner Study Area. In addition, modern aerial photographic imagery available through GoogleEarth™ and Bing™ were examined.

- The Scottish Palaeoenvironmental Archive Database (SPAD) which records the distribution of known palaeoenvironmental sites across Scotland was consulted for information on such sites within or adjacent to the site. The resource provided no relevant information specific to the site (available at: http://www.geos.ed.ac.uk/~ajn/spad/; accessed November 2014).

- Bibliographic and documentary sources (e.g. McLellan 2003) were consulted to provide additional information on the cultural heritage resource.

- The 'Bare-Earth' and 'With Screening' Zone of Theoretical Visibility maps generated for the Proposed Development were used to identify those designated assets within the Outer Study Area from which there would be theoretical visibility of the Proposed Development.

Scoped Out

5.8 Heritage assets recorded by RCAHMS (Canmore) and the Fife HER within the urban environment of Kincardine-of-Forth town and which lie within the Inner Study Area have been excluded from this assessment. They include general records to minor historic buildings and other townscape features, such as the town's bowling green. These assets would not be affected by the Proposed Development and add little to the assessment.

5.9 The 'With Screening' ZTV (Figure 5.3), which takes into account screening provided by intervening buildings and woodland/forestry, indicates that from the built-up areas of Kincardine-on-Forth views to the Proposed Development would be restricted at ground level. Taking this into consideration, heritage assets within the Outer Study Area which are predicted by the 'With Screening' ZTV to have no visibility of the Proposed Development are excluded from the assessment (compare Figure 5.2 with Figure 5.3).

Field Survey

5.10 A walk-over field survey was undertaken on 20 November 2014 within the Inner Study Area (Figure 5.1), with the following aims:

- to assess the baseline condition of the known cultural heritage assets identified through the desk-based study; and

- to identify any further features of cultural heritage interest not detected from the desk-based study and to assess ground conditions across the area for its potential to contain currently unrecorded, buried archaeological remains.

5.11 Identified heritage assets were recorded on pro-forma monument recording forms and by digital photography, and their positions (and where appropriate their extents) were logged using a Global Positioning System (GPS). No intrusive archaeological interventions have been carried out as part of this assessment.

5.12 Site visits were also undertaken in November 2014 to assess the character and sensitivity of the settings of the identified heritage assets within the Outer Study Area. The site visits focused on designated heritage assets in the Outer Study Area predicted by the 'With Screening' ZTV (Figure 5.3) to have visibility of the Proposed Development. Where access was difficult or denied, publicly accessible locations as close as possible to the asset were sought as a basis for assessment. Factors considered in the assessment of the setting of a heritage asset undertaken during the field visit include:

- The location and orientation of the asset.
- The importance, if applicable, of designed settings.
- Any obvious views or vistas.

Method of Appraisal

5.13 The types of effects of the Proposed Development on heritage assets were assessed in the following categories:

- Construction (Direct) effects: where there may be a physical effect on a heritage asset caused by the Proposed Development. Direct effects tend to have permanent and irreversible adverse impacts upon cultural heritage remains.

- Operational (Indirect) effects: where the setting of a heritage asset may be affected as a result of the construction and operation of the Proposed Development.

5.14 Effects were assessed in terms of their magnitude and nature (adverse/neutral/beneficial) and permanence (temporary/permanent).

- Beneficial effects are those that contribute to the value of an asset through enhancement of desirable characteristics or the introduction of new, positive attributes.

- Neutral effects occur where the development can be accommodated comfortably by the receiving environment while neither contributing to nor detracting from the value of the asset.

- Adverse effects are those that detract from the value of a receptor through a reduction in or disruption of valuable characterising components or patterns, or the introduction of new inappropriate characteristics.

5.15 The assessment of significance of the potential effects of the Proposed Development on individual heritage assets was undertaken using two key criteria:

- The heritage importance of the asset.

- The magnitude of likely impact.

5.16 The importance of each heritage asset has been determined from the relative weight given to it in SPP and SHEP. Table 5.2 summarises the relative importance of key types of heritage asset relevant to the study.

Table 5.2: Importance of Heritage Assets

Heritage Importance	Definition
National/International	Assets of national or greater importance, including: Scheduled Monuments, and site proposed for scheduling; Category A Listed Buildings; Inventory Gardens and Designed Landscape.
Regional	Assets of regional importance, including: Archaeological sites and areas of distinctive regional importance; Category B Listed Buildings. Conservation Areas.
Local	Assets of local importance, including: Archaeological assets of local importance; Category C Listed Buildings.
Lesser	Assets of little or no importance, including: Other historic environmental features; Artefact find-spots. Poorly preserved examples of particular types of features
Unknown	Where there is insufficient baseline information to determine more reliably the relative importance of the identified feature.

5.17 The magnitude of impact was assessed in relation to the likely degree of change to the baseline condition (character or setting) of the heritage asset that would result from the construction and operation of the Proposed Development (Table 5.3).

Table 5.3: Magnitude of Impact

Level of Magnitude	Definition
High	A fundamental material change to the baseline condition of the asset, leading to total loss or major alteration of character or setting.
Medium	A material, partial loss or alteration of character or setting.
Low	A slight, detectable alteration of the baseline condition of the asset.
Imperceptible	A barely, distinguishable change from baseline conditions.

5.18 The heritage importance of the asset defined in Table 5.2 and the magnitude of the predicted impact (Table 5.3) are combined to provide an assessment involving professional judgement of the likely significance of the effect. Table 5.4 summarises the criteria for assessing the significance of an effect.

Table 5.4: Significance of Effects

Magnitude of Impact	Heritage Importance of the Asset				
	National	**Regional**	**Local**	**Lesser**	**Unknown**
High	Major	Major	Moderate	Minor	Unknown
Medium	Major	Moderate	Minor	None	Unknown
Low	Moderate	Minor	None	None	Unknown
Imperceptible	Minor	None	None	None	Unknown

Significance Criteria

5.19 The definition of the terms used to describe the relative significance of effects are as follows:

- Major – a fundamental change to the environment.
- Moderate – a material but non-fundamental change to the environment.
- Minor – a detectable but non-material change to the environment.
- None – no detectable change to the environment.

Micrositing Allowance

5.20 It should be noted that positioning of the proposed towers (YG007R-YG009R) would be subject to a 50m Infrastructure Location Allowance (ILA). The assessment of impacts presented within this chapter has been based upon the layout indicated on Figure 5.1. Any micrositing changes would respect the constraints shown on Figure 5.1 such that no tower would be moved to the extent that impacts would be any greater than those reported in this chapter.

Policy Context

National Legislation and Policy

5.21 National planning policy and guidance on cultural heritage matters comprises Scottish Planning Policy (SPP) (Scottish Government 2014), Scottish Historic Environment Policy (SHEP) (Historic Scotland 2011), Our Place in Time. The Historic Environment Strategy for Scotland (Historic Scotland 2014) and Planning Advice Note 2/2011 (PAN 2) (Scottish Government 2011).

5.22 Scottish Planning Policy (SPP) 2014: This provides details of the Scottish Government's policy on nationally important land-use planning matters. SPP states that the planning policy system should: promote the care and protection of the designated and non-designated historic environment (including individual assets, related settings and the wider cultural landscape) and its contribution to sense of place, cultural identity, social well-being, economic growth, civic participation and lifelong learning, and enable positive change in the historic environment which is informed by a clear understanding of the importance of the heritage assets affected and ensure their future use. Change should be sensitively managed to avoid or minimise adverse impacts on the fabric and setting of the asset, and ensure that its special characteristics are protected, conserved or enhanced.

5.23 Scottish Historic Environment Policy 2011: This sets out the Scottish Ministers' policies for the historic environment, and provides policy direction for Historic Scotland and a framework that informs the day-to-day work of a range of organisations that have a role and interest in managing Scotland's historic environment. Through the implementation of SHEP, Scottish Ministers wish to achieve three outcomes for Scotland's historic environment: that the historic environment is cared for, protected and enhanced for the benefit of our own and future

generations; to secure greater economic benefits from the historic environment; and that the people of Scotland and visitors to Scotland value, understand and enjoy the historic environment.

5.24 Our Place in Time. The Historic Environment Strategy for Scotland (2014): This notes that 'Scotland's historic environment is intrinsic to our sense of place and strong cultural identity'. The vision of the policy is that 'Scotland's historic environment is understood and valued, cared for and protected, enjoyed and enhanced'. The strategy sets out three high level aims through which this shared vision will be realised: by investigating and recording our historic environment to continually develop our knowledge, understanding and interpretation of our past and how best to conserve, sustain and present it; by caring for and protecting the historic environment, ensuring that we can both enjoy and benefit from it and conserve and enhance it for the enjoyment and benefit of future generations, and by sharing and celebrating the richness and significance of our historic environment, enabling us to enjoy the fascinating and inspirational diversity of our heritage.

5.25 PAN 2/2011: This advises that, in determining planning applications, planning authorities should take into account the relative importance of archaeological sites (para 5). It also notes that in determining planning applications that may impact on archaeological features or their settings, planning authorities may on occasion have to balance the benefits of development against the importance of archaeological features (para 6). The desirability of preserving a monument (whether scheduled or not) is a material consideration and the objective should be to assure the protection and enhancement of monuments by preservation in situ, in an appropriate setting. When preservation in situ is not possible, recording and/or excavation followed by analysis and publication of the results may be an acceptable alternative (para 14).

Regional and Local Planning Policy Guidance

5.26 The regional and local planning policies are set out in: The SESplan Strategic Development Plan (2012-32) (adopted June 2013), Dunfermline & West Fife Local Plan (adopted Nov 2012) and the Proposed FIFEplan Local Development Plan (draft currently under consultation). A summary of policies relevant to this assessment are provided in Table 5.5.

Table 5.5: Regional and Local Planning Policies

Planning Policy	Policy No and details
The SESPlan Strategic Development Plan (2012-32)	**Policy 1B - The Spatial Strategy: Development Principles:** states that Local Development plans will ensure that there are no significant adverse impacts on the integrity of international and national built or cultural heritage sites in particular, World Heritage Sites, Scheduled Monuments, Listed Buildings, Royal Parks and Sites listed in the Inventory of Gardens and Designed Landscapes.
Dunfermline & West Local Plan (2012)	**Policy E7: Conservation Areas:** Development within a Conservation Area or affecting its setting shall preserve or enhance its character and be consistent with any relevant Conservation Area appraisal or management plan that may have been prepared for the area. The design, materials, scale and siting of any development shall be appropriate to the character of the Conservation Area and its setting. **Policy E8 - Listed Buildings:** Development affecting a listed building, or its setting, shall preserve the building, or its setting, or any features of special architectural or historic interest which it possesses. The layout, design, materials, scale, siting and use of any development shall be appropriate to the character and appearance of the listed building and its setting.

	Policy E11 – Historic Gardens and Designed Landscapes: Development affecting Historic Gardens and Designed Landscapes shall protect, preserve, and enhance such places and shall not impact adversely upon their character, upon important views to, from or within them, or upon the site or setting of component features which contribute to their value. **Policy E12 – Ancient Monuments and Archaeological Sites**: Scheduled Monuments and other identified nationally important archaeological resources shall be preserved in situ, and with an appropriate setting. Developments that have an adverse effect on scheduled monuments or the integrity of their setting shall not be permitted unless there are exceptional circumstances. All other archaeological resources shall be preserved in situ wherever feasible. The significance of any impacts on archaeological resources and their settings will be weighed against other merits of the development proposals in the determination of planning applications. The developer may be requested to supply a report of an archaeological evaluation prior to determination of the planning application. Where the case for preservation does not prevail, the developer shall be required to make appropriate and satisfactory provision for archaeological excavation, recording, analysis, and publication in advance of development. Where compatible with their preservation, proposals for the enhancement, promotion and interpretation of ancient monuments and archaeological sites will be supported.
Proposed FIFEplan Local Development Plan (draft currently under consultation)	**Policy 14 – Built and Historic Environment:** Development which protects or enhances buildings or other built heritage of special architectural or historic interest will be supported. Proposals will not be supported where it is considered they will harm or damage: • The character or special appearance of conservation areas, and its setting having regard to Conservation Area Appraisals and associated management plans. • Sites recorded in the Inventory Historic Gardens and Designed Landscapes and other non-inventory gardens and designed landscapes of cultural and historic value. • Listed Buildings or their setting, including structures or features of special architectural or historic interest. • Scheduled Monuments, including their setting. For all historic buildings and archaeological sites, whether statutorily protected or not, support will only be given if, allowing for any possible mitigating works, there is no adverse impact on the special architectural or historic interest of the building or character or appearance of the conservation area. All archaeological sites and deposits, whether statutorily protected or not, are considered to be of significance. Accordingly, development proposals which impact on archaeological sites will only be supported where: • Remains are preserved in-situ and in an appropriate setting; or • There is no reasonable alternative means of meeting the development need and the appropriate investigation, recording, and mitigation is proposed. In all the above, development proposals must be accompanied with the appropriate investigations. If unforeseen archaeological remains are discovered during development, the developer is required to notify Fife Council and to undertake the appropriate investigations.

Baseline Conditions

Current Baseline: Inner Study Area

5.27 Eighteen heritage assets have been identified within the Inner Study Area. The locations and extents of these assets are shown on Figure 5.1. Technical Appendix 3.1 provides detailed gazetteer information on the character and baseline condition of the features. Numbers in brackets and in bold in the following text refer to asset numbers provided on Figure 5.1 and listed in Technical Appendix 3.1.

5.28 There are no Scheduled Monuments within the Inner Study Area, and no part of the Inner Study Area lies within a Conservation Area, Inventory and Garden and Designed Landscape or Historic Battlefield.

5.29 One Listed Building, Category B Listed Inch House (**10**), stands within the Inner Study Area.

Prehistoric Features

5.30 Field work carried out in 1994 by GUARD (GUARD 1994) recorded the remains of five shell middens (**6**, **9**, **11**, **15** and **16**) within arable fields surrounding Inch House (**10**) and close to the old sea wall (**14**). None of the shell middens are visible today, and the areas in which they were previously recorded are now covered in grass or scrubland and the current condition of the middens is unknown. Numerous early prehistoric shell middens have been recorded along the raised shore-line of the Firth of Forth (for example GUARD 1996, Smith *et al* 2010, & Scottish Archaeological Research Framework (SCARF, available at http://www.scottishheritagehub.com: Section 4.2.2) and they provide organic-rich remains from the Mesolithic and Neolithic periods. Taking this into account, it is considered that if buried remains of the shell middens do still survive they are potentially of regional heritage importance.

Medieval or Later Settlement

5.31 One farmstead, Inch Farm (**7**), and a country house, Inch House (**10/16586**), are recorded on 18th and 19th century historic maps within the study area. Both properties are still occupied. The farmstead (**7**) is considered to be of local importance as it forms part of the historic character of the landscape surrounding Kincardine. Inch House (**10/16586**) was constructed in the mid-18th century and is first recorded on Roy's map of 1747-55. The house is a Category B Listed House and is of regional heritage importance.

5.32 Canmore records that linear cropmarks (**4**), possibly of cultivation remains, are visible on oblique aerial photographs dating from 1982. Examination of these aerial photographs indicates that several linear cropmarks criss-cross an arable field to the north of Inch House (**10**). No upstanding remains are visible today and it is unknown what the condition of survival of any buried remains might be.

Industrial Features

5.33 Nine roofed buildings, annotated 'Rope Works' (**2**), are depicted on the Ordnance Survey 1st Edition map (1866); by 1914 the works are annotated as 'disused'. Examination of subsequent Ordnance Survey maps (1947-1981) indicates that the former rope work buildings were later modified to form part of a concrete works in the late 1940s, which continued to be in use until the 1980s and then later demolished. The footprint of the rope/concrete works is still visible today, in an area of scrubland just north of Walker Street. The building remains are industrial

features that form part of the historic character of the landscape and are considered to be of local heritage importance.

5.34 Six former mineshafts (airshafts) (**3a-f**) are recorded on the Ordnance Survey 1st Edition map (1866) and on subsequent map editions until 1968 in farmland to the southeast of Kincardine. All of the mineshafts have been backfilled; four of the shafts (**3a**, **3c**, **3d** and **3e**) are no longer visible in improved arable fields, one of the shafts (**3b**) has been capped and is still visible as a slight grass-covered mound on the edge of an arable field, and one shaft (**3f**) has been in-filled with hardcore to form a level surface. The former mineshafts are minor coal mining features of the past and are considered to be of lesser heritage importance.

5.35 Two additional possible shafts (**18a** and **b**) are recorded by the HER within a field just south of Kincardine cemetery. The faint outlines of these shafts are visible on oblique aerial photographs dating from 1982. No upstanding remains are visible today and it is unknown what the condition of survival of any buried remains might be.

Coastal Features

5.36 The old seawall (**14**) is still visible running along the southern side of Walker Street and forms a retaining wall for the modern public road. It has been crossed by the recently constructed A985 just west of Inch House. The sea wall is well preserved and of local heritage importance.

Miscellaneous

5.37 Canmore records the presence of a quarry (**1**) within arable fields just south of Kincardine. No details are provided on the exact location of the quarry. No quarry is depicted on the Ordnance Survey maps or visible on vertical aerial photographs at the location recorded by Canmore. The area now forms part of a football ground and improved arable field and there is nothing on the ground to suggest that the quarry was ever at this location.

5.38 Two 'stones' (**5** and **8**) are recorded on the Ordnance Survey 2nd Edition map (1895). The first 'stone' (**5**) no longer survives and its site is considered to be of lesser heritage importance. The second 'stone' (**8**) stands at the edge of a ploughed field; it appears to be a 19th century memorial and is considered to be of local heritage importance.

5.39 The remains of three drains (**12**) were uncovered just north of Inch House (**10**) during archaeological investigations prior to the construction of the A985 public road (McLellan 2003). The drains ran away from the house and were interpreted as possibly forming a small late-18th or early-19th century drainage system. The area in which the drains were recorded is now crossed by the A985 public road and the drains are considered to be of lesser heritage importance.

5.40 The HER records that a dump of debris (**13**), including sandstone blocks and post-medieval pottery, was recorded in a field just west of Inch House (GUARD 1994). Nothing is now visible of the dump and its current condition is unknown; if buried remains do still survive they are possibly of local heritage importance.

5.41 Canmore records that a cropmark (**17**) visible on aerial photographs on the southern edge of Kincardine-on-Forth has been interpreted by Welsh as the possible remains of a Roman fortlet. Information provided by the Fife HER (S.Liscoe HER Officer, pers comm.) notes that the area

in which the 'cropmarks' are located is actually 19th century made-up ground and the features noted by Welsh are more likely to be the result of variations in the character of the deposited material within the reclaimed land. The site is now crossed by the A985 public road and is of lesser heritage importance.

Overall Archaeological Potential of the Proposed Development Area

5.42 Examination of historic maps (for example Roy's map 1747-55) indicates that land to the North of Inch House (**10**) has been under cultivation since at least the mid-18th century and the area continues to be used as arable farmland today. The foreshore area to the south of Inch House and the old sea wall (**14**) was reclaimed during the 19th century and now forms a number of flat arable fields.

5.43 Previous work carried out in the Inner Study Area (GUARD 1994) has recorded a number of potential early prehistoric shell middens, present around Inch House and along the former foreshore of the Firth of Forth. Other such shell middens have been recorded on the raised shore-line of the Firth of Forth and provide well-preserved organic-rich early prehistoric deposits.

5.44 In the wider landscape the NMRS records that a prehistoric stone coffin and cremation urns were uncovered at Tulliallan Nurseries, approximately 0.8km to the northeast of the Proposed Development, in the mid-19th century, while a further prehistoric cist burial was also found here in the 1960s (NMRS no: NS98NW 10) and these finds indicate prehistoric activity in the immediate area surrounding the Proposed Development. The study area also lies close to a narrow point in the Firth of Forth and this may have been a natural crossing point since the prehistoric period. Further afield several prehistoric artefacts (i.e. flint artefacts, axeheads and arrowheads) and burial remains have been recorded along the raised shore-line of the Firth of Forth between Alloa and Cramond (http://pastmap.org.uk, RCAHMS 2014) suggesting that the area was extensively utilised / settled during the prehistoric period.

5.45 Taking this into consideration it is assessed that the potential of as yet undetected buried remains surviving within the Inner Study Area is high. Nevertheless, given the limited ground-breaking works required for the separate elements of the Proposed Development the probability of encountering hitherto undiscovered sites of archaeological significance during the course of construction work is considered to be moderate to low.

Current Baseline: Outer Study Area

5.46 The 'Bare-Earth' ZTV (Figure 5.2) indicates that there is predicted visibility of the Proposed Development from two Scheduled Monuments, one of which is also a Category B Listed Building, two Category A Listed Buildings, an additional 34 Category B Listed Buildings, 23 Category C Listed Buildings, one Inventory Garden and Designed Landscapes (GDL) and one Conservation Area (CA).

5.47 The 'Bare-Earth' ZTV takes no account of obstructions to Intervisibility resulting from existing forestry/woodland and intervening buildings. A 'With Screening' ZTV (Figure 5.3) has been produced for the Proposed Development, and uses the following assumptions: height of buildings 8m and height of forestry/woodland 15m (details provided in Chapter 3.0).

5.48 The 'With Screening' ZTV (Figure 5.3) indicates that views to the Proposed Development would be generally restricted from the surrounding landscape such that at ground level there would be a view of the Proposed Development from only one Category A Listed Building, Kincardine Bridge (5078), six Category B Listed Buildings, including Inch House (16586), three Category C Listed Buildings, one GDL and one CA.

5.49 Further details are provided in Technical Appendix 3.2 and Potential Operational Effects Section below.

Future Baseline

5.50 If the Proposed Development was not to proceed there would likely be no immediate change to the baseline condition of the heritage assets identified unless they were affected by future land use changes unrelated to the Proposed Development.

Potential Effects of Proposed Development

Proposed Development Details

5.51 The Proposed Development consists of the realignment of the Longannet to Kincardine 275kV OHL. Three new steel lattice towers (YG007R-YG009R) would be constructed to a maximum height of 50.2m and three existing steel lattice towers (YG007-YG009) would be dismantled. At each tower an approximate area of 30m by 30m is required for construction works and a 5m wide tract under the new OHL route is required for conductor stringing. The dismantled towers would be cut up into sections and the foundations reduced to 1m below ground level, the remaining foundations left in situ and the ground level reinstated. Details of the Proposed Development are provided in Chapter 2.

Potential Construction Effects

5.52 No recorded cultural heritage assets would be affected directly by the Proposed Development. A 30m by 30m working area is proposed at each tower location (proposed and existing) and works within these areas could potentially affect heritage assets within close vicinity to the working areas, i.e. Tower YG009 which lies in close proximity to former rope/concrete works (**2**). It has been established by the assessment that there is a high potential for further archaeological discoveries within the Inner Study Area. However, the likelihood of any such remains being present within the limited areas of ground to be disturbed by the Proposed Development is considered to be moderate to low.

Potential Operational Effects

5.53 The assessment of operational (indirect) effects in relation to the relevant designated assets adopted the following approach:

- Consideration of the sensitivity of the setting of each asset;
- Identification of how the presence of the Proposed Development would change the setting (magnitude of impact); and
- Appraisal of significance of effect.

5.54 Technical Appendix 3.0 provides summary information on the baseline character and key components of the setting of each relevant designated heritage asset, the magnitude of predicted impact and the significance of predicted effect, using the methods set out above.

5.55 The majority of the heritage assets identified within the Outer Study Area are located within the built-up environment of Kincardine-on-Forth. Analysis of the 'With Screening' ZTV indicates that the majority of these assets are predicted to have no visibility of the Proposed Development (Figure 5.3) and there would be no effect on their settings. Where visibility is predicted within Kincardine-on-Forth the 'With Screening' ZTV indicates that only glimpses of the Proposed Development would be seen viewed principally along town streets located on the southeast side of Kincardine-on-Forth. Overall, visibility of the Proposed Development from the Kincardine-on-Forth Conservation Area and from heritage assets located within the town would be limited by intervening buildings and would not significantly affect the enclosed urban setting of the Conservation Area. The realignment of the OHL would result in the line being positioned slightly further from the south-eastern edge of Kincardine-on-Forth removing the line from the foreground in views of the town, from the east whilst travelling along the A985 public road, resulting in a slight beneficial effect on certain buildings (e.g. **16598**, **16609**).

5.56 A slight beneficial effect is also predicted for one building, Category B Listed Burnbrae House (**16582**), which stands on the northeastern edge of Kincardine-on-Forth, on a south facing slope. Views from the front elevation (south elevation) of the house look out over the outskirts of the town towards the Fife coastline and taking in the Firth of Forth. Currently the existing OHL is visible crossing this view, however, the proposed OHL would be positioned further from the building and at a slightly lower elevation than the existing OHL. As a result the line would not be so prominent in views from the house from its principal facade.

5.57 The 'With Screening' ZTV also indicates that intervening topography and woodland would also limit views of the Proposed Development from Tulliallan GDL and the listed buildings that stand within the GDL, including Category A Listed Tulliallan Castle (**1685**). Limited views of the Proposed Development are predicted only from small areas within the eastern edge of the GDL from farmland areas that make up part of the GDL policies and the presence of the Proposed Development would not significantly affect the setting of the GDL.

5.58 There would be views of the Proposed Development from Category A Listed Kincardine Bridge (**50078**) and Category B Listed Lurg Farm dovecot (**17131**). The dovecot (**17131**) stands in the farmyard for Lurg Farm and has a localised farm setting; distant views from this asset are not components of its setting and the presence of the Proposed Development in the surrounding farmland would not affect the setting of the building. Views from Kincardine Bridge (**50078**) are principally concentrated along the Firth of Forth estuary and to the northeast and southwest whilst travelling across the bridge. Several OHLs cross the surrounding farmland and these are visible together with Longannet Power Station on the foreshore in views to the southeast. The realignment of the Proposed Development would result in only a slight, barely detectable change to surrounding landscape and would not significantly affect the setting of the bridge.

5.59 One heritage asset, Category B Listed Inch House (**16586**) lies just south of the existing OHL and would be in close proximity to the proposed new OHL. The potential effect of the Proposed Development on the setting of this asset is discussed in detail below in Table 5.6.

Table 5.6: Appraisal of Effect on Setting of Inch House (16586)

Setting

This two-storey category B Listed house was built in the late-18th century. Today it stands within a small garden just north of Walker Street. The house is surrounded by trees and vegetation that form part of the gardens of the house. They not only provide a sheltered setting for the building, but also afford some screening of views, principally from ground level, out to the surrounding farmland from the house. The main elevations of the house are orientated southwest (front elevation) and northeast (rear elevation). Views from the front elevation of the house look out over improved arable fields, coastal embankment and railway, and the Firth of Forth. Views out from the rear of the house are now partially screened by the intervening embankment of the recently constructed A985 public road. The A985 carriageway runs through farmland immediately north of the house and has modified the original farmland setting of the house. The house itself, surrounded by trees, is visible from surrounding farmland and whilst travelling along Walker Street. The existing OHL towers (YG007-009) that run past the northern side of the house are likely to be visible in views to the surrounding farmland from the upper floors of the house; these towers are also visible beyond the house, with Tower YG008 seen directly behind the house, in views from the south along the Firth of Forth foreshore.

Planning consent was granted in 2007/ 2010 for the construction of a housing development and business park in existing fields surrounding Inch House – the fields to the north of Inch House are allocated for the housing development and the fields to the east of Inch House area allocated for the business park. This future development would result in a change to the nature of the setting of Inch House.

Changes

The proposed OHL diversion would be aligned past Inch House on its southwest side and would be visible in views from the front elevation of the house.

The closest proposed tower (Tower YG008R) would be c. 125m away from the house, off-set to the west, and out of direct line of sight in the principal vista from the house: that to the southwest and the Firth of Forth. Although the tower would be visible on the periphery of the view in this southward vista, a copse of trees in the garden immediately to the southwest of the house would largely screen the tower (particularly the lower section) and the tower would not be eye-catching when looking directly out towards the Firth of Forth. The OHL cables would be visible, crossing the view, and, at c.80m distant it is likely that they would be visible against the sky in views taking in the Firth of Forth. However, they would be at such a height that they would not significantly affect views of the Forth estuary landscape; especially from ground level. In views of the house, from both the foreshore (to the south) and from the A977 and surrounding roads (to the north), the proposed new tower (YG008R) would be visible: although, it would be seen offset from the house and would not affect an ability to appreciate views of the house. Planning consent has also been granted for housing and a business park development in the fields to the north and east of Inch House and the proposed repositioned towers would be seen in the same context as this other modern development when viewed from the surrounding area.

Although, the proposed new towers would constitute new elements in the farmland to the south of Inch House they would not impede views of the house and would not lie in direct line of sight in the principal vista from the building's front elevation.

Magnitude of Effect – It is assessed that the construction and operation of the Proposed Development would cause a **low** magnitude change to the baseline setting of the Listed Building, resulting in a slight detectable, but non- material, alteration to the setting of the house.

Likely Significance of Effect –**Not Significant**: the presence of the Proposed Development would result in a minor, adverse, change to the setting of Inch House.

Mitigation

Mitigation by Design

5.60 The finalised layout of the Proposed Development is designed to minimise potential effects on the setting of Category B Listed Inch House (**16586**), by positioning Tower YG008R as far away from the main elevation of the house as possible.

Mitigation During Construction

5.61 Except where otherwise stated all mitigation works presented in the following paragraphs would take place prior to or during the removal of the existing OHL towers and construction of the proposed new towers. All works would be conducted by a professional archaeological organisation, and the scope of works would be detailed in a Written Scheme of Investigation (WSI). The WSI would be subject to the approval of Fife Council.

Preservation in Situ

5.62 Construction and ground-breaking works for the Proposed Development would seek to avoid known upstanding cultural heritage assets (Figure 5.1). Procedures would include the exclusion of heritage assets from working areas, and avoidance of assets when planning access routes.

5.63 Where assets survive as upstanding features and lie within close proximity to development components they would be avoided as far as is practicable in order to ensure their preservation in situ. Sites would be visibly marked out to prevent accidental damage occurring to the remains during construction activities in the vicinity. Existing towers to be dismantled will be felled away from heritage assets. Sites that would be marked-out if necessary include:

- The remains of former rope/concrete works (**2**), which lies in close proximity to existing Tower YG009.

Archaeological Investigations

5.64 Any requirement for archaeological mitigation, through pre-construction trial trench evaluation or construction phase monitoring of works through watching briefs, would be carried out in accordance with a Condition of Consent. The scope and timing of any such works would be agreed in consultation with Fife Council.

Excavation/Post-Excavation

5.65 If significant archaeological discoveries were made during any archaeological evaluation or watching brief, and if preservation in situ of any such remains were not possible, provision would be made for their excavation and recording to a strategy and specification to be agreed with Fife Council. This provision would be including the consequent production of a written report on the findings, with post-excavation analyses and publication of the results of the works, where appropriate.

Construction Guidelines

5.66 Written guidelines would be issued on use by all construction contractors outlining the need to avoid causing unnecessary damage to known sites. The guidelines, to be contained within the Construction Environment Management Plan (CEMP), would contain arrangements for calling upon retained professional support in the event of the buried remains of potential archaeological interest (such as building remains, human remains, artefacts, etc) being

discovered in areas not subject to archaeological monitoring. The guidance would make clear the legal responsibilities placed upon those who disturb artefacts or human remains.

Mitigation During Operation

5.67 No mitigation measures are proposed in relation to the likely operational effects.

Residual Effects

Residual Construction Effects

5.68 No recorded cultural heritage assets would be affected directly by the Proposed Development and no residual effects are predicted.

Residual Operational Effects

5.69 All impacts arising from the operation of the Proposed Development are identified as of no more than **minor** significance. There is no appropriate mitigation to offset the indirect effects that the Proposed Development would have on the setting of heritage assets within the wider landscape and the residual effect would be the same as the significance of the predicted impact.

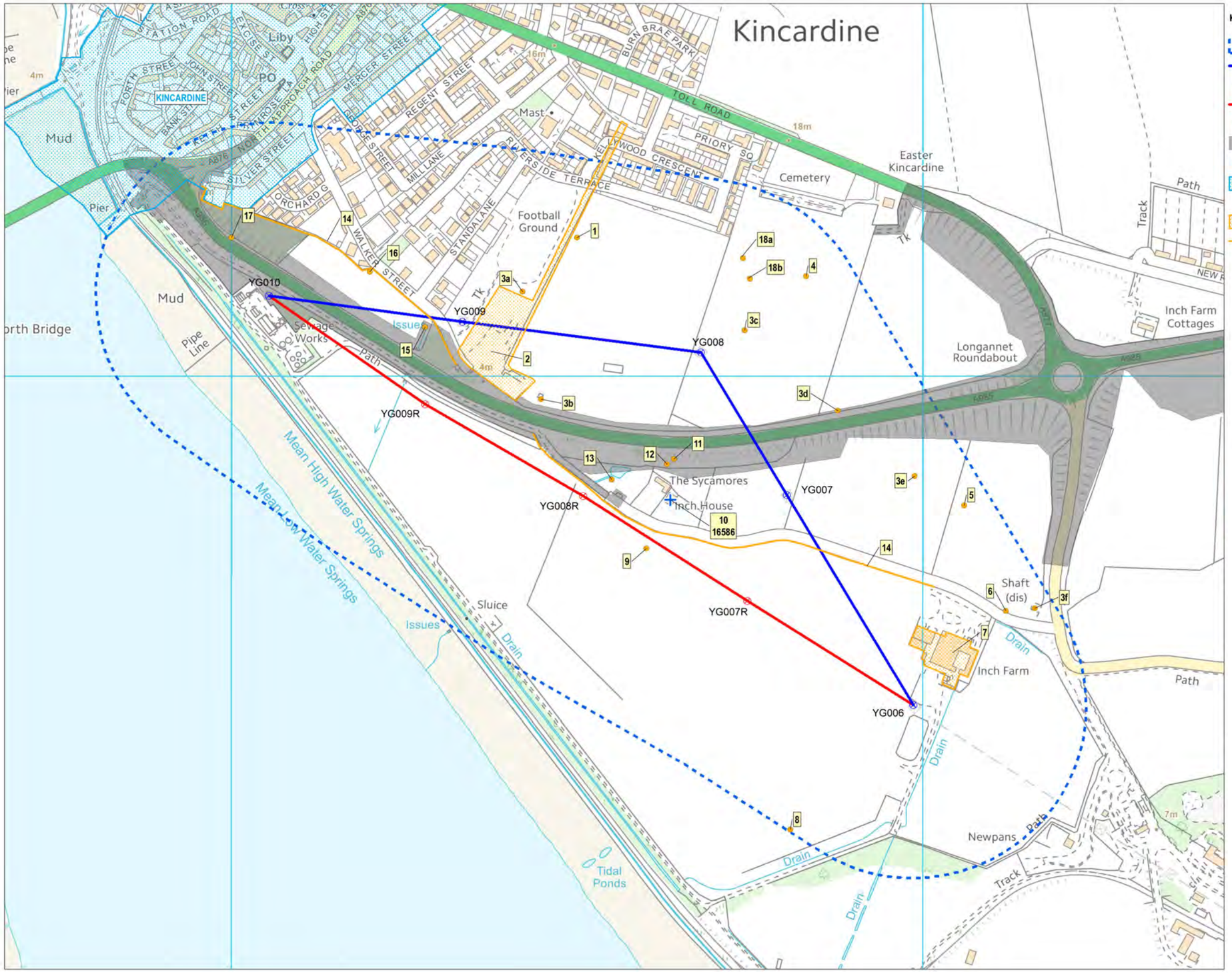


figure 5.1

Title:

Heritage Assets identified within the Inner Study Area

Project:

Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: Bar Scale

Date: Mar 2015

Prepared by CFA Archaeology for SPEN

Environmental Designworks
Landscape Architecture + Planning

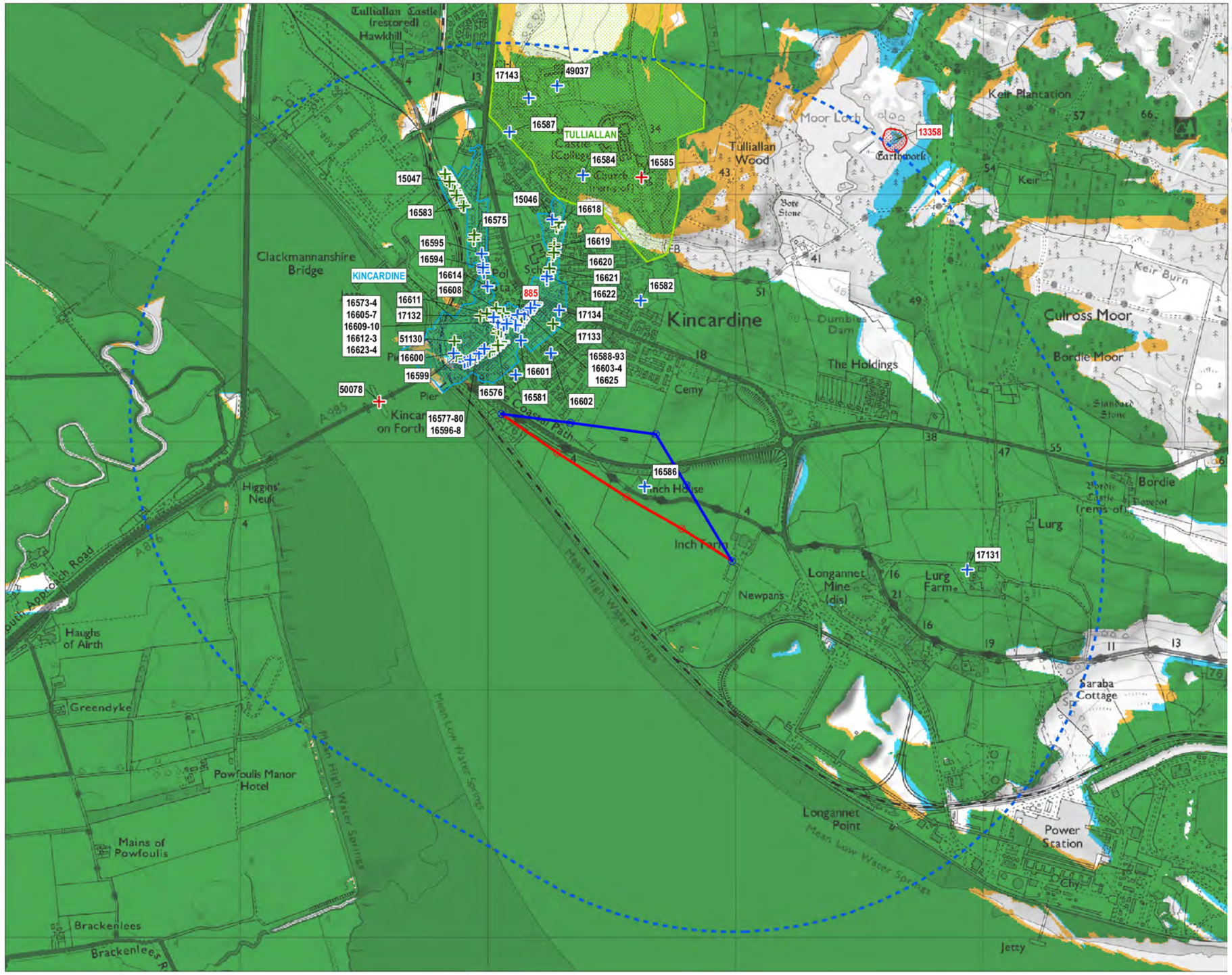


figure 5.2

Title:

Outer Study Area Heritage Assets & Bare Earth ZTV

Project:

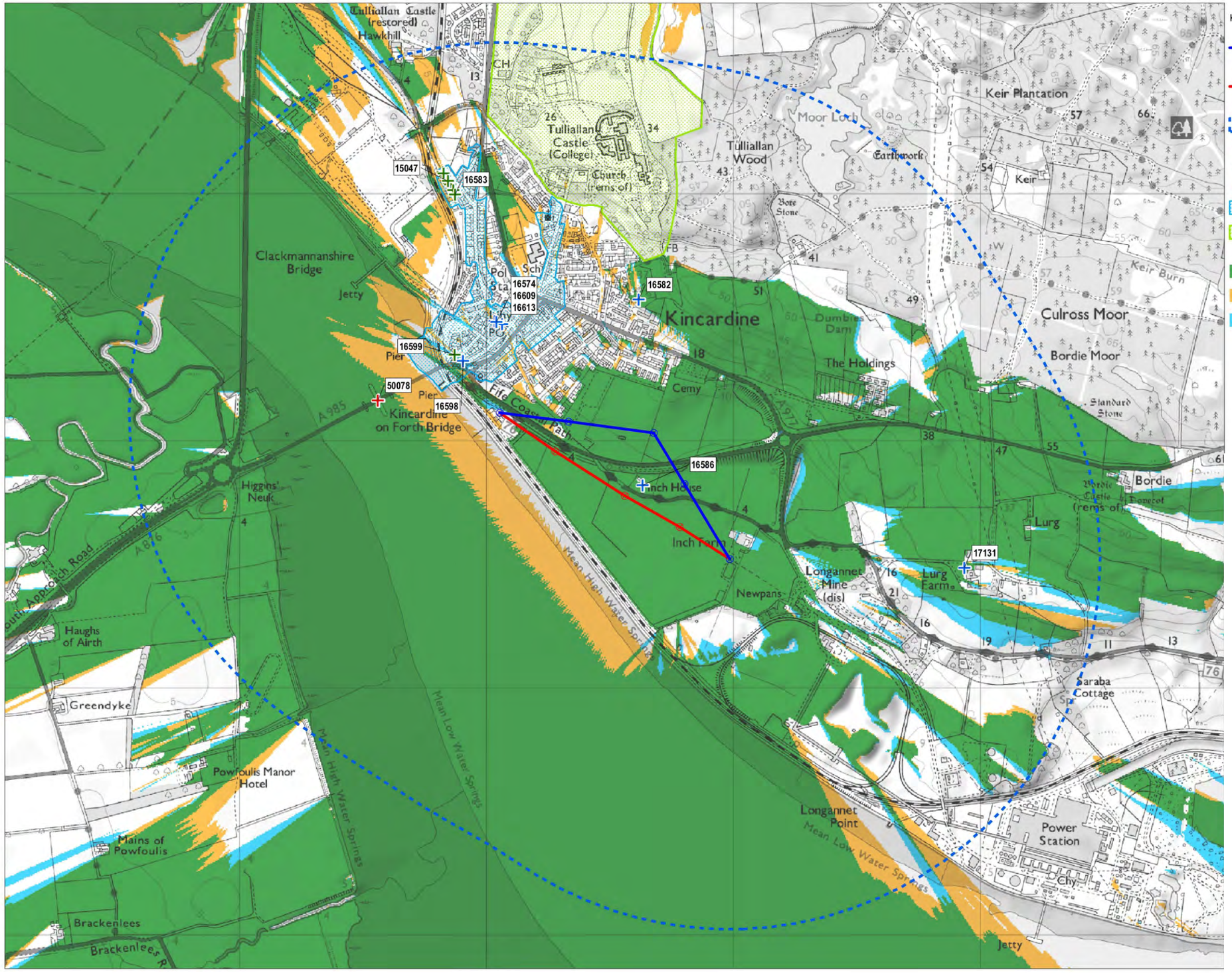
Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: Bar Scale

Date: Jan 2015

Prepared by CFA Archaeology for SPEN

Environmental Designworks
Landscape Architecture + Planning



Key:

- Existing OHL
- Existing Tower Location
- Proposed OHL
- Proposed Tower Location
- Outer Study Area
- Listed Building Category A
- Listed Building Category B
- Listed Building Category C
- Conservation Area
- Garden and Designed Landscape
- Zone of Theoretical Visibility of Existing & Proposed Towers
- ZTV Difference - Proposed Towers Only
- ZTV Difference - Existing Towers Only

N

0m 500m 1km

figure 5.3

Title:

Outer Study Area Heritage Assets & With Screening ZTV

Project:

Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: Bar Scale

Date: Jan 2015

Prepared by CFA Archaeology for SPEN

Environmental Designworks
Landscape Architecture + Planning

Introduction

6.1 This chapter presents the baseline hydrological conditions along the Longannet to Kincardine overhead line diversion, and a qualitative assessment of the changes to the baseline that the construction/installation and subsequent operation of the overhead line are predicted to have.

Scope and Methodology

Geographical Scope

6.2 The geographical scope of this assessment covers the proposed overhead line diversion route between YG006 and YG010. It focuses on the locations of the three proposed tower bases (YG007 to YG009), and includes the land beneath the proposed route of the overhead line diversion (Figure 2.1).

6.3 Consideration has also been given to the land either side of the proposed overhead line diversion route, within a buffer of approximately 50 m to the south of the line and up to the southern edge of Walker Street to the north (see Figure 6.1).

6.4 Where a surface water feature extends beyond this buffer, baseline information has been collected from outside the proposed route and buffer in order to understand the hydrology and complete the assessment.

Technical Scope

6.5 The technical scope of this chapter is to assess the potential effects of the proposed development on the quality or quantity of hydrological (surface water) features currently present within the geographical area of the assessment. This assessment is not a detailed flood risk assessment.

Temporal Scope

6.6 This assessment considers the construction phase of the proposed works (i.e. construction of the towers and overhead line) and the operational phase (including inspection and maintenance).

Assessment Methodology- Sources of Baseline Information

6.7 The assessment method includes the collation of baseline hydrological information from the following sources:

- Scottish Environment Protection Agency website (www.sepa.gov.uk, accessed 10 November 2014); and
- Ordnance Survey 1:25,000 scale mapping, Sheet 367 Dunfermline, Kirkcaldy & Glenrothes South, 2001.

6.8 A site walkover was also undertaken on 10 November 2014 in order to identify surface water features present along the proposed diversion route.

6.9 No additional consultation has been undertaken as part of this hydrological assessment.

Assessment Method and Significance Criteria

6.10 Using the baseline conditions identified from the sources above, and the description of the proposed development presented in Chapter 2, the potential changes upon the hydrological environment resulting from the proposed development are described. A qualitative assessment methodology is then used to assess the magnitude of the potential changes and the significance of the effects.

6.11 Two factors have been considered in using this approach: 1) the sensitivity of the receiving environment (in this case a watercourse, surface water body or surface water abstraction); and 2) the magnitude of the change should it occur. This approach provides a mechanism for identifying the areas where mitigation measures are required, and for identifying mitigation measures appropriate to the significance of the effects presented to the hydrological environment by the proposed development.

6.12 The sensitivity classification of the receiving environment is defined in Table 6.1. Criteria for determining the magnitude of the change are provided in Table 6.2. The sensitivity of the receiving environment together with the magnitude of the change defines the significance of the effect, as identified within Table 6.3.

Table 6.1: Sensitivity Criteria for Receptor

Sensitivity	Definition
Very High	• International importance. • Receptor with a high quality and rarity, regional or national scale and limited potential for substitution/replacement.
High	• National importance. • Receptor with a high quality, local scale and limited potential for substitution / replacement; or • Receptor with a medium quality and rarity, regional or national scale and limited potential for substitution / replacement.
Medium	• Regional importance. • Receptor with a medium quality and rarity, local scale and limited potential for substitution / replacement; or • Receptor with a low quality and rarity, regional or national scale and limited potential for substitution / replacement.
Low	• Local importance. • Receptor with a low quality and rarity, local scale. • Environmental equilibrium is stable and is resilient to changes that are greater than natural fluctuations, without detriment to its present character.

Table 6.2: Magnitude of Change Criteria and Definitions

Magnitude	Criteria	Definition
Major	Results in loss of attribute.	Fundamental (long term or permanent) changes to hydrology and water quality, such as: • Wholesale changes to watercourse channel, route, hydrology or hydrodynamics. • Changes to site resulting in an increase in runoff with flood potential and also significant changes to erosion and sedimentation patterns. • Major changes to the water chemistry.

Moderate	Results in change in integrity of attribute or loss of part of attribute.	Material, but non-fundamental, and short to medium term changes to hydrology and water quality, such as: • Some fundamental changes to watercourses, hydrology or hydrodynamics. Changes to site resulting in an increase in runoff within system capacity. • Moderate changes to erosion and sedimentation patterns. • Moderate changes to the water chemistry of surface runoff and groundwater.
Minor	Results in minor change to attribute.	Detectable, but non-material, and transitory changes to hydrology and water quality, such as: • Minor or slight changes to the watercourse, hydrology or hydrodynamics. • Changes to site resulting in slight increase in runoff. • Minor changes to erosion and sedimentation patterns. • Minor changes to the water chemistry.
Negligible	Results in a change to the attribute but of insufficient magnitude to affect the use/integrity.	No perceptible changes to hydrology and water quality, such as: • No alteration or very minor changes with no impact to watercourses, hydrology, hydrodynamics, erosion and sedimentation patterns. • No pollution or change in surface water chemistry.

Table 6.3: Significance of Effect

Magnitude of Change	Sensitivity of Receptor			
	Very High	High	Medium	Low
Major	**Major**	**Major**	**Moderate**	Minor
Moderate	**Moderate**	**Moderate**	**Moderate**	Minor
Minor	Minor	Minor	Minor	None
Negligible	None	None	None	None

6.13 The relative significance of effects presented in Table 6.3 can be described in the following terms:
Major - a fundamental change to the environment.
Moderate - a material but non-fundamental change to the environment.
Minor - a detectable but non-material change to the environment.
None - no detectable change to the environment.

6.14 Effects of 'major' and 'moderate' significance (bold in Table 6.3) are considered to be 'significant' in terms of the EIA Regulations.

Policy Context

6.15 The main legislation, policies and guidance that apply to the protection of the surface water environment, and are considered as part of this assessment, are:

6.16

- The European Water Framework Directive (2000/60/EC) and the Water Environment (Controlled Activities) (Scotland) Regulations 2011, which present controls over water activities, in order to protect, improve and promote sustainable use of the water environment. Any abstractions from, discharges to, impounding of, or engineering by,

surface water are regulated under these in order to protect the quality and quantity of surface water.

- The Water Environment (Register of Protected Areas) (Scotland) Regulations 2004, which provides details of protected water bodies that need to be managed in order to achieve the objectives required by the Water Framework Directive. These include areas designated for the protection of habitats and species (in this case those that might be dependent on the surface water conditions in the proposed development area), drinking water protected areas, and nutrient sensitive areas.
- Scottish Planning Policy 2014, which address managing flood risk and drainage.
- Planning Advice Note (PAN) 69 - Planning and Building Standards Advice on Flooding.
- Dunfermline and West Fife Local Plan, 2012 - Policy I4: Flooding and Water Quality.

Baseline Conditions

Site Walkover Observations

6.17 The proposed positions of the new tower bases are located within agricultural land between Walker Street to the north and northeast, and the Firth of Forth to the south and west. The buildings of Inch Farm are located to the east, beyond which is the Longannet Power Station. There is a sewage treatment works and Kincardine town to the northwest (Figure 6.1).

6.18 The fields are flat and are low-lying at approximately at sea level. The fields are currently set-aside or planted for arable crops. The fields are separated from the Firth of Forth to the south by a narrow strip of land along which runs the railway line to the Longannet Power Station and a track. The railway line is raised up on an embankment approximately 2 m higher than the fields.

6.19 The only surface water features located within the assessment area are man-made linear drainage features. One feature (Figure 6.1, photographs B and C) is aligned almost north-south and is located just to the west of proposed tower location YG9R. This drainage channel appears to come from the north outside the development area and enters the development area though a culvert (Figure 6.1, photograph B). The feature is approximately 1.5 m deep and 1.5 m wide. At the time of the walkover, water was present in the bottom of the channel to a depth of approximately 0.15 cm to 0.20 cm and was flowing to the south.

6.20 At its southern end, the drainage ditch joins another man-made linear drainage feature, which is northwest-southeast aligned (Figure 6.1, photographs D and E). This channel comes from outside the development to the northwest and runs parallel with the railway and coast. The channel is positioned on the land-side of the railway embankment. The feature is approximately 1.0 m deep and 1.5 m wide. At the time of the walkover, water was present in the bottom of the channel to a depth of approximately 0.10 cm to 0.20 cm. Upstream of the convergence with the drainage channel coming in from the north, the water did not appear to be flowing and the channel was partially overgrown. Downstream of the convergence, the channel banks were clearer and water was flowing to the southeast. The discharge point of this channel could not be confirmed during the walkover, but is assumed to be the Firth of Forth.

6.21 There are small areas of standing water in small ruts and depressions resulting from rainfall that had not yet infiltrated to ground (see example in Figure 6.1, photograph A). No other water features were identified during the walkover. There are no surface water features between Walker Street and any of the proposed tower locations. There are no surface water features located at the proposed tower locations (Figure 6.1, photographs F, G and H).

6.22 There were no surface water abstractions or discharges observed along the watercourses during the walkover. It is unlikely that the water courses identified within the development area are used for water supply.

Published Information Summary

6.23 The published SEPA flood map (published 15 January 2014) illustrates that the site is located within an area that has high likelihood of flooding from the coast. Such flooding is likely to originate from high water conditions and surges in the estuary of the Forth. There are areas of low to high likelihood of flooding from surface water mapped along the southern sections of the field by the main drainage channel that runs from northwest to southeast parallel with the railway and coast. The maps indicate that there is no likelihood of flooding from rivers.

6.24 The development area is not protected from flooding by a formal flood prevention scheme.

6.25 No information is available on the existing quality of the surface water within the drainage channels.

6.26 There are no international or national designations that apply to the development area that are associated with the surface water environment or species that might be dependent on the surface water within the development area.

6.27 Parts of the Firth of Forth into which the drainage channels are assumed to discharge are internationally designated Special Protection Areas and Ramsar sites, and nationally designated Sites of Special Scientific Interest. The designations relate to a variety of geological and geomorphological features, coastal and terrestrial habitats, vascular plants, invertebrates, breeding, passage and wintering birds.

6.28 The development area is not located in a surface water drinking water protected area as presented on the SEPA Drinking Water Protected Areas (Surface Water) map (2013).

6.29 The development area is not located within a nitrate vulnerable zone as presented on the SEPA map of Water Framework Directive Protected Area Register of Nutrient Sensitive Areas (2011).

Identification of Receptors and Sensitivity

6.30 There are few surface water features in the main study area. The drainage ditch that runs north to south near proposed tower YG9R is the main receptor considered in this assessment. The second drainage ditch that runs along the southeastern boundary of the fields is considered to be secondary surface water receptor.

6.31 Based on the available baseline information, the sensitivity of all surface water features identified is **low**.

6.32 The designations assigned to the Firth of Forth relate to flora and fauna, which are considered in the Ecology Assessment (Chapter 4). However, these may be dependent on the quality of water in the Firth into which the drainage channels discharge so the Firth is considered to be a secondary receptor with **very high** sensitivity.

6.33 There are no known changes to the baseline hydrological environment anticipated that may result in the future baseline or receptors being different from the current baseline conditions.

Potential Effects of Proposed Development

Construction Effects

6.34 Based on the project description presented in Chapter 2, the activities that will take place during construction that have the potential to change surface water quality are the presence of vehicles on site, and the excavation and construction of the tower bases. There are no surface water abstractions or impoundments planned as part of the work that might change surface water flows. No construction will take place within the drainage ditches or that will change the morphology of the surface water features. There is no proposed construction of a watercourse crossing, and no proposals to lay cables beneath the watercourses.

6.35 Possible changes are limited to run-off from the construction area, which has the potential to affect the quality of water in the drainage ditches (including unintentional leaks of hydrocarbons from machinery and increased suspended solids from ground works), and to the Firth of Forth into which it is assumed the channel discharges. The Construction Environmental Management Plan (CEMP) will be followed to control the potential environmental effects of construction; therefore, any changes to surface water receptors would be negligible, resulting in a significance of effects of '**none'** and no additional mitigation measures are considered to be necessary.

6.36 There will also be a temporary compound and a storage area for use during the construction. The location of these will be agreed with the landowner and will be covered by the CEMP with the aim of avoiding or reducing any potential environmental effects from the storage of machinery and materials. Therefore, any change to surface water receptors would be negligible, resulting in a significance of effects of '**none'** and no additional mitigation measures are considered to be necessary.

6.37 There are no predicted changes during construction that would affect the function of the drainage ditches to discharge flood water or that would alter the morphology of the drainage ditches. Therefore, the change to drainage will be negligible, resulting in a significance of effects of '**none'** and no additional mitigation measures are considered to be necessary.

6.38 No discharges to surface water are proposed. If any are required, permission must be gained through the Controlled Activities Regulations (2011), which are used to regulate discharges to make sure reasonable steps are taken to ensure that the discharge will not result in pollution of the water environment or erosion of banks or beds of the receiving watercourse.

Operational (Post-construction) Effects

6.39 During operation, there are no predicted changes to the quality or quantity of water in the surface watercourses as a result of the inspection or maintenance of the towers or lines. However, the proposed towers and tower bases would be located on land that is at risk of flooding from the coast.

6.40 The presence of the proposed towers and tower bases, and their inspection and maintenance, would not change the drainage channels and there would be no change in the access to the watercourses to enable management of drainage in the coastal flood zone. Therefore, the change to drainage will be negligible, resulting in a significance of effects of '**none'** and no additional mitigation measures are considered to be necessary.

6.41 The proposed development will result in an immeasurable change in flood plain storage volume due to the presence of the tower bases. This change is unlikely to change the ability of the floodplain to store and convey flood water. Therefore, the change to flood storage will be negligible, resulting in a significance of effects of '**none'** and no additional mitigation measures are considered to be necessary.

6.42 On the basis of the above, it is anticipated that a detailed flood risk appraisal and drainage impact assessment will not be required.

Residual and Cumulative Effects

6.43 There are no predicted significant hydrological effects as a result of the proposed development. There are no additional mitigation measures recommended to reduce the scale of the change and subsequent effect over and above those that will be included in the CEMP. Therefore, the residual effects are the same as those predicted in the initial assessment. A summary of the predicted changes and effects is presented in Table 6.4.

Table 6.4: Summary of Predicted Changes to the Hydrological Environment and Significance of Effects

Receptor (Sensitivity)	Potential Change	Mitigation	Magnitude of Change	Effect Significance
Construction Phase				
Drainage Channels (low)	Change in surface water quality from hydrocarbon or increased suspended solids	Follow controls on activities, storage, maintenance and water management in CEMP	Negligible	None
	Change in surface water flows/ability for channels to discharge flood water	None proposed	Negligible	None
	Change in channel morphology/ stability	None proposed	Negligible	None

Firth of Forth (very high)	Change in surface water quality from hydrocarbon or increased suspended solids	Follow controls on activities, storage, maintenance and water management in CEMP	Negligible	None
Operational Phase				
Drainage ditches	Change in drainage function	None proposed	Negligible	None
	Change in flood plain storage	None proposed	Negligible	None

6.44 The predicated effect of significance is **none** for all predicted changes, so the effects are not considered to be significant in terms of the EIA Regulations.

6.45 There is predicted to be no detectable change to the hydrological environment as a result of the proposed development so no assessment of cumulative effects is considered necessary.

LEGEND

- PHOTO LOCATION
- STUDY AREA
- EXISTING TOWER
- PROPOSED TOWER

figure 6.1

Title:

Hydrology Assessment Photo Locations

Project:

Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Scale: Bar Scale

Date: Jan 2015

Prepared by Golder Associates for SPEN

Environmental Designworks
Landscape Architecture + Planning

Proposed Development

7.1 The proposed overhead line diversion is located to the south east of the settlement of Kincardine on agricultural land. The proposed development is needed to allow consented housing and industrial buildings to be constructed on land to the north and south of the A985 Kincardine Bypass.

7.2 The diversion of 1.2km length of existing overhead line will require the construction of three new towers of similar design and height as the existing. On completion of the works the redundant overhead line and three towers will be dismantled and removed.

Planning Context

7.3 The proposed development is located to the south of the Kincardine Eastern Expansion Area identified in the adopted Dunfermline and West File Local Plan. Planning consent was granted for housing and a business park in 2007 and the associated legal agreement concluded in 2010. The relocation of the existing overhead line aligned through the proposed development is required as part of the planning consent.

Statutory Consent

7.4 The proposed overhead line diversion will be subject to an application for consent to Scottish Ministers under Section 37 of the Electricity Act 1989. The Ministers are required to consult with Fife Council within whose area the proposed application is located. Deemed planning consent will be sought from Fife Council under Section 57 (2) of the Town and Country Planning (Scotland) Act 1997.

Assessment Report

7.5 Based on the scale and characteristics of the proposed development and environmental context, those effects considered to be potentially significant have been assessed under the following headings: -

- **Landscape and Visual Amenity**
- **Cultural Heritage**
- **Ecology**
- **Hydrology**

7.6 The relative significance of effects has been assessed using the following terms: -
Major - a fundamental change to the environment.
Moderate - a material but non-fundamental change to the environment.
Minor - a detectable but non-material change to the environment.
None- no detectable change to the environment.

7.7 Any effect of the proposed development assessed as **"major"** or **"moderate"** (in terms of the criteria above) would be considered to be **"significant"** within the terms of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000. Any effect assessed as **"minor"** would not be considered as **"significant"** within the terms of these Regulations.

7.8 The Assessment Report provides a detailed description of the aspects of the environment likely to be affected by the development. A summary of the assessment findings is reviewed below.

Summary of Effect on Landscape and Visual Amenity

7.9 The sensitivity of the landscape features to change is considered to be low and the magnitude of change low during construction and operation. Overall, the significance of effect upon the immediate local landscape features is judged to be **minor adverse** during construction and operation.

7.10 The sensitivity of the landscape character to change is considered to be low and the magnitude of change low during construction. Overall, the significance of effect upon the landscape character is considered to be minor adverse during construction and **minor adverse to negligible** during operation of the proposed diversion.

7.11 The greatest change in the character of views and visual amenity will be restricted and localised, encompassing sensitive and less sensitive receptors to the immediate north, east, south and west. Views will also change to a lesser extent for more distant receptors located to the south of the Forth of Forth.

7.12 The most sensitive visual receptors with open views of the proposed development are afforded from: the Listed Building of Inch House and adjacent residential property located to the immediate north of the proposed diversion; section of the Fife Coastal Path; and properties forming the eastern edge of the settlement of Kincardine. The change in visual amenity for these receptors ranges from **moderate adverse** to **major beneficial**. For the majority of receptors in the wider surrounding area including the settlement of Kincardine and south of the Firth of Forth, the change in visual amenity will be either **minor adverse** or **minor beneficial**.

7.13 The overall significance of visual effect for sensitive receptors is considered to range from major beneficial to major adverse during construction of the proposed diversion, and an overall **minor adverse** effect during operation.

7.14 In summary, the overall significance of landscape and visual effects of the proposed development will on balance, be **minor adverse** and not considered significant in terms of the adopted criteria.

Summary of Effect on Ecology

7.15 The fields within which the new towers will be located, are dominated by arable farmland with some improved / semi-improved pasture. Field boundaries are either undefined or are marked by dry stone walls or recently planted hedgerows. Ecological survey work undertaken in the area found little evidence that protected species and habitats are present. Bat activity surveys identified small numbers of bats using parts of the site near existing buildings at Kincardine, Inch House and Inch Farm, but elsewhere no bat activity was recorded.

7.16 The Firth of Forth SSSI, SPA and Ramsar site is located on the southern side of the Firth of Forth, approximately 650m from the proposed overhead diversion route. This site is noted for the diverse range of waders and wildfowl that it supports. During surveys undertaken from October 2014 to January 2015, curlew was the most frequently recorded SPA species

observed in the fields near the proposed diversion, with a peak count of twenty three birds. Flocks of lapwings were recorded on two occasions, and a single redshank and a flock of pink footed geese was also recorded on one occasion. Overall, it was found that very few SPA species used the site.

7.17 Measures designed to mitigate ecological impacts have been identified and the Assessment concludes that the proposed diversion will be **minor** and not have a significant effect on the SPA, or any of the species for which it is noted, either alone or in combination with other plans or projects, and so the requirement for an "appropriate assessment" is not considered to be triggered.

7.18 The Ecology Assessment also notes that baseline conditions will change when the consented housing and industrial development is constructed. This will result in the introduction of new structures into the area.

Summary of Effect on Cultural Heritage

7.19 Eighteen cultural heritage assets have been identified within the Inner Study Area, including the remains of several potentially prehistoric shell middens, 19th-20th century mining activity and a former rope/concrete works. No certain direct impacts on upstanding remains are predicted. One site, the former remains of a rope/concrete works (2) lies in close proximity to development components. Mitigation to offset any potential effects on these assets has been provided.

7.20 Ground disturbance works associated with the construction of the proposed diversion could have an impact on hitherto unrecorded, buried archaeological remains present in affected areas. Taking into consideration the cultural heritage assets present in proximity to the study area it has been assessed that there is a high potential for as yet undetected buried remains to survive within the Inner Study Area. However, the likelihood of any such remains being present within the limited areas of ground to be disturbed by the proposed overhead line diversion is considered to be moderate to low.

7.21 All impacts arising from the operation of the proposed overhead line diversion are identified as of no more than **minor** significance. There is no appropriate mitigation to offset the indirect effects that the proposed diversion would have on the setting of heritage assets within the wider landscape and the residual effect would be the same as the significance of the predicted impact.

Summary of Effect on Hydrology

7.22 The activities that will take place during construction of the proposed overhead line diversion that have the potential to change surface water quality are the presence of vehicles on site, and the excavation and construction of the tower bases. The Construction Environmental Management Plan (CEMP) will be followed to control the potential environmental effects of construction; therefore, any changes to surface water receptors and drainage will be negligible, resulting in a significance of effects of **none**.

7.23 During operation, there are no predicted changes to the quality or quantity of water in the surface watercourses as a result of the inspection or maintenance of the towers or lines.

However, the proposed towers and tower bases will be located on land that is at risk of flooding from the coast.

7.24 The presence of the proposed towers and tower bases, and their inspection and maintenance, will not change the drainage channels and there will be no change in the access to the watercourses to enable management of drainage in the coastal flood zone. Therefore, the change to drainage will be negligible, resulting in a significance of effects of **none**.

7.25 The proposed development will result in an immeasurable change in flood plain storage volume due to the presence of the tower bases. This change is unlikely to change the ability of the floodplain to store and convey flood water. Therefore, the change to flood storage will be negligible, resulting in a significance of effects of **none.**

7.26 In summary, **no** significant hydrological effects are predicted as a result of the proposed overhead line diversion. There are no additional mitigation measures recommended to reduce the scale of the change and subsequent effect over and above those that will be included in the CEMP.

Mitigation

7.27 Mitigation measures for the proposed development are detailed within the Assessment Report and have been taken into account during the assessment process.

7.28 In conjunction with the Construction, Health, Safety and Welfare requirements, which are imposed on all ScottishPower contractors, SP Transmission shall prepare a Construction Environmental Management Plan (CEMP) to control all potential environmental effects during the construction stage.

Conclusion

7.29 The Assessment Report provides a detailed review of how the environment is expected to change as a consequence of the proposed overhead line diversion. This process has identified no significant environmental effects and suitable mitigation measures have been identified which will be implemented and enforced.

References

LVIA
ASH (1996) Central Region Landscape Assessment Report. No 123.

ASH (1997) Clackmannanshire Landscape Character Assessment. No 96.

Clackmannanshire Council (2002) Clackmannanshire and Stirling Structure Plan.

Clackmannanshire Council (2011) Clackmannanshire Local Plan as altered.

Clackmannanshire Council (2013) Proposed Clackmannanshire Local Development Plan.

Commission of the European Communities (1997) Directive 97/11EC Amending Directive 85/337/EEC.

Council of Europe (2000)European Landscape Convention. Committee of Ministers of the Council of Europe 718th Meeting. Open for Signature at the Landscape Protection Conference 20/10/00. Treaty ratified 2004.

European Water Framework Directive (2000/60/EC).

Countryside Commission (1993) Landscape Assessment Guidance (CCP423).

David Tydesley Associates (1998) Fife Landscape Character Assessment No 113.

David Tydesley Associates (1998) Central Region Landscape Character Assessment Supplement Stirling to Grangemouth Landscape Character Assessment No 124.

Falkirk Council (2007) Falkirk Council Structure Plan.

Falkirk Council (2010) Falkirk Council Local Plan.

Falkirk Council (2013) Proposed Local Development Plan.

Fife Council (2009) Fife Structure Plan 2006-2026.

Fife Council (2012) Dunfermline and West Fife Local Plan 2012.

Fife Council (2014) Draft Proposed FIFEplan Local Development Plan.

Historic Scotland (1987-) Inventory of Gardens and Designed Landscapes.

Land Use Consultants (1991) Landscape Assessment Principles and Practice.

Landscape Institute with the Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, Third Edition, Routeledge, London.

Landscape Institute (2011) Photography and Photomontage in LVIA, Advice Note 01/11, London, LI

South East Scotland Development Plan Authority (2013) South East Scotland (SES) Plan.

Maps
British Geological Survey () Solid Edition
MLURI (1986) Land Capability for Agriculture
MISR (1982) Soil Survey of Scotland
OS Explorer
OS Landranger

Legislation and Planning Guidance
SPP Planning System (2014)
PAN 60: Planning for Natural Heritage
PAN 69: Planning and Building Standards Advice on Flooding

Electricity Act 1989 (as amended by the Utilities Act 2000)
Electricity Works (Environmental Impact Assessment)(Scotland) Regulations 2000
Town and Country Planning (Scotland) Act 1997
Water Environment (Register of Protected Areas) (Scotland) Regulations 2004
Water Environment (Controlled Activities) (Scotland) Regulations 2011

Ecology Assessment

Creswell, P., Harris, S. & Jefferies, D.J. (1990) The History, Distribution, Status and Habitat Requirements of the Badger in Britain. NCC.

Hundt, L. (2012) Bat Surveys: Good Practice Guidelines, Second Edition, Bat Conservation Trust.

JNCC (2010) Handbook for Phase 1 Habitat Surveys. Published by the Joint Nature Conservation Committee, Peterborough.

Cultural Heritage Assessment

GUARD (1994) Kincardine Crossing Archaeological Evaluation (Avoidance Phase) Volume 1.

GUARD (1996) Coastal Assessment Survey: The Firth of Forth from Dunbar to Border of Fife, Report for HS.

McLellan, K (2003) Kincardine Eastern Link Road: Shafts/Drain Area, GUARD Report no 1457.

Smith, D.E. Davies, M.H. Brooks, C.L. Mighall, T.M. Dawson, S. Rea, B.R. Jordon, J.T. and Hollloway, L.K. (2010) 'Holocene relative sea levels and related prehistoric activity in the Forth lowland, Scotland, United Kingdom', Quaternary Science Reviews, 29 (2010) 2832-2410.

Legislation and Planning Guidance
Fife Council (2012) Dunfermline & West Local Pan

Fife Council (2014) Draft Proposed FIFEplan Local Development Plan (October 2014)

Historic Scotland (2011) Scottish Historic Environment Policy (SHEP), Historic Scotland.

Historic Scotland (2014) Our Place In Time: The Historic Environment Strategy for Scotland, Historic Scotland.

Institute for Archaeologists (IfA) (2012) Standard and Guidance for Historic Environment Desk-based Assessment, Institute for Archaeologists.

Institute for Archaeologists (IfA) (2014) By-Laws: Code of Conduct, Institute for Archaeologists.

Scottish Government (2011) Planning Advice Note (PAN), 2/2011: Planning and Archaeology, Edinburgh.

Scottish Government (2014) Scottish Planning Policy (SPP), Edinburgh.

Strategic Development Planning Authority for Edinburgh and South East Scotland (2013) SESPlan: Strategic Development Plan 2013.

Historic Maps
Ordnance Survey 1st Edition (1866) Perth and Clackmannan, Sheet CXLII.2 (Tulliallan), 25 inches to 1 mile.

Ordnance Survey (1895) Fifeshire, Sheet 037.06, 25 inches to 1 mile.

Ordnance Survey (1914) Fifeshire, Sheet 037.06, 25 inches to 1 mile.

Ordnance Survey (1947) Fifeshire, Sheet 037.06, 25 inches to 1 mile.

Ordnance Survey (1951) Fife and Kinross, Sheet XXXVII.NW, 6 inches to 1 mile.

Ordnance Survey 1958 Clackmannanshire-Fife-Stirlingshire Sheet NS98NW 6 inches to 1 mile.

Ordnance Survey 1968 Clackmannanshire-Fife-Stirlingshire, Sheet NS98NW, 6 inches to 1 mile.

Ordnance Survey 1981 Clackmannanshire-Fife-Stirlingshire, Sheet NS98NW, 6 inches to 1 mile.

RCAHMS Aerial Photographs

Sortie	Date	Frame Run/Photo no	Scale	Library Ref
106G/UK/1326	28.03.1946	7217-7219 7214-7210	1:4,800	A_0036
540/0801	04.07.1952	3146-3142 3134-3136	1:9,960	B_0343
58/3544	16.05.1960	0450-0455	1:10,666	B_0483
ASS/519/88	07.06.1988	028-029	1:24,000	C_0279

Landscape and Visual Assessment

The following are terms as defined by the Landscape Institute and Institute of Environmental Management and Assessment, in the Guidelines for Landscape and Visual Assessment (2013).

Term	Explanation
Baseline Studies	*Work done to determine and describe the environmental conditions against which future changes can be measured or predicted and assessed.*
Enhancement	*Proposals that seek to improve the landscape resource and visual amenity of the proposed development site and its wider setting, over and above its baseline condition.*
Landscape Character	*A distinct recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.*
Landscape Effects	*Effects on the landscape as a resource in its own right.*
Landscape Receptors	*Defined aspects of the landscape resource that have the potential to be affected by the proposal.*
Landscape Quality (Condition)	*A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements*
Landscape Value	*The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.*
Magnitude (of effect)	*A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration.*
Photomontage	*A visualisation which superimposes an image of a proposed development upon a photograph or series of photographs.*
Sensitivity (of receptor)	*A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor.*
Significance	*A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.*
Visual Amenity	*The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop to the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.*
Visual Effects	*Effects on specific views and on the general visual amenity experienced by people.*
Visual Receptors	*Individuals and/ or defined groups of people who have the potential to be affected by a proposal.*
Zone of Theoretical Visibility (ZTV)	*A map, usually digitally produced, showing areas of land within which a development is theoretically visible.*

Transmission Equipment

The following are general definitions of terms used in relation to transmission equipment.

Term	Explanation
Conductor	*Wire strung between pylons/towers, used for transmitting electricity.*
Earthwire	*Wire strung between the tops of pylons/ towers, used for lightning and system protection. May also be used to carry telecommunication signals*
Electricity lines	*Either an overhead line or an underground cable used to transmit electricity.*
Insulator	*Used to attach the conductors to the pylons/ towers preventing electrical discharge to the steelwork. Usually made from porcelain glass units, joined together to form an insulator ring.*
kV	*Kilovolt (one thousand volts)*
MW	*Megawatt (one million watts or one thousand kilowatts)*
Outage	*The withdrawal from service of any part of the transmission system for a period of time in connection with repair, maintenance, or construction of the transmission system as a result of breakdown or failure.*
Overhead Line	*An electric line installed above ground usually supported by lattice steel towers or wooden poles.*
SPEN	*Scottish Power Energy Networks. Develop and operate the transmission system on behalf of Scottish Power Transmission Ltd.*
SPT	*Scottish Power Transmission Ltd. Licence holder under the Electricity Act 1989, responsible for the transmission network from the English/ Scottish border to just north of Stirling.*
Wayleave	*An agreement granted by the owner or occupier of land whereby transmission equipment is permitted to be installed on, over or under the land so owned or occupied in return for annual payments.*

SP ENERGY NETWORKS