Proposed Longannet–Kincardine 275kV Overhead Line Diversion

Assessment Report

Technical Appendices

SP ENERGY NETWORKS

Technical Appendices

1: Landscape and Visual Assessment

2: Ecology Assessment

3: Cultural Heritage Assessment

4: Hydrology Assessment

Appendix 1: Landscape & Visual Assessment

1.1 LVIA Methodology

Guidelines for Landscape and Visual Assessment

Good practice described in the *"Guidelines for Landscape and Visual Impact Assessment"* as summarised below, is followed *"to identify and assess the significance of the effects of change resulting from development on both the landscape as an environmental resource in its own right and on peoples views and visual amenity"* (LI, IEMA, 2013).

The first stage in undertaking a Landscape and Visual Impact Assessment (LVIA) is to establish the landscape and visual conditions.

- *"For the landscape baseline, the aim is to provide an understanding of the landscape in the area that may be affected- its constituent elements, its character and the way this varies spatially, its geographic extent, its history (which may require its own specialist study), its condition, the way the landscape is experienced, and the value attached to it.*
- *For the visual baseline, the aim is to establish the area in which the development may be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points." (para 3.15, p32)*

Establishment of baseline conditions and the key relevant landscape and visual aspects of the proposed development, allows the likely significant effects to be predicted. *"LVIA, in common with other topics in EIA, tends to rely on linking judgements about the sensitivity of the receptor and about the magnitude of the effects to arrive at conclusions about the significance of the effects. These terms are effectively a shorthand way of describing the wider array of factors that underlie the* ***nature of the receptor likely to be affected*** *(sensitivity) and* ***the nature of the effect likely to occur*** *(magnitude)". (para 3.24, p.37)*

In accordance with the LVIA Guidance each effect is considered *"in terms firstly of its* ***sensitivity****, made up of judgements about:*

- *The susceptibility of the receptor to the type of change arising from the specific proposal; and*
- *The value attached to the receptor;*

And secondly its ***magnitude,*** *made up of judgements about:*

- *The size and scale of effect- for example, whether there is complete loss of a particular element of the landscape or a minor change;*
- *The geographical extent of the area that will be affected; and*
- *The duration of the effect and its reversibility." (para 3.26, p.38)*

An assessment of the likely landscape and visual effects on the landscape as a resource in its own right and on specific views and on the general visual amenity experienced by people is then undertaken. This embraces all types of effects and includes for example those that are positive/ beneficial and negative/adverse, direct and indirect, and long and short term, as well as cumulative effects. Current guidance notes, *"Assessing the significance of landscape and visual effects is a matter of judgement". (p.46)*

Mitigation measures are prepared to prevent/ avoid, reduce and where possible offset any significant landscape and visual effects identified. Enhancement measures may also be identified which are not specifically related to the mitigation of adverse landscape and visual effects, but are *"proposals that seek to improve the landscape of the site and its wider setting beyond its baseline condition".(p.47)*

In summary, a key requirement of a LVIA is that the basis of judgements *"is transparent and understandable, so that the underlying assumptions and reasoning can be examined by others". (p.46)*

Methodology
The adopted methodology for this Landscape and Visual Impact Assessment is outlined below.

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.

Landscape and Visual Baseline Survey and Analysis
Understanding the 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.

Review of the 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. The nature and sensitivity of landscape features and character is then assessed.

Review of the existing visibility and visual amenity: Visibility of the proposed development, 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 the visibility is determined by using a combination of fieldwork and specialist computer mapping. The nature and sensitivity of views and visual amenity is then assessed.

Landscape and Visual Impact Assessment
Landscape and Visual effects are reviewed and identified with reference to: the identification of 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)*.

Landscape sensitivity is assessed with reference to the degree to which a particular landscape type or area can accommodate change arising from the proposed development, without detrimental effects on its character. The degree to which a particular

landscape type or area can accommodate change arising from a particular development is considered to vary with:

- existing landuse
- the pattern and scale of the landscape;
- visual enclosure/ openness of views, and distribution of visual receptors;
- the scope for mitigation, which would be in character with the existing landscape;
- the value placed on the landscape.

The ***sensitivity of visual receptors and views*** is considered to be dependent on:

- the location and context of the viewpoint;
- the expectations and occupation of the receptors;
- the importance of the view (which maybe determined with respect to its popularity or numbers of people affected, its appearance in guidebooks, on tourist maps, and in the facilities provided for its enjoyment and references to it in literature and art).

For the purposes of assessment ***visual receptors*** are divided into several types, which are considered to be of differing ***sensitivity***, as follows:

Residential: Highly sensitive, as they experience prolonged often highly valued views.

Recreational: Highly sensitive, for users of recreational facilities including public rights of way, as their attention or interest may be focussed on the landscape and views are often part of their recreational experience (e.g. walkers, cyclists etc). Less sensitive or moderate are people engaged in an outdoor sport or recreation.

Workers: Medium to low sensitivity, as may not receive prolonged views, and will be distracted by work.

Travellers**:** Low sensitivity, as their views are constantly changing and attention is focussed on that activity (e.g. motorists). Where travel involves scenic routes awareness of views will be high.

Magnitude of change is assessed with reference to the scale or degree of change to the landscape and visual resource, the nature of the effect and its duration.

<u>Evaluation of Significance of Effects</u>

An assessment of the likely effects is reviewed with reference to landscape features, character, views and visual amenity. Professional judgement and evaluation of the ***nature*** or ***magnitude of effect*** and the environmental ***sensitivity of the receptor*** *or* ***location*** allows the different thresholds of significance of effect to be determined and described using the terms **major, moderate, minor or none**.

1.2 Development Plan Extracts

SESplan. Adopted 2013

Policy 1B The Spatial Strategy Principles

Local Development Plans will:

- Ensure that there are no significant adverse impacts on the integrity of international, national and local designations and classifications in particular National Scenic Areas, Special Protection Areas, Special Areas of Conservation, Sites of Special Scientific Interest, Areas of Great Landscape Value and any other Phase 1 Habitats or European protected species.
- 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 Ancient Monuments, Listed Buildings, Royal Parks, and Sites listed in the Inventory of Gardens and Designed Landscapes
- Have regard to the need to improve the quality of life in local communities by conserving and enhancing the natural and built environment to create a more healthy and attractive place to live;
- Contribute to the response to climate change, through mitigation and adaptation; and
- Have regard to the need for high quality design, energy efficiency and the use of sustainable building materials.

Dunfermline and West Local Plan. Adopted 2012

Policy E1: Development outwith Town and Village Envelopes

Outwith the settlement limits as defined by towns and village envelopes shown on the Proposals Map, development will only be permitted where it is in accordance with Policies E15- E29.

Policy E7: Conservation Areas

Development and 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.

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, deign, 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 on 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 Ancient 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 setting 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 provisions 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.

Policy E15: Development in the Countryside
Development in the Countryside will only be supported where it:
a) is required for agriculture, horticultural, woodland or forestry operations; or
b) is for new enterprises which either diversify the above land based businesses to bring economic support to the existing business or add local value by using the products of, or servicing, land based businesses or other established countryside activities; or
c) diversify or add to the above land based business to bring economic support to the existing business or add local value by using the products of, or servicing, land based businesses or other established countryside activities; or
d) is for the extension of established businesses; or
e) provides for small scale employment land adjacent to settlement boundaries, which contributes to the Councils employment land supply requirements; or
f) is for facilities for access to the countryside; or
g) is for facilities for outdoor recreation or tourism or other development which demonstrates a proven need for a countryside location; or
h) is for housing (as supported by Policy E16)

and is of a scale and nature compatible with surrounding uses; is well located in respect of available infrastructure and contributes to the need for any improved infrastructure; will result in an overall enhancement to the landscape and

environmental quality of an area; provides employment for local people or supports local services and that equivalent alternative capacity does not exist within the local area (or settlement boundary).

Policy E16: Housing Development in the Countryside

Policy E17: Green Belt

Policy E18: Protection of Agricultural Land

Irreversible development of prime agricultural will be supported only if there are overriding national or local circumstances, or if the land is zoned for development in the Local Plan.

Policy E19: Local Landscape Areas

Development proposed within a Local Landscape Area or outwith the boundary but which may impact upon the designated area, will only be permitted where it has no significant adverse affect on the identified landscape qualities of the area and/ or its overall landscape integrity and setting. Proposals must demonstrate through form, scale, layout, detailing, siting, design, materials and landscape treatment, how the development will contribute to the conservation, restoration, or enhancement of the special landscape area and its associated character and qualities.

Policy E20: Water Environment

Policy E21: European Protected Species

Policy E22: Local Biodiversity and Geodiversity Sites

Policy E23: Protection of Biodiversity

Policy E24: Tree Preservation Orders

Policy E25: Trees on Development Sites

Policy E26: New Tree Planting

Polcy E27: The Coast

Development on the undeveloped coast will not be supported unless it can be demonstrated that:

a) there is a proven need for a coastal location;
b) the proposal avoids the use of greenfield sites and can reuse vacant land;;
c) the proposal demonstrate high standards of design and siting, and is of appropriate scale and character;
d) the proposal does not contribute to or is at risk of coastal erosion;
e) the proposal is not subject to nor will it contribute to flood risk;
f) the proposal safeguards cultural and natural heritage resources;
g) the proposal does not prejudice the footpath and/ or cycle network;

h) the proposal does not result in the coalescence of coastal villages; and
i) the proposal ensures that obtrusive lighting is minimised.

Development which is proven to require a coastal location or which contributes to the economic regeneration of coastal settlements should be located on the developed coast in the first instance.

Policy E28: Landfill

Policy E29: Waste Management Sites

FIFEplan. Proposed 2014

Policy 7 Development in the Countryside

Development in the countryside will only be supported where it:

1. Is required for agricultural, horticultural, woodland, or forestry operations;
2. Will diversify or add to the above land based businesses to bring economic support to existing business;
3. Is for the extension of established businesses;
4. Is for small scale employment land adjacent to settlement boundaries, excluding green belt areas, and no alternative site is available within a settlement boundary which contributes to the Councils employment land supply requirements;
5. Is for facilities for access to the countryside;
6. Is for facilities for outdoor recreation, tourism or other development which demonstrates a proven need for a countryside location; or
7. Is for housing in line with Policy 8 (Housing in the Countryside).

In all cases, development must:

- Be of a scale and nature compatible with surrounding uses;
- Be well located in respect of available infrastructure and contribute to the need for any improved infrastructure; and
- Not result in an overall reduction in the landscape and environmental quality of the area.

Prime Agricultural Land

Development on prime agricultural land will not be supported except where it is essential:

1. As a component of the settlement strategy or necessary to meet an established need, for example for essential infrastructure, where no other suitable site is available;
2. For small scale development directly linked to a rural business; or
3. For the extraction of minerals where this accords with other policy objectives and a commitment to restore land to its former status within an acceptable timescale.

Policy 10 - Amenity

Development will only be permitted if it does not have a significant detrimental impact on the amenity of existing or proposed landuses. Development proposals must demonstrates that they will not lead to a significant detrimental impact on amenity in relation to:

1. Air quality, with particular emphasis on the impact of development in designated Air Quality Management Areas.
2. Contaminated and unstable land, with particular emphasis on the need to address potential impacts on the site and surrounding are;
3. Noise, light and odour pollution and other nuisances, including shadow flicker from wind turbines;
4. Traffic movements;
5. The loss of privacy, sunlight and daylight;
6. Construction impacts;
7. The visual impact of the development on the surrounding areas;
8. The loss of playing fields, open space, green networks, protected trees, and woodland; and
9. Impacts on the operation of existing or proposed businesses and commercial operations; or
10. Impacts on operation of existing or proposed waste management facilities.

Where potential amenity issues are identified in the relevant settlement proposals tables or are identified as part of the assessment of the impact of a development proposal, the relevant mitigation measures will be required to be implemented by the developer to an agreed timetable and specification.

The actions required to mitigate or avoid amenity impact will vary according to the circumstances in each case but will include measures such as landscape buffer strips between incompatible uses, separation distances, noise attenuation screens or fences and bunding.

Policy 13 - Natural Environment and Access

Development proposals will only be supported where they protect or enhance natural heritage and access assets including: -

- 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 use;
- Biodiversity in the wider environment
- Protected and priority habitats and species;
- Landscape character and views;
- Carbon rich soils (including peat);
- Green networks and greenspaces; and
- Core paths, cycleways, bridleways, existing rights of ways and established footpaths.

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

Site Appraisal Process
Development proposals must provide an assessment of the potential impact on natural heritage, biodiversity, trees and landscape and include proposals for the enhancement of natural heritage and access assets, as detailed in Fife's Designing Places Supplementary Guidance.

Development proposals likely to have a significant effect on a Natura 2000 site will not be in accordance with the Plan if it cannot be ascertained, by means of an Appropriate Assessment, that they will not have an adverse effect on the integrity of Natura site(s).

Unless there is an imperative reason of overriding public interest development that impacts negatively on these sites will not be supported.

Policy 14- Built and Historic Environment
Six qualities of successful places
The Council will apply the six qualities of successful places when considering development. New development will need to demonstrate how it has taken account of and meets each of the following six qualities:
1. distinctive;
2. welcoming
3. adaptable;
4. resource efficient;
5. safe and pleasant; and
6. easy to move around and beyond.

Guidance on how these qualities will be interpreted by the Council and addressed by those proposing development will be provided in Fife's Designing Places Supplementary guidance.

Designated Sites and Buildings
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 of 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.

Falkirk Council Local Plan 2010
Policy EQ28: Coastal Zone
The council will promote an integrated approach to the management of the coastal zone and will support the provisions of the Forth Integrated Management Strategy. Development and other land management proposals within the coastal zone will be assessed in terms of:

1. Impacts on the amenity, ecology and water quality of the coastal environment (see Policies EQ24 and EQ25);
2. The requirement to safeguard the undeveloped coast, as defined on the proposals map, from further development unless it is proven that the development is essential, a coastal location is essential, and no suitable sites exist within the developed coast;
3. Long term flooding risk (see Policy ST12), and compatibility with existing coastal defence strategies, including the desirability of working with natural coastal processes where possible and the need to recognise the wider impacts where intervention is unavoidable; and
4. Appropriate promotion of the recreational potential of the coastal zone, including the development of the Forth Foreshore Path and linked coastal access networks, providing it is compatible with Policy EQ24 and the protection of coastal habitats and species.

Clackmannanshire Local Plan 2004 as altered
Policy EN11 - Enhancing Environmental Quality
New development will be expected to positively contribute to its immediate environment by:

- Achieving a high quality of architectural design and integrating well with the built form and landscape character of its immediate surroundings
- Ensuring that the form, scale, layout and materials reflect and, where possible,

enhance the character of the surrounding area.

- Protecting and enhancing the landscape, woodland, habitat, pond and watercourse resources within and around the site
- Ensuring the protection and enhancement of local amenity through the provision of high quality landscaping, planting and boundary treatments.
- Sensitive siting of soft and hard landscaping features of suitable specification for amenity and to provide shelter belts. The provision of landscaping to be in accordance with SAN 12 (*Open Space and Landscaping*) in the case of housing developments.
- Assessing proposals for new developments to ensure that they provide a high level of safety and security for pedestrians where necessary, including protection of existing accesses within and around the site, in accordance with PAN 46 (Planning for Crime Prevention) and the Secured by Design initiative.

1.3 SNH Landscape Character Assessment Extracts

Fife Landscape Character Assessment
Key Characteristics and Features

C15 Coastal Flats (CF111 Longannet) Landscape Character Type (LCT)

- Flat, low lying, open, large scale, exposed coastal landscape at sea level;
- Intensively cultivated, geometrically laid out, large to medium scale, predominantly arable fields or forestry plantations with rectilinear, fenced enclosures or without enclosure;
- A variety of other land uses, particularly industrial and other built developments, golf courses and other grasslands;
- The slightly sinuous or angular roads raised above the fields with dry stone dykes or open sides;
- Isolated, scattered or regularly spaced farmsteads, conspicuous due to the lack of screening, in contrast to designed landscapes which are well screened by policy planting and shelterbelts;
- Straight ditches, sea walls and flood banks with small bridges;
- Several point features of interest that are conspicuous in the flat landscape;
- A coastal landscape where the character is always influenced by the sea and can be particularly affected by the weather conditions and views of the sky and the sea;
- The wide range of landscape experiences depending on the particular landscape unit and the weather conditions; typically dominated either by the areas of development or the coast;
- Away from the urban areas and forestry plantations it is a large- scale, open (and in high winds very exposed), simple, flat, balanced landscape with varied textures and colours and slow movement; in the plantations it is a small scale, confined, uniform, tended, very calm and sheltered landscape with straight lines, simple patterns and little variation in colours or textures;
- Seaward views are invariably extensive and maybe extensive across the Flats themselves;
- Landward, views are generally towards the Cliffs, Braes, Coastal Hills or Coastal Terraces.

Landscape Guidelines Extract for Coastal Flats LCT
Other Developments and Structures in the Landscape

Low level, linear features would be appropriate but higher linear features would either add to the clutter of existing overhead lines or create new and inappropriate features in those parts that do not have them at present. Any structures likely to have a significant effect on the landscape or views should be subject to rigorous landscape and visual impact assessment in accordance with Section E.3.

Ensure any new road or other major engineering works are carefully sited and designed to minimise their landscape and visual impact. Any works likely to have a significant effect on the landscape or views should be subject to rigorous landscape and visual impact assessment in accordance with Section E.3.

C17 Other Intertidal Shores LCT

- A natural landscape dominated by the sea and the tidal cycle;
- At low tide the low lying, dull brown or brown – grey sheets of the mudflats with the meandering outwash channels;
- The rougher texture, more colourful shingle bays and rocky shores with their deep striations;
- The lighter colour and smooth, even slope to the sea of the sandy beaches with their groynes and other structures;
- The landform, colours, textures and patterns of sand/ mud and water of the estuaries;
- The large- scale, flat, open or exposed, uniform or simple landscapes with smooth textures, sinuous lines and muted colours;
- The solitude dominated by natural noises and the naturalness of the area, with sometimes huge flocks of birds or perhaps just occasional waders or gulls flying or scurrying across mud or shingle;
- The ever changing line of the waters edge and the sound and movement of the waves;
- The generally natural landscape occasionally punctuated by small moored craft, artefacts of navigation and small harbours;
- The wide range of landscape experiences depending on the weather conditions and the local permutations of mud, sand, shingle and rock, estuary or harbour;
- Typically, it is a large scale, open (and in high winds very exposed), simple, flat, harmonious, natural, landscape with sinuous lines, random patterns, varied textures, colours and slow movement, and dominated by the sight, sound and smell of the sea.
- Views are invariably extensive in the seaward direction and landward are generally towards the Cliffs, Braes, Coastal Hills or Coastal Terraces.

C18 Firth of Forth LCT

- A very large scale, flat, horizontal and natural landscape dominated by the weather conditions and the colour of the sea and sky and the movement of waves;
- The many small off shore islands;
- The navigation and shipping artefacts of the water;
- The frequent but very slow movements of vessels of a variety of types;
- A maritime landscape where the character is always influenced by the sea and can be particularly affected by the weather conditions and views of the sky and the sea;
- The effect of lights reflecting on the Firths at night;
- The Tay Road and Railway Bridges, and the Kincardine, Forth Rail and Forth Road Bridges;
- Often a calm, bright, colourful and smooth, exposed landscape with extensive views.

1. 4 Viewpoint Photograph Technical Information

No	LVIA Viewpoint Photograph Locations
1	**Fife Coastal Path passing Inch House (Walker Street)**– Fife Coastal Path, Listed Building, Residential
2**	**Kincardine, Riverside Terrace-** Residential, Minor Road
3	**The Holdings, Westfield**- Public Footpath, Residential
4**	**Minor Road to Culross B9037** -Public Footpath, Minor Road
5**	**Newpans**-Public Footpath
6	**Brackenlees Road** – Public Footpath, Cycle Path, Residential, Minor Road
7	**Skinflats Nature Reserve**- RSPB Local Nature Reserve, Recreation
8**	**Kincardine on Forth Bridge A985**- Listed Building (Cat A), Major Road, Public Footpath, Cycleway, Firth of Forth SPA, SSSI.
9	**Kincardine, Feregait A977-** Major Road, Recreation, Residential

** Wireline Photomontage Location

The viewpoint photographs have been taken in accordance with current LVIA practice and in particular Landscape Institute Advice Note 01/11 (March 2011). The detailed record sheets for each Viewpoint Photograph are listed below.

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	1
Viewpoint name	Inch House Coastal Path
NGR	NS93551 86828
Elevation + tripod Height	3m + 1.55m
Distance from objective	0m
Date	5/12/14
Time	11.34 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good, poor in low lever sun
Filters used	Skylight
File Numbers	1209 - 1232

Exposure + Bearing°

All compass bearings corrected to Grid (Variation -3°)

1/640 sec / f 6.3	280°	296°	312°	328°	344°
	000°	016°	032°	048°	064°
	080°	096°	112°	128°	144°
	160°	176°	192°	208°	224°
	240°	256°			

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	2
Viewpoint name	Riverside Terrace
NGR	NS93626 87256
Elevation + tripod Height	10m + 1.55m
Distance from objective	200m
Date	5/12/14
Time	12.47 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good, poor in low level sun
Filters used	Skylight
File Numbers	1253 - 1260

Exposure + Bearing°
All compass bearings corrected to Grid (Variation -3°)

1/800 sec / f 6.3	138°	154°	170°	186°	202°
	218°	234°	250°		

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	3
Viewpoint name	The Holdings
NGR	NS9433187345
Elevation + tripod Height	45m + 1.55m
Distance from objective	900m
Date	5/12/14
Time	12.17 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good, poor in low level sun
Filters used	Skylight
File Numbers	1245 - 1252

Exposure + Bearing°
All compass bearings corrected to Grid (Variation -3°)

1/640 sec / f 6.3	181°	197°	213°	229°	245°
	261°	277°	293°		

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	4
Viewpoint name	Minor Road to Culross
NGR	NS94205 86787
Elevation + tripod Height	8m + 1.55m
Distance from objective	400m
Date	5/12/14
Time	11.36 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good, poor in low level sun
Filters used	Skylight
File Numbers	1233 - 1243

Exposure + Bearing°
All compass bearings corrected to Grid (Variation -3°)

1/640 sec / f 6.3	193°	199°	215°	231°	247°
	263°	279°	295°	311°	327°

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	5
Viewpoint name	Minor Road to Culross
NGR	NS93704 86241
Elevation + tripod Height	2m + 1.55m
Distance from objective	400m
Date	5/12/14
Time	10.46 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good, poor in low level sun
Filters used	Skylight
File Numbers	1199 - 1208

Exposure + Bearing°
All compass bearings corrected to Grid (Variation -3°)

1/640 sec / f 6.3	300°	316°	332°	348°	004°
	020°	036°	042°	058°	074

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800 Challenged by Security – Police called

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	6
Viewpoint name	Brackenlees Road Public Footpath
NGR	NS92061 83981
Elevation + tripod Height	2m + 1.55m
Distance from objective	3200m
Date	5/12/14
Time	09.49 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good, poor in low level sun
Filters used	Skylight
File Numbers	1190 - 1196

Exposure + Bearing°

All compass bearings corrected to Grid (Variation -3°)

1/640 sec / f 6.3	347°	003°	019°	035°	051°
	069°	083°			

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	7
Viewpoint name	Skinflats RSPB reserve
NGR	NS 92033 85971
Elevation + tripod Height	2m + 1.55m
Distance from objective	2000m
Date	5/12/14
Time	09.27 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good
Filters used	Skylight
File Numbers	1181 - 1187

Exposure + Bearing°
All compass bearings corrected to Grid (Variation -3°)

1/640 sec / f 6.3	006°	022°	038°	054°	070°
	086°	102°			

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	8
Viewpoint name	Kincardine Bridge Cycle Path
NGR	NS 92692 87234
Elevation + tripod Height	8m + 1.55m
Distance from objective	1500m
Date	5/12/14
Time	13.33 UTC
Meteorological conditions	Bright, 0/8 cover, Vis moderate/good
Filters used	Skylight
File Numbers	1284 - 1289

Exposure + Bearing°

All compass bearings corrected to Grid (Variation -3°)

1/800 sec / f 6.3	101°	117°	033°	049°	065°
	081°				

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

Lamont Associates Viewpoint Record Sheet

Project

Kincardine Inch Farm SPEnergy Networks

Viewpoint number	9
Viewpoint name	A977 Recreation Park near Bus Stop Kincardine
NGR	NS 93101 87994
Elevation + tripod Height	9m + 1.55m
Distance from objective	2000m
Date	23/12/14
Time	10.32 UTC
Meteorological conditions	Dull, 8/8 cover C_L 6, Vis moderate/good
Filters used	Skylight
File Numbers	1307 - 1314

Exposure + Bearing°
All compass bearings corrected to Grid (Variation -3°)

1/200 sec / f 6.3	125°	141°	157°	173°	189°
	205°	221°	237°		

Clinometer Angle (°)	0°
Additional Notes/Sketches (and over)	Camera: Canon 50D Lens: Canon EF 35-350mm L Series @35mm ISO: 800

1.5 Visibility

The visual appraisal of receptors is based on a grading of degrees of visibility, from *"not visible"* to *"fully open views"*. To indicate the degree of visibility of the site (or proposed development) from any location, that continuum has been divided into the following four categories:

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.

Site survey work was undertaken in October - December 2014.

Note: Visibility has been surveyed from the closest point to receptor without the need to enter upon private land. Survey findings are therefore approximate only.

***** indicates a selected **Viewpoint Photograph Location**. Viewpoint location indicated in Figure 3.2 and Photographs in Figure 3.3.

Receptor Type	Visual Receptor	Sensitivity	Description of Visibility
Property			
North			
Residential	Inch House***** **Viewpoint 1**	high	open
Residential	The Sycamores adjacent Inch House (west)	high	open
Residential	Riverside Terrace*****/ Kellywood Crescent/ Priory Square, Kincardine **Viewpoint 2**	high	11 No open 18 No partial 8 No glimpse
Residential	Easter Kincardine, Kincardine	high	open
Residential	Tulliallan Cemetery	high	open
Residential	The Holdings***** **Viewpoint 3**	high	32 No open, other properties glimpse/ none
East			
Residential	Inch Farm & Terrace of Cottages	high	partial
Residential/ Farm	Bordie	high	partial/ glimpse
Residential	Lurg	high	partial/ glimpse
Residential	Lurg Farm	high	partial/ glimpse

Receptor Type	Visual Receptor	Sensitivity	Description of Visibility
South			
Hotel	Powfoulis Manor Hotel	high	partial/ glimpse
Residential	Greendyke	high	glimpse
Residential	Haugh of Airth	high	glimpse
Residential/ Farmstead	Mains of Powfoulis	high	glimpse
Residential/ Farmstead	Brackenlees	high	glimpse
Residential/ Farmstead	Hardilands	high	partial/ glimpse
Residential/ Farmstead	Stonehouse Farm	high	partial/ glimpse
Residential/ Farmstead	Orchardhead	high	partial/ glimpse
Residential	Property Brackenlees Road* **Viewpoint 6**	high	partial/ glimpse
Residential	Skinflats Settlement east edge	high	glimpse/ none
West			
Residential	Airth Settlement	high	glimpse/ none
Residential	Kennet Pans	high	glimpse/ none
Residential	Clackmannan Settlement	high	glimpse/ none
Residential	Standalane, Doctors Park, Riverside Terrace, Kincardine	high	20 No open
Residential	Walker Street, Kincardine	high	7 No glimpse 1 No partial
Residential	Orchard Grove/ Kincardine House, Kincardine	high	12 No glimpse
Residential	Silver Street, Kincardine	high	11 No partial/ glimpse
Residential	Kincardine Settlement* **Viewpoint 9**	high	partial/ glimpse/ none
Recreation/ Footpaths & Cycle Routes			
North	Fife Coastal Route	high	open
	Footpaths North* **Viewpoint 3**	high	open
	Tulliallan Golf Club	high	glimpse/ none
	Devilla Forest	high	glimpse/ none
East	Footpaths East* **Viewpoint 4**	high	open
	Footpaths East* **Viewpoint 5**	high	open
South	Footpath South parallel Railway	high	open
	Footpaths/ Cycle routes* south of Firth of Forth **Viewpoint 6**	high	partial/ glimpse
	Skinflats RSPB LNR* **Viewpoint 7**	high	partial

Receptor Type	Visual Receptor	Sensitivity	Description of Visibility
West	Footpaths west of A985 south of Firth of Forth	high	glimpse
	Footpaths / cycle route north of Firth of Forth	high	glimpse
Protected Sites			
North	Inch House Listed Building LB	high	open
	Burnbrae LB	high	open
	Tulliallan Garden and Designed Landscape	high	glimpse/none
East	Bordie LB	high	partial/ glimpse
	Lurg Farm LB	high	partial/ glimpse
	Dunimarie Garden and Designed Landscape	high	glimpse/ none
South	Powfoulis Manor Hotel LB	high	partial/ glimpse
	Howkerse LB	high	partial/ glimpse
West	Kincardine on Forth Bridge* LB **Viewpoint 8**	high	open
	Kincardine Conservation Area	high	partial/ glimpse/ none
	Kennet Pans LBs/ SAM	high	glimpse
Roads			
North	A985	low	open/ partial/ glimpse
	A977 **Viewpoint 9**	low	open/ partial/ glimpse
East	B9037* **Viewpoint 4**	low	open
South	Minor Roads South of Firth of Forth	low	partial/ glimpse
	M9	low	glimpse
West	A985 **Viewpoint 8**	low	open
	A876	low	open/ partial
	A905	low	glimpse
	Minor Roads West A876	low	glimpse

1.6 Visual Effect of Proposed Development

The visual effect of the proposed development without mitigation on the selected viewpoints, and visual receptors with partial or open views is detailed below. Positive effects are underlined and in **bold**.

Visual effect has been assessed from the closest point to the receptor without the need to enter upon private land. Findings are therefore approximate only.

***** indicates selected **Viewpoint Photograph Location**. Viewpoint location indicated in Figure 3.2 and Photographs in Figure 3.3
****** indicates Photomontages of the Proposed Overhead Line Diversion as indicated in Figure 3.4.

Receptor Type	Visual Receptor	Sensitivity	Description of Visibility	Magnitude of Change	Appraisal of Visual Effect
Property					
North					
Residential	Inch House***** **Viewpoint 1**	high	open	medium	moderate
Residential	The Sycamores property adjacent Inch House(west)	high	open	medium	moderate
Residential	Riverside Terrace*****/ Kellywood Crescent/ Priory Square, Kincardine **Viewpoint 2****	high	11 No open 18 No partial 8 No glimpse	low	**37 No minor**
Residential	Easter Kincardine, Kincardine	high	open	low	**minor**
Residential	Tulliallan Cemetery	high	open	low	**minor**
Residential	The Holdings***** **Viewpoint 3**	high	32 No open, other properties glimpse/ none	low	**32 No minor**
East					
Residential	Inch Farm & Cottages	high	partial	low	minor
Residential	Bordie	high	partial/ glimpse	low	minor/none
Residential	Lurg	high	partial/ glimpse	low	minor/none
Residential	Lurg Farm	high	partial/ glimpse	low	minor/none
South					
Hotel	Powfoulis Manor Hotel	high	partial/ glimpse	low	minor/ none
Residential/ Farmstead	Hardilands	high	partial/ glimpse	low	minor/ none
Residential/ Farmstead	Stonehouse Farm	high	partial/ glimpse	low	minor/ none
Residential/ Farmstead	Orchardhead	high	partial/ glimpse	low	minor/ none
Residential	Property Brackenlees Road***** **Viewpoint 6**	high	partial/ glimpse	low	minor/ none
Residential	Howkerse	high	partial/glimpse	low	minor/none

Receptor Type	Visual Receptor	Sensitivity	Description of Visibility	Magnitude of Change	Appraisal of Visual Effect
West					
Residential	Standalane, Doctors Park, Riverside Terrace,	high	20 No open	high	**major**
Residential	Walker Street, Kincardine	high	7 No glimpse 1 No partial	low	minor/none
Residential	Silver Street, Kincardine	high	11 No partial/ glimpse	low	minor/none
Residential	Kincardine Settlement* **Viewpoint 9**	high	partial/ glimpse/ none	low	**minor**/ none
Recreation/ Footpaths & Cycle Routes					
North	Fife Coastal Route	high	open	medium	moderate
	Footpaths North* **Viewpoint 3**	high	open	low	**minor**
East	Footpaths East* **Viewpoints 4****	high	open	low	**minor**
	Footpaths East* **Viewpoints 5****	high	open	low	minor
South	Footpaths South of Firth of Forth	high	open	low	minor
	Footpaths/ Cycle routes* south of Firth of Forth **Viewpoint 6**	high	partial/ glimpse	low	minor/none
	Skinflats RSPB LNR* **Viewpoint 7**	high	partial	low	minor
Protected Sites					
North	Inch House LB	high	open	medium	moderate
	Burnbrae LB	high	open	low	**minor**
East	Bordie LB	high	partial/ glimpse	low	**minor**/none
	Lurg Farm LB	high	partial/ glimpse	low	**minor**/none
South	Powfoulis Manor LB	high	partial/ glimpse	low	minor/none
	Howkerse LB	high	partial/glimpse	low	minor/none
West	Kincardine on Forth Bridge* LB **Viewpoint 8****	high	open	low	minor
	Kincardine Conservation Area	high	partial/ glimpse/ none	low	minor/ none/ minor
Roads					
North	A985	low	open/part/ glimpse	low/ low	minor/ **minor**
	A977 **Viewpoint 9**	low	open/ partial/ glimpse	low	**minor**/none
East	B9037* **Viewpoint 4****	low	open/ partial	low	**minor**
South	Minor Roads South	low	partial/ glimpse	low	minor/none
West	A985	low	open	low	minor
	A876	low	open/ partial	low	minor/none

Appendix 2: Ecology Assessment

BSG | ecology

Proposed Longannet- Kincardine 275kV Overhead Line Diversion

Ecology Report

BSG | ecology

Issuing office

The Schoolhouse | Live Theatre | 12 Trinity Chare | Newcastle Upon Tyne | NE1 3DF
T: 0191 303 8964 | W: www.bsg-ecology.com | E: info@bsg-ecology.com

Client	Scottish Power
Job	Kincardine Overhead Line Diversion
Report title	Ecology Report
Draft version/final	FINAL
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	Name	**Position**	**Date**
Originated	Alan Salkilld	Senior Ecologist	27 November 2014
Reviewed	Steven Betts	Partner	01 December 2014
Updated	Steven Betts	Partner	07 January 2015
Approved for issue to client	Steven Betts	Partner	29 January 2015
Issued to client	Steven Betts	Partner	29 January 2015

Contents

1 Summary

1.1 The construction of proposed housing to the east of Kincardine and business / industrial units to the east of Inch House requires the diversion of an existing overhead line (OHL). This will involve the construction of 900m of new 275kV overhead line comprising 3 new towers on concrete foundations. The site of the proposed OHL diversion is on the south east side of Kincardine, in the vicinity of Inch House and Inch Farm.

1.2 The fields within which the new towers will be located, together with many of the surrounding fields, 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.

1.3 Survey work undertaken in the area has 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.

1.4 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 line 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 OHL 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.

1.5 Measures are described that are designed to mitigate impacts on flora and fauna. Although mitigation measures are described, it is likely that the baseline conditions will change when the consented building development is constructed. This will result in the introduction of new structures into the landscape.

1.6 It is concluded that the proposed overhead line 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, and so the requirement for 'appropriate assessment' is not considered to be triggered.

2 Introduction

Site Description

2.1 The site of the proposed overhead line diversion is on the southern side of Kincardine, in the vicinity of Inch House and Inch Farm (Figure 1). The study area, which covers the existing overhead line route and the proposed overhead line route together with a buffer area around them, comprises a series of arable fields and some improved and poor semi-improved grazing pasture. Field boundaries are either unmarked or consist of stone walls or recently planted hedgerows. Devilla Forest is located approximately 1.5km to the north-east of the nearest existing tower at its closest point.

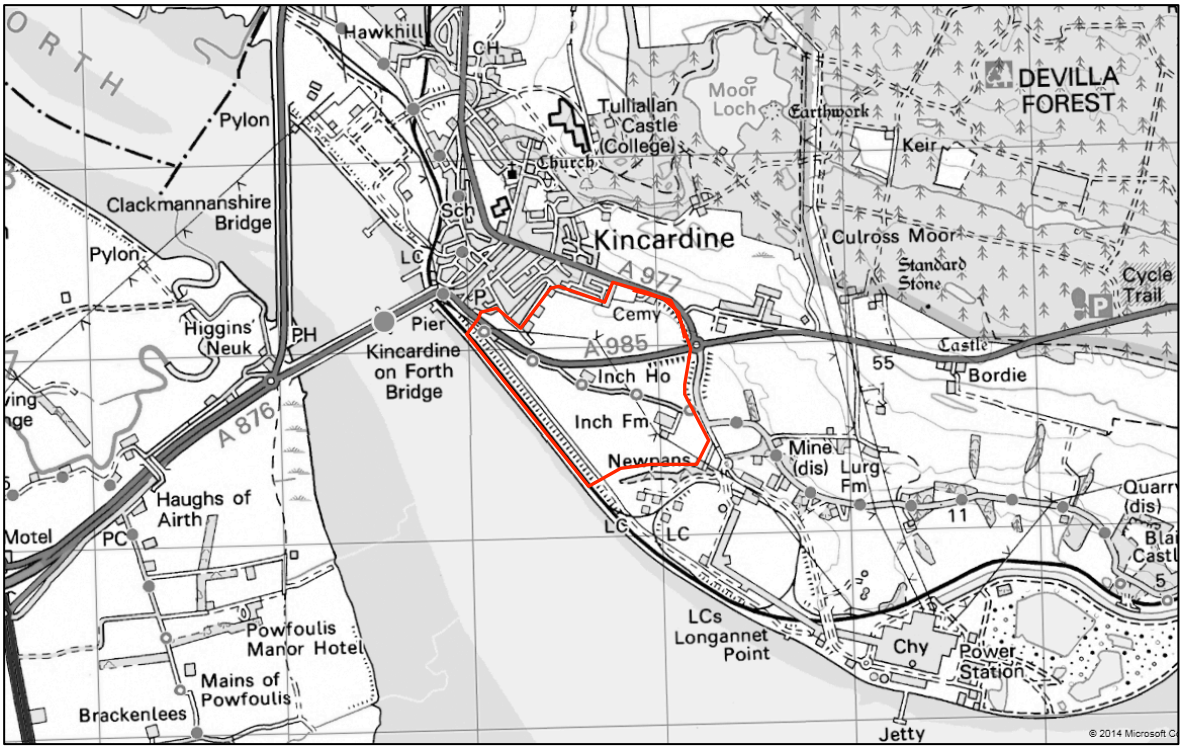

Figure 1: Map showing location of proposed overhead line diversion route and area covered by surveys (outlined in red).

Description of Project

2.2 The construction of proposed housing to the east of Kincardine requires the diversion of the existing overhead overhead line. This will involve the construction of 900m of new 275kV overhead overhead line comprising 3 new towers on concrete foundations, with a total maximum height of 50.2m.

2.3 A temporary compound and storage area will be required for the duration of the construction works and temporary vehicular access of up to 5m wide will be required for each tower. The temporary access routes will be clearly demarcated and adhered to for the duration of the works.

2.4 Each tower site will require an approximate area of 30m by 30m for construction and a 5m wide track under the route, for conductor stringing. The access routes will all be temporary.

2.5 Once the diversion work is completed the three redundant towers will be dismantled and removed. The construction programme is scheduled to take place over a 7 month period.

Aims of Study

2.6 The aim of this study was to assess the ecological interest of the area that will be affected by the proposed works. This area was surveyed to identify any ecological constraints that will need to be taken into account during the installation of the new overhead towers, the dismantling of the redundant towers and the re stringing of the overhead line. In particular the study has focussed on the need to minimise impacts on protected species, protected habitats and designated sites, including bird species associated with the nearby Firth of Forth Special Protection Area (SPA).

3 Methods

Desk Study

3.1 A desk study has been undertaken using data obtained from the Scottish Natural Heritage protected sites database (http://www.snh.org.uk/snhi/, accessed 18/11/2014) and the Joint Nature Conservation Committee's protected sites database (www.jncc.org.uk, accessed 18/11/2014) to establish the location and nature of any statutory designated sites of nature conservation interest located within 2km of the centre of the proposed development area. This includes Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

3.2 This search area has been adopted as it represents the maximum distance over which impacts (direct or indirect) might be expected to occur for most species and habitats. Furthermore it is considered unlikely that most species that may be encountered within the site (based on an assessment of the habitats that are present) will travel more than 2km when commuting or foraging. Consequently it is unlikely that there will be significant interactions with species using sites more than 2km from the proposed development site.

3.3 The exception to this is birds, which may commute over larger distances. For this reason the search area has been extended to include the nearest SPAs to the site.

3.4 A search has also been made for records of statutorily protected and Biodiversity Action Plan (BAP) species using the National Biodiversity Network database (www.searchnbn.net, accessed 18/11/2014). Historical records have been requested from Fife Nature Records Centre and Fife Bird Club. In addition, reference has been made to the Scottish Biodiversity List (accessed 18/11/2014) and the Fife Local Biodiversity Action Plan 2013-2018 (LBAP), both of which identify a number of species and habitats that are of conservation importance at the national and regional levels.

3.5 An aerial photograph of the site and its surroundings (www.bing.com/maps, accessed 01/09/2014) was examined to further assist in understanding the context of the site and to identify and assess possible habitat linkages with other habitats or sites of ecological importance within the local area.

Field Survey

Phase 1 Habitat Survey

3.6 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, 2003), and a habitat map was produced. Target Notes were used to describe the general character of the site and to record any features of ecological interest identified during the survey.

3.7 The surveys were extended to include an assessment of the habitats present to determine their suitability to support protected species. If any signs of protected species were observed these were recorded. Further details of the protected species survey methods adopted are provided below. During the surveys weather conditions were good and there was good visibility across the site.

3.8 The survey covered all habitats within at least 200m of the proposed overhead line diversion route and all associated infrastructure.

Badgers

3.9 The proposed overhead line diversion route and surrounding area were surveyed for signs of badger *Meles meles* activity on 25 September 2014. Further information was gathered during the site visit on the 20 November 2014. The survey covered all habitats within the site boundary together with a buffer area that extended at least 200m from the proposed development footprint. Any badger signs seen during the assessment were noted: signs of badger activity include setts, latrines, tracks, hair, dung pits and snuffle holes as described by Creswell *et. al*. (1990). Any field signs were recorded on a map and the grid reference was noted.

Bats

3.10 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. Summary details of the survey are provided in Table 1 below.

Table 1: Summary details of the bat activity surveys

Date	Start time	Finish time	Sunset	Weather
25/09/14	18:37	21:00	19:07	Cloud cover 8/8 oktas, light breeze, occasional drizzle, 17°C

3.11 The bat activity surveys were carried out by Paul Lowings, who holds Scottish bat license No. 9837, and Rike Kroener. Both are experienced ecologists who have carried out numerous bat surveys at a range of sites in northern England and Scotland.

3.12 Figure 2 below shows the bat activity transect routes that were surveyed.

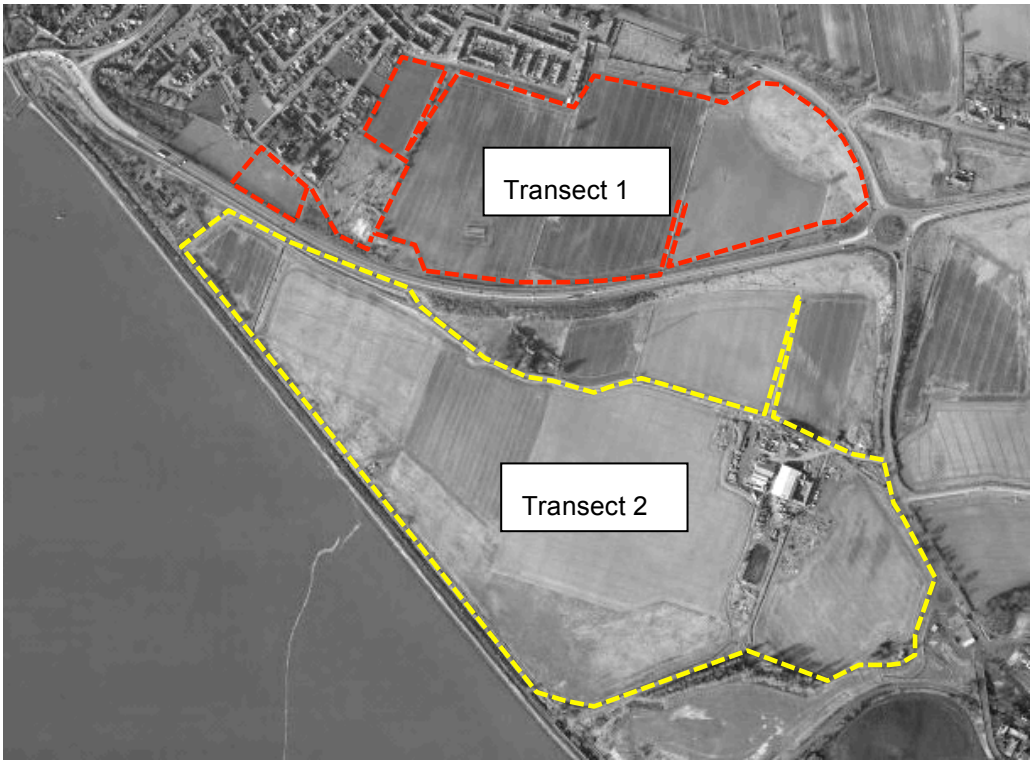

Figure 2: Bat activity survey transect routes

Breeding Birds

3.13 As the survey work commenced in September 2014, which is outside the bird breeding period, it has not been possible to carry out breeding bird surveys. However, the habitats present within the site have been assessed to determine their likely value for breeding birds. The habitat requirements of various farmland birds have been taken into account when carrying out this assessment.

Wintering Birds

3.14 Point count surveys were used to record the presence of wintering birds within the study area. Surveys were undertaken by Paul Lowings during October, November, December 2014 and January 2015. Summary details of the surveys are provided in Table 2 below.

Table 2: Summary details of the wintering bird surveys

Date	High tide	Start time	Finish time	Weather
21/10/14	14:32	14:23	15:30	Cloud cover 2/8 oktas, wind F6 from west, 9°C
		16:25	17:30	
27/10/14	17:04	14:45	15:31	Cloud cover 8/8 oktas, wind F3 from south west, 15°C
		16:06	17:10	
17/11/14	11:20	11:20	12:15	Cloud cover 8/8 oktas, wind F0, 9°C, occasional rain
		13:17	14:08	
21/11/14	14:12	12:10	13:06	Cloud cover 4/8 oktas, wind F2 from east, 8°C
		14:06	14:58	
15/12/14	08:59	09:15	10:19	Cloud cover 2/8 oktas, wind F1 from west, 2°C
		11:05	12:04	
19/12/14	12:56	10:55	11:40	Cloud cover 2/8 oktas, wind F2 from south-west, 2°C
		13:00	13:50	
15/01/15	10:13	10:15	11:10	Cloud cover 6/8 oktas, wind F2 from south-west, 5°C
		12:10	12:48	
19/01/15	12:00	11:57	12:45	Cloud cover 3/8 oktas, wind F1 from west, -1°C
		13:53	14:35	

High Tide Point Count Surveys

3.15 The fields within the study area were visited during the high tide period (2 hours before or after high tide) and a point count survey was undertaken for each field, which involved standing at a selected 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 and roosting activity, such as droppings, and these were also recorded. The aim of these surveys was to see whether birds from the Firth of Forth SPA were using the fields within the study area.

Shoreline Point Count Surveys

3.16 Point count surveys were undertaken that covered the northern shore of the Firth of Forth adjacent to the study area. Counts were made from a pier located at the northern end of the shoreline, which provided a clear view of the section of shore closest to the study area. The aim of these surveys was to evaluate the importance of this section of the shore for SPA bird species.

Other Species

3.17 During the walkover survey notes were made of any other protected species that were either observed or could potentially be present based on the habitats present within the site. For example, brown hare *Lepus europaeus*, which is a species of principal importance included on the Scottish Biodiversity List, could potentially be present within or adjacent to the site.

Limitations to Methods

3.18 Due to the date of commission of the work it was only possible to undertake a single bat activity transect survey. However, this survey was carried out in conditions when bats would be expected to be present, at a time of the year when bats are still active and in accordance with the methodology set out in Bat Conservation Trust guidance (Hundt, 2012). The survey has been complemented by an assessment of potential bat roost sites within the study area, and the evaluation of the habitats present for commuting and foraging bats.

3.19 The assessment has concluded that study area is poor for foraging bats and this is supported by the results of the bat activity surveys (see Section 4). There are few bat roosting opportunities within the site and none of these will be affected by the proposed works. For these reasons the scope of the bat activity surveys is not considered to be a significant constraint. It is considered that a robust impact assessment has been carried out.

3.20 It has not been possible to carry out breeding bird surveys but it has been possible to evaluate the habitats present for breeding birds. A significant proportion of the study area is arable land with no grass margins, and this is considered to be poor for ground nesting birds. The limited range of habitats that is present has allowed a robust appraisal to be undertaken of habitat suitability for breeding birds. As the proposed works are limited in their scope and impact, it is considered that a robust assessment has been possible in the absence of breeding bird data.

4 Results and Interpretation

Consultation

4.1 Neville Makan (Scottish Natural Heritage, Edinburgh) was consulted on 7 October 2014. The scope of survey work was discussed and Mr Makan referred to SNH's Service Statement for Planning and Development[1]. With regard to protected species he advised that SNH would only expect to be consulted if a species protection plan and an SNH licence was likely to be required. He also advised that a report summarising the results of the survey work should confirm that the Bat Conservation Trust guidance (Hundt, 2012) has been followed, and it should conclude that no offence is likely to be committed and therefore recommend that no further surveys are required.

4.2 With regard to bird surveys Mr Makan advised that SNH would only expect to be consulted if there was likely to be a significant effect under the Habitat Regulations, and there was a need to determine whether Appropriate Assessment would be required. Mr Makan suggested that this was only likely if the walkover survey identifies qualifying species from the Firth of Forth SPA using the survey area or if Wetland Bird Survey (WeBS) count data indicate that the site is important for these species.

4.3 The results of the survey work undertaken on site have concluded that, despite small numbers of curlew, lapwing and redshank (an SPA interest feature) being present, it is unlikely that the proposed work will have a significant effect on the integrity of the SPA. As no significant impacts on protected species, particularly bats, are likely either, no further correspondence has been undertaken with SNH, which is in accordance with the advice provided at the initial consultation.

Desk Study

Statutory Designated Sites

4.4 The only statutory designated sites present within 2km of the proposed overhead line diversion route are the Firth of Forth SPA, SSSI and Ramsar site, and the Torry Bay Local Nature Reserve (LNR). The closest part of the Firth of Forth is approximately 650m to the south-west of the proposed overhead line diversion, on the southern shore of the Firth of Forth. Torry Bay LNR is located on the northern bank of the Firth of Forth and is approximately 1.95km to the south-east of the proposed overhead line diversion.

Firth of Forth SSSI

4.5 The Firth of Forth SSSI is an extensive coastal area located on the east coast of Scotland. It stretches from Alloa to Crail on the north shore and to Dunbar on the south shore. It includes the estuary upriver from the Forth bridges and the firth east of the road and rail bridges. It is of importance for a variety of geological and geomorphological features, coastal and terrestrial habitats, vascular plants, invertebrates, breeding, passage and wintering birds.

4.6 The following bird species are listed on the SSSI citation: red-throated diver *Gavia stellata*, great crested grebe *Podiceps cristatus,* Slavonian grebe *Podiceps auritus*, cormorant *Phalacrocorax carbo*, pink-footed goose *Anser brachyrhynchus*, shelduck *Tadorna tadorna*, mallard *Anas platythynchos*, wigeon *Anas Penelope*, scaup *Aythya marila*, eider *Somateria mollissima*, long-tailed duck *Clangula hyemalis*, common scoter *Melanitta nigra*, velvet scoter *Melanitta fusca*, goldeneye *Bucephala clangula*, red-breasted merganser *Mergus serrator*, oystercatcher *Haematopus ostralegus*, ringed plover *Charadrius hiaticula*, golden plover *Pluvialis apricaria*, grey plover *Pluvialis squatarola*, lapwing *Vanellus vanellus*, knot *Calidris canutus*, dunlin *Calidris alpina alpine*, bar-tailed godwit *Limosa lapponica* curlew *Numenius arquata*, redshank *Tringa tetanus*, turnstone *Arenaria interpres*, and sandwich tern *Sterna sandvicensis*.

[1] http://www.snh.gov.uk/about-snh/what-we-do/scottish-economy/planning, accessed on 8 October 2014.

Firth of Forth SPA

4.7 The Firth of Forth SPA qualifies under Article 4.1 of the Habitats Directive by regularly supporting wintering populations (1993/94-97/98 winter peak means) of European importance of the Annex 1 species: red-throated diver *Gavia stellata* (90 individuals; 2% of GB), Slavonian grebe *Podiceps auritus* (84; 2% of NW Europe, 21% of GB), golden plover *Pluvialisapricaria* (2,949; 1% of GB) and bar-tailed godwit *Limosa lapponica* (1,974; 2% of Western Europe, 4% of GB). The site further qualifies under Article 4.1 by regularly supporting a post-breeding (passage) population of European importance of the Annex 1 species sandwich tern *Sterna sandvicensis* (1,617, 6% of GB, 1% of East Atlantic).

4.8 The Firth of Forth SPA qualifies under Article 4.2 of the Habitats Directive by regularly supporting wintering populations (1993/94-97/98 winter peak means) of both European and international importance of the migratory species pink-footed goose *Anser brachyrhynchus* (10,852; 6% of Icelandic/Greenlandic), shelduck *Tadorna tadorna* (moulting flock of 4,509; 2% of NW European), knot *Calidris canutus* (9,258; 3% of western European/Canadian), redshank *Tringa totanus* (4,341; 3% of European/West African) and turnstone *Arenaria interpres* (860 individuals; 1% of European).

4.9 The Firth of Forth SPA further qualifies under Article 4.2 by regularly supporting a wintering waterfowl assemblage of European importance: a 1992/93-96/97 winter peak mean of 95,000 waterfowl, comprising 45,000 wildfowl and 50,000 waders. This assemblage includes nationally important numbers of 15 migratory species: great crested grebe *Podiceps cristatus* (720; 7% of GB), cormorant *Phalacrocorax carbo* (682; 5% of GB), scaup *Aythya marila* (437; 4% of GB), eider *Somateria mollissima* (9,400; 13% of GB), long-tailed duck *Clangula hyemalis* (1,045; 4% of GB), common scoter *Melanitta nigra* (2,880; 8% of GB), velvet scoter *M. fusca* (635; 21% of GB), goldeneye *Bucephala clangula* (3,004; 18% of GB population), red-breasted merganser *Mergus serrator* (670; 7% of GB), oystercatcher *Haematopus ostralegus* (7,846; 2% of GB), ringed plover *Charadrius hiaticula* (328; 1% of GB), grey plover *Pluvialis squatarola* (724; 2% of GB), dunlin *Calidris alpina* (9,514; 2% of GB), and curlew *Numenius arquata* (1,928; 2% of GB). The assemblage also includes large numbers of the following species: wigeon *Anas penelope* (2,139 [1991/2-95/96]), mallard *A. platyrhnchos* (2,564 [1991/2-95/96]) and lapwing *Vanellus vanellus* (4,148 [1991/2-95/96]).

Firth of Forth Ramsar

4.10 The site qualifies under Ramsar criterion 5 as it supports an assemblage of birds of international importance with a peak count in winter of 72,281 waterfowl (5 year peak mean 1998/99-2002/2003). It also qualifies under Ramsar criterion 6 by support the following species/populations at levels of international importance:

4.11 Species with peak counts in spring/autumn:

- Pink-footed goose, *Anser brachyrhynchus*, Greenland, Iceland/UK 7863 individuals, representing an average of 3.2% of the population (5 year peak mean 1998/9-2002/3).
- Common shelduck, *Tadorna tadorna*, NW Europe 3596 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3).
- Common redshank, *Tringa tetanus totanus*, 5151 individuals, representing an average of 2%of the population (5 year peak mean 1998/9-2002/3).
- Ruddy turnstone, *Arenaria interpres interpres*, NE Canada, Greenland/W Europe & NW Africa 936 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3).

4.12 Species with peak counts in winter:

- Slavonian grebe, *Podiceps auritus*, Northwest Europe 68 individuals, representing an average of 2% of the population (5 year peak mean 1998/9-2002/3).
- Common goldeneye, *Bucephala clangula clangula*, NW & C Europe 1789 individuals, representing an average of 7.1% of the GB population (5 year peak mean 1998/9-2002/3).
- Red knot, *Calidris canutusis landica*, W & Southern Africa (wintering) 7295 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3).

- Bar-tailed godwit, *Limosa lapponica lapponica*, W Palearctic 1737 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3).

4.13 The site citation has also identified species/populations subsequent to the designation of the site, which may be considered for future inclusion under criterion 6.

4.14 Species regularly supported during the breeding season:

- Common tern, *Sterna Hirundo hirundo*, N & E Europe 889 apparently occupied nests, representing an average of 1.4% of the breeding population (Seabird 2000 Census)

4.15 Species with peak counts in spring/autumn:

- Goosander, *Mergus merganser merganser*, NW & C Europe 191 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3).

Torry Bay LNR

4.16 Torry Bay LNR has artificial lagoons with mudflats built from ash from Longannet Power Station, along with mudflats. The reserve is part of a larger area of inter-tidal mud flats extending between Longannet Point and Crombie Point.

Non-statutory Designated Sites

4.17 Two local wildlife sites are present within 2km of the proposed diversion route, but both sites are more than 1km away at their closest point. The two sites are Devilla Forest Mires Wildlife Site and Moor Loch Wildlife Site.

4.18 Devilla Forest Mires Wildlife Site is located approximately 1.5km to the north-east of the study area at its closest point. The site consists of a mesotrophic loch with surrounding swamp habitat and an oligotrophic swamp with surrounding mire vegetation. A number of small basin mires also for part of the wildlife site.

4.19 Moor Loch Wildlife Site is located approximately 1.2km to the north-east of the study area. This is a mesotrophic-eutrophic loch comprising open water and wetland habitat fringed by semi-natural woodland. The loch contains several small islands of broad-leaved woodland and the site is surrounded by coniferous plantation.

Protected Species

4.20 The Fife Nature Records Centre has provided a number of records of protected species within 2km of the proposed overhead line diversion route. However, none of these records relate specifically to the study area or adjacent areas. Where appropriate the records are referenced in the descriptions provided below for key receptors within the study area. The results of the desk study are available upon request.

Field Survey

4.21 The results of the Phase 1 Habitat Survey are described below. For clarity the descriptions have been divided up into the broad habitat types that have been identified within the site.

Habitat Description

4.22 The fields within which the new towers will be located, together with many of the surrounding fields, 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.

4.23 A Phase 1 Habitat Survey map and target notes are presented in this Report in Appendices 1 and 2 respectively, and photographs of the site are presented in Appendix 3.

Arable

4.24 Many of the fields within the study area are arable, most of which were sowed with winter cereal crops at the time of the survey. Two of the fields had been recently ploughed. No significant grass margins are present but common ruderal grass and herb species are present along the field boundaries (see below).

Poor semi-improved and semi-improved grassland

4.25 Poor semi-improved grassland fields are present within the study area. Grass and herb species present include cock's-foot *Dactylis glomerata*, meadow grass *Poa* sp, creeping thistle *Cirsium arvense*, creeping buttercup *Ranunculus repens*, tufted vetch *Vicia cracca*, common mouse-ear *Cerasteum fontanum*, perennial rye grass *Lolium perenne*, common ragwort *Senecio jacobaea*, white clover *Trifolium repens*, red clover *Trifolium pratense*, Timothy *Phleum pratense*, creeping bent *Agrostis stolonifera* and hard rush *Juncus inflexus*. Some localised patches of sedge (possibly *Carex sylvatica*) are also present.

4.26 A small field of semi-improved grassland is present to the west of Inch House (Appendix 2, TN1). Species present include cock's-foot, meadow grass, soft rush *Juncus effusus*, broad-leaved dock *Rumex obtusifolius*, creeping thistle and hogweed *Heracleum Sphondylium*. There is a small area of seasonally damp ground near the northern boundary of the field.

Improved grassland

4.27 Three improved grassland fields are present within the study area. Perennial rye grass and Timothy are the dominant grass species and the sward is generally less than 20cm high but with some taller plants.

Plantation woodland

4.28 Small areas of young plantation woodland are present along the southern side of the A985 link road (Appendix 2, TN3) and along the eastern boundary of the water treatment facility (Appendix 2, TN7). Species present were silver birch *Betula pendula*, Scot's pine *Pinus sylvestris*, hazel *Coryllus avellana* and willow *Salix sp*.

Dense scrub

4.29 Dense scrub habitat covers the embankments along the A985 link road (Appendix 2, TN14 and TN15). Species present include gorse *Ulex europaeus*, broom *Cytisus scoparius*, bramble *Rubus fruticosus*, creeping thistle, knapweed *Centaurea nigra*, cock's-foot, *buddleja* sp., willow, hawthorn *Crataegus monogyna*, tufted hair grass *Deschampsia caespitose*, tufted vetch *Vicia cracca*, devil's bit scabious *Succisa pratensis,* beech *Fagus sylvatica*, holly *Ilex aquifolium* and hazel *Coryllus avellana*.

Scattered trees

4.30 A line of mature poplar trees *Populus* sp. is present along the southern boundary of fields to the south-west part of the study area (Appendix 2, TN18).

4.31 A mature oak tree *Quercus* sp. is present in an area of semi-improved grassland to the north of the A985 (Appendix 2, TN22).

4.32 A semi-mature beech tree is present on the eastern edge of an area of previously developed land at the southern edge of Kincardine (Appendix 2, TN25).

Hedgerows

4.33 Recently planted hedgerows comprising hawthorn, oak, holly, hazel and willow are present along field boundaries in the northern half of the study area (Appendix 2, TN21 and TN24). The hedgerows are about 2m high and are unmanaged.

Wet ditch

4.34 A wet ditch is present along the boundary between two fields in the northern part of the study area, close to the estuary (Appendix 2, TN5). The only aquatic plant that is present is starwort *Callitriche* sp., which is extensive. The water level is about 1m below the level of the adjacent fields and the banks are vegetated with tall ruderal vegetation dominated by rosebay willowherb *Chamerion angustifolium*, creeping thistle, couch grass *Agropyron* sp. and cock's-foot with occasional gorse.

Protected Species

Badgers

4.35 No signs of badger activity were recorded during the survey (such as setts, latrines, footprints, snuffle holes or hairs on fences). No badger setts are present within the study area. The habitat is considered to have limited suitability for foraging badger as it comprises predominantly of arable habitat that is subject to regular management. The presence of badger cannot be ruled out within adjacent habitats, but no evidence has been found to indicate that badgers are active in the area and their presence is considered unlikely.

Bat Tree Inspections

4.36 A small number of trees are present within the study area but most of these are immature having been planted as part of the landscaping scheme for the recently constructed A985. A small number of mature (Appendix 2, TN18 and TN22) and semi-mature trees (Appendix 2, TN25) are present and these were assessed to determine their bat roosting potential. Most of these trees have no obvious features that might be used by roosting bats, but some of the trees in the garden of Inch House may have some suitability.

Bat Building Assessment

4.37 There are a number of buildings and structures located within the study area and these are associated with Inch House and Inch Farm. In addition there is a building in the southern part of the study area (Appendix 2, TN10): this is a small prefabricated unit which is considered to have no potential to support roosting bats.

4.38 Inch House, which is located in the centre of the study area, is an old traditional two-storey farm house with a pitched roof covered with slates. The presence of dormer windows indicates that the loft area has been converted into a living area. The building was not inspected closely but its age and construction style has led to the conclusion that it probably has some potential to support roosting bats.

4.39 An old stone construction barn is located adjacent to Inch House and this has been converted into a dwelling. It has a pitched slate-covered roof. This building may also have some potential to support roosting bats.

4.40 Inch Farm is located in the southern part of the study area and is currently used as a timber yard. There are some old stone construction farm buildings on the eastern side of the site, and some of these may have suitability for roosting bats. Adjacent to these buildings to the west are some large modern portal-framed buildings, which have no potential for supporting roosting bats. However, the farm is isolated within an area of arable and pasture farmland where foraging opportunities for bats are limited.

4.41 Further afield there are dwellings in Kincardine to the north that may have potential to support roosting bats. These buildings have not been assessed as part of this study.

4.42 Records of three soprano pipistrelle bat *Pipistrelle pygmaeus* roosts within 2km of the diversion route were also provided. The three roosts were located in the residential area of Kincardine, approximately 400m to the north of the study area.

Bat Activity Surveys

4.43 Two species of bat were recorded during the bat activity transect surveys: common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus.* The results of the bat activity transect surveys are presented in Appendix 4.

4.44 During the survey on 25 September 2014 low levels of bat activity were recorded with the majority of bat passes recorded along the boundary of the residential area at the south-east corner of Kincardine (Transect 1). Up to three soprano pipistrelle bats were recorded within 31 to 42 minutes after sunset, and it is concluded that these bats may be roosting in this area. Records of three pipistrelle roosts within buildings in this area were found during the desk study.

4.45 Only three common pipistrelle bat passes were recorded during Transect 2; two passes were recorded near the line of poplar trees along the southern boundary of the study area (Appendix 2, TN18) and a single bat pass was recorded near Inch House (Appendix 2, TN13). No other bats were recorded during this transect.

4.46 The habitats within the study area are considered to be very poor for foraging bats (see for example Ekman & De Jong, 1996; Walsh & Harris, 1996a,b; Altringham, 2003; Downs & Racey, 2006; Brandt et al., 2007) so it is considered unlikely that bats will regularly forage in this area. Bats have very specific habitat preferences for foraging, and in broad terms they tend to favour broadleaf woodland and water whilst generally avoiding arable land, moorland and improved grassland (Walsh and Harris 1996a, b). It has also been shown that linear habitat features, such as watercourses and woodland margins, are particularly important for commuting bats, often providing links between neighbouring habitat units.

Breeding Birds Habitat Assessment

4.47 In general the study area is considered to be poor for breeding birds. The dominant habitat type is arable, where there are no grass margins around the various fields. These fields are therefore considered to be sub-optimal for ground nesting species such as skylark *Alauda arvensis* and grey partridge *Perdix perdix*. However, the areas of poor semi-improved and improved grassland within the southern part of the study area may potentially support these species.

4.48 The areas of landscape planting alongside the A985 are considered to provide limited nesting opportunities for birds as the trees and shrubs are immature and consequently are not considered to provide good cover from predators such as corvids, which were observed within the study area during the phase 1 habitat survey.

4.49 Denser areas of scrub and tall ruderal vegetation to the north of Inch Farm may potentially support species such as wren *Troglodytes troglodytes*. The various buildings at Inch Farm and Inch House may also provide nesting opportunities for species such as house sparrow *Passer domesticus* and swallow *Hirundo rustica*.

4.50 Overall it is considered unlikely that the study area supports anything other than a limited range of breeding bird species, which will mostly utilise the boundary habitats around some of the fields.

Wintering Birds Habitat Assessment

4.51 The habitat within the site has been assessed to determine its likely importance for wintering birds. The site is very open in nature comprising a series of arable and pasture fields that vary in their size, orientation and slope. The land to the south of the A985 is generally quite flat, but the land to the north of the road slopes gently upwards to the north. The A985 is slightly elevated on an embankment with landscape planting present along both sides.

4.52 Most of the arable land within the study area has been sown with a winter cereal crop but some fields have been ploughed. Whilst recently ploughed land may be attractive to feeding, loafing or roosting gulls and waders, the close proximity of boundary hedgerows and the presence of existing overhead lines may deter some birds from using the fields within the northern part of the site.

4.53 Birds may preferentially select large fields with good visibility all around, presumably so that predators can be easily spotted (Mason & MacDonald, 1999). Whilst suitable fields are present in the southern part of the site, the close proximity of trees and dense scrub and other boundary features may render some areas unsuitable for many birds because of the reduced visibility.

4.54 The Fife Nature Records Centre provided records for the following bird species, which are listed on the Firth of Forth SPA citation, within 2km of the proposed diversion route: cormorant *Phalacrocorax carbo*, curlew *Numenius arquata*, goldeneye *Bucephala clangula*, great crested grebe *Podiceps cristatus*, lapwing *Vanellus vanellus*, mallard *Anas platyrhynchos*, oystercatcher *Haematopus ostralegus*, ringed plover *Charadrius hiaticula*, shelduck *Tadorna tadorna* and wigeon *Anas Penelope*. Many of these records are Wetlands Bird Survey (WeBS) core counts that relate to the SPA site itself.

Wintering birds Point Count Surveys

4.55 To assist with reporting the fields within the study area have been individually numbered as shown on Figure 3 below. Recorded bird activity has been referenced to the relevant field number.

Figure 3: Aerial photo showing numbered fields

4.56 During the bat activity survey carried out on 25 September 2014 a mixed flock of approximately 50 grey geese *Anser* sp. and ducks landed in field number 4 at dusk. No other geese or wildfowl were recorded within any of the fields within the study area, and no signs of their presence were noted (such as feeding signs, moulted feathers and droppings). During the high tide point count survey on 21 November 2014 50 pink-footed geese *Anser brachyrhynchus* were observed flying south over field number 1 at a height of 100m but did not land within the study area. Geese were not recorded during any of the other survey visits.

4.57 The results of point counts carried out during October 2014 to January 2015 indicate that the site is not used regularly by wintering wildfowl and waders. No wildfowl or waders were recorded in the northern half of the study area, which is where the existing overhead line route in located. In the southern half of the study area the only SPA species that were recorded were curlew, redshank and oystercatcher.

4.58 During the high tide point count survey on 21 October 2014 five curlews, four herons *Ardea cinerea* and 20 starlings *Sturnus vulgaris* were present in field number 4 (see Figure 3). This field was stubble at the time of this survey. No other birds were recorded on this occasion. Following high tide the number of curlews present in field number 4 increased to 6: a single heron was also present. At this time a sparrowhawk *Accipiter nisus* was recorded perching on a tree between fields 14 and 15 and a buzzard *Buteo buteo* was observed hunting over field number 17.

4.59 During the same survey four curlews and one oystercatcher were recorded using the exposed mudflats on the northern shore of the Firth of Forth adjacent to the study area. On this side of the river the bed has a relatively steep gradient, which means that only a relatively small area of mudflat is exposed by the dropping tide. By comparison the area of exposed mudflat on the southern side of the river is much more extensive.

4.60 Prior to high tide on 27 October 2014 a total of 20 curlews were recorded foraging and roosting in field number 4, which was still stubble at this time. During the high tide point count survey four curlews were recorded in field number 4 together with four herons and a hunting kestrel *Falco tinnunculus*. Birds recorded along the northern shore of the Firth of Forth at this time were one curlew and five oystercatchers.

4.61 During the high tide point count survey on 17 November 2014 ten fieldfare *Turdus pilaris* and five redwing *Turdus iliacus* were recorded in field number 1. A single heron was observed in field number 3 and 23 curlew were recorded in field number 4, which was still stubble at this time. Two kestrels were also observed hunting over field number 5. Point counts completed after high tide identified 11 curlew in field number 4 and two kestrels still hunting over field number 5. Activity recorded on the northern shore of the Firth of Forth at this time identified ten mallards, two curlews and one heron.

4.62 Prior to high tide on 21 November 2014 four curlews were recorded in field number 4 (which by now had been ploughed) and three herons were recorded in field number 5. A single buzzard was also recorded perched on a fence post in field number 9. Three curlews were recorded in field number 2 as well as a single heron. Field number 4 contained two curlews and two herons. A total of 20 curlews were recorded in field number 5 and a single kestrel was also observed hunting here. Birds recorded on the northern shore of the Firth of Forth at this time were 15 mallards and 3 curlews.

4.63 During the Phase 1 Habitat Survey carried out on 20 November 2014, the northern shore of the Firth of Forth was visited again. At this time 3 mallard and 4 herons were present. Mallard was only ever recorded along the Firth of Forth shore.

4.64 On all survey locations curlews were only observed in the southern part of field 4 or in field 5. No waders or wildfowl were observed in the northern part of this field.

4.65 On 15 December 2014 a single redshank *Tringa tetanus* was observed in field 5. This was the only occasion when this species was recorded using any of the fields. During the same survey single snipe Gallinago gallinago were recorded in fields 2 and 5 and a single heron was recorded in field 4. A total of 6 herons, 2 redshank, 16 black-headed gulls and 2 great black-backed gulls were recorded along the shoreline to the west of the railway line.

4.66 On 19 December 2014 heron was the only species recorded using any of the fields, with 1 bird in field 5, 2 in field 2 and 3 in field 4. A total of 10 mallards were recorded along the shoreline.

4.67 On 15 January 2015 single herons were noted in fields 3 and 4 and a small flock of 4 lapwings *Vanellus vanellus* was observed in the southern part of field 5. A single heron and oystercatcher were recorded along the shoreline.

4.68 On 19 January 2015 a flock of 11 lapwings was recorded in field 4, where the birds were loafing. Along the shoreline there were 3 mallard, a heron, 15 black-headed gulls, a curlew and a redshank.

Other Species

4.69 No other protected species were recorded within or adjacent to the site, however, it is possible that brown hare is present in the area (although the farmland is potentially isolated by the A985, the A977 and Longannet Power Station). The desk study has not returned any records of this species for the study area.

4.70 A record of otter *Lutra lutra* was provided for a location at Moor Loch, which is situated approximately 1.2km to the north-east of the nearest existing tower. The ditches within the Study Area are considered to be poor for otter as they appear to be for local land drainage purposes only and do not link into a local watercourse catchment (but discharge via a sluice into the Firth of Forth). The occasional presence of otter cannot be ruled out but this is likely to be infrequent.

4.71 Multiple records of red squirrel *Sciurus vulgaris* were provided from Tulliallan Wood and Keir Plantation, the nearest of these being approximately 680m to the north of the study area. No suitable habitats for red squirrel are present within the study area.

5 Potential Impacts and Recommendations

5.1 In the following sections reference has been made to relevant legislation and policy when evaluating each ecological receptor. More detailed information on the legislation and policy that affords protection to fauna and flora is presented in Appendix 5.

5.2 The impact assessment takes into account a baseline that is likely to change as a result of planning permission that has been granted for housing to the north of the A985 and for business / industrial use on land between Walker Street and the A985 to the east of Inch House (07/00252/PPP). The existing overhead line to the north of the A985 and east of Inch House is located within the Kincardine Eastern Expansion Area as identified in the adopted Local Plan. The strategic land allocation Proposals KCD002 and 003 provide for approximately 350 houses on the fields to the immediate east of Kincardine settlement. To the south of the A985 and east of Inch House the fields are allocated under KCD006 for long-term specialist industry (energy). The preferred uses on this site as identified in the Local Plan will be business, general industry and storage/ distribution.

Designated Sites

Construction Phase

5.3 The Firth of Forth SSSI, SPA and Ramsar sites are located on the southern shore of the Firth of Forth, approximately 650m to the south-west of the proposed overhead line diversion route. Torry Bay LNR is located on the northern bank of the Firth of Forth, approximately 1.95km to the south-east of the proposed overhead line diversion route. Consequently direct impacts on these designated sites are considered to be unlikely during the proposed construction works and the removal of the redundant towers, as all works will be restricted to the development footprint. The separation distances between the various sites are likely to minimise impact likelihood and magnitude.

5.4 Whilst the proposed works are not predicted to impact directly on the nearest SPA, the construction works may impact on bird species associated with the SPA if they use the habitats along the proposed overhead line diversion route. The only birds listed on the Firth of Forth SPA citation that have been recorded within the study area during the wintering bird surveys are curlew, redshank, oystercatcher, lapwing and mallard. Of these both oystercatcher and mallard were only recorded on the northern shore of the Firth of Forth, which is effectively screened from the proposed overhead line diversion route by the raised embankment of the railway. This embankment is estimated to be approximately 3m above the adjacent farmland to the north. Only one redshank was recorded using field 5 to the south-west of the proposed overhead line diversion route. As only one bird was recorded and as the field that it was using is more than 200m from the diversion route, a significant impact on this species is considered to be highly unlikely.

5.5 During the various site visits it was noted that Walker Street, which is located along the northern boundary of field number 4, is subject to regular recreational use by walkers, dog walkers and cyclists. In addition, Inch Farm is an active timber yard and there is a high level of baseline disturbance associated with this site, and there is also background noise associated with activities at Longannet Power Station. It was also noted that the railway line along the south-west boundary of the fields is used by long, slow-moving trains that are supplying coal to the power station[2]. Disturbance associated with Walker Street and the railway line may influence how birds use the study area.

5.6 Curlew was recorded (peak count 23 birds) within field number 4, in which tower YG 7R will be constructed, during some of the survey visits. The birds were always recorded near the southern edge of this field, at least 150m from the nearest of the proposed tower locations. It is possible that their position within this field was linked to the presence of walkers and cyclists using Walker Street, which may have caused some displacement of the birds.

[22] Based on observations made at the time of the Phase 1 Habitat Survey trains use the railway at a rate of approximately one train per hour.

5.7 Curlews were recorded in field numbers 2 and 5 on one occasion. The birds in field number 2 were present on the western side nearest the railway, approximately 140m from the proposed overhead line diversion route. Field number 5 is more than 200m from the route. It is important to note that field number 4 was stubble during the first three survey visits, but was then ploughed before the final visit took place. The change in status of this field may have reduced its attractiveness for curlews, resulting in the use of adjacent fields.

5.8 It is possible that the construction of the new towers could result in the disturbance and/or displacement of curlew using this part of the study area. Noise and visual disturbance arising from the presence of people and machinery may cause curlews to move away from the working area. Disturbance related impacts are most likely to occur if work takes place during the winter period when curlew numbers are expected to peak. It is possible that the birds may become habituated to the disturbance, particularly in the latter stages of the development when the tower base has been constructed and the upper part of the structure is being added (the zone of influence will be restricted at this point).

5.9 Pearce-Higgins *et al* (2012) considered data for 18 wind farm sites and 12 paired reference sites, all in unenclosed upland habitats in the UK. Five species were found to show statistically significant changes in density during the construction period (in comparison with re-construction numbers), including curlew. Decreases occurred in curlew, with no recovery during the first full year of operation (data for subsequent years were not analysed / available). Pearce-Higgins *et al* (2012) concluded the supporting evidence was most compelling with regard to curlew[3]. The results indicated a decline of up to 40% in curlew within a 620m area around the outermost turbines of the wind farms concerned during construction.

5.10 Whitfield *et al* (2010) considered the evidence for effects on curlew from survey work at five wind farm sites, three of which were in southern Scotland (Black Law, Dun Law and Hadyard Hill). All had baseline pre-construction data available. Two reference sites were also surveyed. The aim of the study was to investigate whether there was an immediate effect of turbine construction on curlew distribution, whether site faithful birds remained but were not replaced by new recruits to the population over time, and whether there was evidence of decreased breeding success close to turbines due to greater disturbance during the construction and operational phases.

5.11 The study found that at four of the five sites there was no evidence of a decline in curlew numbers or a change in the distribution of curlew in response to wind farm construction, while at the fifth the evidence was inconclusive.

5.12 Since these papers were produced, the evidence for displacement for curlew has been subject to considerable debate at the conjoined mid-Wales wind farm public inquiries e.g. Pearce-Higgins (2014). For example, Whitfield has argued that unoccupied habitat is frequently available away from turbine arrays and therefore an alternative conclusion might be that the loss to the population is short or medium term (potentially affecting 1-2 breeding seasons) as opposed to permanent, as pairs will settle elsewhere once they have accumulated experience of different locations or return to the wind farm once habituation has taken place.

5.13 There clearly remains considerable disagreement among academic researchers as to how wind farms affect waders, particularly curlew. However, much of the debate to date relates to breeding birds, whereas parts of the study area are used by wintering curlew.

5.14 There are no robust regional data on curlew numbers in Scotland, although the national population was estimated at approximately 59,000 pairs by Forrester & Andrews [Eds] (2007). The SPA population is reported to be 1,928 (see paragraph 4.26). Consequently the peak count of 23 birds represents approximately 1.2% of the SPA population.

5.15 Lapwing was only recorded in January 2015 when a small flock of 4 birds was observed in field 5 and a flock of 11 birds was observed in field 4 during separate survey visits. As previously noted for curlew, displacement impacts are considered unlikely taking into account the location of the birds relative to the working area, and the current level of disturbance in the area.

[3] The sampling method (Brown & Shepherd) is not designed to collect high resolution data on passerines or snipe.

5.16 Pink-footed geese were recorded in the southern part of the study area on a single occasion. No other evidence has been found to indicate that geese regularly use the site, such as feeding signs, moulted feathers and droppings. It is therefore concluded that pink-footed goose is an infrequent visitor only.

5.17 In conclusion, it is considered that the proposed development will not have a significant effect on the Firth of Forth SPA nor any of the species that it is noted for.

Operational Phase

5.18 Once the diverted overhead line has been constructed the only impacts that are likely to arise are as follows:

- Impacts associated with displacement caused by the presence of new structures located within parts of the landscape where they were previously absent; and
- Impacts associated with birds colliding with overhead lines.

5.19 The proposed works involve the diversion of an existing overhead line, which will require the relocation of three towers. The tower closest to Kincardine will be moved approximately 140m to the south. The middle tower will be moved approximately 300m to the south and the tower nearest to Inch Farm will be moved approximately 200m to the south. The proposed work will therefore have a minor effect in terms of the avian sightline impact caused by the overhead lines, although it is noted that the A985 will separate the existing and proposed routes.

5.20 In addition, outline planning permission has been granted for business / industrial development on land to the east of Inch House between Walker Street and the A985. This development will introduce new structures to the landscape, which will partially offset the avian sightline impact of the diverted overhead line. Furthermore, there is likely to be an increase in background noise and visual disturbance associated with the operation of the new business / industrial development, during the construction and occupation phases.

5.21 No data are available on bird collisions with overhead lines in the vicinity of Kincardine, however, it is noted that the SPA is effectively encircled on three sides overhead lines supplying electricity generated by Longannet Power Station. This includes river crossings at Clackmannanshire Bridge and further to the west at Alloa. 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 overhead line).

5.22 No direct or indirect impacts are predicted on either the Devilla Forest Mires Wildlife Site, which is located approximately 1.5km to the north-east of the study area, or the Moor Loch Wildlife Site, which is located approximately 1.2km to the north-east of the study area.

Recommendations

5.23 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.

Habitats

Construction Phase

5.24 The construction of three new towers and the removal of the existing towers will result in the permanent loss of small areas of improved and poor semi-improved grassland and arable land at each tower location. The dimensions of the new foundations have not been confirmed at the time of writing but are estimated to be between 16m^2 and 25m^2 for each tower. In addition it is expected that there will be the disturbance of habitats around each tower base, along the access track to each tower and along the line of the new overhead lines. These impacts will be temporary in nature, the area being restored after the works have been completed.

5.25 It is not expected that any trees or shrubs will need to be removed to accommodate the diverted overhead line.

Operational Phase

5.26 Once the redundant towers have been removed and the new towers constructed and the overhead lines reconnected, the site will be restored. Access tracks and the construction compound will be removed and either restored to arable or re-seeded as grassland. The foundations of the redundant towers will be removed to a depth of 1m, back-filled with soil and returned to arable or grassland. However, any restoration is likely to be short-term as planning permission has been granted to develop the land to the north of the A985 and an area of land between the A985 and Walker Street to the south. The proposed development will result in the loss of habitats within the development footprint.

5.27 No further significant habitat impacts are anticipated during the operational phase of the development, although engineers may need to occasionally access towers to undertake inspections or repairs. It is assumed that the surrounding farmland will remain as arable and pasture.

Recommendations

5.28 It is recommended that habitats are protected by clearly marking out the extent of the working area. Contractors should be briefed to ensure that they remain within the demarked working area, thereby ensuring that impacts on adjacent habitats are minimised. Tree and shrub loss will be minimised by using access routes that cross arable or pasture farmland.

Badgers

Construction and Operational Phases

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

Recommendations

5.30 Although no signs of badger activity were found on site it is recognised that this is a mobile species that may subsequently colonise a site. If badger forages within the site there is a risk that animals could fall into deep excavations. It is therefore recommended that all deep excavations are covered at night or that a ramp is installed to allow badgers to get out if they should fall in.

Bats

Construction Phase

5.31 The results of the bat activity survey, desk study and habitat assessment have led to the conclusion that the study area is poor for roosting, commuting and foraging bats. No 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. It is concluded that the proposed works will not be contrary to existing legislation that protects bats and their roost sites.

5.32 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: the results of the bat activity survey show that small numbers of bats were present within the study area and were mostly associated with existing buildings at Kincardine, Inch House and Inch Farm.

Operational Phase

5.33 There is no clear evidence that bats in the UK are at risk of colliding with overhead lines or the towers that support them. In this case there is an existing overhead line and towers in the northern part of the study area, which is where most of the recorded bat activity was located. This suggests that bat distribution within the site is not linked to the presence of overhead lines but is probably linked to the proximity to roost sites and the best foraging habitats.

5.34 The diverted overhead line will be located to an area where bat activity was very low during the survey carried out in September 2014. A small amount of bat activity was recorded in the vicinity of Inch House and it is expected that bats will continue to forage in this area. Where the diverted overhead line passes close to Inch House, it will be located in an improved pasture field to the south, which is considered to provide poor foraging habitat for bats (see for example Ekman & De Jong, 1996; Walsh & Harris, 1996a,b; Altringham, 2003; Downs & Racey, 2006; Brandt *et al*., 2007).

Recommendations

5.35 Impacts on bat roosts are unlikely to occur and so no measures are proposed to protect these features. Measures designed to protect habitats (see above) will also benefit bats by minimising impacts on habitats used for foraging. No further surveys are considered to be necessary as a robust assessment has been carried out.

Wintering and Breeding Birds

Construction Phase

5.36 Impacts on SPA bird species are considered in the Designated Sites section (paragraph 5.17 *et seq*). Aside from waders and wildfowl associated with the SPA, the study area was found to support a limited range of common passerine, corvid and raptor species during site visits carried out in October and November 2014. A limited range of species may breed within the study area, nesting opportunities being limited by the habitats that are present.

5.37 The construction of the new towers and the dismantling and removal of the redundant towers 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. The existing tower that is closest to Kincardine is located within grassland and, whilst this may support ground nesting species such as skylark, it is an area that is subject to regular disturbance by walkers. The remaining two existing towers are located in arable land with limited potential to support nesting birds. Two of the new towers will be constructed in pasture fields, the third being constructed in an arable field, all of which are considered to be poor for nesting birds. The most southerly of the new towers is located close to Inch Farm, which is an active timber yard with a high background noise level.

Operational Phase

5.38 Once the works have been completed it is considered unlikely that further impacts on birds will occur. It is likely that, over time, birds will become habituated to the new tower and will continue to utilise their previous nesting sites. As landscaped habitats along the A985 mature it is likely that they will be exploited by greater and greater numbers of breeding birds.

Recommendations

5.39 All vegetation clearance work should be carried out outside of the breeding season for birds i.e. April to August. This should minimise the risk of disturbance or harming nesting birds. 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. This will usually involve a walkover survey to check to see if nesting birds are present in the area where work is scheduled to take place.

5.40 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. This can be achieved by marking out a protection zone around the nest site, the size of the zone being dependent on various factors, such as the density of the vegetation and the species of bird present.

Other Species

5.41 No other protected species have been identified in the area. Consequently no impacts are predicted on any other notable species.

Habitats Regulations Appraisal

The HRA Process

5.42 The desk study has revealed that the Firth of Forth SSSI, SPA and Ramsar site is present within 1km of the study area at its closest point. It is important that the impact of the proposed development on this European site is fully investigated and evaluated. This requirement is set out in European legislation and the UK legislation that transposes the European legislation into UK law.

5.43 Articles 6(3) and 6(4) of the Habitats Directive[4] set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

5.44 "*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public*."

5.45 Article 6(4) goes on to discuss alternative solutions, the test of "imperative reasons of overriding public interest" (IROPI) and compensatory measures:

5.46 "*If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted*."

5.47 The purpose of the 'appropriate assessment' is the same for all plans or projects, i.e. to demonstrate that their implementation would not adversely affect the integrity of a Natura 2000 site.

5.48 In Scotland, the Habitats Directive is transposed into law through the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) (referred to as the 'Habitats Regulations'). Part 4 of the Habitats Regulations covers the assessment of plans and projects and it sets out the requirement that the authority determining a planning application must assess the potential effects of the proposal upon Natura 2000 sites prior to consent being granted.

5.49 The term 'Habitats Regulations Appraisal' (HRA) is used to cover the whole process of assessing the effects of a project on Natura 2000 sites and Ramsar sites. An 'appropriate assessment' is only one stage within the whole process of HRA.

[4] European Commission (2001). Assessment of plans and projects significantly effecting Natura 2000 site. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Published November 2001.

5.50 The European Commission has developed guidance in relation to Articles 6(3) and 6(4) of the Habitats Directive, and this recommends a four stage approach to addressing the requirements of these Articles. The four stages can be summarised as follows:

5.51 Stage 1 – Screening: This stage identifies the likely effects of a plan or project on a Natura 2000 site, either alone or in combination with other plans or project. Specifically this stage considers whether these effects are likely to be significant with regard to the integrity of the site.

5.52 Stage 2 – Appropriate Assessment: If it is considered that a plan or project is likely to have a significant effect on the integrity of a European site, the requirements of Stage 2 are triggered. This stage considers the impacts of the plan or project on the integrity of the relevant Natura 2000 site(s), either alone or in combination with other plans or projects. The assessment should consider the implications for the site in view of the site's conservation objectives. If adverse impacts are identified, this assessment should also consider measures to mitigate the identified impacts.

5.53 Stage 3 – Assessment of alternative solutions: If adverse impacts are predicted and it is not possible to fully mitigate those impacts, this stage examines alternative ways of achieving the objectives of the plan or project or plan that avoid adverse impacts on the integrity of a Natura 2000 site.

5.54 Stage 4 – Assessment where no alternative solutions exist and where adverse impacts remain: This stage assesses compensatory measures where it is deemed that the project or plan should proceed for Imperative Reasons of Overriding Public Interest (IROPI).

5.55 Within these various stages the Habitats Directive promotes the adoption of a hierarchy of avoidance, mitigation and compensatory measures. Consequently the first step is to ensure that a project avoids negative impacts on Natura 2000 sites. If potential negative impacts are identified and avoidance is not feasible, then mitigation measures need to be applied such that no adverse effects on European sites remain.

5.56 If impacts cannot be fully mitigated then the project should be taken forward to the final stage, i.e. assessment of compensatory measures where it is deemed that the project or plan should proceed for Imperative Reasons of Overriding Public Interest (IROPI).

Screening Assessment

5.57 The results of the assessment presented in paragraph 5.2 *et seq* conclude that the proposed overhead line diversion will not have a significant effect on the SPA 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. Only one redshank was recorded using field 5, which is more than 200m from the proposed overhead line diversion route. 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.

5.58 SNH has previously concluded that the East Coast 400kV Reinforcement Project (Blairingone to Kincardine) will not adversely affect the integrity of the [Natura 2000] site, despite parts of the infrastructure being located about 300m from the Firth of Forth SPA and about 150m from an intertidal area that had recently been created by managed realignment and which supports SPA birds.

5.59 SNH also noted that environmental assessment work carried out for the Clackmannanshire Bridge indicated that the intertidal area at Kincardine is important for knot, redshank, shelduck and pink-footed geese (but not curlew). No wader or goose roosts were identified, the nearest roost being on the south side of the estuary at Skinflats. Skinflats is more than 2km from the proposed overhead line diversion route.

5.60 The proposed overhead line diversion is required to facilitate the development of land to the east of Kincardine for housing. The survey work carried out from October 2014 to January 2015 indicates that this area is not used by SPA bird species (no waders or wildfowl were observed to the north of the A985). Furthermore the habitats present have been evaluated as being poor for waders and

wildfowl due to the proximity of busy roads – the centre point of the fields is approximately 160m maximum distance from roads that are well used and illuminated at night.

5.61 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 therefore 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 'appropriate assessment' is not triggered.

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Appendix 1: Phase 1 Habitat Survey Map

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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

BSG ecology

OFFICE: Newcastle
T: 0191 303 8964

JOB REF: 7792.00

PROJECT TITLE
KINCARDINE POWERLINE DIVERSION

DRAWING TITLE
Figure 1: Phase 1 Habitat Map

DATE: 28.11.2014 CHECKED: SB SCALE: 1:4,000
DRAWN: COH APPROVED: SB STATUS: FINAL

Sources: BSG Ecology survey data

Appendix 2: Phase 1 Habitat Survey Target Notes

1. Semi-improved grassland with a wall marking the boundary with the road and the garden of the adjacent farmhouse, and a fence marking the boundary with the adjacent plantation woodland. The sward is less than 10cm high although some individual plants are higher than this. Species present include cock's-foot *Dactylis glomerata*, meadow grass *Poa* sp., soft rush *Juncus effuses*, broad-leaved dock *Rumex obtusifolius*, creeping thistle *Cirsium arvense* and hogweed *Heracleum Sphondylium*. There is a small area of seasonally damp ground near the northern boundary. Robin *Erithacus rubecula* was present.
2. Verge alongside a narrow lane. The southern side is dominated by bramble *Rubus fruticosus* and the northern side is tall ruderal vegetation with common knapweed *Centaurea nigra*, cock's-foot, ribwort plantain *Plantago lanceolata*, fescue *Festuca* sp., meadow grass, ground elder *Aegopodium podagraria*, cow parsley *Anthriscus sylvestris*, creeping thistle, common nettle *Urtica dioica*, false oat grass *Arrhenatherum elatius*, bramble, tufted hair grass *Deschampsia caespitosa* and rosebay willowherb *Chamerion angustifolium*.
3. Small young plantation woodland with silver birch *Betula pendula*, Scot's pine *Pinus sylvestris*, hazel *Coryllus avellana* and willow *Salix* sp. All trees are less than 4m high.
4. Poor semi-improved grassland with cock's-foot, meadow grass, creeping thistle, creeping buttercup *Ranunculus repens*, tufted vetch *Vicia cracca*, common mouse-ear *Cerasteum fontanum*, perennial rye grass *Lolium perenne*, common ragwort *Senecio jacobaea*, white clover *Trifolium repens*, red clover *Trifolium pratense*, Timothy *Phleum pratense*, creeping bent *Agrostis stolonifera* and hard rush *Juncus inflexus*. There are localised patches of sedge (possibly *Carex sylvatica*). The grassland has previously been cut – the sward height is mostly less than 10cm high with occasional patches up to c.20cm. Four meadow pipits *Anthus pratensis* were present.
5. Ditch along the boundary between fields. The base of the ditch is 0.5m wide, the water depth is less than 10cm and some flow was evident. The only aquatic plant that is present is starwort *Callitriche* sp., which is extensive. The water level is about 1m below the level of the adjacent fields. The banks are vegetated with tall ruderal vegetation dominated by rosebay willowherb, creeping thistle, couch grass and cock's-foot with occasional gorse *Ulex europaeus*. Wren *Troglodytes troglodytes* was recorded. The arable field to the west encroaches to the top of the bank: to the east there is a 3m wide margin.
6. Arable field planted with winter cereal. The height of the vegetation is less than 10cm.
7. Small young plantation woodland with the same species as TN3.
8. Narrow access track with verges that are vegetated with rosebay willowherb, gorse, wild strawberry *Fragaria vesca*, bramble, grasses as listed in TN4, and occasional hawthorn *Crataegus monogyna*, common broom *Cytisus scoparius*, silver birch, dog rose *Rosa canina* and common nettle *Urtica dioica*. The trees alongside the track are less than 5m high – there is evidence of some tree management including felled trees and piles of chipped wood. A ditch runs parallel to the track between the track and the railway line, which runs on an embankment. The water level within the ditch appears to be variable and no aquatic vegetation is present. There is overhanging tall ruderal vegetation (see above). Wren was recorded here and grey heron *Ardea cinerea* was recorded using the adjacent ditch.
9. Estuary shoreline is defined by a stone protected bank with a low stone wall along the top. At high tide the water reaches to within 1m of the top. Grey heron (4) and mallard *Anas platyrhynchos* (3) were present along the shore adjacent to the site. No waders were present (no mudflats were exposed).
10. Electrical sub-station located within a small fenced compound. The sub-station is a modern pre-fabricated building.
11. An area of tall overgrown grassland with the same species as TN4. Dominant species are willowherb (possibly *Epilobium montanum*), couch grass *Elymus repens*, cock's-foot, creeping thistle, meadow grass, broad-leaved dock and common ragwort. Wren is present.

12. Improved grassland dominated by Timothy and perennial rye grass – the sward is mostly less than 20cm high but with some higher plants. There is a well-worn path that crosses the grassland from the farmhouse. There are signs of dog presence.
13. Farmhouse and converted outbuildings (into a dwelling). There are a number of mature broadleaf trees in the garden; mostly sycamore *Acer pseudoplatanus*, 20m-22m high, trunk up to 1.5m diameter. Some trees have bat roost potential. Immature trees are also present including beech *Fagus sylvatic*, European holly *Ilex aquifolium* and various ornamental broadleaf species. A mature horse chestnut *Aesculus hippocastanum* is present adjacent to the eastern boundary of the garden. Some ivy *Hedera helix* is growing up some of the trees.
14. Scrub covered embankment dominated by broom with bramble, gorse and some immature broadleaf trees including beech, sycamore and hawthorn.
15. Scrub covered embankment with gorse, broom, bramble, creeping thistle, knapweed, cock's-foot, *buddleja* sp., willow *Salix* sp., hawthorn, tufted hair grass, tufted vetch, devil's bit scabious *Succisa pratensis*, beech, holly and hazel. Blackbird *Turdus merula* was recorded here.
16. Poor semi-improved grassland with the same species as TN4. There is a series of tracks that cross the grassland, possibly used by motorcycles as a track. These are bare earth and appear to be regularly used.
17. Farm steading and timber yard with numerous piles of sawn wood. There is a high background noise level associated with timber processing, movement and storage.
18. Line of mature poplar trees approximately 18m – 20m high. The trees have no bat roost potential.
19. Wide verge between the road and the adjacent grassland field. The verge is colonised with tall ruderal vegetation with bramble, cock's-foot, creeping thistle, false oat grass and broom. There are occasional immature broadleaf trees including sycamore and hawthorn. Carrion crow *Corvus corone* and kestrel *Falco tinnunculus* were observed flying over this area and heron was recorded in the adjacent field.
20. Overgrown ditch that crosses the field. This had been dug out in places. Tall ruderal vegetation was present indicating disturbed ground.
21. Recently planted hedgerow with hawthorn, oak, holly, hazel and willow. The hedgerow is about 2m high and is unmanaged.
22. Mature oak tree 20m – 22m high with a trunk approximately 0.8m in diameter. The tree is not considered to have potential to support roosting bats.
23. Small fenced enclosure surrounded with palisade fencing.
24. Poor semi-improved grassland field that was being grazed by ponies at the time of the site visit. The grassland consists of the same species as TN4. There is a relatively young hedgerow that has been planted alongside the road to the south.
25. An area of hard-standing that appears to have been a previously developed site that has been cleared and abandoned. There is some local fly tipping. Tall ruderal vegetation is present with tufted hair grass, rosebay willowherb, cock's-foot, creeping thistle, false oat grass, broad-leaved dock, ribwort plantain, yarrow *Achillea millifolium*, alchemilla *Alchemilla mollis*, bramble, white campion *Silene latifolia*, red campion *Silene dioica*, colt's-foot *Tussilago farfara*, fescue, hogweed, nettle, teasel *Dipsacus fullonum*, dog rose *Rosa canina*, herb Robert *Geranium robertianum* and ivy *Hedera helix*. There are some remnant stone wall sections present. A semi-mature beech tree is present on the eastern edge of this area: it is 14m – 16m high and the trunk is approximately 0.6m diameter. This tree has no potential to support roosting bats. Robin, magpie *Pica pica* and wren were present.

Appendix 3: Site Photographs

Photograph 1: Sea wall adjacent to the outfall sluice from the site.	Photograph 2: Sea wall looking north towards Kincardine Bridge.
	

Photograph 3: Sea wall showing higher level protection.	Photograph 4: Access track that runs parallel to the sea wall (looking east).
	

Photograph 5: Drain located adjacent and parallel to the railway.	Photograph 6: Drain located adjacent and parallel to the railway.
	

Photograph 7: Access track that runs parallel to the sea wall (looking west).	Photograph 8: Drain that separates arable and pasture fields in the southern part of the site.
	

Photograph 9: Small area of semi-improved grassland near Inch House.	Photograph 10: Poor semi-improved grassland looking south towards the railway.
	

Photograph 11: Access road to the west of Inch House.	Photograph 12: Overgrown ditch in grassland to the east of Inch Farm.
	

Photograph 13: Small structure located near the southern access track.	Photograph 14: Electrical sub-station located near the southern access track.
	

Photograph 15: Area of poor semi-improved grassland that has not been cut recently.	Photograph 16: Improved grassland to the south of Inch House showing worn path.
	

Photograph 17: Mature trees around the boundary of the garden of Inch House.	Photograph 18: Arable field to the east on Inch House.
	

Photograph 19: Area of poor semi-improved grassland close to the A985 roundabout.	Photograph 20: Arable land near Inch Farm.
	

Photograph 21: Arable land to the north of Inch Farm.	Photograph 22: Arable land to the north of the A985.
	

Photograph 23: Poor semi-improved grassland immediately to the south of Walker Street.	Photograph 24: Area of hard-standing in the south-west part of the site.
	

Appendix 4: Bat activity survey results

Transect 1:

Time	Common name	Species	Comment
19:38	Soprano pipistrelle	*Pipistrellus pygmaeus*	Bat feeding low over scrub in the lee of semi-mature trees
19:42	Soprano pipistrelle	*Pipistrellus pygmaeus*	Two bats feeding in the field
19:49	Soprano pipistrelle	*Pipistrellus pygmaeus*	As 19:38
20:03	Soprano pipistrelle	*Pipistrellus pygmaeus*	Bat briefly feeding on the sheltered east side of the hedgerow
20:07	Common pipistrelle	*Pipistrellus pipistrellus*	Bat feeding in the lee of a mature sycamore tree
20:13	Pipistrelle species	*Pipistrellus sp.*	Distant bat not seen
20:16	Soprano pipistrelle & common pipistrelle	*Pipistrellus pygmaeus & Pipistrellus pipistrellus*	One bat of each species feeding in the lee of two mature sycamore trees
20:25	Pipistrelle species	*Pipistrellus sp.*	Distant bat not seen
20:42	Common pipistrelle	*Pipistrellus pipistrellus*	Bat feeding along hedge at waypoint and over scrub area to the west of waypoint
20:46	Soprano pipistrelle	*Pipistrellus pygmaeus*	Bat feeding and social calling as 19:38
20:49	Common pipistrelle	*Pipistrellus pipistrellus*	Unseen bat feeding (probably in gardens)
20:52	Soprano pipistrelle	*Pipistrellus pygmaeus*	Bat still feeding as 19:38

Transect 2:

Time	Common name	Species	Comment
20:14	Common pipistrelle	*Pipistrellus pipistrellus*	Brief pass by commuting bat
20:16	Common pipistrelle	*Pipistrellus pipistrellus*	Bat feeding among trees
20:44	Common pipistrelle	*Pipistrellus pipistrellus*	Bat heard but not seen near Inch House

Appendix 5: Summaries of Relevant Policy, Legislation and Other Instruments

6.1 This section briefly summarises the relevant legislation, policy and related issues that are relevant to the main text of the report. The following text does not constitute legal or planning advice.

6.2 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 here.

Scottish Planning Policy

6.3 The revised and updated Scottish Planning Policy (SPP) was adopted by the Scottish Government 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.

6.4 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, and these include the need to protect, enhance and promote access to natural heritage, including green infrastructure, landscape and the wider environment.

6.5 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. They also have a duty under the Water Environment and Water Services (Scotland) Act 2003 to protect and improve Scotland's water environment.

6.6 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.

6.7 The presence (or potential presence) of a legally protected species is an important consideration in decisions on planning applications. The level of protection afforded by legislation must be factored into the planning and design of development and any impacts must be fully considered prior to the determination of an application.

6.8 Plans should identify and safeguard the character of areas of wild land as identified on the 2014 SNH map of wild land areas. Development may be appropriate in wild land in some circumstances.

6.9 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.

6.10 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

6.11 Fife Council concluded consultation on the proposed Fife Local Development Plan (LDP) 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 Proposed LDP includes the following policies that are considered to be relevant with regard to the protection of ecological features within the study area:

6.12 Policy 7: Development in the countryside. Development in the countryside will only be supported in certain circumstances, which are listed within the policy text. The policy includes the following situations where development may be supported, and which may be relevant in the context of the proposed overhead line diversion:

- It is for the extension of established businesses;
- It is for facilities for outdoor recreation, tourism, or other development which demonstrates a proven need for a countryside location; or
- It is for housing to in line with Policy 8 (Houses in the Countryside).

6.13 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.

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

Scottish Wildlife Legislation

6.15 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

6.16 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.

6.17 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). 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).

Appendix 3: Cultural Heritage Assessment

Technical Appendix 3.1: Cultural Heritage Assets within Inner Study Area (Figure 5.1)

Asset no	Asset name and type	Status	Canmore no / HER no	Easting	Northing	Source(s)	Site description	Heritage Importance
1	Kincardine On Forth, Kellywood Workings, Quarry	-	NS98NW 168	293500	687200	Canmore;	Canmore holds two general photographs from 1964 of a quarry at this location. No further information is provided. Examination of the photographs held by the NMRS records that the photographs show a large gravel/stone quarry, however there is no detail within the photographs to suggest the location of this site. No quarry is depicted in this area on historic maps, or visible on aerial photographs suggesting that the quarry is located outside the development area. The location recorded by Canmore for the quarry is now located at the edge of an improved arable fields and there was no visible evidence of a quarry in this area during the field survey.	Lesser
2	Rope Works/Concrete Works	-	MFF9980	293413	687090	Historic maps; Aerial photographs	Nine roofed buildings, annotated 'Rope Works', are depicted on the Ordnance Survey 1st Edition map (1866). The same rope works are shown on the 2nd Edition map (1895); by 1914 the works are annotated as 'disused' indicating that they had gone out of use by this date. Examination of subsequent Ordnance Survey maps (1947-1981) indicates that the former rope work buildings were later modified to form part of concrete works in the late 1940s. The concrete works continue to be in use until the 1980s and the Fife HER records that they were later demolished. The concrete works are visible on aerial photographs from, 1946 to 1988, and the footprints of the former works are visible just north of the A895 public road on modern aerial photographs (GoogleEarth™). Field work identified the remains of the rope/concrete works in an area of rough scrubland just north of Walker Street/ B9037 public road. The footprint of the works, extending over an area c. 130m by 95m, are still visible as a number of concrete floors and several piles of bricks overgrown with grass and bushes. A well-preserved stone wall and two gateways (or entrances) runs along the southern edge of the site, and appear to correspond with the original rope works on the Ordnance Survey 1st Edition map. A large grass-covered bank runs out from the northern side of the works, terminating at Riverside Terrace (approximately 215m long and 15m wide), this is depicted on the Ordnance Survey 1st Edition map associated with the rope works.	Local

Asset no	Asset name and type	Status	Canmore no / HER no	Easting	Northing	Source(s)	Site description	Heritage Importance
3a-g	Mining works, Old Shafts	-	NS98NW 330; NS98NW 291; MFF9986; MFF9887; MFF9988	293600	687000	Historic maps; Aerial photographs; GUARD 1994	Seven 'Old Shaft's (air shafts) are depicted on the Ordnance Survey 1st Edition map (Perth and Clackmannan, 1866, Sheet CXLII.2 (Tulliallian), 25 inch) and subsequent maps until 1968. • (**3a**) – 293421, 687122: A square shaft shown on the 1st Edition map and subsequent maps until 1968. No visible remains of the shaft were visible in what is now an area of rough scrub land just north of the former Concrete Works (**2**). • (**3b**) – 293448, 686966: A square shaft with a roofed building shown immediately south of the shaft on the 1st Edition map. The building is depicted as unroofed on the Ordnance Survey 2nd Edition map and subsequent maps until 1958. The shaft is not depicted on the Ordnance Survey 1968 map. A rectangular area of rough ground is visible on modern aerial photographs (GoogleEarth™) at the former location of this shaft. Field survey identified the capped shaft which now survives as a rough mound, covered in scrub, on the edge of an improved pasture field. No remains of the building shown on the 1st Edition map are visible, and no other features were identified. • (**3c**) – 293742, 687066: A roughly oval shaft is depicted on the 1st Edition and subsequent maps until 1968. Location of previous shaft now lies within improved arable field; no visible remains of the shaft survive suggesting that it has been backfilled. • (**3d**) – 293877, 686949: A square shaft is depicted on the 1st Edition and subsequent maps until 1968. Location of previous shaft now lies within improved arable field; no visible remains of the shaft survive suggesting that it has been backfilled. • (**3e**) – 293988, 686855: A square shaft is depicted on the 1st Edition and subsequent maps until 1968. Location of previous shaft now lies within improved arable field; no visible remains of the shaft survive suggesting that it has been backfilled.	Lesser

Asset no	Asset name and type	Status	Canmore no / HER no	Easting	Northing	Source(s)	Site description	Heritage Importance
							• (**3f**) – 294162, 686664: A square shaft is depicted on the 1st Edition map. By the Ordnance Survey 2nd Edition the shaft is depicted as a water-filled roughly oval hollow. The oval shaft is depicted on subsequent maps until 1968. In 1994 GUARD recorded that this shaft was a walled coal shaft which had been backfilled with clean hard core. Current field survey identified the backfilled shaft; the area is now used as a storage area for the saw mill at Inch Farm. Canmore and the HER record that two unroofed building are depicted on the Ordnance Survey 1st Edition (Perthshire 1866, Sheet CXLII), but are not shown on the 1991 1:10,000 Ordnance Survey map at the location of shafts **3e** (Canmore Ref: NS98NW 291; HER no MF9985) and **3f** (Canmore Ref: NS98nw 292; HER no MFF289). However examination of the Ordnance Survey 1st Edition 25 inch map shows that the building recorded by Canmore are actually the former shafts, and that no buildings are depicted on the map at either location.	
4	Inch House, Cropmark(s), Cultivation remains	-	NS98NW 49	293831	687144	Canmore; Aerial photographs	Canmore records that linear cropmarks, possibly cultivation remains, are visible on vertical aerial photographs taken in 1982. Examination of the aerial photographs recorded several linear cropmarks, which may be former cultivation remains, criss-crossing an arable field to the north of Inch House and several large roughly circular crop marks which maybe remnants of former mining features within this area.	Unknown
5	Stone	-		294060	686813	Historic maps	The location of a 'stone' is depicted on the Ordnance Survey 2nd Edition map (Fifeshire, 1895, Sheet 037.06, 25 inch) and on the 1914 and 1947 Ordnance Survey 25 inch maps. The previous location for this feature now lies in a improved arable field and there is no visible remains of the 'stone'.	Lesser
6	Inch Farm, Shell midden	-	MFF9984	294120	686660	HER; GUARD 1994	The HER notes that work carried out by GUARD in 1994 recorded the remains of a shell midden just north of Inch Farm. The shell midden comprised a very dense concentration of marine shell, c. 30 m in diameter, in the southeast corner of an arable field and overlain by the B9037 public road to the south. No visible remains of the shell midden were visible during the current field survey. The area is now covered in dense grass and hardcore/stones which have been laid down to form a solid surface at the entrance to the field.	Unknown (Regional)

Asset no	Asset name and type	Status	Canmore no / HER no	Easting	Northing	Source(s)	Site description	Heritage Importance
7	Inch Farm, Farmhouse, Farmstead	-	NS98NW 297	294040	686590	Canmore; Historic maps; Aerial photographs	Canmore records the presence of Inch Farm and holds a number of general photographs of features associated with the farmstead, including a waterhole, old pump, sea wall and farmyard, from 1968. No further information is provided. A farmstead comprising five buildings set around and rectangular courtyard and four long rectangular buildings (possibly barns) located immediately to the northeast of the main farm buildings is shown on the Ordnance Survey 1st Edition map (Perth and Clackmannan, 1866, Sheet CXLII.2 (Tulliallian), 25 inch) and subsequent maps, annotated 'Inch Farm'. Field survey identified the farmstead which is still occupied.	Local
8	Stone (monolith), memorial	-	-	293825	686358	Historic maps; Aerial photographs	The location of a 'stone' is depicted on the Ordnance Survey 2nd Edition map (Fifeshire, 1895, Sheet 037.06, 25 inch) and on subsequent maps. What may be a possible standing stone at the location depicted by the Ordnance Survey maps is visible on aerial photographs from 1946 to 1988 and on modern aerial photographic imagery (GoogleEarth™) standing in an improved pasture field. Field survey identified the stone (or monolith) standing in an area of scrubland on the edge of a ploughed field. The stone measures 1.5m tall by 0.5m wide and 0.4m deep. The main faces of the stone are aligned NNW and SSE. The NNW face has carved writing on it, although much worn a name 'WILLIAM LEWIS (or HEWIT)' and a possible date (18th century?) were visible. The SSE face is blank. The stone is embedded into a small rectangular stone block with a number of boulders placed around its footings.	Local
9	Inch House, Shell midden	-	MFF9983	293600	686750	HER; GUARD 1994	The HER notes that previous work carried out by GUARD in 1994 recorded that the remains of a shell midden are present within a field close to the sea wall (**14**). The shell midden comprised of a major concentration of shells (c. 30 m in diameter). No visible remains of the shell midden were visible during the current field survey; the field has been left fallow and is covered in dense grass.	Unknown (Regional)
10	Inch House, House	Category B Listed (16586)	NS98NW 298	293635	686821	Canmore; Statutory List; Historic maps	The Statutory List records that this two-storey house with attic was built in the 2nd half of the 18th century and is enclosed by a rubble-built garden wall. A settlement annotated 'Inch' is depicted on Roy's map of 1747-55. A roofed building, annotated 'Inch House', is shown on the	Regional

Asset no	Asset name and type	Status	Canmore no / HER no	Easting	Northing	Source(s)	Site description	Heritage Importance
							Ordnance Survey 1st Edition map (Perth and Clackmannan, 1866, Sheet CXLII.2 (Tulliallian), 25 inch) and subsequent maps. Field survey identified the house which is still occupied. Further details are provided in Appendix 3.2.	
11	Inch House, Shell midden	-	MFF9982	293640	686880	HER; GUARD 1994	The HER notes that previous work carried out by GUARD in 1994 recorded that a recent pipe laid from a well just north of Inch House contains some marine shell up-cast suggesting the presence of a shell midden at this location. No visible remains of the shell midden were visible during the current field survey. This area is now crossed by the embankment for the recently constructed A985 public road.	Unknown (Regional)
12	Kincardine Eastern Link Road, Drainage system	-	NS98NW 330	293800	687100	Canmore; McLellan 2003	Canmore notes that an evaluation carried out in 2002 (McLellan 2003) recorded the presence of a drainage system, possibly of the later 18th or early 19th century, associated with Inch House. McLellan (2003) records that three drains were uncovered, two large stone-lined drains and one rubble drain. The stone-lined drains were aligned NE-SW and NW-SE respectively, whilst the rubble drain was aligned E-W. It is suggested that the drains formed part of a drainage system that may be contemporary with Inch House. They appear to run away from Inch House, and its associated buildings, and they may have been used to carry water from the occupied areas, into the paddock at the back of the house. No finds were found within the drains and as such it is difficult to date them, however, the excavator argued that a lack of ceramic drain and rubbish within them may indicate a late-18th or early-19th century date for the drains.	Lesser
13	Inch House, Artifact Scatter	-	MFF9981	293550	686850	HER; GUARD 1994	The HER notes that previous work carried out by GUARD in 1994 identified a dump of debris (c. 50 m sq), including sandstone blocks and Throsk type pottery of post-medieval date, in the southeast corner of a field just west of Inch House. The debris had been cut by a modern service trench showing that the deposits were <1m deep. Nothing was visible of the dump during the current field survey; the field is now covered in dense grass.	Unknown (Local)
14	Kincardine On Forth, Old sea wall, Sea defences	-	NS98NW 227	292970	687240	Canmore; McLellan 2003	Canmore holds a photograph of the old sea wall from 1974. No further details are provided. McLellan (2003) recorded that the sea wall runs alongside Walker Street/ B9037 visible as a vertical dry stone retaining wall, dating	Local

Asset no	Asset name and type	Status	Canmore no / HER no	Easting	Northing	Source(s)	Site description	Heritage Importance
							possibly to the later 18th century. The seawall, consisting of large stone blocks, is still visible running along the southern side of Walker Street/ B9037. It has been crossed by the recently constructed A985 just east of Inch House.	
15	Kincardine, Shell Midden		MFF9979	293280	687070	HER	The HER notes that previous work carried out by GUARD in 1994 identified a concentration of marine shell forming a roughly circular shaped midden (c. 25m in diameter). The shell midden was bisected by a canalised stream.	Unknown (Regional)
16	Shell Midden		MFF9978	293200	687150	HER	The HER notes that previous work carried out by GUARD in 1994 identified a concentration of marine shell with flint (c.30m in diameter) within a ploughed field immediately to south of the old sea wall (14).	Unknown (Regional)
17	Kincardine On Forth, Fortlet (Roman) (Possible)	-	NS98NW 16	293000	687200	Canmore; HER	Canmore records that a cropmark, strongly suggesting the ditch of a Roman fortlet, has been observed on a large scale specialist photograph [Information contained in letter (and trace) from T C Welsh to the Ordnance Survey in 1979. No further information is provided Information from the 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.	Lesser
18	Inch House, Mine Shafts (possible)		MFF9990, MFF9991	293740 293750	687170 687140	HER	The HER records that the location of two possible mine shafts are recorded on a plan provided in a report produced by GUARD in 1994 following archaeological investigations at Kincardine. No further details are provided. No mine shafts are depicted in this area on historic maps, however circular cropmarks which are potentially the remains of two shafts are visible on oblique aerial photographs for this area. The location for the mine shafts now lies at the edge of an improved arable field and there are no visible remains of any shaft in this area.	Unknown

Technical Appendix 3.2: Cultural heritage assets within the Outer Study Area with Predicted Visibility of the Proposed Development (Figure 5.3, With Screening ZTV)

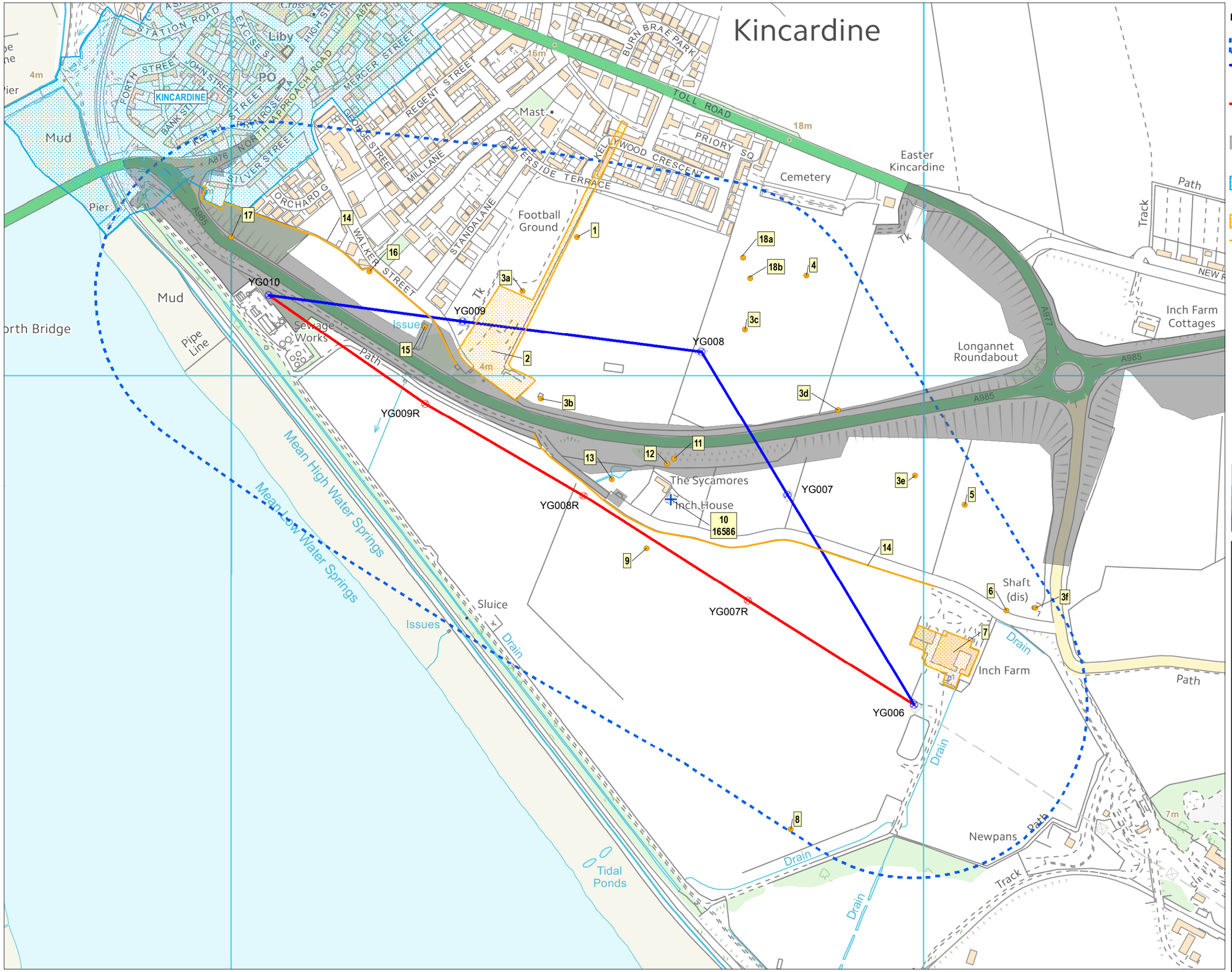
Asset number	Asset name	Importance of Asset (Status)	Character	Bare Ground Visibility	Visibility with Screening	Magnitude of Impact	Significance of Effect
50078	Kincardine Bridge	National (Category A)	Large road bridge crossing the Firth of Forth. Constructed in the 1930s. Views from the bridge are concentrated along the Firth of Forth to the NW and SE, and take in wider landscape views including Kincardine-on-Forth, the Firth of Forth coastline and Longannet Power Station.	Both Proposed & Existing Towers	Both Proposed & Existing Towers	**Imperceptible**: The Proposed Development would be visible at a slightly closer distance than previous to the asset, crossing farmland along the coastline to the east. Nevertheless, the presence of the Proposed Development would not significantly affect wide views from the asset along the Firth-of-Forth nor affect an ability to appreciate or understand the asset.	**Minor**
16574	14 and 16 Excise Street, Kincardine-on-Forth	Regional (Category B)	Late-18th century small single-storey house. Forms part of Kincardine-on-Forth CA. Localised town setting.	Both Proposed & Existing Towers	Proposed Towers Only	**Imperceptible**: Glimpses of the Proposed Development may be visible on the south-eastern edge of Kincardine-on-Forth town. The presence of the Proposed Development would not however affect the immediate town setting surrounding the building.	None
16582	Burnbrae House, Kincardine-on-Forth	Regional (Category B)	Late-18th century small three-storey classic mansion-house standing on edge of Kincardine-on-Forth within small designed landscape. Main elevation (front) of the house is orientated SSW, overlooking the immediate surrounding modern housing estate and with longer views taking in the fife coast and Firth of Forth. Town setting.	Both Proposed & Existing Towers	Both Proposed & Existing Towers	**Low, Beneficial**: The Proposed Development would be visible further from the building than previous; the proposed OHL seen at a slightly lower elevation than the existing OHL. The Proposed Development would be visible from the main elevation of the house, aligned south, in views taking in the Firth of Forth. Nevertheless, the presence of the Proposed Development would not affect the ability to understanding or appreciation the building and	**Minor**

Asset number	Asset name	Importance of Asset (Status)	Character	Bare Ground Visibility	Visibility with Screening	Magnitude of Impact	Significance of Effect
						its gardens or its town setting.	
16586	Inch House and Garden Walls	Regional (Category B)	Late 18th century house. Situated in small garden just north of B9097 public road. Surrounded by trees and vegetation. Main elevation (front elevation) orientated to the south-west overlooking arable farmland and the coastline along Firth of Forth.	Both Proposed & Existing Towers	Both Proposed & Existing Towers	**Low, Adverse**: Proposed Development would be visible in views to the Firth of Forth from the front elevation of the house. The closest tower to the house would be present 125m, off-set to the west and out of direct line of sight in the principal vista from the house 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 and the tower would not be eye-catching when looking directly out towards the Firth of Forth. In views of the house, from both the foreshore and from the A977 and surrounding roads, the proposed new towers would be visible: although, the OHL towers would be seen offset from the house and would not affect an ability to appreciate views of the house. **See Table 5.6 in Cultural Heritage Chapter for detailed discussion.**	**Minor**
16598	"Ye Olde House" 25, 26 Forth Street, Kincardine-on-Forth	Regional (Category B)	18th century two cottages converted into public houses. Forms part of Kincardine-on-Forth CA. Localised town setting.	Both Proposed & Existing Towers	Existing Towers Only	**Low, Beneficial**: views to the Proposed Development screened by intervening buildings	**Minor**
16609	20 Excise Street,	Regional	18th century single-storey cottage.	Both Proposed &	Existing	**Low, Beneficial**: views to the	**Minor**

Asset number	Asset name	Importance of Asset (Status)	Character	Bare Ground Visibility	Visibility with Screening	Magnitude of Impact	Significance of Effect
	Kincardine-on-Forth	(Category B)	Forms part of Kincardine-on-Forth CA. Localised town setting.	Existing Towers	Towers Only	Proposed Development screened by intervening buildings	
16613	Kincardine Rc Chapel, 6 Coopers Lane, Kincardine-on-Forth	Regional (Category B)	18th century 2-storey house. Forms part of Kincardine-on-Forth CA. Localised town setting.	Both Proposed & Existing Towers	Proposed Towers Only	**Imperceptible**: Glimpses of the Proposed Development may be visible on the south-eastern edge of Kincardine-on-Forth town. The presence of the Proposed Development would not however affect the immediate town setting surrounding the building.	None
17131	Sands Doocot - Lurg Farm	Regional (Category B)	Late-18th century dovecot. Forms part of Lurg farmstead; standing in farm courtyard and surrounded by farm buildings. Localised setting.	Both Proposed & Existing Towers	Both Proposed & Existing Towers	**Imperceptible:** Proposed Development would be visible in landscape surrounding dovecot. Its presence would not affect the immediate farm setting of the building.	None
15047	22-38 Hawkhill Road, Kincardine-on-Forth	Local (Category C)	Row of single-storey miners' cottages, constructed late-18th century. Forms part of Kincardine-on-Forth CA. Localised town setting.	Both Proposed & Existing Towers	Proposed Towers Only	**Imperceptible**: Glimpses of the Proposed Development may be visible on the south-eastern edge of Kincardine-on-Forth town. The presence of the Proposed Development would not however affect the immediate town setting surrounding the building.	None
16583	2-20 Hawkhill Road inclusive (All Even Numbers), Kincardine-on-Forth	Local (Category C)	Row of single-storey miners' cottages, constructed late-18th century. Forms part of Kincardine-on-Forth CA. Localised town setting.	Both Proposed & Existing Towers	Proposed Towers Only	**Imperceptible**: Glimpses of the Proposed Development may be visible on the southeastern edge of Kincardine-on-Forth town. The presence of the Proposed Development would not however affect the immediate town setting surrounding the building.	None
16599	"Lucker" 23 Forth Street, Kincardine-on-Forth	Local (Category C)	Early-19th century 2-storey house. Forms part of Kincardine-on-Forth CA. Localised town setting.	Both Proposed & Existing Towers	Both Proposed & Existing Towers	**Imperceptible**: Glimpses of the Proposed Development may be visible on the south-eastern edge of Kincardine-on-Forth town. The presence of the Proposed Development would not however	None

Asset number	Asset name	Importance of Asset (Status)	Character	Bare Ground Visibility	Visibility with Screening	Magnitude of Impact	Significance of Effect
						affect the immediate town setting surrounding the building.	
	Tulliallan	National (GDL)	Tulliallan GDL lies just north of Kincardine-on-Forth. It comprises of wooded parkland policies that form the setting for Category A Listed Tulliallan Castle (16585) and other associated structures including Category B Listed Tulliallan Castle walled garden (49037), old parish church (16584), dovecot (17143) and lodge (16587). There are formal gardens laid out along the west elevation of the Castle, while to the south of the Castle are terraced gardens (or Italian Garden). Today the Castle forms part of the Scottish Police College and several modern office blocks and other building complexes have been built around the Castle and throughout the GDL for the college.	Both Proposed & Existing Towers	Proposed Towers Only	**Imperceptible:** Visibility of the Proposed Development would be limited to the eastern edges of the GDL by intervening buildings and forestry/woodland. None of the listed buildings or principal views within the GDL would be affected. The presence of the Proposed Development would not affect an understanding or appreciation of the GDL and its associated listed buildings.	**Minor**
	Kincardine-on-Forth	Regional (Conservation Area)	The CA stands on the east bank of the Firth of Forth. The town developed at a natural crossing point on the river where it narrows slightly. The CA encompasses the 18th/19th core of the town, including Keith St, High St, Kirk St and Kilbagie St. The town slopes gently up from the river and is surrounded by mainly agricultural land. Modern housing estates have been built up around the 18th/19th century town centre, particularly to the east side of the town. A green backdrop for the CA is provided by the wooded policies of Tulliallan Castle, present to the north of the CA.	Both Proposed & Existing Towers	Both Proposed & Existing Towers	**Imperceptible**: Glimpses of the Proposed Development would be visible from the outer edges of the CA. The presence of the Proposed Development would not, however, affect the immediate the town setting of the buildings that comprise the CA, nor affect any principal vistas or views from the CA.	None

Kincardine



Key:

- Inner Study Area
- Existing OHL
- Existing Tower Location
- Proposed OHL
- Proposed Tower Location
- GUARD Study Area
- Listed Building Category B
- Conservation Area
- Cultural Heritage Site (point)
- Cultural Heritage Site (area)
- Cultural Heritage Site (line)

CFA ARCHAEOLOGY LTD
Old Engine House
Eskmills Park
Musselburgh
East Lothian, EH21 7PQ
T: 0131 273 4380
F: 0131 273 4381
info@cfa-archaeology.co.uk
www.cfa-archaeology.co.uk

Fig. No:	Report No:
5.1	-

Title: Heritage Assets identified within the Inner Study Area

Project: YG Route Longannet - Kincardine Overhead Line Diversion

Client: Environmental Designworks

Scale at A3: 1:5,000

Drawn by:	Checked:	Date:
SW	AD	04/03/2015

Key:

- Existing OHL
- Existing Tower Location
- Proposed OHL
- Proposed Tower Location
- Outer Study Area
- Scheduled Monument
- 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

CFA ARCHAEOLOGY LTD
Old Engine House
Eskmills Park
Musselburgh
East Lothian, EH21 7PQ
T: 0131 273 4380
F: 0131 273 4381
info@cfa-archaeology.co.uk
www.cfa-archaeology.co.uk

Fig. No:	Report No:
5.2	-

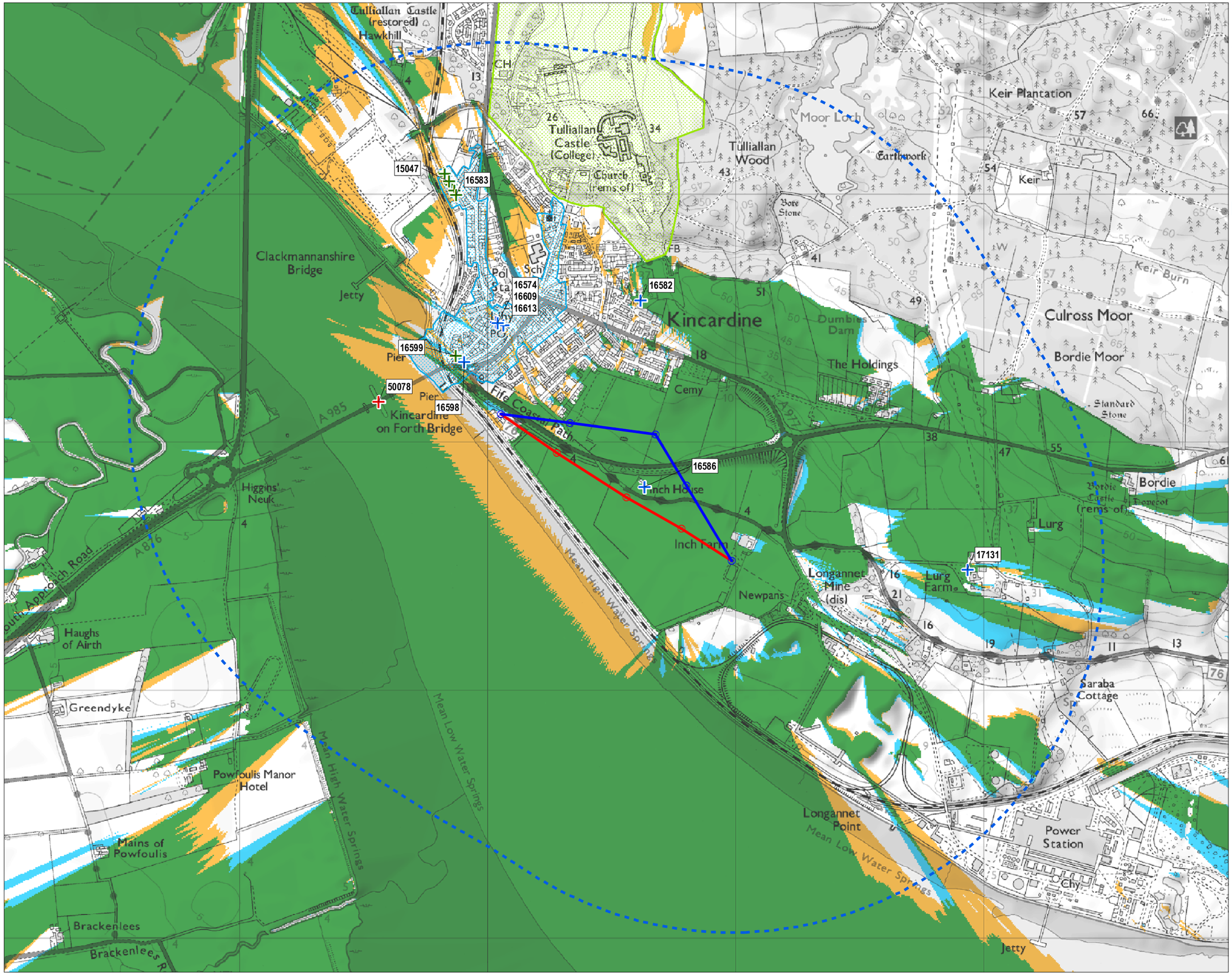
Title:
Outer Study Area, Heritage Assets and Bare-Earth ZTV

Project:
YG Route Longannet - Kincardine Overhead Line Diversion

Client:
Environmental Designworks

Scale at A3:
1:14,000

Drawn by:	Checked:	Date:
SW	AD	09/12/2014



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

CFA ARCHAEOLOGY LTD
Old Engine House
Eskmills Park
Musselburgh
East Lothian, EH21 7PQ
T: 0131 273 4380
F: 0131 273 4381
info@cfa-archaeology.co.uk
www.cfa-archaeology.co.uk

Fig. No:	Report No:
5.3	-

Title: Outer Study Area, Heritage Assets and With-Screening ZTV

Project: YG Route Longannet - Kincardine Overhead Line Diversion

Client: Environmental Designworks

Scale at A3: 1:14,000

Drawn by:	Checked:	Date:
SW	AD	09/12/2014

Appendix 4: Hydrology Assessment

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


A.


F.


G.


B.


C.


D.


E.


H.

REFERENCE(S)
SERVICE LAYER CREDITS: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

CLIENT
SPEN – ENVIRONMENTAL DESIGNWORKS

PROJECT
PROPOSED LONGANNET - KINCARDINE OVERHEAD LINE DIVERSION

TITLE
HYDROLOGY ASSESSMENT – PHOTO LOCATIONS

CONSULTANT
Golder Associates

YYYY-MM-DD	2014-12-01
DESIGNED	DZF
PREPARED	DZF
REVIEWED	AG
APPROVED	BS

PROJECT NO.	CONTROL	REV.	FIGURE
P4514870695	---	A	6.1

SP ENERGY NETWORKS