Norfolk Boreas Offshore Wind Farm

Consultation Report

Appendix 14.8 Necton substation workshop presentations

Applicant: Norfolk Boreas Limited
Document Reference: 5.1.14.8
Pursuant to APFP Regulation: 5(2)(q)

Date: June 2019
Revision: Version 1
Author: Copper Consultancy

Photo: Ormonde Offshore Wind Farm

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INTRODUCTION

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Dear Reader,

About the Norfolk Vanguard and Norfolk Boreas Projects

Over the past 18 months, Vattenfall have been consulting on our proposals to build two new 1.8 Gigawatt wind farms at least 50km off the coast of Norfolk. As of August 2017, we have held 20 public drop in exhibitions and meetings and during this informal consultation more than 1,850 members of the public have participated and shared their knowledge to help shape our proposals. The feedback provided by participants at these events can be found in our consultation reports which are published in full on both of our project websites norfolkvanguard.vattenfall.co.uk and norfolkboreas.vattenfall.co.uk

Once operational, Norfolk Vanguard and Norfolk Boreas together can generate 4% of the UK's electricity requirements, or half of the total energy needs (commercial, industrial and domestic) of the East of England region[1]. The project will save five million tonnes of CO_2 each year[2]. These are significant contributions to our future low carbon economy and electricity needs.

1 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/552059/Chapter_5_web.pdf

2 http://www.renewableuk.com/page/UKWEDExplained

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About this document

In July 2017, workshops were held in the areas where important onshore infrastructure – specifically the Cable Relay Stations and Substations to connect the project to the UK electricity network – might be placed. Those invited to the workshops included parish, district and county councillors, the local campaign group, local residents and property owners potentially most affected, and others active in the local community.

The following day, an open drop-in event was held at a local community venue to enable others to view the materials presented by Vattenfall, including a 3D model of the project options under discussion, to see the comments and questions of local participants and to contribute their perspective.

At these sessions, it was agreed that the visual information presented would be made available so that others could see the information.

A transcribed report of the views gathered at the evening and subsequent drop-in event is available on our website.

This digital book shows the materials presented at the event which focussed specifically on the siting of project Substations.

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What are the visuals and maps – why are they important?

Vattenfall is considering both DC and AC transmission options for these offshore wind projects because:

- Technology is advancing rapidly, and it is not clear which of these options will offer the best solution for the projects when we come to build them (more than 5 years from now).
- Especially given the size and distance from shore of our projects, we need to be able to build the most affordable, efficient and reliable solution for the UK consumer. Making an early decision in favour of one particular technology could lock the project into a transmission solution that is not best.

The purpose of the meeting was to share and explore, with a very local focus, information relating to the siting of project Substations for Norfolk Vanguard and Norfolk Boreas offshore wind farms. We reviewed together, in brief, information from the Environmental Impact Assessment (EIA) work relevant to selecting a potential site, and heard the feedback of those most likely to be affected by the siting of project Substations in the options being considered.

The **maps** illustrate some of the primary constraints that have to be considered as part of the regulated EIA process. Identification of appropriate sites includes consideration of technical and commercial feasibility, environmental impact and stakeholder concerns.

Photomontages are also shown. Visual impact is a major consideration in the EIA process and viewpoint assessments are made in order to seek to site infrastructure where it has the least impact and/or where the opportunities to mitigate against impacts are greatest. The viewpoint assessment is illustrated by a range of visualisations, including photographs and photomontages and a digital model. These were displayed to help people envisage the Substation in situ in two of the proposed siting options being considered.

Example viewpoints illustrated by the digital model showing the potential for screening through planting schemes will be issued in supplementary digital books shortly.

The site selection process is applied at many different levels for projects of this scale and nature. This process is ongoing and iterative in nature.

This material has been issued on 10th August, 2017.

The next phase of consultation will take place in the autumn. Events organised then, as part of our Statutory Consultation, will be widely advertised. Feedback provided then will inform the final Norfolk Vanguard proposals we submit to the Planning Inspectorate in the summer of 2018.

If you have feedback to share in the meantime, please send to info@norfolkvanguard.vattenfall.co.uk

Thank you for your interest.

Best wishes,

Ruari Lean & Graham Davey

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PURPOSE OF THE WORKSHOP

To reflect together on:

- The need to discuss the siting of the project substations
- How we have arrived at the refined project Substation Search Areas, guided by the Environmental Impact Assessment process and local feedback, and where we are in the process
- Looking at substation siting options

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EXPLORING KEY CONSIDERATIONS OF SITING PROJECT SUBSTATIONS

July 2017

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WHAT HAPPENS NEXT

Main topics to be discussed:

- Pros and Cons of each footprint
- How might issues be overcome:
  - Landscape
  - Noise
  - Access

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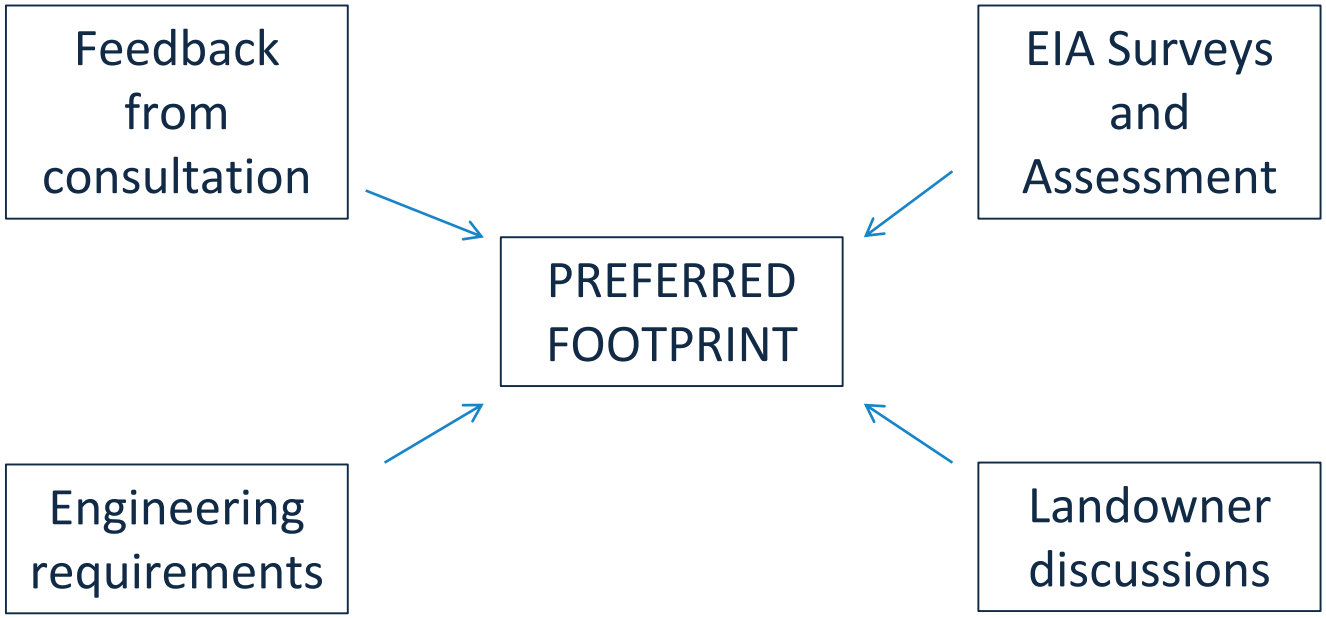
NEXT STEPS: SITE SELECTION



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HOW CAN I STAY INVOLVED?

Step	Provisional Timeline	How you can have your say
PEIR Submission and Consultation	October – November 2017	Your chance to feed into the project before DCO submission
DCO Submission	June 2018	The formal application for development consent to the Planning Inspectorate (PI)
DCO Acceptance	July 2018	28 days for the PI to decide if the application meets set standards
Pre-examination	August – October 2018	You can register with the PI and provide a summary of your views in writing
Examination	November 2018 – April 2019	The PI will carry out an examination. Those who have registered will be invited to provide more details of your views in writing and at hearings
Decision	May – October 2019	The PI will advise the Secretary of State who will make a decision as to whether to grant or refuse development consent
Post decision	November 2019	A six week period when the decision can be legally challenged

HOW CAN I STAY INVOLVED?

https://infrastructure.planninginspectorate.gov.uk/application-process/participating-in-the-process/

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CONSTRAINTS AND OPPORTUNITIES

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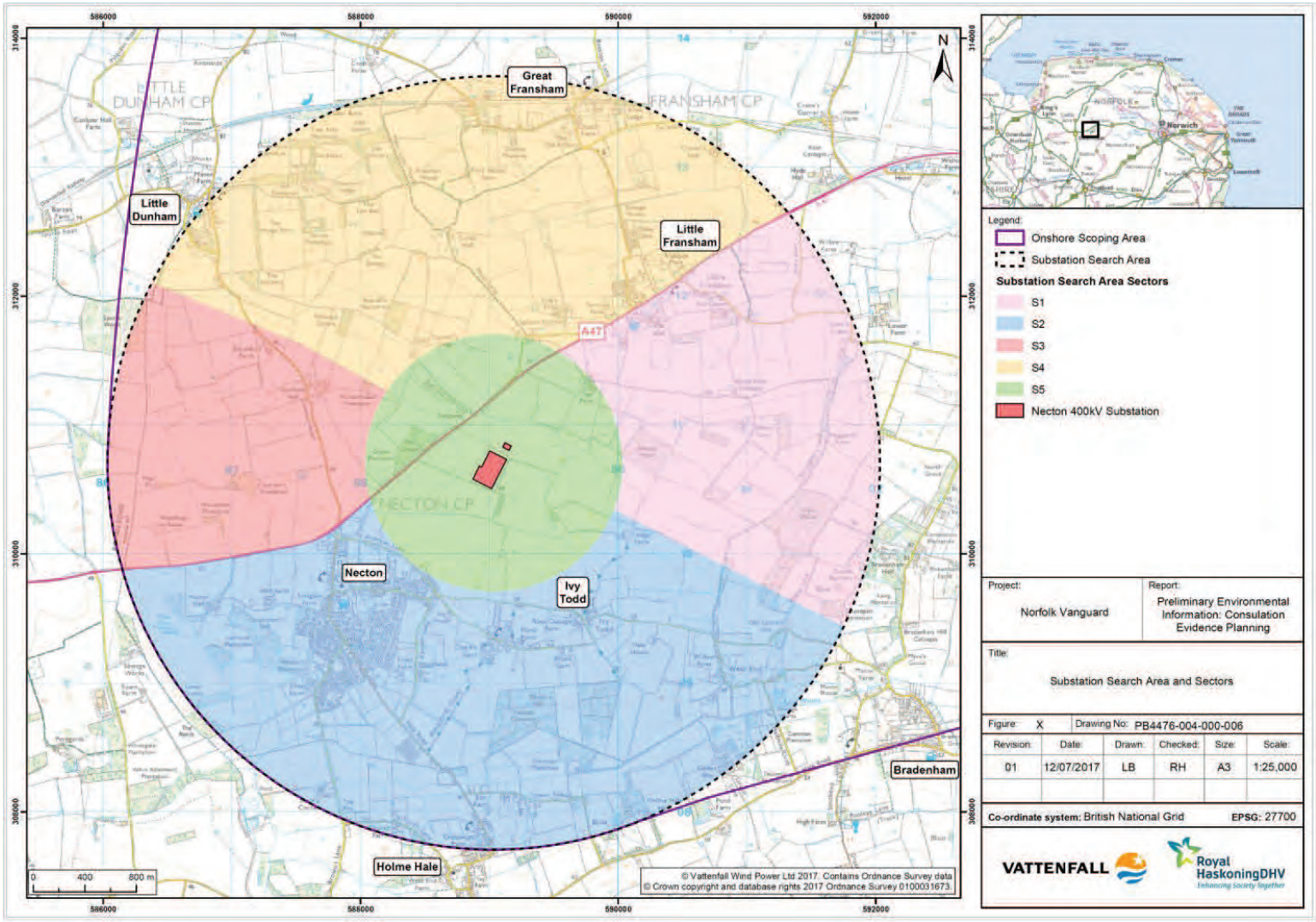
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Norwich
Legend:
Onshore Scoping Area
Substation Search Area
Substation Search Area Sectors
S1
S2
S3
S4
S5
Necton 400kV Substation
Project:
Norfolk Vanguard
Report:
Preliminary Environmental Information: Consulation Evidence Planning
Title:
Substation Search Area and Sectors
Figure: X
Drawing No: PB4476-004-000-006
Revision: 01
Date: 12/07/2017
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Royal HaskoningDHV
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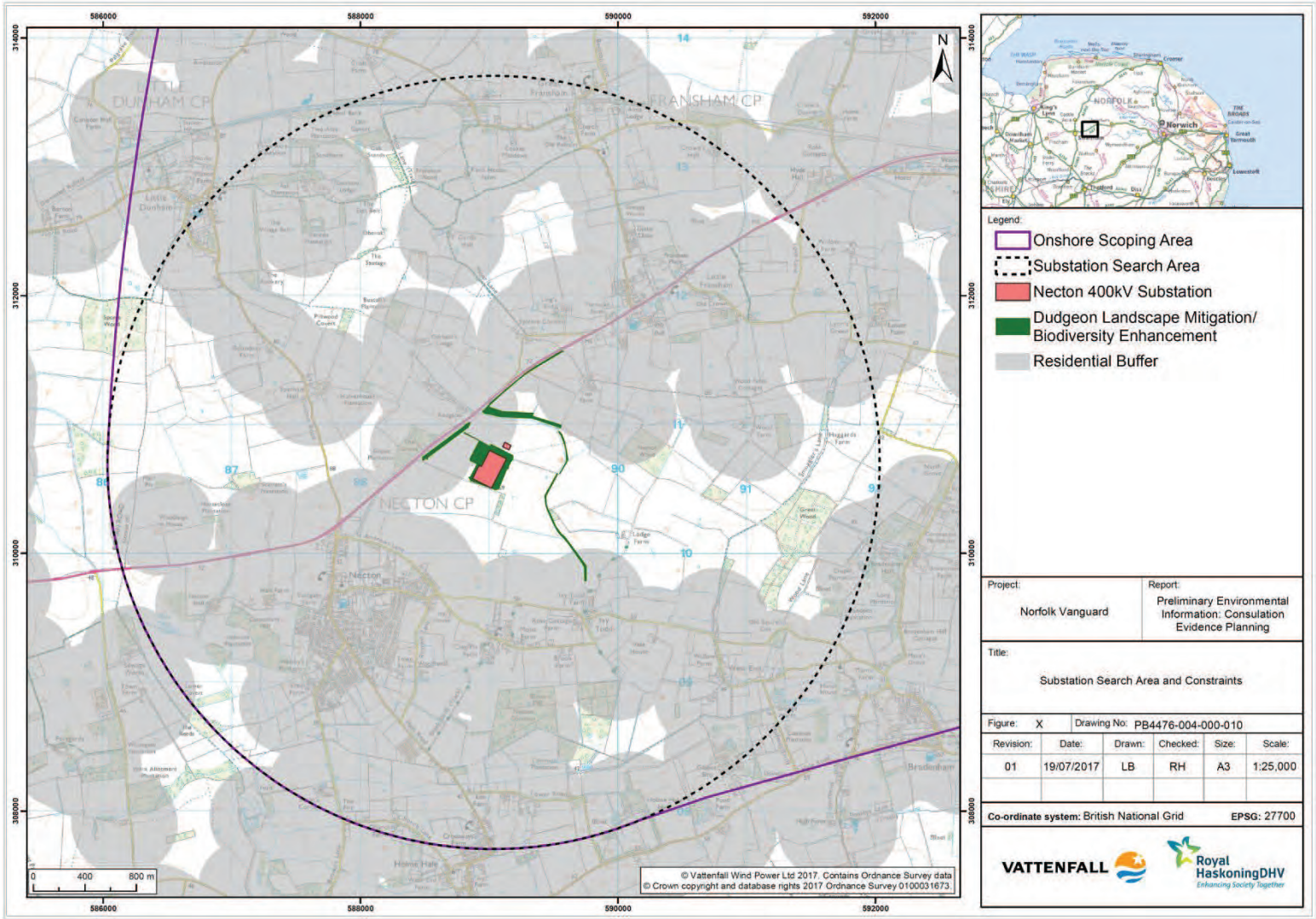
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NORFOLK
Legend:
Onshore Scoping Area
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Necton 400kV Substation
Dudgeon Landscape Mitigation/ Biodiversity Enhancement
Residential Buffer
Project:
Norfolk Vanguard
Report:
Preliminary Environmental Information: Consulation Evidence Planning
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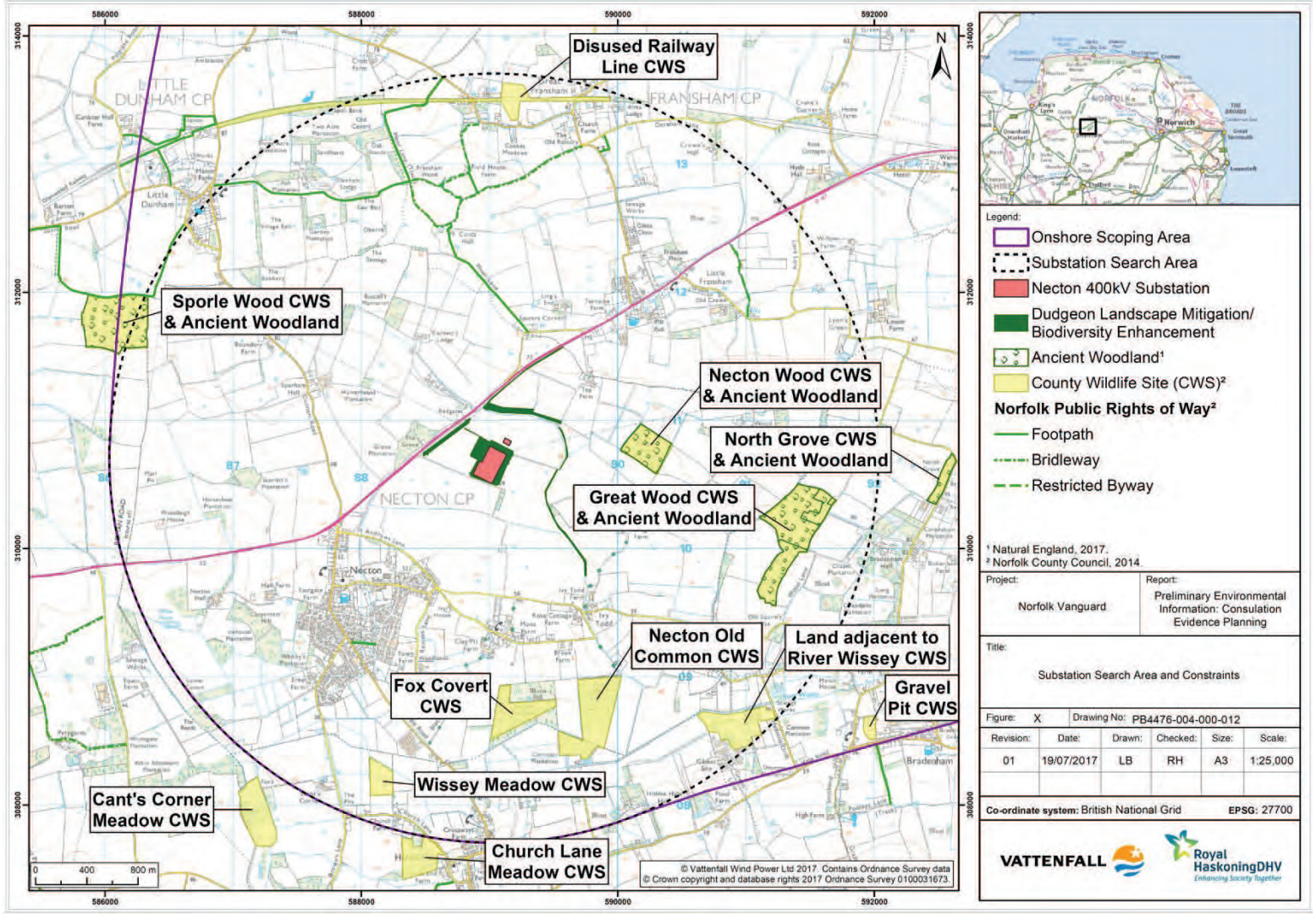
Disused Railway Line CWS
Sporle Wood CWS & Ancient Woodland
Necton Wood CWS & Ancient Woodland
North Grove CWS & Ancient Woodland
Great Wood CWS & Ancient Woodland
Necton Old Common CWS
Land adjacent to River Wissey CWS
Gravel Pit CWS
Fox Covert CWS
Wissey Meadow CWS
Cant's Corner Meadow CWS
Church Lane Meadow CWS
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Norwich
NORFOLK
Legend:
Onshore Scoping Area
Substation Search Area
Necton 400kV Substation
Dudgeon Landscape Mitigation/ Biodiversity Enhancement
Ancient Woodland¹
County Wildlife Site (CWS)²
Norfolk Public Rights of Way²
Footpath
Bridleway
Restricted Byway
¹ Natural England, 2017.
² Norfolk County Council, 2014.
Project: Norfolk Vanguard
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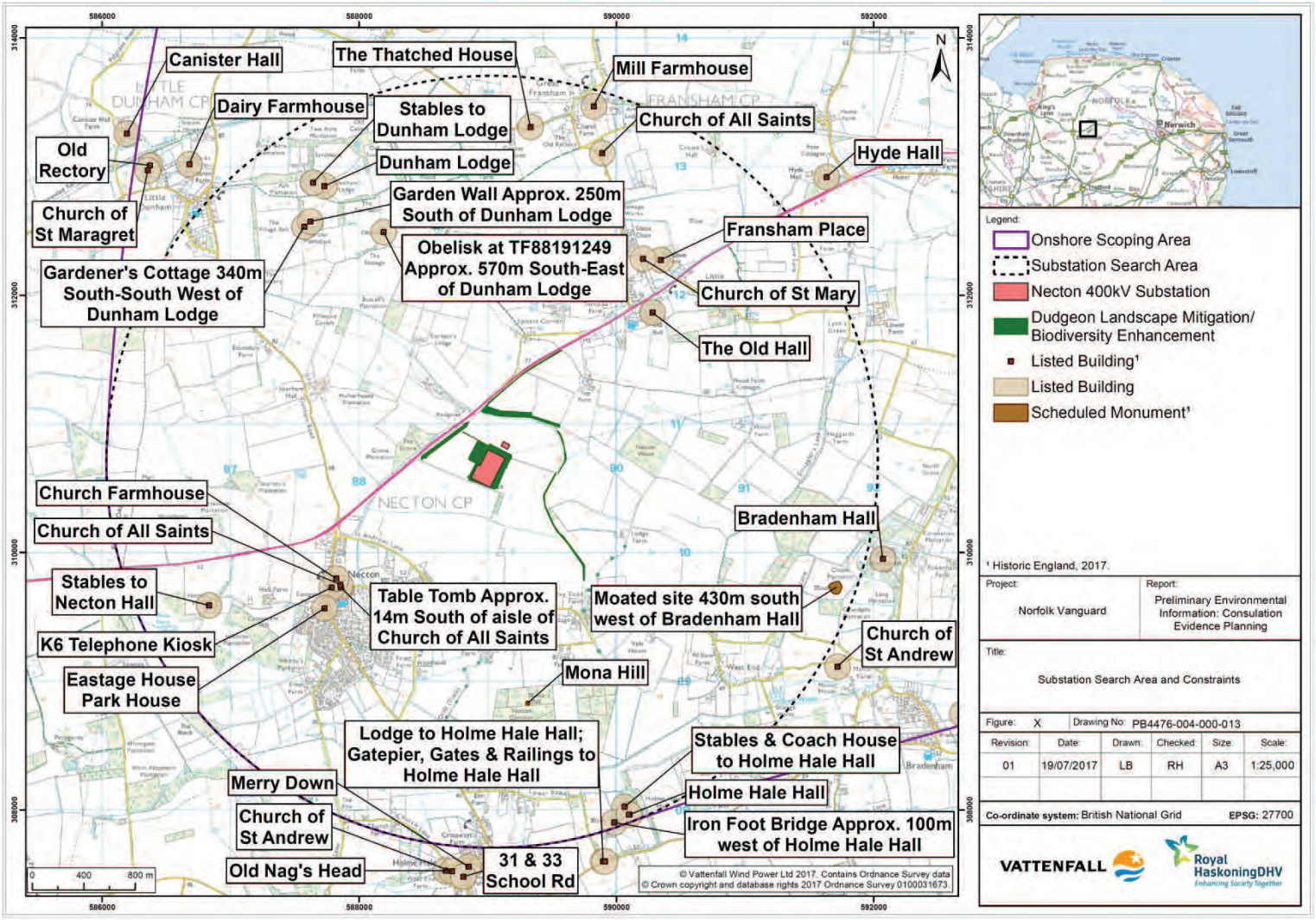

Legend:

- Onshore Scoping Area
- Substation Search Area
- Necton 400kV Substation
- Dudgeon Landscape Mitigation/ Biodiversity Enhancement
- Listed Building¹
- Listed Building
- Scheduled Monument¹

¹ Historic England, 2017.

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Title: Substation Search Area and Constraints

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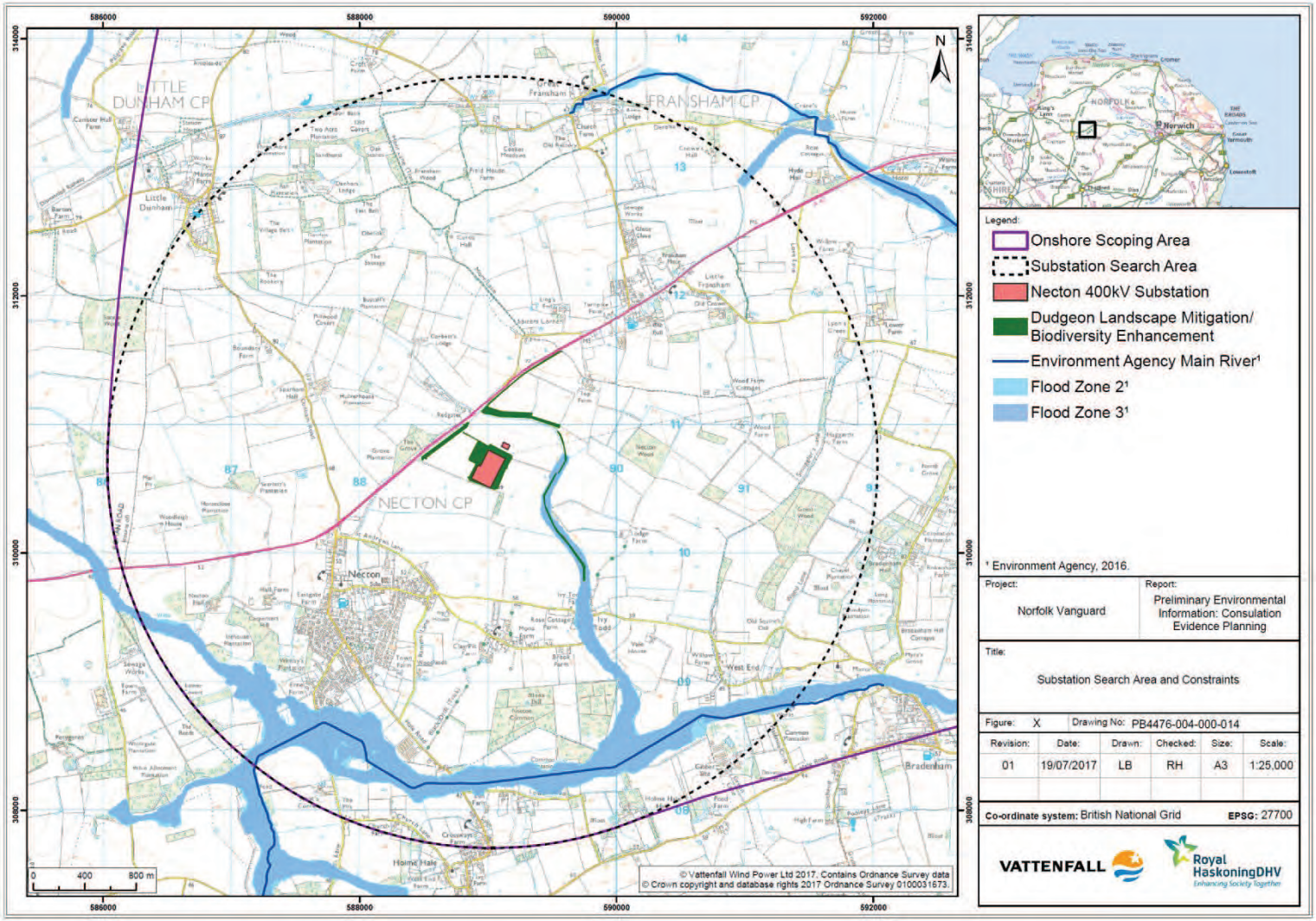
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Norwich
Lowestoft
Legend:
Onshore Scoping Area
Substation Search Area
Necton 400kV Substation
Dudgeon Landscape Mitigation/ Biodiversity Enhancement
Environment Agency Main River¹
Flood Zone 2¹
Flood Zone 3¹
¹ Environment Agency, 2016.
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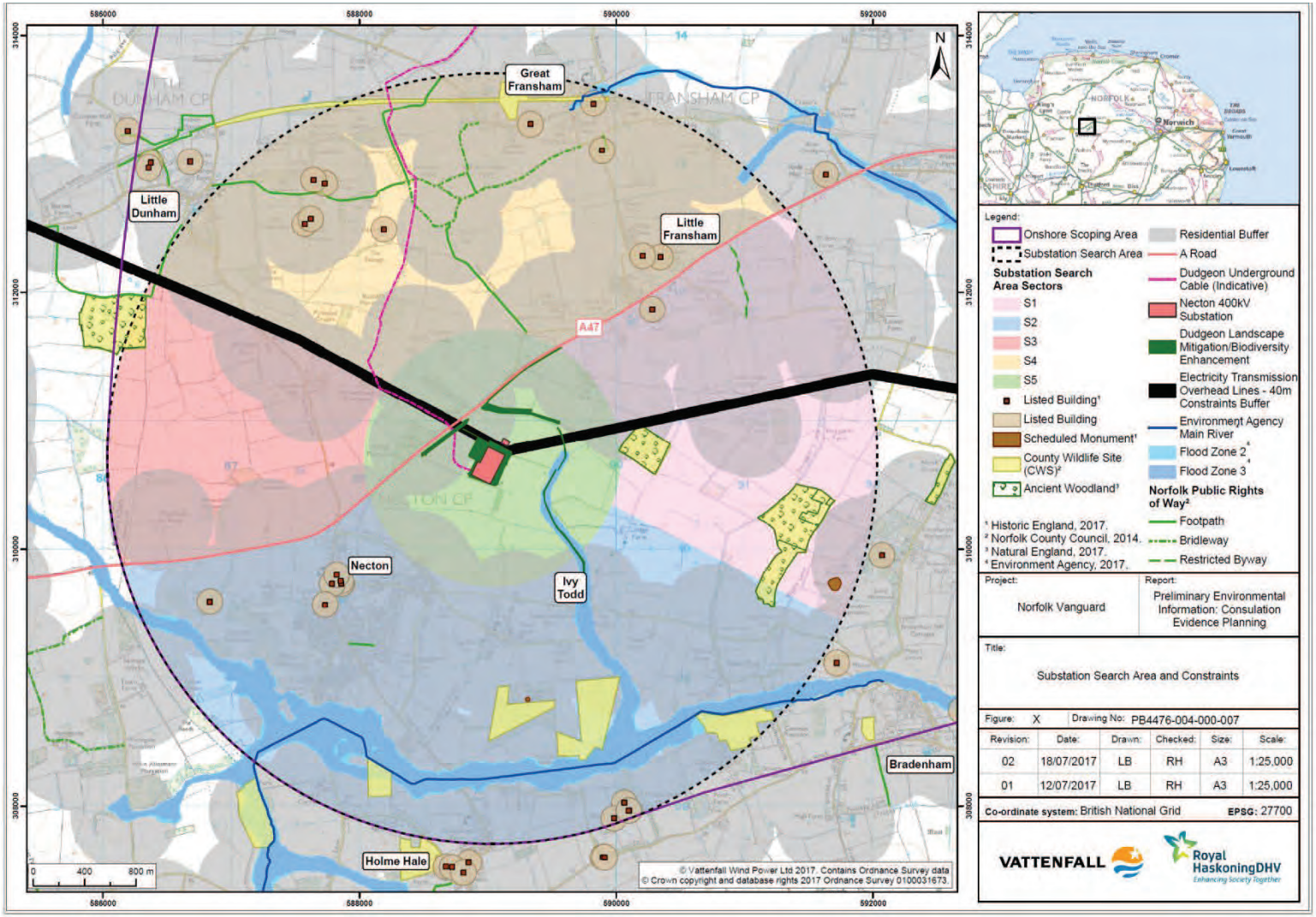
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Norwich
Legend:
Onshore Scoping Area
Substation Search Area
Substation Search Area Sectors
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S3
S4
S5
Listed Building¹
Listed Building
Scheduled Monument¹
County Wildlife Site (CWS)²
Ancient Woodland³
Residential Buffer
A Road
Dudgeon Underground Cable (Indicative)
Necton 400kV Substation
Dudgeon Landscape Mitigation/Biodiversity Enhancement
Electricity Transmission Overhead Lines - 40m Constraints Buffer
Environment Agency Main River
Flood Zone 2⁴
Flood Zone 3
Norfolk Public Rights of Way²
Footpath
Bridleway
Restricted Byway
¹ Historic England, 2017.
² Norfolk County Council, 2014.
³ Natural England, 2017.
⁴ Environment Agency, 2017.
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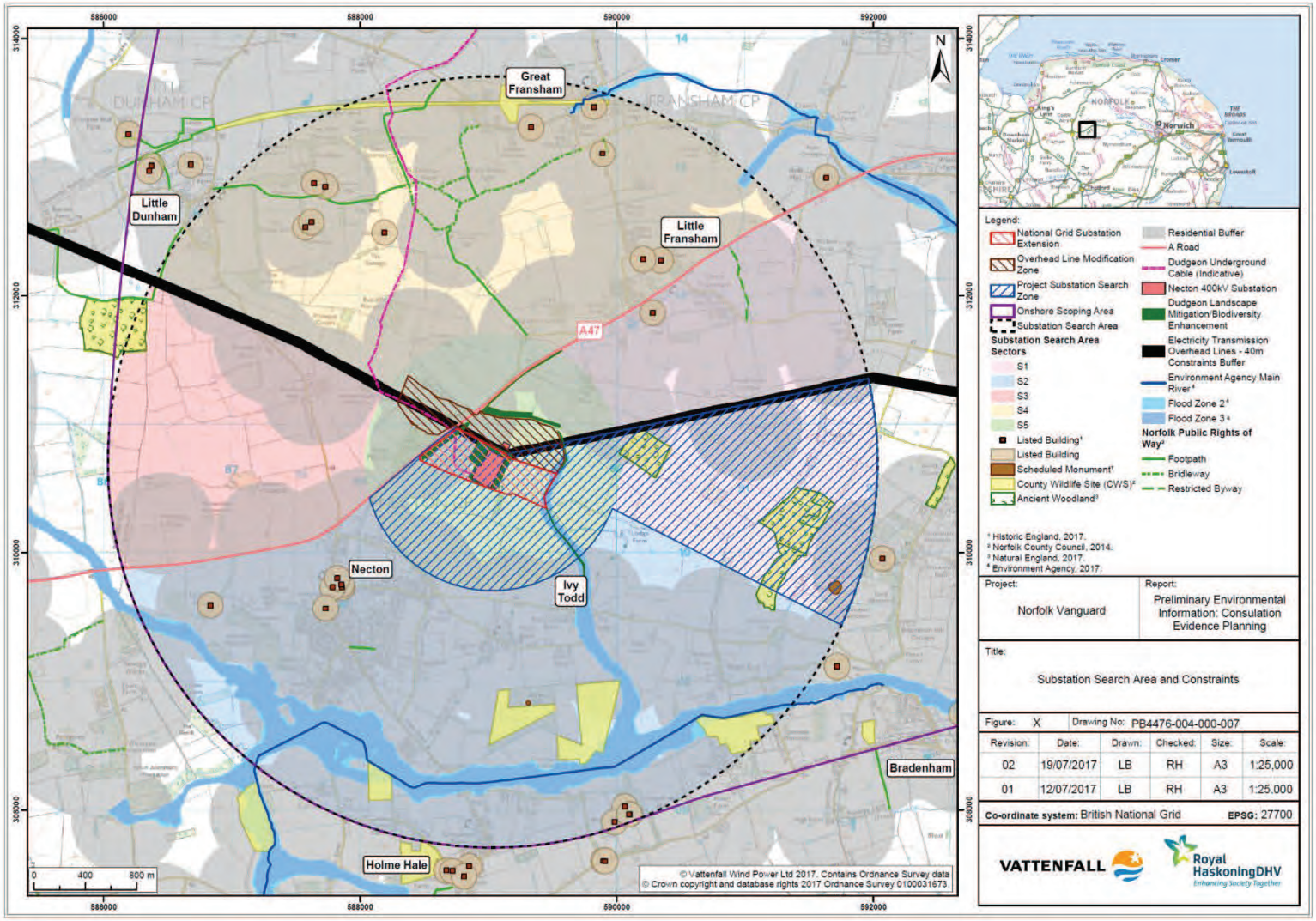
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Norwich
Legend:
National Grid Substation Extension
Overhead Line Modification Zone
Project Substation Search Zone
Onshore Scoping Area
Substation Search Area
Substation Search Area Sectors
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Listed Building[1]
Listed Building
Scheduled Monument[1]
County Wildlife Site (CWS)[2]
Ancient Woodland[3]
Residential Buffer
A Road
Dudgeon Underground Cable (Indicative)
Necton 400kV Substation
Dudgeon Landscape Mitigation/Biodiversity Enhancement
Electricity Transmission Overhead Lines - 40m Constraints Buffer
Environment Agency Main River[4]
Flood Zone 2[4]
Flood Zone 3[4]
Norfolk Public Rights of Way[2]
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Restricted Byway
[1] Historic England, 2017.
[2] Norfolk County Council, 2014.
[3] Natural England, 2017.
[4] Environment Agency, 2017.
Project: Norfolk Vanguard
Report: Preliminary Environmental Information: Consulation Evidence Planning
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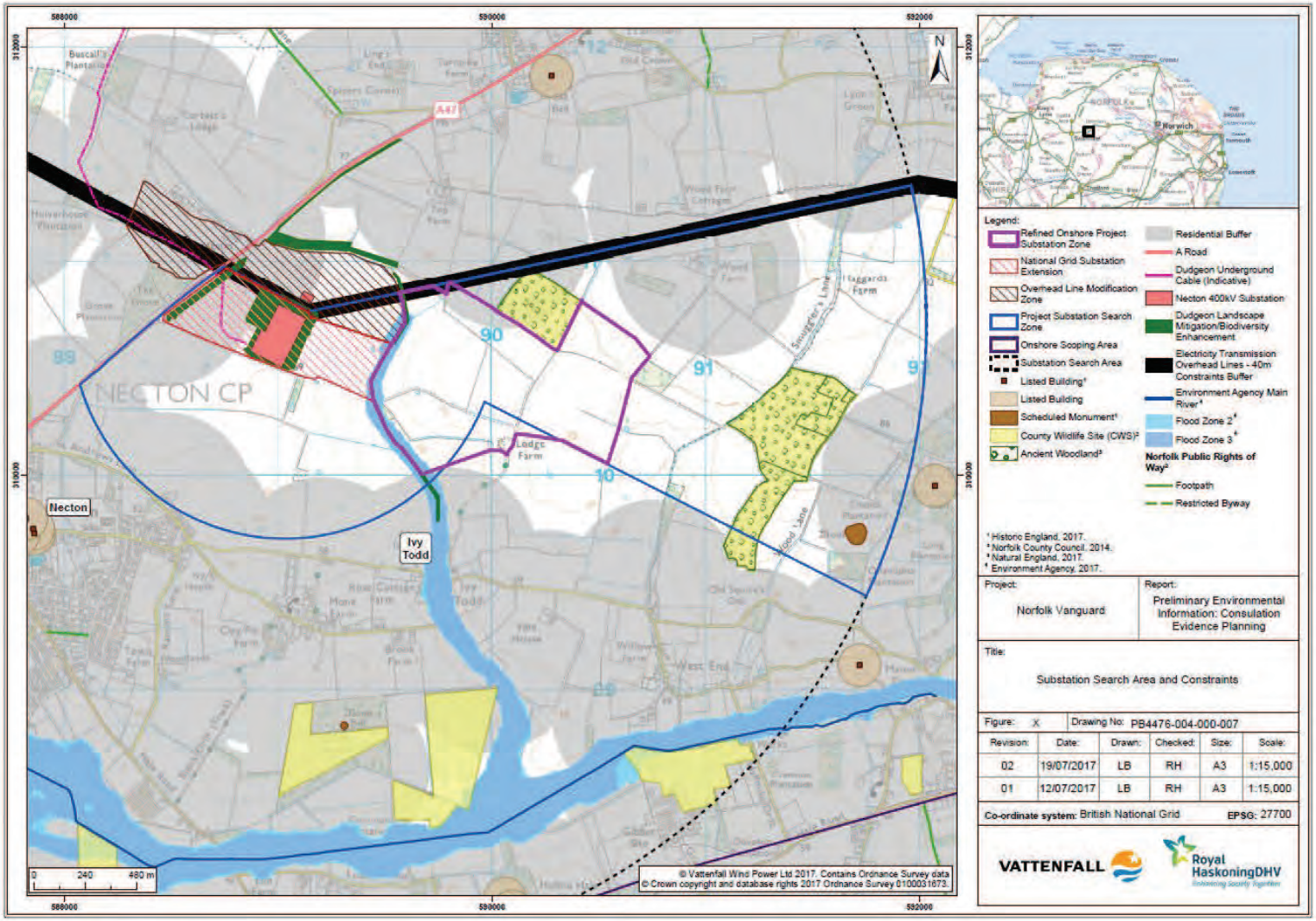
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Lodge Farm
Haggards Farm
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Norwich
Legend:
Refined Onshore Project Substation Zone
National Grid Substation Extension
Overhead Line Modification Zone
Project Substation Search Zone
Onshore Scoping Area
Substation Search Area
Listed Building¹
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Scheduled Monument¹
County Wildlife Site (CWS)²
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Environment Agency Main River⁴
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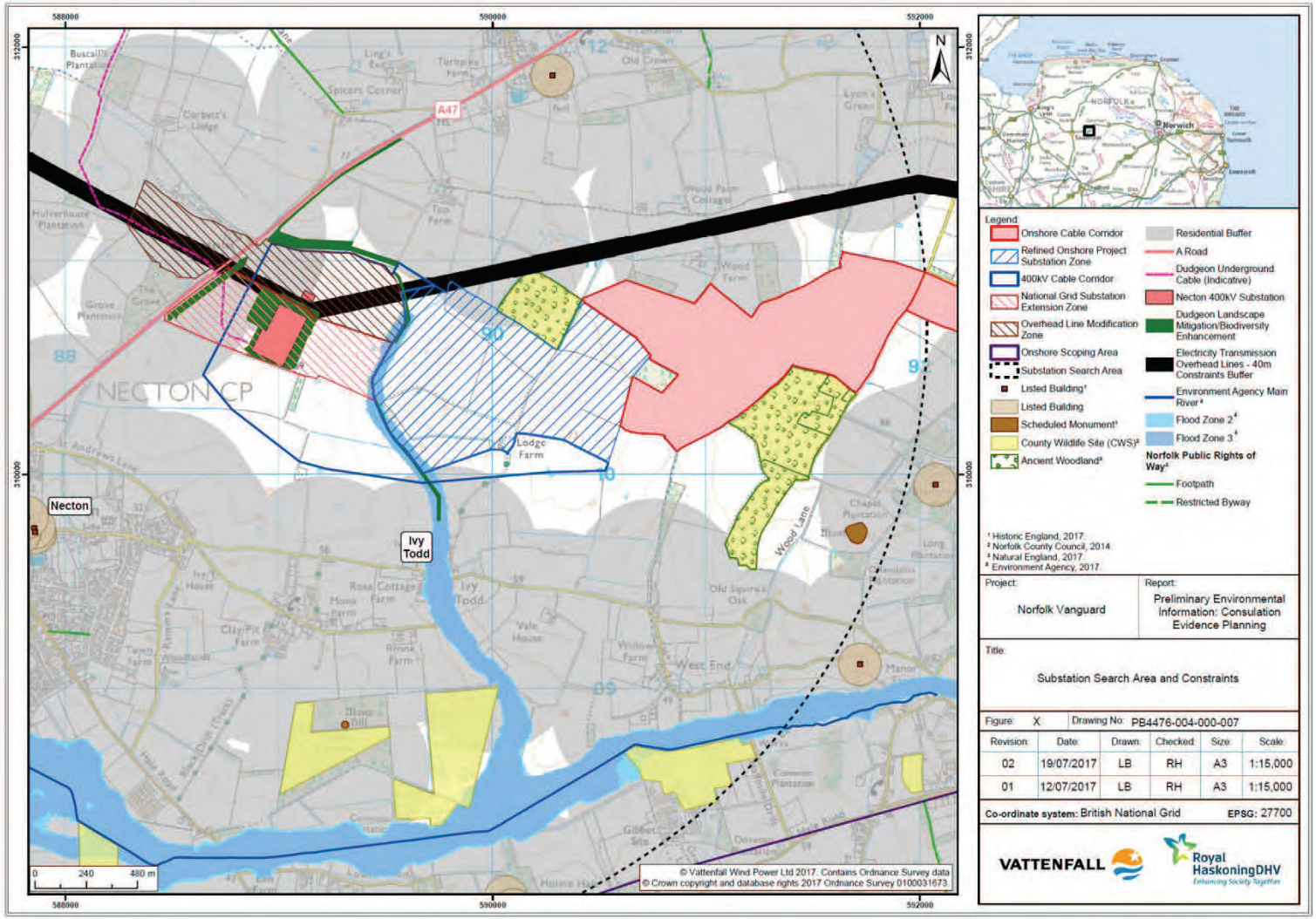

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FOUR FOOTPRINTS

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EXTENSION TO NATIONAL GRID SUBSTATION

In order to connect our projects, National Grid will have to extend the existing 400kV substation, and make some changes to the way the overhead lines are linked to this substation.

- We are aiming to secure consent for National Grid's works as part of our DCO
- National Grid is carrying out an initial design study, to define:
    - Footprint of the 'permanent works'
    - Extent of 'temporary works'
    - Duration of construction
- We will share this information with you as soon as we can

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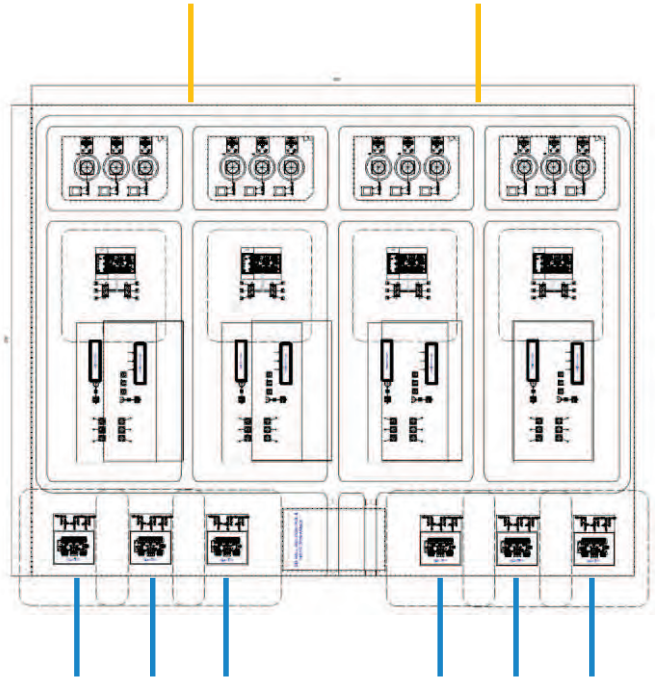
SUBSTATION FOOTPRINT OPTIONS

Vattenfall has developed four alternative footprints for the substations within the refined search area. The design of each footprint was an engineering-led process. Key considerations included:

- Routing of incoming and outgoing cables from each substation
- Known environmental sensitivities and constraints
- Land ownership boundaries

CABLES AND ROADS ~ SINGLE SUBSTATION

Connection to NG – 400kV cables



Connection to wind farm – export cables

400kV cable circuits enter the substation on one side, and the export cables exit on the opposite side.

Roadways within the substation to allow for off-loading of transformer units and other plant.

- Single point for vehicle entry and exit
- Entry point can be chosen to suit site constraints

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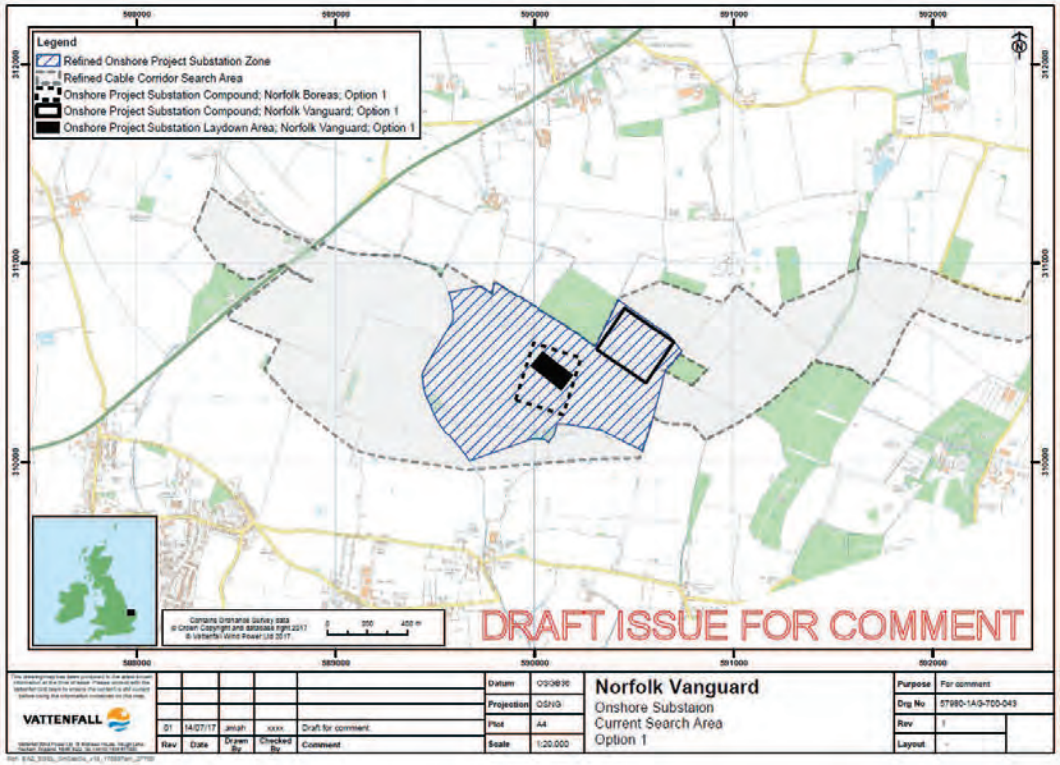
FOOTPRINT OPTION 1



- Furthest from Necton, but closest to Wood Farm
- On high ground, but good use of existing woodland and hedgerows to provide visual screening
- Fairly level sites – less need for site preparation works

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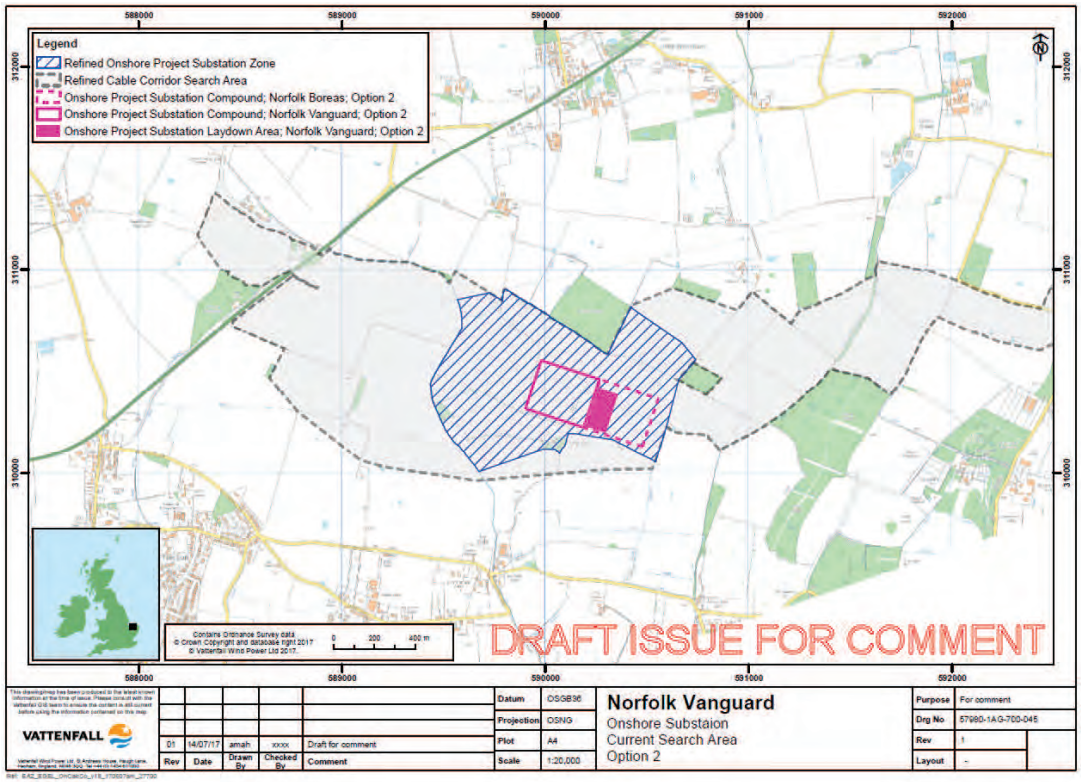
FOOTPRINT OPTION 2



- Similar distance from Necton; not so close to Wood Farm
- On high ground, but good use of existing hedgerows to provide visual screening
- Moderately level sites – some site preparation needed

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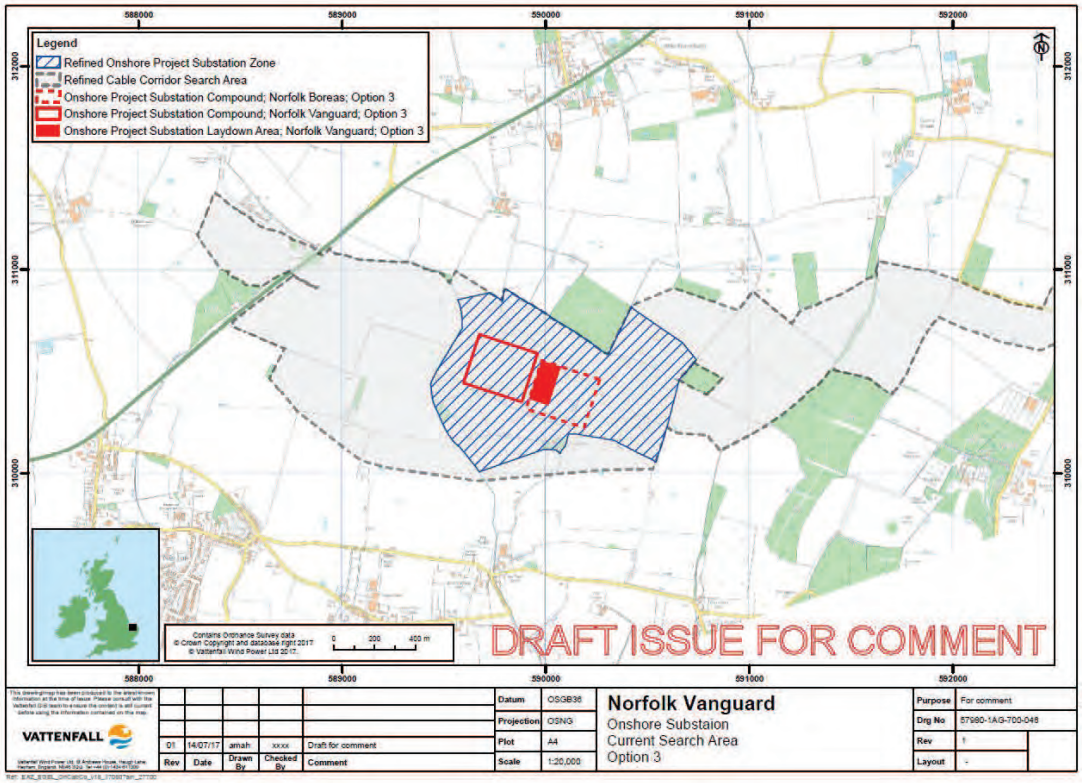
FOOTPRINT OPTION 3



- Slightly closer to Necton
- On lower ground; some use of existing woodland to provide visual screening
- Sloping sites – more need for site preparation works

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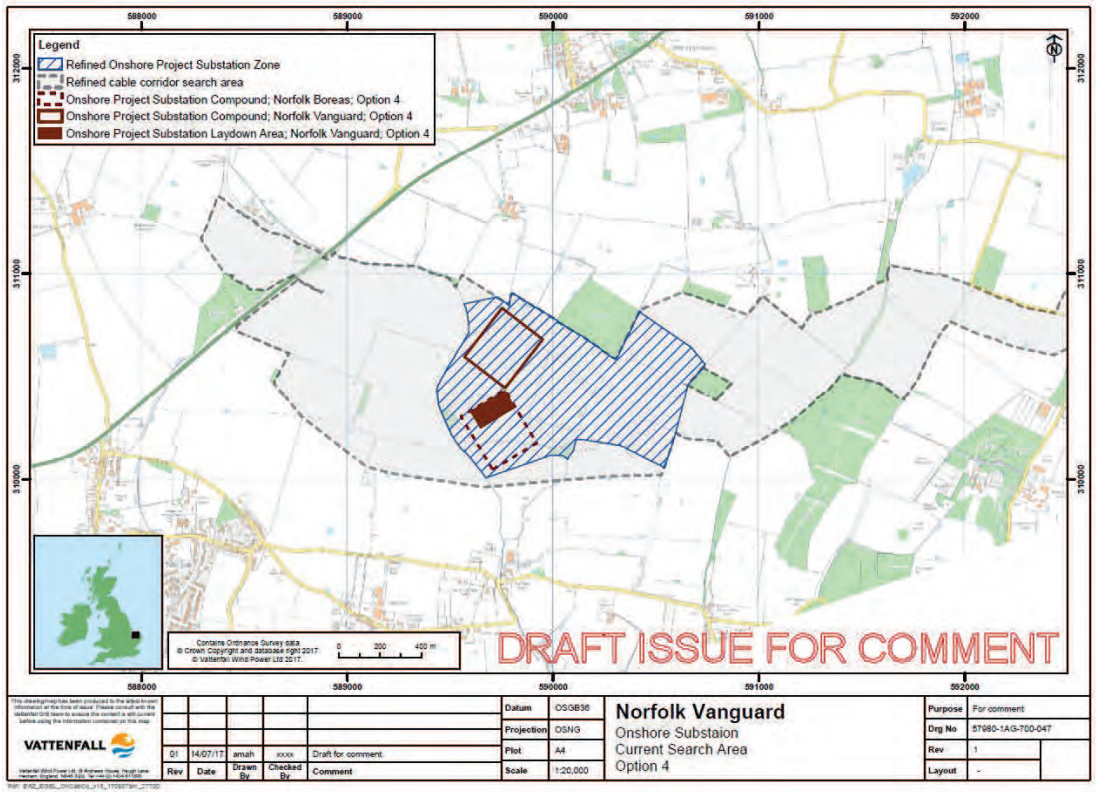
FOOTPRINT OPTION 4



- Closest to Necton and Ivy Todd
- Lower in the landscape than other options
- Less use of existing woodland and hedgerows to provide visual screening
- Sloping sites – more need for site preparation works

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MAPS AND VISUALISATIONS

Our landscape consultants have prepared visualisations of the substations, for both HVAC and HVDC options. These visualisations based on two of the defined footprints, and are in accordance with Scottish Natural Heritage Visualisation Guidance.

http://www.snh.gov.uk/planning-and-development/renewable-energy/visual-representation/

Each table has a printed booklet containing hard copies of the visualisations.

Presentation scope:

- Quickly guide you through the viewpoints and visualisations for footprint option 1
- Brief discussion of mitigation planting

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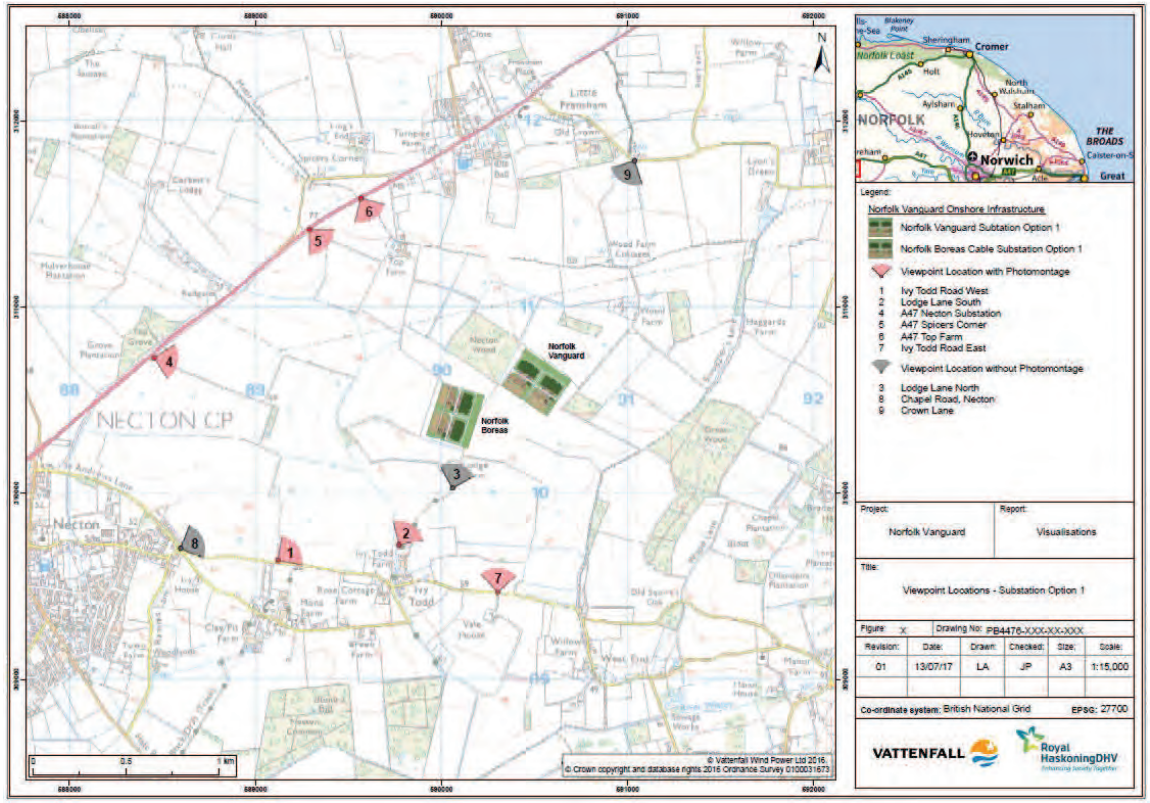
OPTION 1 ~ LOCATION MAP WITH VIEWPOINTS



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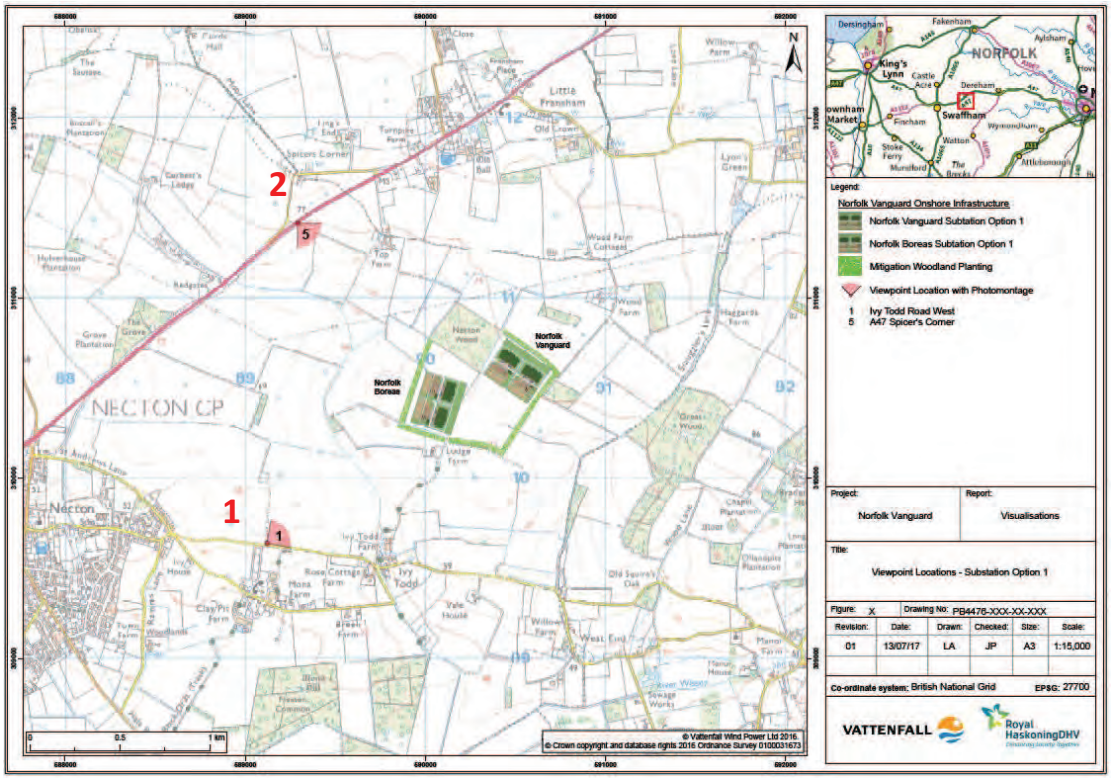
OPTION 1 ~ LOCATION MAP WITH VIEWPOINTS



Viewpoints:

1. Ivy Todd Road west
2. A47 Spicer's Corner

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OPTION 1 ~ VIEW FROM IVY TODD ROAD WEST

OS reference:	589120 E 306539 N	Horizontal field of view:	90° (cylindrical projection)	Camera:	Canon EOS 5D Mark II
Eye level:	60.5m AOD	Principal distance	522 mm	Lens:	50mm (Canon EF 50mm f1.4)
Direction of view:	48°			Camera height:	1.5 m AGL
Nearest distance:	1.04km			Date and time:	24/03/2017, 11:14:16

OPTION 1 Viewpoint 1: Ivy Todd Road West

HVDC Substation

VATTENFALL

OPTION 1 ~ VIEW FROM A47 SPICER'S CORNER

OS reference: 580290 E 311415 N
Eye level: 79m AOD
Direction of view: 139°
Nearest distance: 1.07km
Horizontal field of view: 90° (cylindrical projection)
Principal distance: 522 mm
Camera: Canon EOS 5D Mark II
Lens: 50mm (Canon EF 50mm f/1.4)
Camera height: 1.5 m AGL
Date and time: 24/03/2017, 09:51:33

OPTION 1 Viewpoint 6: A47 Spicer's Corner
HVDC Substation

VATTENFALL

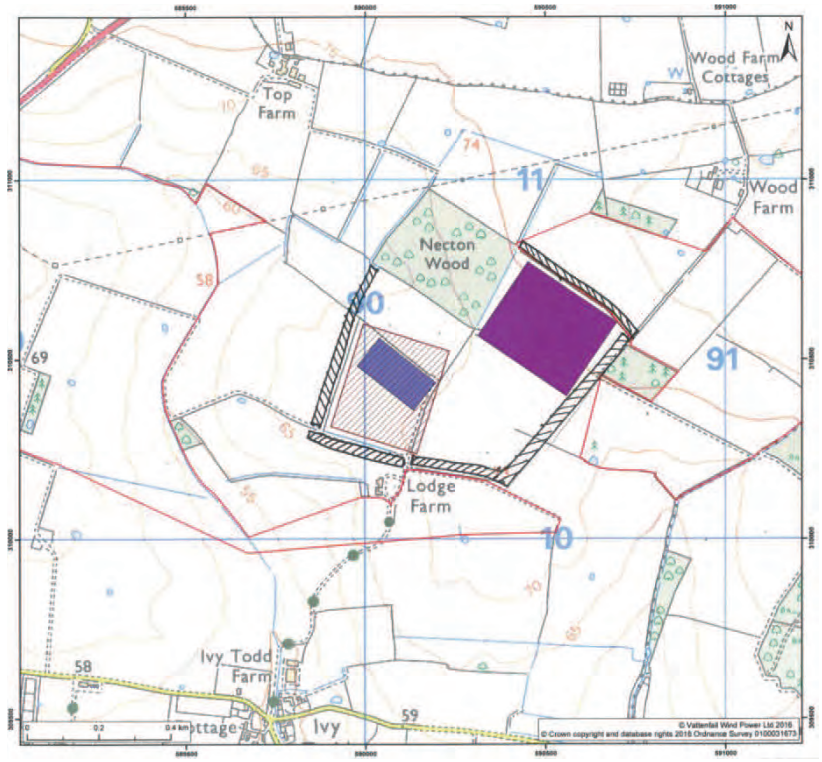
ACCESS ROUTES FOR CONSTRUCTION TRAFFIC

There will be a lot of traffic during construction of the substations. We are taking steps to minimise the impact on local residents.

- Access to the site will be directly from the A47, via a dedicated access road
- Two options are being considered:
    - Use and extend the existing access road to the NG and Dudgeon site
    - Build a new access road, joining the A47 at Spicer's Corner
- We are talking to Highways England and NCC highways to agree on a solution; safe road design is the main concern

VATTENFALL

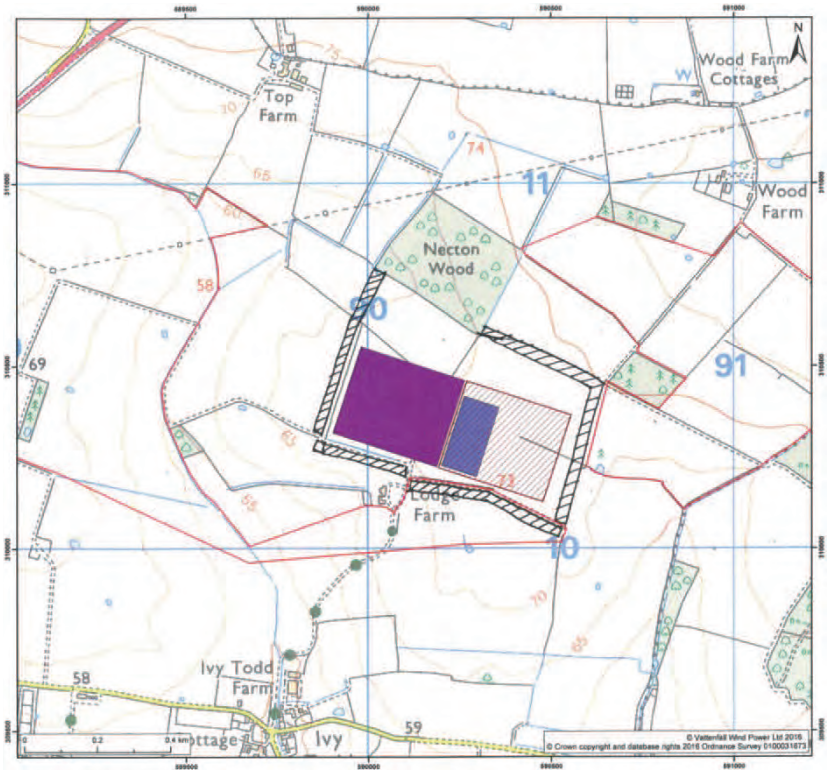
OPTION 1 ~ PLANTING



Hatched area shows proposed woodland planting scheme.

VATTENFALL

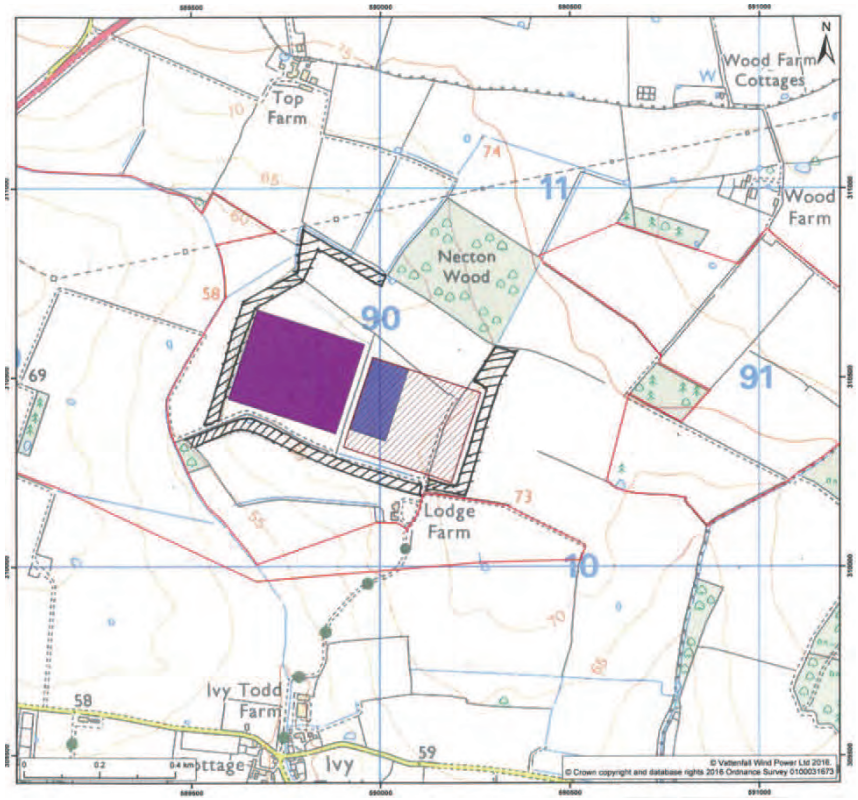
OPTION 2 ~ PLANTING



Hatched area shows proposed woodland planting scheme.

VATTENFALL

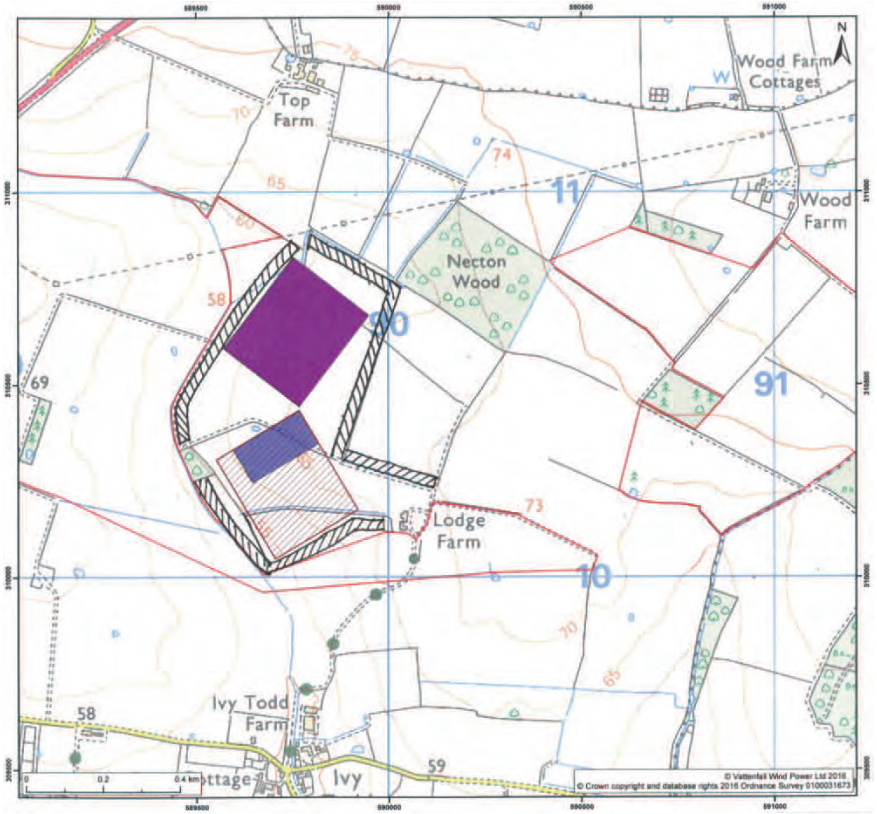
OPTION 3 ~ PLANTING



Hatched area shows proposed woodland planting scheme.

VATTENFALL

OPTION 4 ~ PLANTING



Hatched area shows proposed woodland planting scheme.

VATTENFALL

PHOTOMONTAGE & VISUALISATIONS

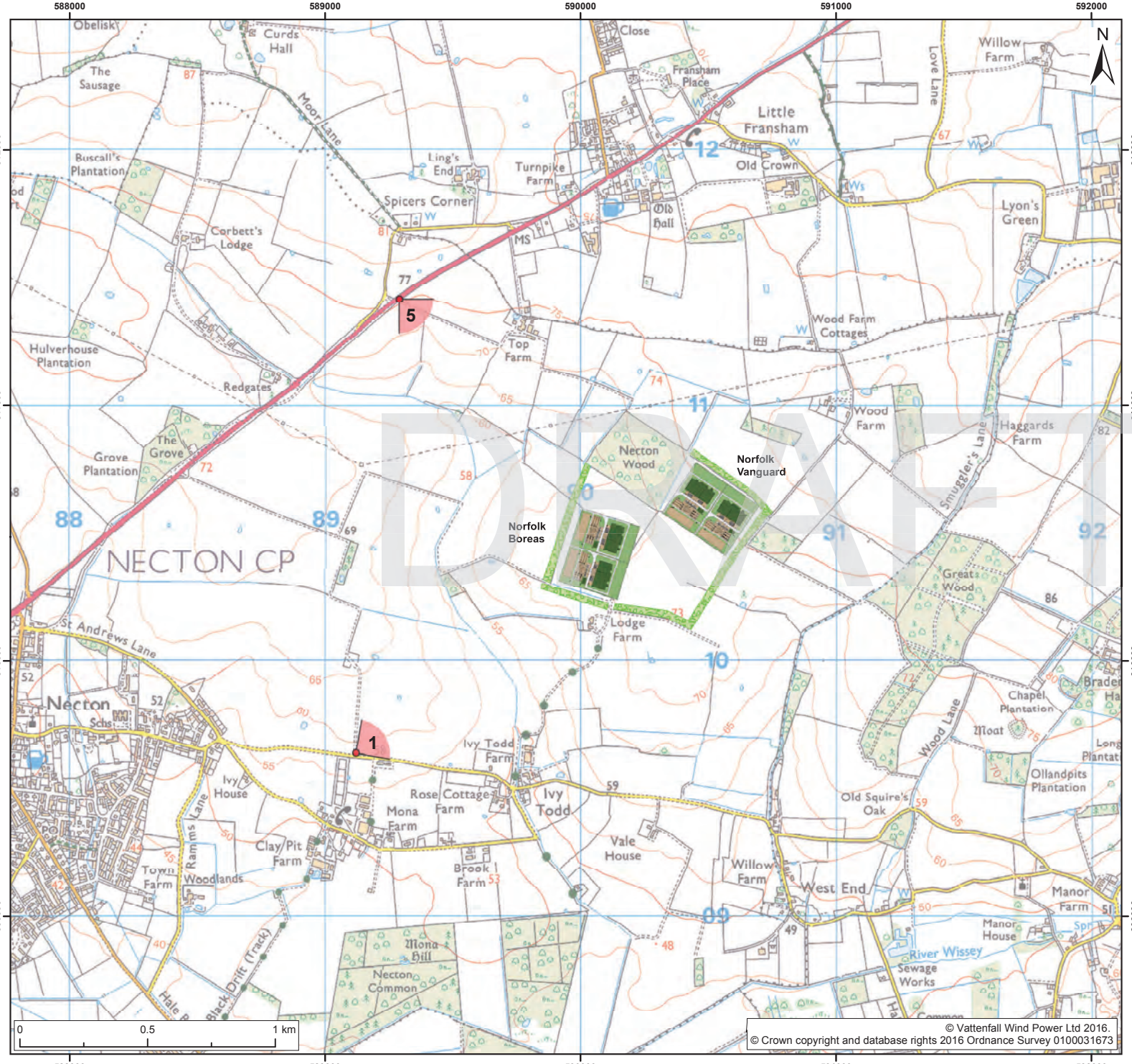
At the workshops and drop-ins we showed photomontage visualisations from Ivy Todd Road West and from Spicer's Corner of Option 1 and 4 for both AC and DC substations.

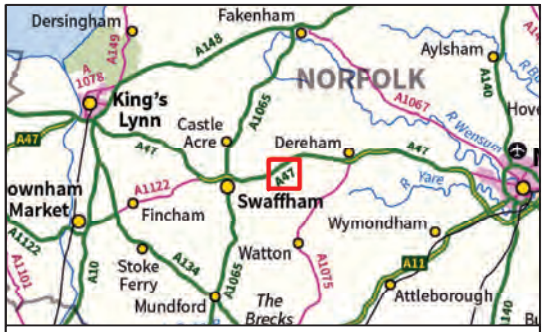
The 3DW model was available at both the evening and following-day drop-in sessions, although there was limited time to display it at the evening workshops. The advantage of the 3DW model is that it can provide visual aids to display the type of visual impact likely to be noted as a result of infrastructure from any local point, including people's homes. Many people at the drop-in sessions took advantage of the 3DW model to 'see' what any particular substation option would look like from a point of interest of particular interest to them e.g. their home, their favourite dog-walking path, a view from their commute etc.

Here we show you the additional photomontages again on the following pages. The 3DW visualisations will be made available in a separate booklet, also linked from the 'Documents' page on the project website.

This is a flavour of the kind of information the consenting team are using to inform decision-making, and we hope can help to inform the feedback you will provide.

VATTENFALL





Legend:

Norfolk Vanguard Onshore Infrastructure

- Norfolk Vanguard Subtation Option 1
- Norfolk Boreas Subtation Option 1
- Mitigation Woodland Planting
- Viewpoint Location with Photomontage

1 Ivy Todd Road West
5 A47 Spicer's Corner

Project:	Report:
Norfolk Vanguard	Visualisations

Title: Viewpoint Locations - Substation Option 1

Figure: X | Drawing No: PB4476-XXX-XX-XXX

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	13/07/17	LA	JP	A3	1:15,000

Co-ordinate system: British National Grid **EPSG:** 27700

VATTENFALL

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OPTION 1
VIEWPOINT 1
IVY TODD ROAD WEST

VATTENFALL

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 1 Viewpoint 1: Ivy Todd Road West

HVDC Substation

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 1 Viewpoint 1: Ivy Todd Road West

HVDC Substation with Mitigation Planting

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 1 Viewpoint 1: Ivy Todd Road West

HVAC Substation

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 1 Viewpoint 1: Ivy Todd Road West

HVAC Substation with Mitigation Planting

OPTION 1
VIEWPOINT 5
A47 SPICER'S CORNER

VATTENFALL

OS reference:	589290 E 311415 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	78m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	135°			**Camera height:**	1.5 m AGL
Nearest distance:	1.07km			**Date and time:**	24/03/2017, 09:31:33

OPTION 1 Viewpoint 5: A47 Spicer's Corner
HVDC Substation

OS reference:	589290 E 311415 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	78m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	135°			**Camera height:**	1.5 m AGL
Nearest distance:	1.07km			**Date and time:**	24/03/2017, 09:31:33

OPTION 1 Viewpoint 5: A47 Spicer's Corner

HVDC Substation with Mitigation Planting

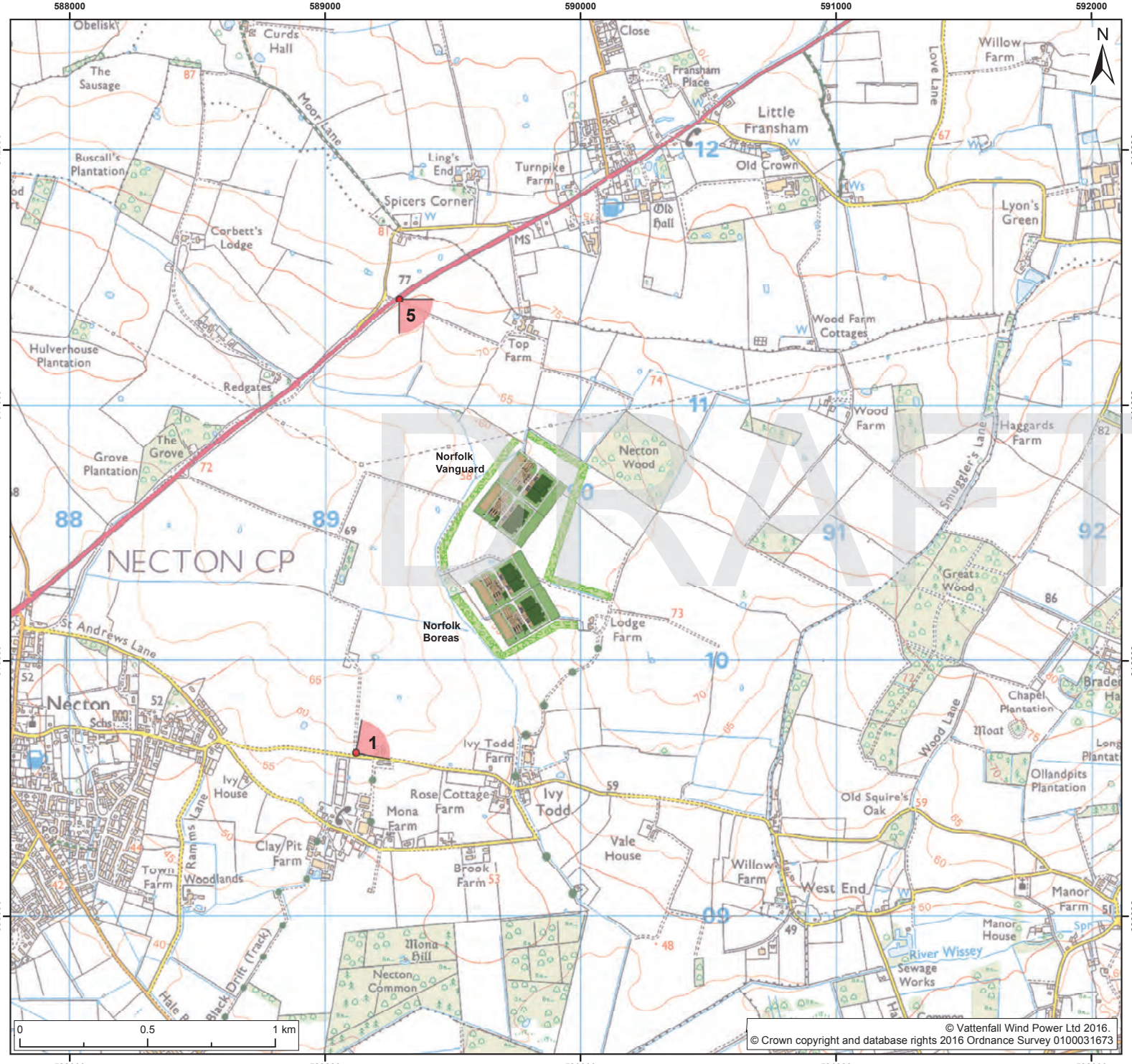
OS reference:	589290 E 311415 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	78m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	135°			**Camera height:**	1.5 m AGL
Nearest distance:	1.07km			**Date and time:**	24/03/2017, 09:31:33

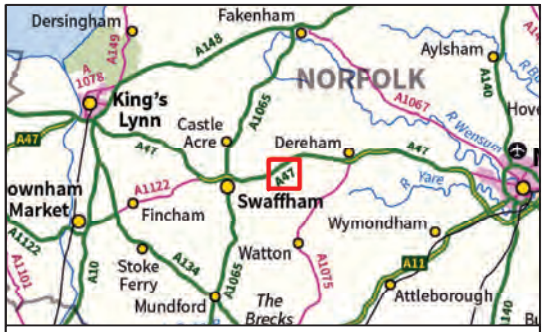
OPTION 1 Viewpoint 5: A47 Spicer's Corner
HVAC Substation

OS reference:	589290 E 311415 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	78m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	135°			**Camera height:**	1.5 m AGL
Nearest distance:	1.07km			**Date and time:**	24/03/2017, 09:31:33

OPTION 1 Viewpoint 5: A47 Spicer's Corner

HVAC Substation with Mitigation Planting





Legend:

Norfolk Vanguard Onshore Infrastructure

- Norfolk Vanguard Subtation Option 4
- Norfolk Boreas Subtation Option 4
- Mitigation Woodland Planting
- Viewpoint Location with Photomontage

1 Ivy Todd Road West
5 A47 Spicer's Corner

Project:	Report:
Norfolk Vanguard	Visualisations

Title: Viewpoint Locations - Substation Option 4

Figure: X | Drawing No: PB4476-XXX-XX-XXX

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	13/07/17	LA	JP	A3	1:15,000

Co-ordinate system: British National Grid **EPSG:** 27700

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OPTION 4
VIEWPOINT 1
IVY TODD ROAD WEST

VATTENFALL

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 4 Viewpoint 1: Ivy Todd Road West
HVDC Substation

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 4 Viewpoint 1: Ivy Todd Road West

HVDC Substation with Mitigation Planting

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 4 Viewpoint 1: Ivy Todd Road West

HVAC Substation

OS reference:	589120 E 309638 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	60.5m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	48°			**Camera height:**	1.5 m AGL
Nearest distance:	1.04km			**Date and time:**	24/03/2017, 11:14:16

OPTION 4 Viewpoint 1: Ivy Todd Road West

HVAC Substation with Mitigation Planting

OPTION 4
VIEWPOINT 5
A47 SPICER'S CORNER

VATTENFALL

Baseline photograph

This image provides landscape and visual context only

Photomontage of the proposed substations

View flat at a comfortable arm's length

OS reference: 589290 E 311415 N
Eye level: 78m AOD
Direction of view: 135°
Nearest distance: 1.07km

Horizontal field of view: 90° (cylindrical projection)
Principal distance 522 mm

Camera: Canon EOS 5D Mark II
Lens: 50mm (Canon EF 50mm f/1.4)
Camera height: 1.5 m AGL
Date and time: 24/03/2017, 09:31:33

OPTION 4 Viewpoint 5: A47 Spicer's Corner
HVDC Substation

OS reference:	589290 E 311415 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	78m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	135°			**Camera height:**	1.5 m AGL
Nearest distance:	1.07km			**Date and time:**	24/03/2017, 09:31:33

OPTION 4 Viewpoint 5: A47 Spicer's Corner

HVDC Substation with Mitigation Planting

Baseline photograph

This image provides landscape and visual context only

Photomontage of the proposed substations

View flat at a comfortable arm's length

OS reference: 589290 E 311415 N
Eye level: 78m AOD
Direction of view: 135°
Nearest distance: 1.07km

Horizontal field of view: 90° (cylindrical projection)
Principal distance 522 mm

Camera: Canon EOS 5D Mark II
Lens: 50mm (Canon EF 50mm f/1.4)
Camera height: 1.5 m AGL
Date and time: 24/03/2017, 09:31:33

OPTION 4 Viewpoint 5: A47 Spicer's Corner
HVAC Substation

Baseline photograph

This image provides landscape and visual context only

Photomontage of the proposed substations

View flat at a comfortable arm's length

OS reference:	589290 E 311415 N	**Horizontal field of view:**	90° (cylindrical projection)	**Camera:**	Canon EOS 5D Mark II
Eye level:	78m AOD	**Principal distance**	522 mm	**Lens:**	50mm (Canon EF 50mm f/1.4)
Direction of view:	135°			**Camera height:**	1.5 m AGL
Nearest distance:	1.07km			**Date and time:**	24/03/2017, 09:31:33

OPTION 4 Viewpoint 5: A47 Spicer's Corner

HVAC Substation with Mitigation Planting

THANK YOU

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