Dogger Bank Creyke Beck: Community Working Group

3rd May 2012

FOREWIND
DELIVERING YOUR ENERGY FUTURE

Agenda

• Chairs Welcome	19.00 – 19.10
• Update on Converter Stations Micro-siting	19.10 – 19.30
• Next steps – impact assessment and mitigation	19.30 – 19.50
• AC cable route selection process	19.50 – 20.05
• Update on National Grid Works	20.05 - 20.15
• Question and answer session	20.15 - 20.30
• Chair’s closing remarks	20.30 - 20.45

Chairs Welcome

Councillor Jump

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Update on Converter Station Micro-siting

Mark Baxter

Onshore Project Manager

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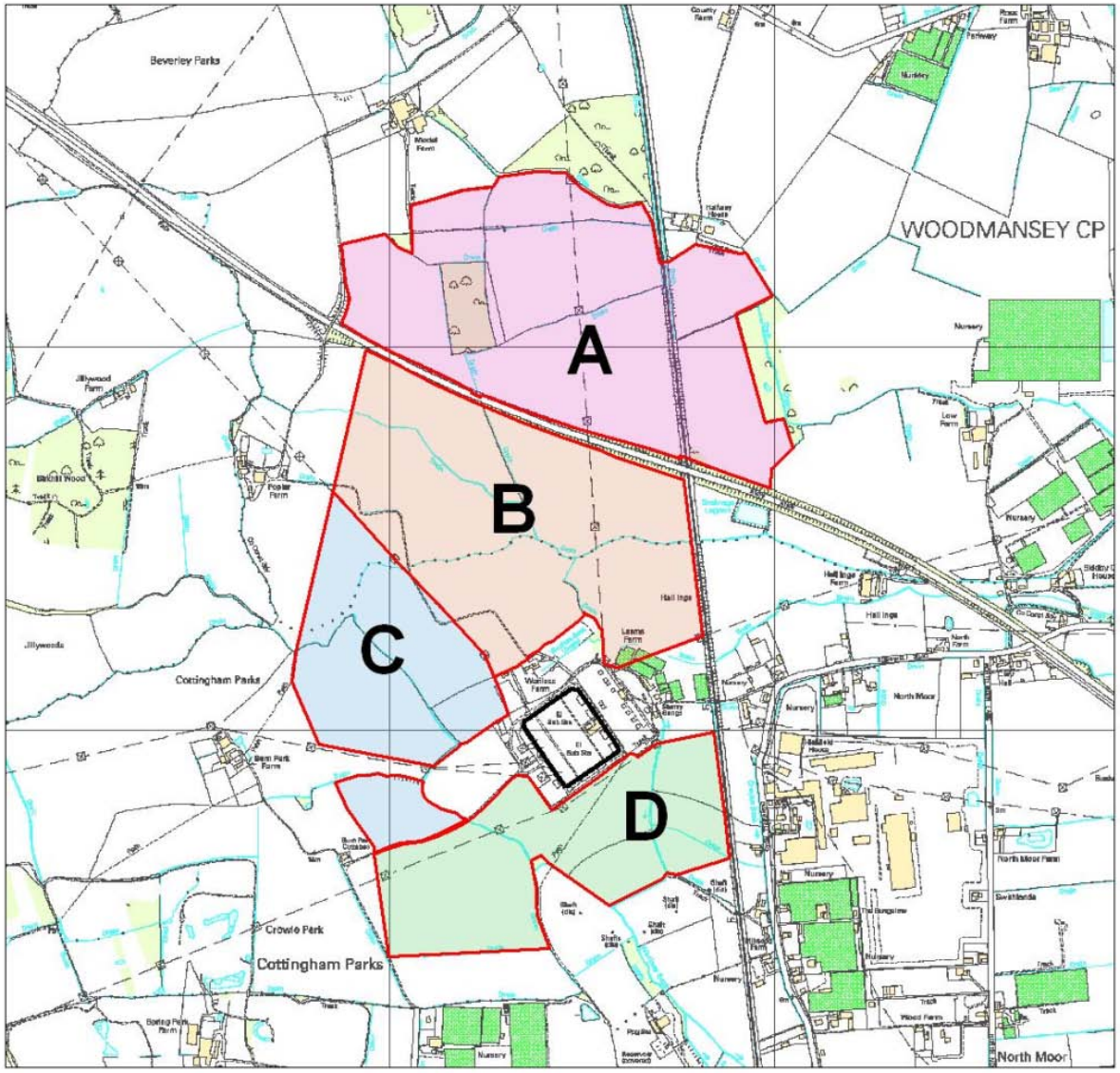
Refresh

- Recommendations from the Statutory Workshop and the Community Working Group have been considered in the converter station micro-siting process.
- We have reviewed the development considerations in relation to micro-siting, including:
  - Construction and Operational Noise,
  - Construction and Operational Access,
  - Drainage, and
  - Landscape and Visual Impact.

- Discussions with Landowners on preferred sector and micro-siting are ongoing
- Proposed AC Cable Corridor from Converter Station to Creyke Beck substation fixed for environmental impact assessment in May 2012
- Environmental Impact Assessment ongoing from May 2012 – August 2012
- Consultation on draft Environmental Statement – Autumn 2012

Sector A



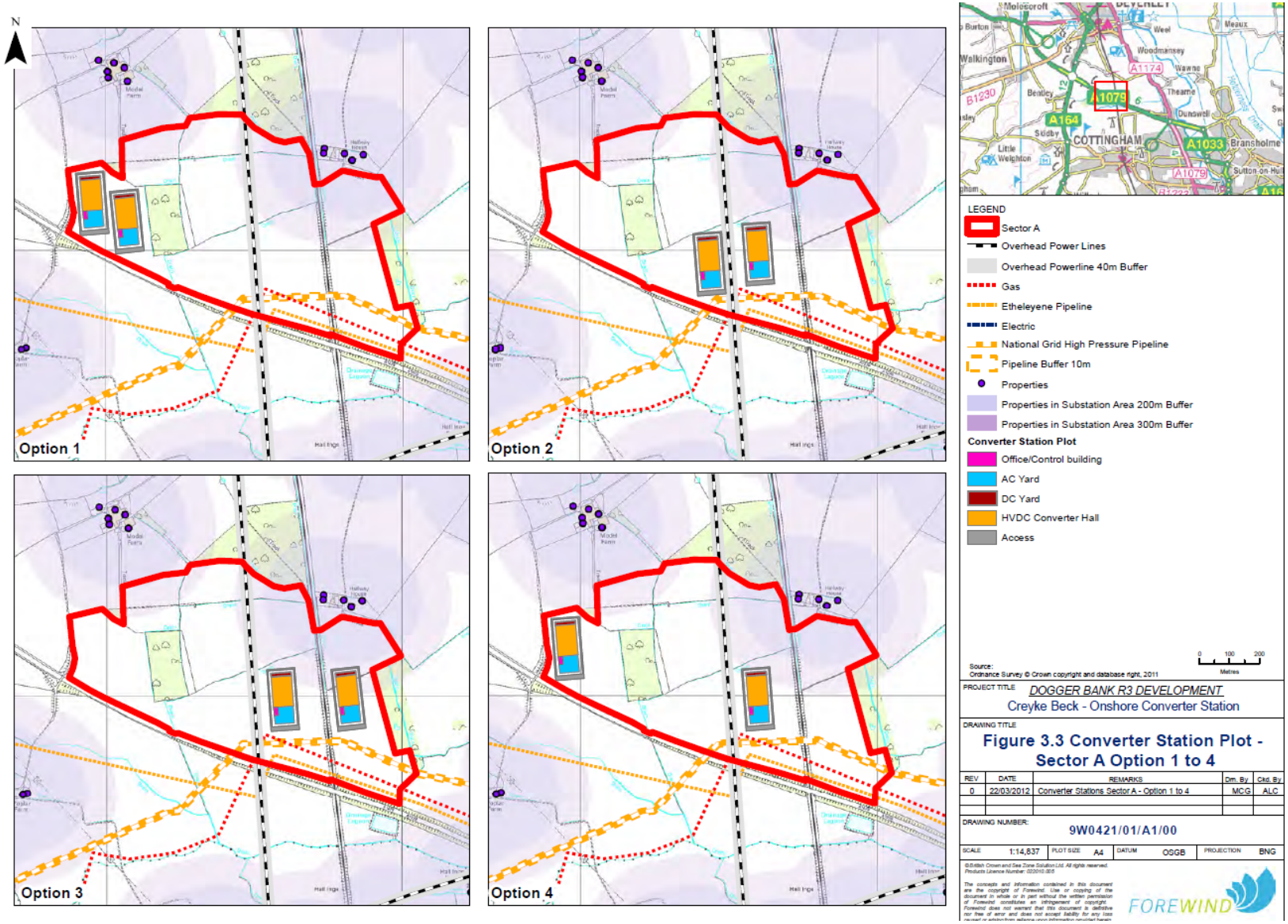
- Microsite 2 x 1GW Converter Stations within Sector A

Converter Station Design Assumption

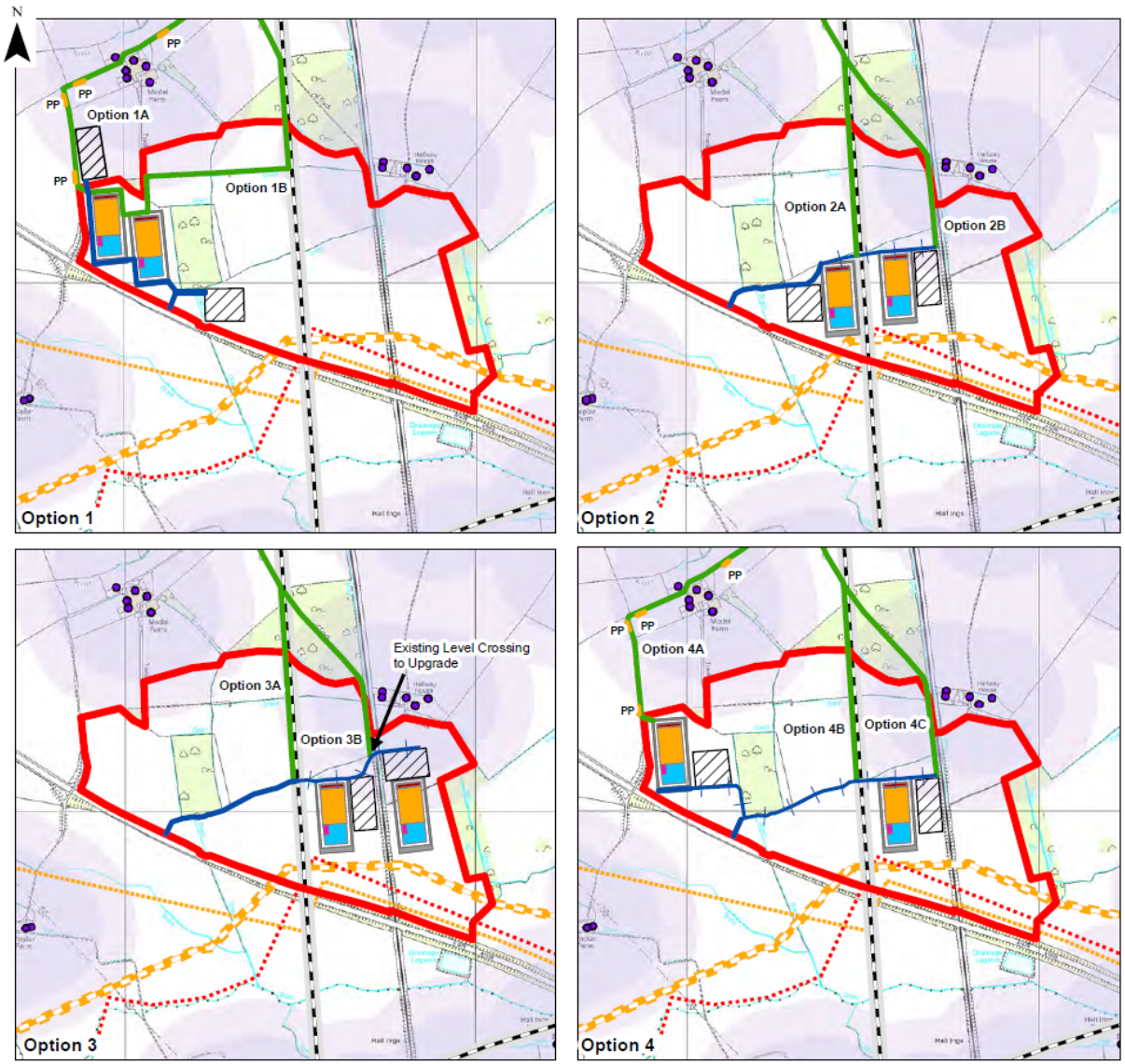
- Outdoor Equipment DC elements up to 10m in height, AC, up to 12m.
- A converter hall is a large building that houses electronic devices. Each will be up to 20m tall and will have slim metal rods up to 30m in height.
- Offices, car parking and a control building approximately 10m height;
- Access roads and fencing around the perimeter.
- Permanent landtake required for each Converter Station is 2 hectares (excludes access, mitigation and temporary works areas)

Previous Working Group Micrositing Suggestions

Microsited Options Taken Forward for Assessment



Microsited Options with Access



LEGEND

Access

- Combined Access (For both Construction and Operational use)
- Construction Access (1m Verge + 5.5m Road + 1m Verge)
- Operational Access (0.5m Verge + 4.1m Road + 0.5m Verge)
- Passing Places (PP)
- Sector A

Converter Station Plot

- Office/Control building
- AC Yard
- DC Yard
- HVDC Converter Hall
- Access
- Overhead Power Lines
- Overhead Powerline 40m Buffer
- Gas
- Etheleyene Pipeline
- Electric
- National Grid High Pressure Pipeline
- Pipeline Buffer 10m
- Properties
- Properties in Substation Area 200m Buffer
- Properties in Substation Area 300m Buffer
- Construction Compound (1 ha)

0 100 200 Metres

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PROJECT TITLE

DOGGER BANK R3 DEVELOPMENT

Creyke Beck - Onshore Converter Station

DRAWING TITLE

Figure 3.4 Converter Station Plot - Sector A Option 1 to 4 with Access Routes

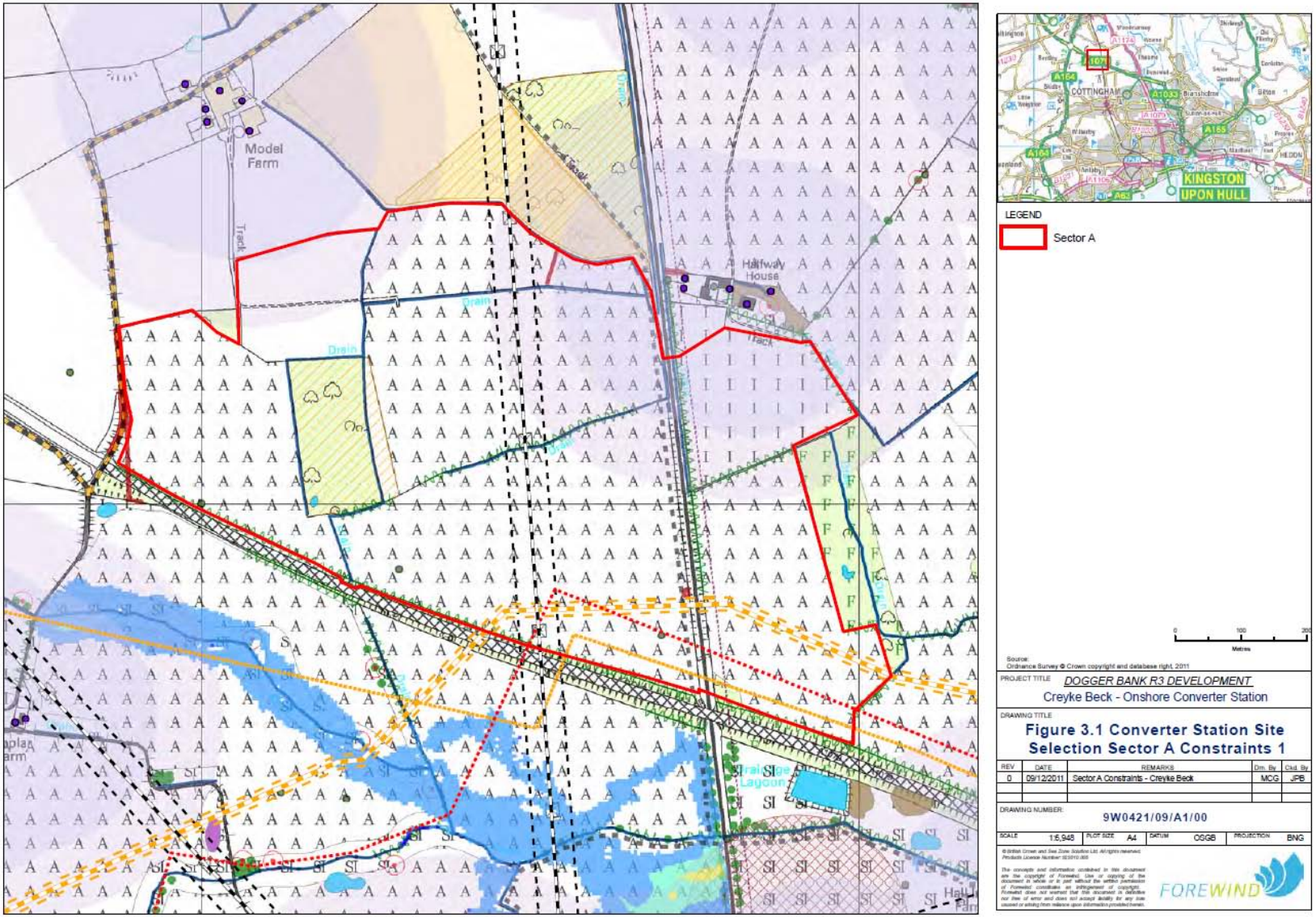
REV	DATE	REMARKS	Drn. By	Ckd. By
0	27/03/2012	Converter Stations Sector A - Option 1 to 4	MCG	ALC

DRAWING NUMBER: 9W0421/01/A1/00

SCALE	1:14,637	PLOT SIZE	A4	DATUM	OSGB	PROJECTION	BNG

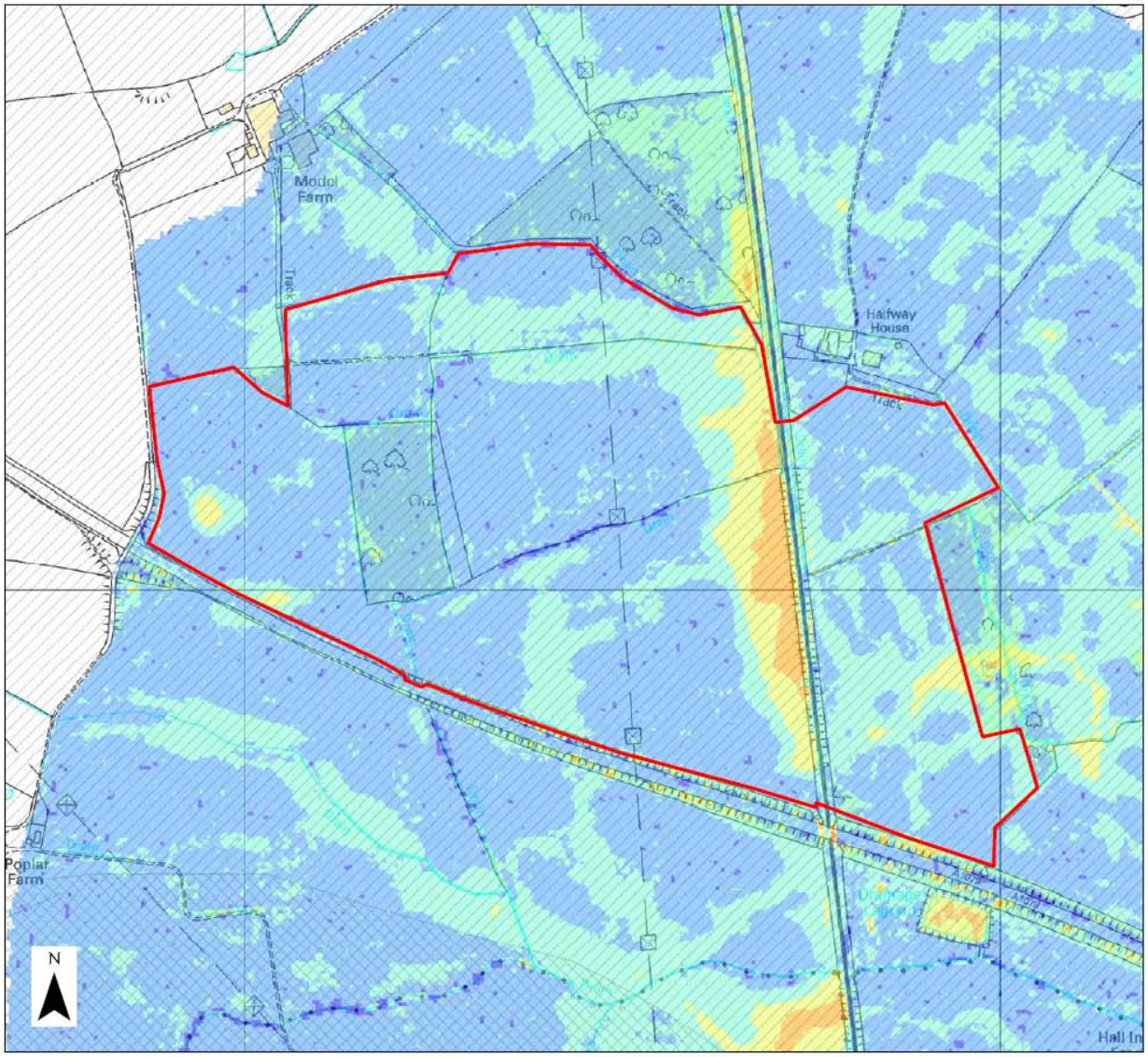
FOREWIND

Sector A Considerations Map



Sector A Constraints Legend

Consideration - Rainfall Depth



LEGEND

Groundwater Source Protection Zones

- Inner Zone
- Outer Zone

1 in 1000 years + Climate Change Rainfall Depth

Metres

- 0
- 0 - 0.1
- 0.1 - 0.5
- 0.5 - 1
- 1 - 2.5
- 2.5 - 5.5

0 100 200
Metres

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PROJECT TITLE: *DOGGER BANK R3 DEVELOPMENT*
Creyke Beck - Onshore Converter Station

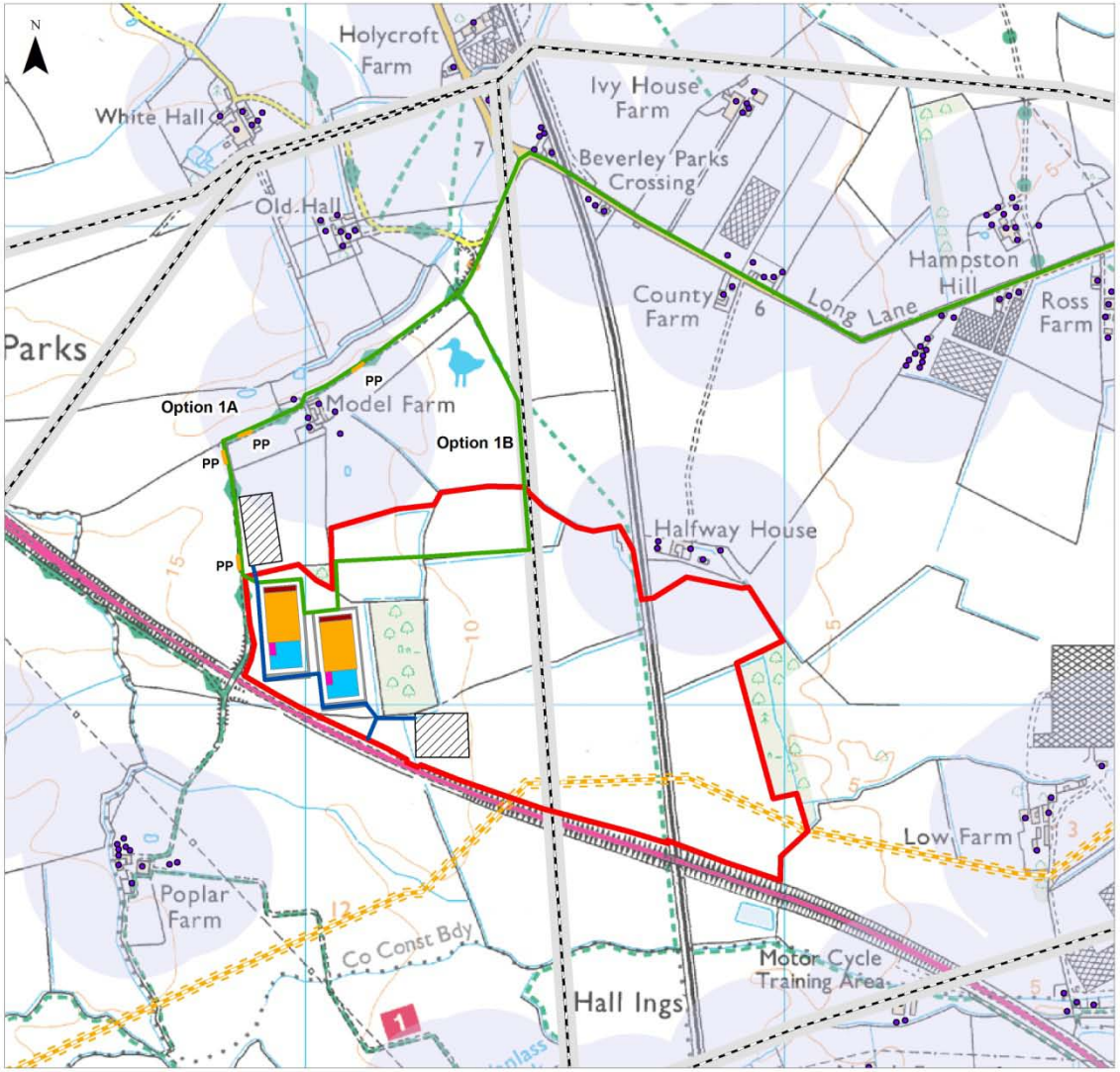
DRAWING TITLE:
Figure 3.2 Converter Station Site Selection Sector A Constraints 2

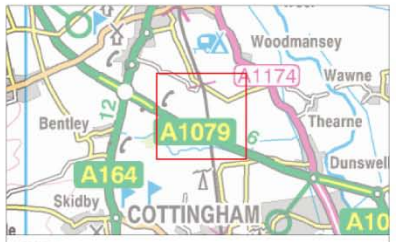
REV	DATE	REMARKS	Dm. By	Chd. By
0	09/12/2011	Sector A Constraints - Creyke Beck	MCG	JPB

DRAWING NUMBER: 9W0421/09/A2/00

SCALE	1:5,885	PLOT SIZE	A4	DATUM	OSGB	PROJECTION	BNG

Preferred Option for Environmental Impact Assessment





LEGEND

- Sector A

Access

- Combined Access (For both Construction and Operational use)
- Construction Access (1m Verge + 5.5m Road + 1m Verge)
- Operational Access (0.5m Verge + 4.1m Road + 0.5m Verge)
- Passing Places (PP)
- Construction Compound (1 ha)

Converter Station Plot

- Office/Control building
- AC Yard
- DC Yard
- HVDC Converter Hall
- Access
- Overhead Power Lines
- Overhead Powerline 40m Buffer
- National Grid High Pressure Pipeline
- Pipeline Buffer 10m
- Properties
- Properties in Substation Area 200m Buffer

0 100 200 Metres

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PROJECT TITLE *DOGGER BANK R3 DEVELOPMENT*

Creyke Beck - Onshore Converter Station

DRAWING TITLE

Operational and Construction Access for Sector A Option 1

REV	DATE	REMARKS	Drn. By	Ckd. By
0	16/04/2012	Construction and Operational Access - Option 1	MCG	ALC

DRAWING NUMBER: **9W0421/01/A1/00**

SCALE	1:8,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

Benefit and Risk with Option 1

Benefit

- Ability to use existing screening along the A1079 and parcels of existing woodland;
- Lesser impact upon views to Beverley Minster from the A1079;
- Preferred from a drainage design view point (due to topography, lower rainfall flood risk and presence of existing drainage network to feed into);
- Would result in limited land severance.

Risk

- Potential effects on setting of Beverley Minster; *(The surroundings in which a heritage asset is experienced)*
- Detailed management of drainage to be confirmed with Environment Agency and ERoY;
- Potential impact to Model Farm;
- Temporary and Permanent Impact on Public Rights of Way due to operational access requirements.

Next Steps

The next steps in the development process associated with the Converter Stations are:

- Liaise with Landowners on Selection Process;
- Identify the AC cable corridor from the converter stations to Creyke Beck substation;
- Environmental Impact Assessment; and
- Consult Statutory Stakeholders and Community on Final Selection and possible mitigation.

Next steps – Environmental Impact Assessment and Mitigation

Thursday 3 May 2012

Mark Baxter – Forewind

Sam Oxley – Land Use Consultants

FOREWIND

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Environmental Impact Assessment

What is EIA?

- It's a comprehensive assessment of the potential impacts (positive and negative) that the construction, operation and decommissioning of the project may have on the environment. Includes social factors too.

- Key issues for the converter stations include:

1) Landscape and visual impact
2) Traffic and transport
3) Noise
4) Archaeology and Ecology

Traffic and Transport

3 meetings to date with ERYC transport team and planning officers.

Construction Access

- Construction access off A1079 layby agreed in principle.
- Keeps construction traffic to main highway network.
- Detailed design and mitigation required to ensure safety of general public.

Operational Access

- Options discussed with ERYC in April 2012. Access likely to be off Long Lane, either past model Farm or through Beverley Parks Nature Reserve.
- Up to 10 vehicle movements a day expected (5 light vehicles in, and 5 out).
- Site essentially unmanned.
- Potential impacts of both routes being analysed.
- Both routes impact PROW, and one route impacts a local nature reserve.

Noise

- The noise assessment will assess potential noise and vibration effects on nearby houses and businesses.

- The existing background noise has been monitored at locations representative of the nearest receptors. The locations were fully agreed with Environmental Health Officers at ERYC.

- The impact assessment will take place May- July 2012 and will consider:
  - Construction of the converters, and their operation (including consideration of existing noise from Creyke Beck substation)
  - Operation of mobile and static plant equipment during construction.
  - Off-site vehicles and equipment on the public road network (e.g. vibration).

Ecology

Ecology

- Habitats, great crested newts, water voles and otters, bats, reptiles, and bird field surveys commenced in Spring 2011 and will finish in Summer 2012.
- Converter station Sector A being surveyed in 2012, therefore results not in yet.
- Potential impacts may include habitat loss and disturbance.
- A mitigation package will be agreed in consultation with Natural England and a range of non-statutory wildlife bodies, e.g. YWT, RSPB.

Archaeology

Archaeology

- Desk based assessment of known records complete, and was used to inform site selection.
- Geophysics of the full working area (any areas of topsoil strip) commenced in March 2012, and will continue over Summer 2012.
- Results will be discussed with the County Archaeologist, to determine further work and mitigation required.
- Mitigation examples include avoidance, or recording by trial trenching.

Landscape and Visual - Existing landscape

Model Farm

Halfway House

A1079

Existing landscape – PRoW

Existing site

Views from the A1079, from the south

Existing site

View from the north

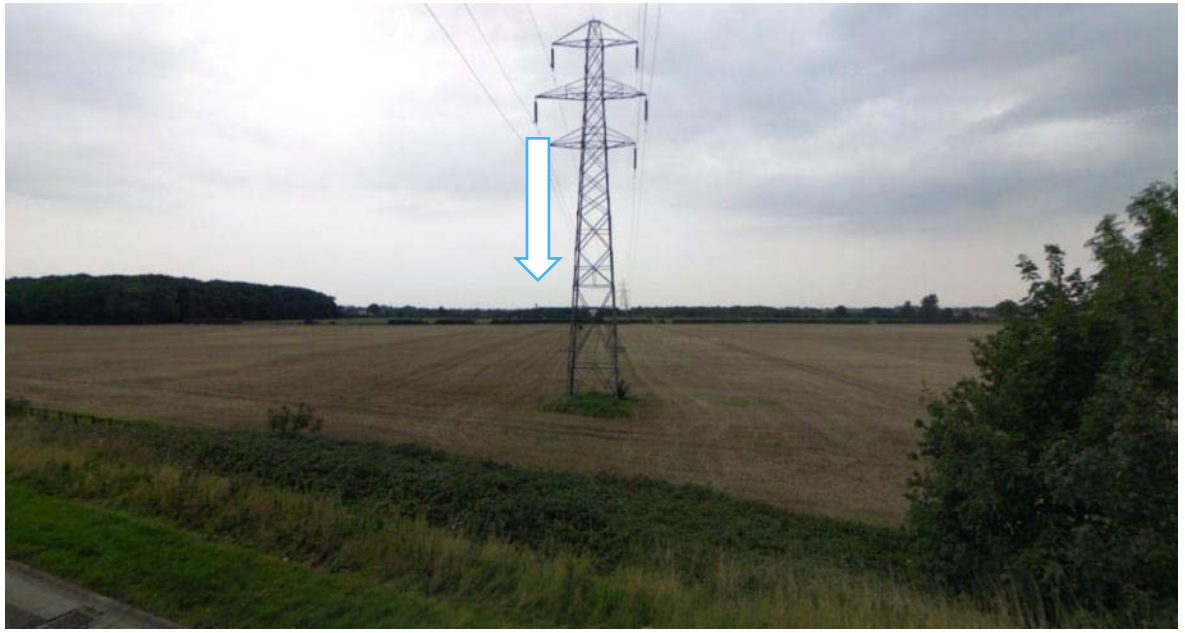
View from the PRoW, from the east

Daylight Views to Beverley Minster

- Glimpsed views to the Minster to Beverley Minster from the A1079
- **night time flood lighting** of the Minster makes it a focal point when seen **from** open or elevated locations in the wider landscape
- Please Note - photographs are low resolution and are **indicative**, for the purposes of this presentation

Daylight Views to Beverley Minster

Glimpsed views to the Minster to Beverley Minster from the A1079

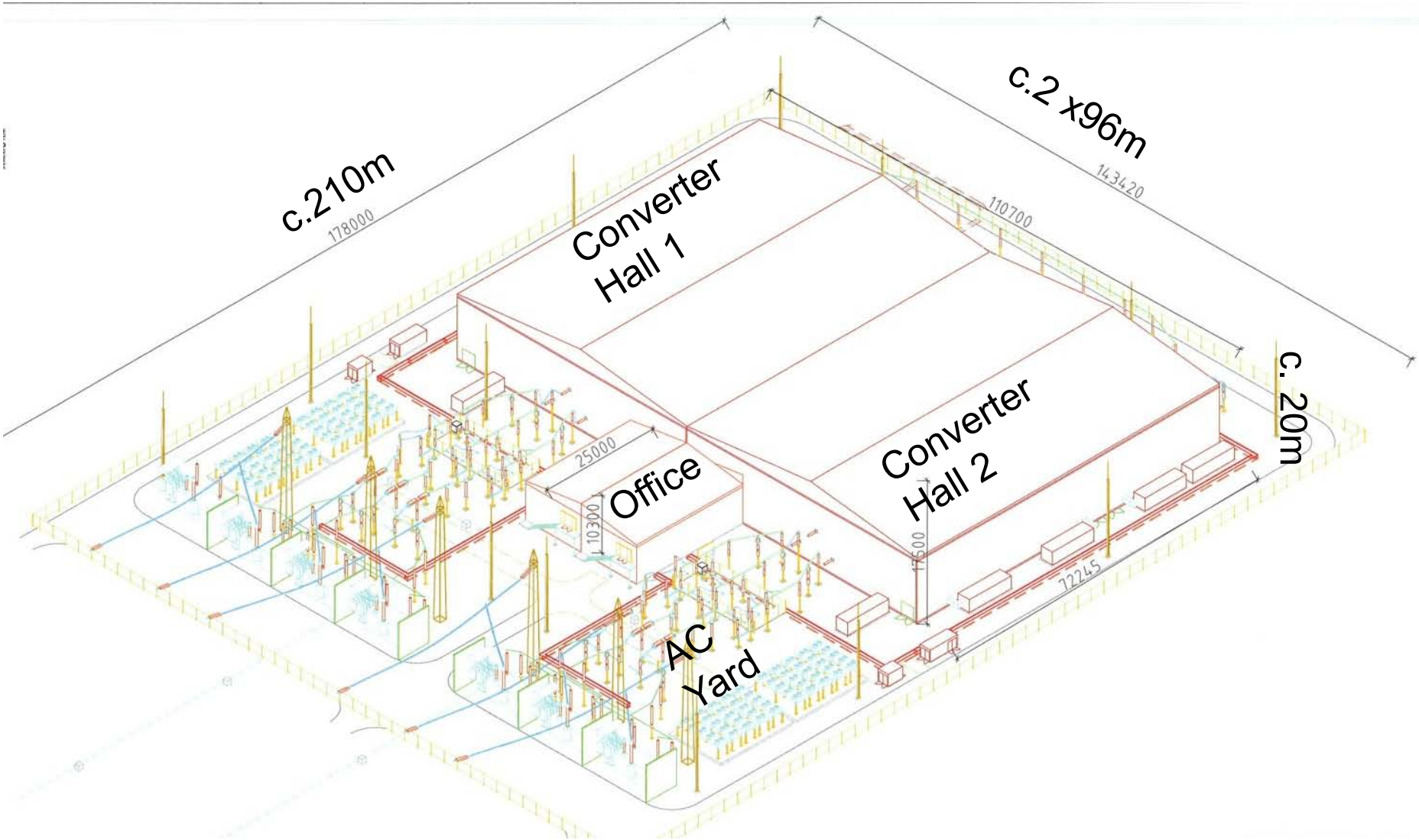


Please Note - photographs are low resolution and are **indicative**, for the purposes of this presentation

Views from Beverley Minster

- View from Beverley Minster to potential Converter Station Site
- In views from the Minster, **infrastructure will be low level** and seen as part of wider landscape and so difficult to discern
- Views **from** the Minster are limited to glimpses during specially arranged roof tours.
- Photographs are low resolution and so are **indicative**, for the purposes of this presentation

Typical Layout



Example Converter Station - ABB ESTLINK

Example Converter Station - SIEMENS

Potential Options - Green Roofs

Example - Imaginative Designs

Potential Options - Boundaries

Potential Options - Materials

Cross Sections

Dogger Bank: Creyke Beck: Existing and Proposed

Existing Section Elevation A - AA

Proposed Section Elevation A - AA

Existing Section Elevation D - DD

Proposed Section Elevation D - DD

Potential Mitigation Options?

Potential Options to Screen?

DC and AC Cable Route Options

Mark Baxter

Onshore Project Manager

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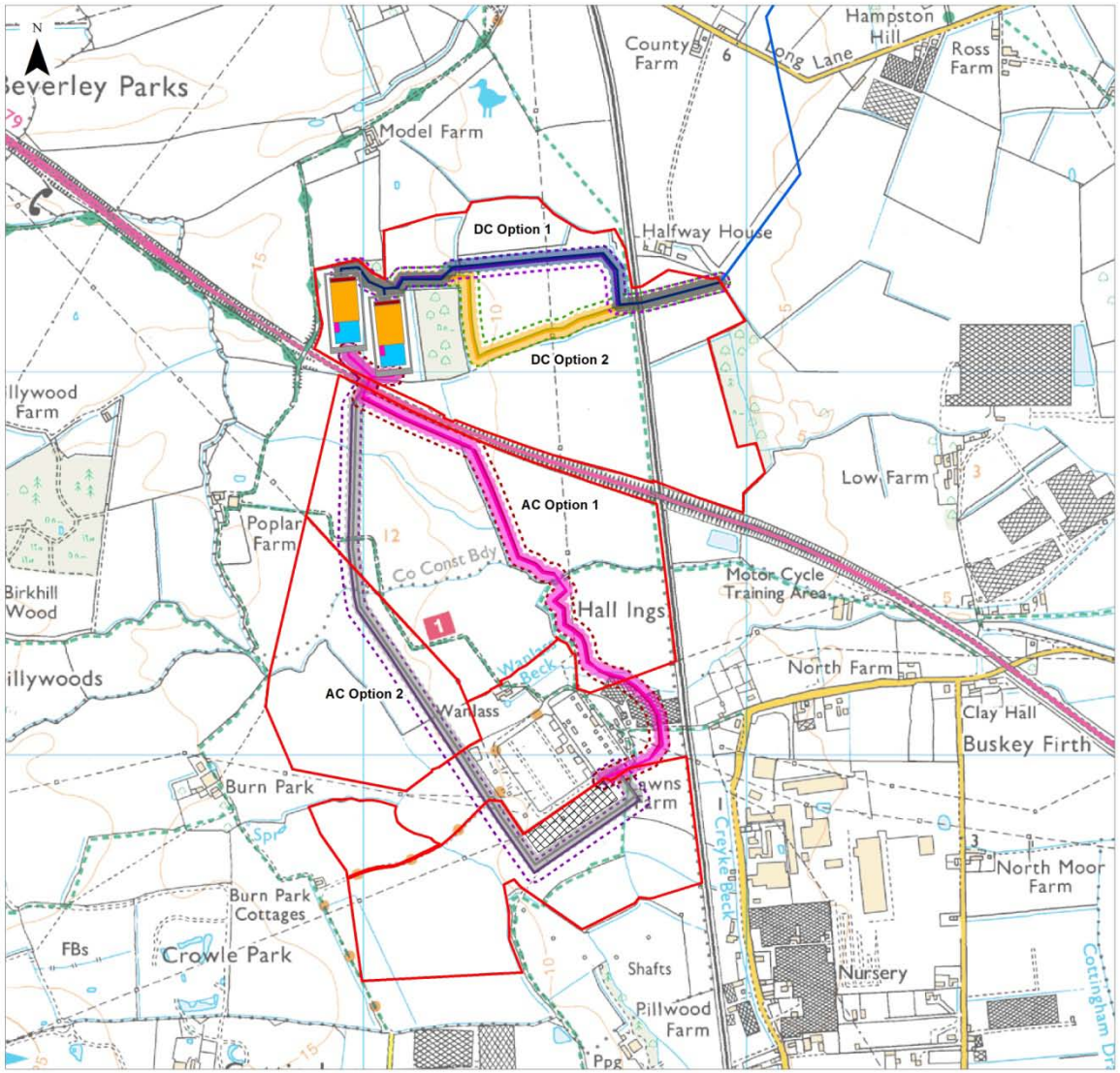
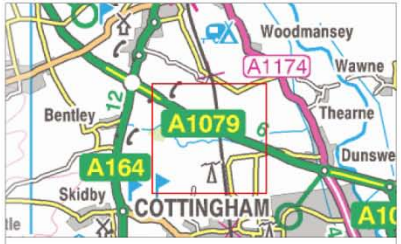
DC Route Options





LEGEND

Land Use
- Sector A
- Sector B
- Sector C
- Sector D
- Cable Centreline
- NG Enabling Works

Converter Station Plot
- Office/Control building
- AC Yard
- DC Yard
- HVDC Converter Hall
- Access
- Sector A - DC Option 1 Cable Centreline 36m
- Sector A - DC Option 1 Cable Corridor 36m
- Sector A - DC Option 1 Cable Centreline 50m
- Sector A - DC Option 1 Cable Corridor 50m
- Sector A - DC Option 2 Cable Centreline 36m
- Sector A - DC Option 2 Cable Corridor 36m
- Sector A - DC Option 2 Cable Centreline 50m
- Sector A - DC Option 2 Cable Corridor 50m
- Substation - AC Option 1 Cable Centreline 36m
- Substation - AC Option 1 Cable Corridor 36m
- Substation - AC Option 1 Cable Centreline 50m
- Substation - AC Option 1 Cable Corridor 50m
- Substation - AC Option 2 Cable Centreline 36m
- Substation - AC Option 2 Cable Corridor 36m
- Substation - AC Option 2 Cable Centreline 50m
- Substation - AC Option 2 Cable Corridor 50m

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0 100 200 Metres

PROJECT TITLE: *DOGGER BANK R3 DEVELOPMENT*
Creyke Beck - Onshore Converter Station

DRAWING TITLE
Cable Micrositing Options Sector A

REV	DATE	REMARKS	Drn. By	Ckd. By
0	16/04/2012	Cable Working Width - Sector A Options	MCG	ALC

DRAWING NUMBER: **9W0421/01/A1/00**

SCALE	1:10,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

DC Cable Comparison

DC Cable Design Assumptions – 36m working width	Option 1	Option 2
Length (m)	1,035	1,128
PRoW Crossings	1	1
Drain Crossings	2	2
Gas Pipeline Crossings	0	0
Main Road Crossings	0	0
Small Lane Crossings	0	0
Railway Crossings	1	1

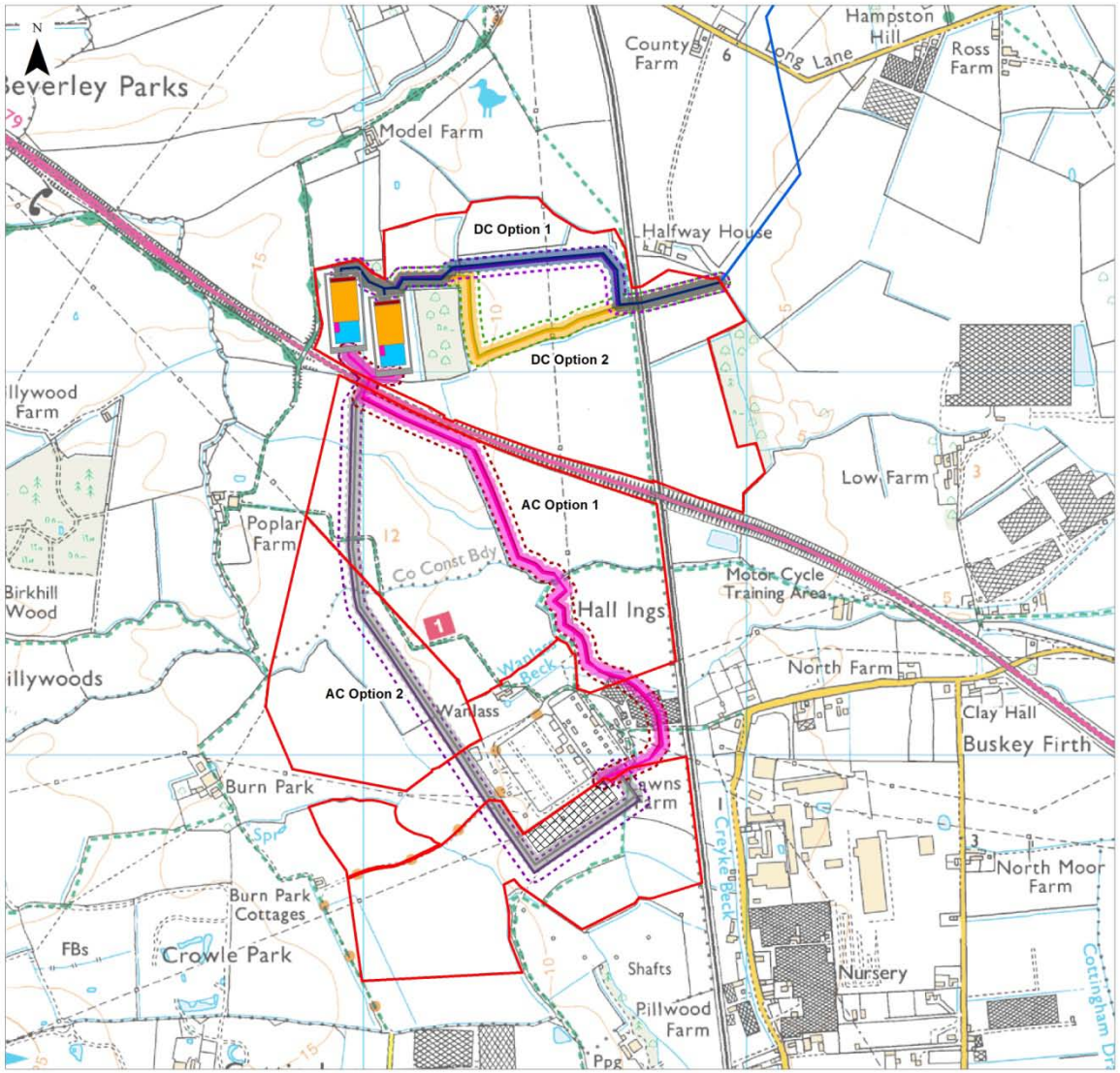
Development Considerations

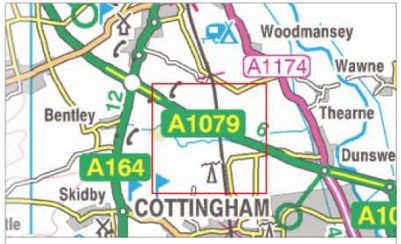
DC

- **Option 1** - passes to the north of the woodland parcel, crossing 2 small watercourses and a hedgerow in the east

- **Option 2** - crosses between two large agricultural fields and along the eastern edge of the woodland parcel. It crosses 2 small watercourses and one hedgerow.

AC Cable Route Options





LEGEND

Land Use

- Sector A
- Sector B
- Sector C
- Sector D
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Converter Station Plot

- Office/Control building
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- Sector A - DC Option 1 Cable Corridor 36m
- Sector A - DC Option 1 Cable Centreline 50m
- Sector A - DC Option 1 Cable Corridor 50m
- Sector A - DC Option 2 Cable Centreline 36m
- Sector A - DC Option 2 Cable Corridor 36m
- Sector A - DC Option 2 Cable Centreline 50m
- Sector A - DC Option 2 Cable Corridor 50m
- Substation - AC Option 1 Cable Centreline 36m
- Substation - AC Option 1 Cable Corridor 36m
- Substation - AC Option 1 Cable Centreline 50m
- Substation - AC Option 1 Cable Corridor 50m
- Substation - AC Option 2 Cable Centreline 36m
- Substation - AC Option 2 Cable Corridor 36m
- Substation - AC Option 2 Cable Centreline 50m
- Substation - AC Option 2 Cable Corridor 50m

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0 100 200 Metres

PROJECT TITLE: *DOGGER BANK R3 DEVELOPMENT*

Creyke Beck - Onshore Converter Station

DRAWING TITLE

Cable Micrositing Options Sector A

REV	DATE	REMARKS	Drn. By	Ckd. By
0	16/04/2012	Cable Working Width - Sector A Options	MCG	ALC

DRAWING NUMBER: **9W0421/01/A1/00**

SCALE	1:10,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

AC Cable Comparison

AC Cable Design Assumptions – 38m working width	Option 1	Option 2
Length (m)	1,670	1,860
PRoW Crossings	3	2
Drain Crossings	3	3
Gas Pipeline* Crossings	4	4
Main Road Crossings (A1079)	1	1
Minor Road Crossings	1	2
Railway Crossings	0	0

Development Considerations

AC

- **Option 1** - The route passes within the 500m buffer of the Highfield House Bowl Barrow Scheduled Monument and between two woodland parcels.
- It has 3 small watercourse, 3 Public Rights of Way, 1 minor road and 4 gas pipeline crossings. It also has a fluvial flood risk in this area of over 1m in depth (near the railway line).
- **Option 2** - passes through an identified Environmental Stewardship Scheme area for Poplar Farm.
- This route also has 2 Public Rights of Way, 3 watercourse, 2 minor road and 4 gas pipeline crossings.

Feedback

1. Does the Working Group have any immediate thoughts on these routing options?

2. Are there any factors that we should consider which have not been mentioned in the options suggested?

3. Is there a clear preference from the options shown?

National Grid Works

David Flood – Head of Electrical - Forewind

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Questions and Answers

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Thank you

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