

The Wrexham (Gas Fired Power Station) Order

5.3 Design and Access Statement

Planning Act 2008 The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Contents

Executive Summary	1
OVERVIEW	1
PRINCIPAL ISSUES CONSIDERED IN THIS STATEMENT	3
CONCLUSION	4
Crynodeb Gweithredol	5
TROSOLWG	5
Y PRIF FATERION A YSTYRIR YN Y DATGANIAD HWN	7
CASGLIAD	8
Chapter 1 ◆ Introduction	9
BACKGROUND TO THE SCHEME	9
PURPOSE OF THIS DOCUMENT	9
Requirement for a Design and Access Statement	9
Guidance on the form of Design and Access Statements	10
REPORT STRUCTURE	11
Chapter 2 ◆ The design context	13
POLICY AND REGULATORY CONSIDERATIONS	13
National Policy Statements	13
Overarching National Policy Statement (NPS) for Energy (EN-1), 2011	13
General considerations	13
Climate change	14
Safety	15
Health	15
Security	15
Biodiversity within developments	16
Flood risk	16
Historic environment	17
Landscape and visual	17
Land use, including open space	17

Noise and vibration	18
Socio-economic	18
Water quality and resources	18
NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2), July 2011	18
Landscape and visual amenity	19
Noise and vibration	20
Transport impacts	21
Air emissions	21
NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)	22
Planning Policy Wales	22
Technical Advice Note 12: Design	24
Conclusions on PPW and TAN 12	24
Development Plan Policy	25
Wrexham County Borough Council guidance	27
CHARACTERISTICS OF THE POWER STATION COMPLEX SITE	28
Location and surroundings	28
Former use	32
Current characteristics of the Power Station Complex Site	33
Planning history	36
CHARACTERISTICS OF THE GAS CONNECTION ROUTE	37
THE DESIGN OBJECTIVES	39
Chapter 3 ◆ The Power Station Complex	41
INTRODUCTION; GENERAL REQUIREMENTS	41
Overall physical and functional requirements	41
STRATEGIC SITE SEARCH	43
Selection of Wrexham Industrial Estate	43
SITING WITHIN WREXHAM INDUSTRIAL ESTATE	43
LAYOUT OF THE POWER STATION COMPLEX	46
Preliminary layout options	46
Refinements to the design of the Power Station Complex	50
Final layout proposal	52
POWER STATION CAPACITY	53
DESIGN CONSIDERATIONS FOR PRINCIPAL COMPONENTS OF THE POWER STATION	55

1: Gas turbine building	55
2: Heat recovery steam generators	56
3: Stacks	57
4: Transformer Compounds (for output of gas turbine/s)	58
5: Steam turbine building	59
6: Transformer Compound (for output of steam turbine)	59
7: Switchgear room	59
8: 132 kV switchyard	60
9: Air cooled condenser	60
10: Administration/control building	61
11: Pressure regulating installation	62
12: Raw/fire tank, 13: Water tank, <i>and</i> , 14: Water treatment system	62
No. 15: Workshop	63
No. 16: Parking	63
No. 17: Heat network interface building	63
No. 18: Pumping Station	64
LANDSCAPE, VEGETATION, BOUNDARY AND LIGHTING TREATMENTS	64
Proposed landscape measures	65
Lighting and perimeter fencing	66
SURFACE WATER AND WASTEWATER	66
ACCESS	67
 Chapter 4 ◆ Gas Connection	 69
GAS CONNECTION ROUTE	69
IMPLEMENTATION OF THE GAS CONNECTION	74
ACCESS TO THE GAS CONNECTION ROUTE	75
 Chapter 5 ◆ Conclusions	 77

Executive Summary

OVERVIEW

- (i) Wrexham Power Limited (WPL) is applying to the Secretary of State under the Planning Act 2008 ('PA 2008') for powers to construct, operate and maintain a combined cycle gas turbine Power Station Complex, together with infrastructure and landscape works (the Power Station Complex Site), and the Gas Connection, all of which form part of the Scheme, known as Wrexham Energy Centre (WEC). The Power Station Complex will be constructed on land at Wrexham Industrial Estate (WIE) to the east of Wrexham, and the Scheme is known as the Wrexham Energy Centre (WEC).
- (ii) WPL is a joint venture company established by St. Modwen and Glenfinnan Properties. Both companies have an extensive background in the development and economic regeneration of sites throughout the UK, including experience in the energy sector.
- (iii) The Power Station Complex Site constitutes a Nationally Significant Infrastructure Project ('NSIP') by virtue of section 14(1)(a) and section 15 of the 2008 Act, which includes in the definition of an NSIP, any onshore generating station in England or Wales of 50 megawatts (MWe) capacity or more. Under section 31 of the 2008 Act, a Development Consent Order ('DCO') is required to develop an NSIP. Section 37 of the 2008 Act specifies that a DCO can only be made if an application is made to the relevant Secretary of State (SoS) (the 'Application').
- (iv) The Gas Connection element of the Scheme is being consented separately under the Town and Country Planning Act 1990 (TCPA 1990) by means of a planning application to the local planning authority. On the basis that powers of compulsory acquisition over the land required for the Gas Connection are being sought as a part of the DCO Application, the ES that accompanies the Application has considered and assessed both the Power Station Complex Site and the Gas Connection. In addition, the ES has cumulatively assessed other proposed developments including the Electrical Connection required for the WEC.
- (v) The Scheme comprises:
 - a combined cycle gas turbine (CCGT) power station (the 'Power Station Complex') (work numbered 1 in Schedule 1 to the Order), which would be fuelled by natural gas and would have an electrical generation capacity of up to 299 MWe;
 - temporary and permanent Laydown Areas (works numbered 2A and 2B respectively in Schedule 1 to the Order);
 - surface water drainage works (work numbered 3 in Schedule 1 to the Order);

- the landscape and ecological mitigation works (work numbered 4 in Schedule 1 to the Order);
 - the alteration and use of the Kingmoor Park Access Road (work numbered 5 in Schedule 1 to the Order) (together the 'Power Station Complex Site');
 - the gas connection and an Above Ground Installation (AGI) (the 'Gas Connection').
- (vi) A description of the Scheme is provided in Chapter 4 of the Environmental Statement ('the ES' - Document reference 6.2.4).
- (vii) The Electrical Connection is not a part of the Application for the Scheme, but will be required for the export of electricity. It is thus assumed that works will be undertaken broadly at the same time as the Scheme construction works. To ensure that a robust assessment is carried out in the ES, a number of realistic assumptions have been made regarding the electrical connection works as set out below:
- The Electrical Connection is likely to consist of underground cabling between the Scheme's electrical switchgear located within the Power Station Complex and the existing Marchwiell substation, located on Abbey Road on the Wrexham Industrial Estate.
 - The wider existing electrical distribution network will also need upgrading to accommodate the new generation. This is likely to comprise works to the existing Marchwiell substation, a re-stringing of existing pylons between Legacy and Wrexham substations, replacement of the existing portal frame towers between Legacy and Marchwiell substations, and the laying of underground cables. Once complete, the electrical distribution network that currently serves the Wrexham Industrial Estate will benefit from increased capacity and resilience.
- (viii) The final technical solution for the Electrical Connection will be determined at a later date by Scottish Power Energy Networks (SPEN) in its role as the statutory undertaker for electrical infrastructure in the area. Any works associated with the Electrical Connection will be consented through the appropriate and lawful consenting regime. Further details of the Electrical Connection and the consultation undertaken with SPEN to date are detailed in the Grid Connection Statement (Document reference 8.1).
- (ix) This Design and Access Statement (Document reference 5.3) explains the design process and rationale for the Scheme and how it accords with the principles of good design. It also provides a review of relevant policies, a summary of technical supporting studies that have been undertaken and details of community engagement undertaken.
- (x) The purpose of this Statement is to assist the Secretary of State and Wrexham County Borough Council (as the local planning authority and determining body for the Gas Connection) to understand the Scheme, its neighbourhood and wider context; to explain the process that led to the chosen design and to consider how the Scheme has been designed to be functional, durable and sympathetic to its physical and visual setting.

- (xi) Photographs, diagrams and plans are included in this Statement to enable design aspects of the Scheme to be explained in non-technical terms. For the avoidance of doubt, however, these are for illustrative purposes only and do not form part of the DCO application ('the Application') and the Gas Connection planning application.

PRINCIPAL ISSUES CONSIDERED IN THIS STATEMENT

- (xii) Chapter 1 of this Statement describes the background to the Scheme in accordance with guidance on the form of design and access statements.
- (xiii) Chapter 2 of this Statement identifies the design policy framework for the Scheme, key features of the WEC Site and surrounding area and how the Application has responded to this framework. It culminates in a list of principal design objectives for the Scheme, which include the following considerations:
- siting of the Scheme in relation to environmental, land use and visual constraints;
 - securing a compact, neat, ordered form of development;
 - achieving high-quality design with appropriate materials and colouring;
 - minimising the length of grid connections;
 - minimising external lighting;
 - providing suitable parking and access for workers and visitors to the WEC Site;
 - using planting and landscaping to 'soften' the site and promote wildlife; and
 - minimising waste.
- (xiv) Chapter 3 then describes the Scheme, giving a detailed account of:
- its overall physical and functional requirements;
 - the selection of Wrexham Industrial Estate as a location for a CCGT power station;
 - considerations of siting within Wrexham Industrial Estate;
 - the proposed layout of the Scheme, and the evolution thereof; and
 - design considerations for each principal component of the Power Station Complex.
- (xv) Chapter 3 also describes access to the Scheme, and provides details of the landscape, vegetation and boundary treatments, as well as foul and surface water drainage arrangements in relation to the Scheme.
- (xvi) Chapter 4 describes the Gas Connection for the Power Station Complex.

- (xvii) This document should be read in conjunction with the submitted plans, including the Works Plans (document reference 2.3), the Planning Statement (Document reference 5.2) and the Environmental Statement (Document reference 6.1-6.4).

CONCLUSION

- (xviii) The Statement concludes that:
- a sensitive response has been taken, through a combination of site planning and siting of the Scheme;
 - the design and layout of the Scheme have sought to respond to, and integrate with, the Wrexham Industrial Estate (WIE) and its surroundings, including existing and proposed uses;
 - any adverse effects felt locally as a consequence of the Scheme in design and access terms would be outweighed by its overall benefits;
 - access routing for vehicles, including HGV movements during construction and demolition, has been optimised;
 - the Gas Connection has been routed to minimise its length and potential impact.
- (xix) In view of these conclusions, the Scheme is considered to meet all statutory and policy requirements in terms of design and access.

Crynodeb Gweithredol

TROSOLWG

- (i) Mae Wrexham Power Limited (WPL) yn cyflwyno cais i'r Ysgrifennydd Gwladol dan Ddeddf Cynllunio 2008 (Deddf 2008) am rymoedd i adeiladu, gweithredu a chynnal a chadw Cyfadeilad Pwerdy tyrbin nwy cylch cyfun ynghyd â gwaith datblygu seilwaith a thirwedd (Safle Cyfadeilad y Pwerdy), a'r Cysylltiad Nwy, sydd oll yn rhan o'r Cynllun, a elwir yn Ganolfan Ynni Wrecsam (WEC). Caiff y Cynllun ei adeiladu ar dir yn Ystâd Ddiwydiannol Wrecsam (WIE), i'r Gorllewin o Wrecsam, ac enw'r cynllun yw Canolfan Ynni Wrecsam (WEC).
- (ii) Mae WPL yn fenter ar y cyd a sefydlwyd gan St. Modwen a Glenfinnan Properties. Mae gan y ddau gwmni brofiad helaeth o ddatblygu safleoedd a'u hadfywio yn economaidd ar draws y DU, yn cynnwys profiad o'r sector ynni.
- (iii) Mae Safle Cyfadeilad y Pwerdy yn Brosiect Seilwaith Cenedlaethol ei Arwyddocâd ('NSIP') o dan adran 14(1)(a) ac adran 15 Deddf 2008, ac mae'r diffiniad o NSIP yn cynnwys unrhyw bwerdy ar y tir yng Nghymru a Lloegr sydd â chapasiti o 50 megawatt (MWe) neu ragor. Dan adran 31 Deddf 2008, mae angen Gorchymyn Caniatâd Cynllunio ('DCO') i ddatblygu NSIP. Dan adran 37 Deddf 2008, ni ellir rhoi DCO oni chyflwynir cais amdano i'r Ysgrifennydd Gwladol perthnasol (SoS) (y 'Cais').
- (iv) Ceisir caniatâd am elfen Cysylltiad Nwy y Cynllun ar wahân o dan Ddeddf Cynllunio Gwlad a Thref 1990 (TCPA 1990) trwy gyflwyno cais cynllunio i'r awdurdod cynllunio lleol. Mae grymoedd prynu gorfodol i sicrhau'r tir sy'n ofynnol ar gyfer y Cysylltiad Nwy yn cael eu ceisio fel rhan o'r cais am DCO, felly mae'r ES sy'n ategu'r Cais wedi ystyried ac asesu Safle Cyfadeilad y Pwerdy a'r Cysylltiad nwy. Yn ychwanegol, mae'r ES sy'n ategu'r cais wedi gwneud asesiad cronnos o'r datblygiadau arfaethedig eraill yn cynnwys y Cysylltiad Trydanol sy'n ofynnol ar gyfer WEC.
- (v) Mae'r Cynllun yn cynnwys:
 - pwerdy tyrbin nwy cylch cyfun (CCGT) ('Cyfadeilad y Pwerdy') (gwaith rhif 1 yn Atodlen 1 y Gorchymyn) a fyddai'n cael ei danio gan nwy naturiol, a byddai ganddo gapasiti cynhyrchu trydan o hyd at 299 MW_e;
 - manau cadw parhaol a dros dro (gwaith 2A a 2B yn eu trefn yn Atodlen 1 y Gorchymyn);
 - gwaith draenio dŵr wyneb (gwaith rhif 3 yn Atodlen 1 y Gorchymyn);
 - gwaith lliniaru'r effeithiau ar y dirwedd ac ar ecoleg (gwaith rhif 4 yn Atodlen 1 y Gorchymyn);
 - newid a defnyddio Ffordd Mynediad Kingmoor Park (gwaith rhif 5 yn Atodlen 1 y

Gorchymyn) (gyda'i gilydd 'Safle Cyfadeilad y Pwerdy');

- y cysylltiad nwy a Gweithfa Uwchben Tir (AGI) (y 'Cysylltiad Nwy').
- (vi) Ceir disgrifiad o'r Cynllun ym Mhennod 4 y Datganiad Amgylcheddol ('yr ES' – Cyfeirnod y ddogfen 6.2.4).
- (vii) Nid yw'r Cysylltiad Trydanol yn rhan o'r Cais ar gyfer y Cynllun, ond bydd yn ofynnol ar gyfer allforio trydan. Tybir felly y bydd y gwaith hwn yn digwydd fwy neu lai ar yr un pryd â gwaith adeiladu'r Cynllun. I sicrhau y gwneir asesiad trylwyr yn yr ES, gwnaed nifer o ragdybiaethau realistig ynghylch y gwaith ar gyfer y cysylltiad trydanol fel y nodir isod:
- Mae'n debygol bydd y Cysylltiad Trydanol yn cynnwys ceblau tanddaearol rhwng offer switsio trydan y Cynllun a leolir o fewn Cyfadeilad y Pwerdy a'r is-orsaf bresennol ym Marchwial, a leolir ar Ffordd yr Abaty yn Ystâd Ddiwydiannol Wreccsam.
 - Hefyd bydd angen uwchraddio'r rhwydwaith dosbarthu trydan presennol i gynnwys y trydan newydd a gynhyrchir. Mae'n debygol bydd hyn yn cynnwys gwaith i is-orsaf bresennol Marchwial, ailosod ceblau ar beilonau presennol rhwng is-orsafoedd Legacy a Marchwial, amnewid tyrau ffrâm porthol presennol rhwng is-orsafoedd Legacy a Marchwial, a gosod ceblau tanddaearol. Ar ôl cael ei gwblhau, bydd gan y rhwydwaith dosbarthu trydan sy'n gwasanaethu Ystâd Ddiwydiannol Wreccsam well capasiti a chadernid na'r hyn sy'n bodoli nawr.
- (viii) Bydd ateb technegol terfynol y Cysylltiad Trydan yn cael ei bennu'n ddiweddarach gan Scottish Power Energy Networks (SPEN) yn rhinwedd ei rôl fel yr ymgymerwr statudol sy'n gyfrifol am seilwaith trydan yn yr ardal. Bydd angen cael caniatâd i wneud unrhyw waith sy'n gysylltiedig â'r Cysylltiad Trydanol trwy'r gyfundrefn gydsynio briodol a chyfreithiol. Mae rhagor o fanylion ynghylch y Cysylltiad Trydanol a'r ymgynghoriad a wnaed gyda SPEN hyd yn hyn wedi'u hegluro yn y Datganiad ynghylch y Cysylltiad â'r Grid (Cyfeirnod y Ddogfen: 8.1).
- (ix) Mae'r Datganiad Dylunio a Mynediad (Cyfeirnod y ddogfen 5.3) yn egluro'r broses ddylunio a'r sail resymegol dros y Cynllun a sut mae'n cyd-fynd ag egwyddorion dylunio da. Mae hefyd yn darparu adolygiad o bolisiau perthnasol, crynodeb o astudiaethau technegol ategol sydd wedi cael eu gwneud a manylion ymdrechion a wnaed i ymgynghori â'r gymuned.
- (x) Pwrpas y Datganiad yw cynorthwyo'r Ysgrifennydd Gwladol a Chyngor Bwrdeistref Sirol Wreccsam (fel yr awdurdod cynllunio lleol a'r corff fydd yn penderfynu a ddylid caniatáu'r Cysylltiad Nwy neu beidio) i ddeall y Cynllun, ei gymdogaeth a'i gyd-destun ehangach; egluro'r broses a arweiniodd at y gwneuthuriad a ddewiswyd ac ystyried sut mae'r Cynllun wedi cael ei ddylunio i fod yn ymarferol, cryf ac yn ystyrlon o'i safle ffisegol a'r olygfa.
- (xi) Cynhwysir ffotograffau, diagramau a chynlluniau yn y Datganiad hwn er mwyn egluro agweddau o wneuthuriad y Cynllun mewn termau annhechnegol. I osgoi unrhyw ansicrwydd, fodd bynnag, defnyddir y rhain at ddiben egluro'r Cynllun yn unig ac nid ydynt yn rhan o'r cais am DCO ('y Cais') na'r cais cynllunio am Gysylltiad Nwy.

Y PRIF FATERION A YSTYRIR YN Y DATGANIAD HWN

- (xii) Mae Pennod 1 y Datganiad hwn yn disgrifio cefndir y Cynllun yn unol â chyfarwyddyd ar ffurf datganiadau dylunio a mynediad.
- (xiii) Mae Pennod 2 y Datganiad hwn yn nodi fframwaith polisi dylunio'r Cynllun, nodweddion allweddol Safle WEC a'r ardal o'i gwmpas, a sut mae'r Cais wedi ymateb i'r fframwaith hwn. Mae'n gorffen â rhestr o brif amcanion dylunio'r Cynllun, sy'n cynnwys yr ystyriaethau hyn:
- lleoli'r Cynllun mewn perthynas â chyfyngiadau o ran yr amgylchedd, defnydd tir ac agweddau gweledol;
 - sicrhau math o ddatblygiad sy'n gryno, destlus a threfnus;
 - sicrhau fod gwneuthuriad y Cynllun o ansawdd uchel a bod y defnyddiau a'r lliw yn briodol;
 - lleihau hyd y cysylltiadau â'r grid;
 - lleihau goleuo allanol;
 - darparu llefydd parcio a mynediad priodol ar gyfer gweithwyr ac ymwelwyr â safle WEC;
 - defnyddio plannu a thirweddu i wella golwg y safle ac annog bywyd gwyllt; a
 - lleihau gwastraff.
- (xiv) Yna, mae Pennod 3 yn disgrifio'r cynllun, gan amlinellu'r canlynol yn fanwl:
- ei ofynion ffisegol ac ymarferol cyffredinol;
 - dewis Ystâd Ddiwydiannol Wrecsam fel lleoliad ar gyfer gorsaf bŵer CGGT;
 - ystyried yr union leoliad o fewn Ystâd Ddiwydiannol Wrecsam;
 - trefn arfaethedig y Cynllun, a sut bydd hynny'n datblygu; ac
 - ystyriaethau o ran dylunio pob un o brif elfennau Cyfadeilad y Pwerdy.
- (xv) Mae Pennod 3 hefyd yn disgrifio mynediad at y Cynllun, ac yn cynnwys manylion dulliau o ymdrin â'r dirwedd, llystyfiant a therfynnau, yn ogystal â threfniadau draenio dŵr budr a dŵr wyneb.
- (xvi) Mae Pennod 4 yn Disgrifio'r Cysylltiad Nwy ar gyfer Cyfadeilad y Pwerdy.
- (xvii) Dylid darllen y ddogfen hon ar y cyd â'r cynlluniau a gyflwynwyd, yn cynnwys Cynlluniau'r Gwaith (cyfeirnod y ddogfen 2.3), y Datganiad Cynllunio (Cyfeirnod y ddogfen 5.2) a'r Datganiad Amgylcheddol (Cyfeirnodau'r ddogfen 6.1-6.4).

CASGLIAD

(xviii) Mae'r Datganiad hwn yn casglu'r canlynol:

- ymatebwyd yn sensitif, trwy gyfuniad o gynllunio'r safle a lleoliad y Cynllun;
- mae gwneuthuriad a threfn y Cynllun wedi ceisio ymateb i ac integreiddio ag Ystâd Ddiwydiannol Wrecsam (WIE) a'i amgylchoedd, yn cynnwys defnyddiau presennol ac arfaethedig yno;
- byddai manteision cyffredinol y cynllun yn gorbwyso unrhyw effeithiau andwyol a deimlid yn lleol yn sgil y Cynllun o ran ei wneuthuriad a mynediad ato;
- mae mynediad i gerbydau, yn cynnwys cerbydau nwyddau trwm a fydd yn dod i'r safle yn ystod y gwaith adeiladu a dymchwel, wedi cael ei optimeiddio;
- mae llwybr y Cysylltiad Nwy wedi cael ei ddewis i leihau ei hyd a'i effaith posibl;

(xix) Yn sgil y casgliadau hyn, ystyrir fod y Cynllun yn cyflawni'r holl ofynion statudol a'r gofynion polisi sy'n ymwneud â dylunio a mynediad.

Chapter 1 ♦ Introduction

BACKGROUND TO THE SCHEME

- 1.1 This Design and Access Statement ('the Statement') accompanies the Application for the Order proposing development consent for the Scheme and the planning application for the Gas Connection. It has been prepared by Savills on the instruction of the applicant, Wrexham Power Limited (WPL). WPL is a joint venture between St. Modwen and Glenfinnan Properties, established with the intention of promoting the Scheme. Both companies have extensive experience in the development and economic regeneration of sites throughout the UK, including experience in the energy sector.

PURPOSE OF THIS DOCUMENT

Requirement for a Design and Access Statement

- 1.2 The Application has been prepared in accordance with 'Rochdale Envelope' principles, through which the maximum overall parameters of the Scheme have been established, but where detailed engineering design is not determined and thus assessments are undertaken on a 'worst-case' basis. As such, details of the architectural treatment of the Power Station Complex are not included in the Application. Instead, details of the external finish and landscape treatment of the Scheme will be submitted to Wrexham County Borough Council (WCBC), the Relevant Planning Authority, for approval, prior to commencement of development. This is a Requirement in the draft Order.
- 1.3 As set out in *The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009*¹, (APFP Regulations) applications for Development Consent Orders (DCOs) must be accompanied by a suite of documents, plans and specialist assessments. By means of Regulation 5(2) (q), the Application should include such '*other documents considered necessary to support the application*'. Planning Inspectorate guidance² identifies Design and Access Statements as an example of the 'other documents' applicants should consider. WPL has therefore prepared this Statement. The submission of a Design and Access Statement is also a requirement for the purposes of the planning application submission for the Gas Connection, in accordance with The Town and Country Planning (Development Management Procedure) (Wales) Order 2012.

¹ See: http://www.legislation.gov.uk/ukxi/2009/2264/pdfs/ukxi_20092264_en.pdf

² See: <http://infrastructure.planningportal.gov.uk/wp-content/uploads/2013/04/Advice-note-6-version-5.pdf>, p.10

Guidance on the form of Design and Access Statements

- 1.4 Limited guidance regarding Design and Access Statements is available in the specific context of DCO applications. However, guidance regarding the requirement, role and content of Design and Access Statements is available in Appendix 1 of *Technical Advice Note 12: Design*, published by the Welsh Government in July 2014. This explains that the Design and Access Statement is ‘a communication tool showing that the objectives of good design (which include the principles of inclusive design) have been considered from the outset of the development process’ (paragraph A2.1).
- 1.5 Paragraph A2.2 goes on to list the main roles of a Design and Access Statement:
- ‘to ensure that the developer can provide evidence to justify proposals in terms of planning policy (national and local) [...];*
 - to explain how the objectives of good design have been applied, or where they have not been applied, the reasons for that;*
 - to clearly set out the established vision and principles for the scheme;*
 - to demonstrate that the principles of sustainability have been addressed and used to inform the design of the development;*
 - to illustrate how the developer has considered conflicting demands and the extent to which these considerations have influenced the proposed development;*
 - to ensure that the developer has satisfactorily considered design issues (...) early in the design process and that potential problems are highlighted before detailed design work commences;*
 - to demonstrate how design decisions have been influenced through the reappraisal of the design’.*
- 1.6 The government’s **Overarching National Policy Statement for Energy** (EN-1, 2011) does not stipulate precisely how Design and Access Statements for DCO applications should be undertaken, but advises in paragraph 4.5 that applicants ‘*should be able to demonstrate in their application documents how the design process was conducted and how the proposed design evolved.*’
- 1.7 The **Town and Country Planning (Development Management Procedure) (Wales) Order 2012** sets out the requirements for Design and Access Statements. Article 7(4) states:
- (4) A design and access statement must, in relation to design—*
 - (a) explain the design principles and concepts that have been applied to the following aspects of the development—*

(i) environmental sustainability;

(ii) movement to, from and within the development;

(iii) character; and

(iv) community safety; and

(b) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account in relation to its proposed use and each of the aspects specified in sub-paragraph (a).

1.8 In relation to access, Article 7(5) states:

(5) A design and access statement must, in relation to access, explain—

(a) the policy or approach adopted as to access and how policies relating to access in the development plan have been taken into account;

(b) how any specific issues which might affect access to the development have been addressed; and

(c) how features which ensure access to the development are to be maintained.

1.9 This Statement thus describes the design process and rationale and explains how access issues have been addressed. It demonstrates how the Scheme accords with the principles of good design and provides a review of relevant policies, a summary of technical supporting studies that have been undertaken and details of community engagement.

1.10 The Scheme is described in Chapter 4 of the ES main statement (Document reference 6.2). The relevant national and local policy and guidance, including the National Policy Statements and the Development Plan, are set out in Chapter 2 of the ES main statement (Document reference 6.2) and in the Planning Statement (Document reference 5.2).

REPORT STRUCTURE

1.11 The Statement is structured as follows:

- Chapter 2: The design context

This chapter outlines and assesses the design policy framework for the Application, as well as the principal features of the WEC Site and surrounding area.

- Chapters 3-4: Specific proposals

These chapters explain the Scheme. A description is given of the functional requirements of each element of the Scheme, the design iteration and evolution process, and an account of

the final design for the Scheme in light of that process.

- Chapter 5: Conclusions

This chapter draws together key outcomes from the design process as a whole and demonstrates that the final design of the Scheme has an appropriate balance between the operational requirements that are inherent to a CCGT proposal, and the design objectives for the Scheme.

- 1.12 Photographs, diagrams, and plans are included in this Statement to illustrate design aspects of the Scheme clearly. For the avoidance of doubt, however, these are for illustrative purposes only and do not form a part of the Application or the Gas Connection planning application.

Chapter 2 ♦ The design context

POLICY AND REGULATORY CONSIDERATIONS

- 2.1 The section identifies the relevant design and access considerations identified in regulations and policy applicable first to DCO applications and then to planning applications.

National Policy Statements

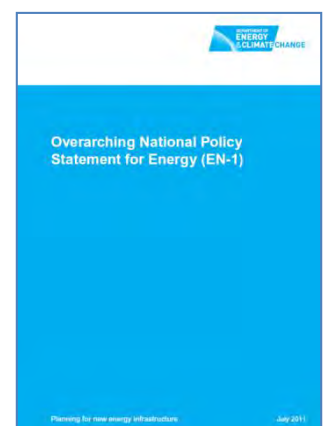
- 2.2 Under the Planning Act 2008, the Secretary of State must have regard to relevant National Policy Statements in considering DCO applications and decide applications in accordance with them, unless the adverse effects of a project would outweigh its benefits or contravene other legal duties.
- 2.3 The *Overarching National Policy Statement for Energy* (EN-1) is relevant to any energy NSIP, along with the relevant technology-specific NPS. For the current Scheme this includes NPS EN-2 *National Policy Statement for Fossil Fuel Electricity Generating Infrastructure*.
- 2.4 The Gas Connection is below the relevant size thresholds that would lead it to be categorised as a NSIP in its own right. However, paragraph 1.2.3 of the *National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines* (EN-4) states that ‘*In England and Wales this NPS is likely to be a material consideration in decision making on relevant applications that fall under the Town and Country Planning Act 1990 (as amended)*’. EN-4 is considered to be material to WCBC’s determination of the planning application for the Gas Connection. It is considered in this chapter.

Overarching National Policy Statement (NPS) for Energy (EN-1), 2011

General considerations

- 2.5 Paragraph 4.5.1 of EN-1 makes clear that ‘good design’ in the context of energy infrastructure is not limited to considerations of visual appearance or aesthetics. It states:

‘The functionality of an object — be it a building or other type of infrastructure — including fitness for purpose and sustainability, is equally important. Applying ‘good design’ to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible.’



- 2.6 Paragraphs 4.5.3 and 4.5.4 of EN-1 describe the expectations on applicants in the design process for a DCO application:

‘the IPC³ needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.’

‘For the IPC to consider the proposal for a project, applicants should be able to demonstrate in their application documents how the design process was conducted and how the proposed design evolved. Where a number of different designs were considered, applicants should set out the reasons why the favoured choice has been selected.’

- 2.7 EN-1 acknowledges that infrastructure development is, by necessity, inherently functional in design, which in turn limits the ability of individual projects to contribute to the aesthetic quality of an area. However, significant importance is attached nonetheless to the design process in order to ensure that where opportunities are available to secure improvements, these are taken.
- 2.8 EN-1 provides design guidance in relation to various specific environmental and planning issues, which are common to a range of infrastructure development types including CCGT power stations. The relevant guidance is described below.

Climate change

- 2.9 Paragraph 4.8.5 of EN-1 requires applicants to consider the impacts of climate change in the design and location of infrastructure, and also to consider climate change in the building, operation, and decommissioning of projects. At paragraph 4.8.8, EN-1 advises that there should be no critical design features in a project that could be seriously affected by climate change over the long term, for example taking into account projected sea level rise.
- 2.10 The location and design of the Scheme has taken into account the potential impacts of climate change. In the case of flooding, the Flood Risk Assessment (Document reference 5.4), which is also described in Chapter 14 of the Environmental Statement main statement (Document reference 6.2), confirms that the Scheme would not be liable to unacceptable risk arising from potential climate change in the long term. CCGT power stations are a well established technology globally, including in areas which experience higher average temperatures compared to the UK (e.g. the Middle East). On this basis, the Power Station Complex is considered to be robust enough to deal with temperature changes associated with potential climate change.

³ The IPC’s functions have been assumed by the Planning Inspectorate (PINS) in accordance with the Localism Act 2011

Safety

- 2.11 Paragraph 4.11.4 of EN-1 requires infrastructure developers (subject to the COMAH⁴ regulations) to engage with the 'Competent Authority' in relation to the design and development of specific projects. The object of this process is to enable the Competent Authority:

'to review as much information as possible before construction begins, in order to assess whether the inherent features of the design are sufficient to prevent, control and mitigate major accidents.'

- 2.12 In this instance, the Competent Authority is the Health and Safety Executive, which WPL has consulted to ensure that health and safety factors have been taken into account. In addition, impacts on safety have been assessed in ES Chapter 17 (Document reference 6.2) which concluded that all residual effects of the Scheme would be insignificant.

Health

- 2.13 Impacts on health have been assessed in ES Chapter 17 (Document reference 6.2). The conclusions of the chapter are that all residual effects from the Scheme would be insignificant. Traffic impacts and construction plant emissions are not expected to be significant. In addition, operational Stack emissions have been assessed as insignificant to human health. All noise and vibration effects would be negligible at all noise sensitive receptors. The effects on human health through the disturbance of contaminated ground during construction have been assessed as insignificant.

Security

- 2.14 Paragraph 4.15.2 of EN-1 describes the Government's policy of ensuring that any protective security measures are 'designed into' new infrastructure projects where possible and proportionate. In the case of potentially 'critical' infrastructure developments, national security considerations should be factored into this process.
- 2.15 Paragraph 4.15.3 of EN-1 confirms that the Department for Energy and Climate Change (DECC) is notified at the pre-application stage about every likely future application for energy infrastructure projects in order to identify any national security implications. Where these are identified, a consultation process between DECC, the applicant and other relevant government departments should take place to ensure that security is adequately considered in the design process. Paragraph 4.15.3 of EN-1 clarifies that, provided DECC (in liaison with other government bodies) is satisfied that security has been adequately addressed through design, the decision-maker should not need to consider the matter any further.

⁴ Control of Major Accident Hazards (COMAH) Regulations 1999

- 2.16 The Scheme does not constitute a ‘critical’ infrastructure project and hence national security is not a relevant consideration in this case. Nevertheless, the design process has ensured that appropriate and proportionate security measures are included in the Scheme as detailed in Chapter 17 of the ES (Document reference 6.2).

Air quality and emissions

- 2.17 Paragraph 5.2.4 of EN-1 refers to exhaust stacks and to the fact that their height is determined by the need to disperse emissions. As emissions are governed by separate regulations, the decision maker *‘need not, therefore, be concerned with the exhaust stack height optimisation process in relation to air emissions, though the impact of stack heights on landscape and visual amenity will be a consideration’*.
- 2.18 The design process that determined the Stack height in the Scheme is described in Chapter 3 of this Statement.
- 2.19 Air quality, including Stack emissions, are assessed in Chapter 8 of the ES main statement (Document reference 6.2).

Biodiversity within developments

- 2.20 Paragraph 5.3.15 of EN-1 acknowledges that the design process for infrastructure projects might give rise to opportunities for beneficial biodiversity or geological enhancements, stating that the decision-maker should *‘maximise such opportunities in and around developments, using requirements or planning obligations where appropriate.’*
- 2.21 In recognition of this approach, WPL has incorporated various features within the Scheme that provide ecological, landscape, visual and amenity benefits. These measures are explained in Chapter 3 of this Statement and Chapter 11 of the ES (Document reference 6.2.).

Flood risk

- 2.22 Paragraph 5.7.23 of EN-1 refers to the sequential approach in flood risk assessment, stating that this should be applied to the layout and design of individual projects. Measures should include the siting of more vulnerable uses in lower-risk areas, seeking opportunities to use open space for amenity, habitat and flood storage uses, and, lowering flood risk through reducing the built footprint of previously developed sites and using Sustainable Urban Drainage Systems (SUDS).
- 2.23 WPL has, despite the WEC not being located in a high flood risk area, followed this advice in its proposals for the Scheme and these are described in Chapter 3 of this Statement. Chapter 14 of the ES main statement (Document reference 6.2) describes the beneficial measures with respect to the water environment. A Level 2 Flood Consequence Assessment has been carried out (Document reference 5.4).

Historic environment

- 2.24 Paragraph 5.8.13 of EN-1 underlines the desirability of sustaining and enhancing the significance of heritage assets, and the relationship between the design process and heritage conservation objectives. More specifically, it states that the consideration of design *‘should include scale, height, massing, alignment, materials and use.’*
- 2.25 The design process for the Scheme has taken designated and non-designated heritage assets into account, and specific measures have been included to manage and mitigate impacts. These are set out in subsequent chapters of this Statement. An assessment of the Scheme’s impacts on the historic environment is set out in Chapter 12 of the ES main statement (Document reference 6.2).

Landscape and visual

- 2.26 Paragraph 5.9.21 of EN-1 refers to project design in the context of landscape and visual impacts, and particularly the relationship between the scale of a project and the extent of such effects. It acknowledges that reductions in the scale of a project could reduce landscape and visual impacts, but that in the context of energy projects this might result in a loss in function. It states:

‘Reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function – for example, the electricity generation output’.

- 2.27 Paragraph 5.9.22 highlights the need to consider colours, materials and landscape treatment in the design process in order to mitigate adverse visual effects. Such measures have been considered carefully in the design of the proposal, and WPL considers that the landscape and visual impacts of the Scheme are comparatively modest and localised. Chapter 3 of this Statement provides more detail on how considerations of scale have influenced the final design of the Scheme. Chapter 10 of the ES (Document reference 6.2) presents the findings of the landscape and visual assessment (LVIA) undertaken in respect of the Scheme.

Land use, including open space

- 2.28 Paragraph 5.10.1 of EN-1 refers to the fact that an energy infrastructure project will have direct and indirect effects on the use or planned use of land in the vicinity for other types of development. Such uses may include open space, sports and recreation and informal amenity. Paragraph 5.10.19 therefore requires applicants to consider how, through the design process, the direct effects of an energy project on existing uses in the area – including open space and recreational uses - can be minimised and mitigated. Chapters 3 and 4 of this Statement explain how these considerations were integrated into the design process of the Scheme. Chapter 16 of the ES (Document reference 6.2) presents the findings of the land use and agriculture assessment undertaken in respect of the Scheme.

Noise and vibration

- 2.29 Paragraph 5.11.8 of EN-1 requires projects to demonstrate good design in noise terms through a number of means, including:

‘through selection of the quietest cost-effective plant available; containment of noise within buildings wherever possible; optimisation of plant layout to minimise noise emissions; and, where possible, the use of landscaping, bunds or noise barriers to reduce noise transmission.’

- 2.30 The EIA for the Scheme has had appropriate regard to noise and vibration factors in design terms, incorporating a number of measures to mitigate adverse effects. These are explained in Chapter 9 of the ES main statement (Document reference 6.2).

Socio-economic

- 2.31 Paragraph 5.12.9 of EN-1 requires the decision-maker to consider whether mitigation measures are necessary to mitigate any adverse socio-economic effects of a development. High quality design, leading to an improved visual and environmental experience for visitors, is identified as an example of how this could be achieved.
- 2.32 The Scheme creates employment as well as the opportunity for a heat supply for businesses in the Wrexham Industrial Estate, with resulting positive socio-economic effects. In addition, the design has sought to minimise the landscape and visual effects of the Scheme.
- 2.33 Socio-economic effects are considered in Chapter 6 of the ES main statement (Document reference 6.2).

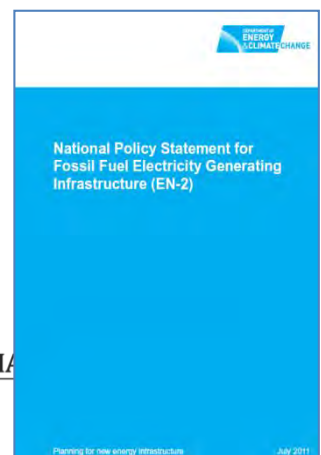
Water quality and resources

- 2.34 Paragraph 5.15.10 of EN-1 highlights that the design process can minimise the impact on local water resources, for example through the efficient use of water, including water recycling. Design measures to achieve this outcome are described in Chapter 3 of this Statement, and Chapter 14 of the ES main statement (Document reference 6.2) assesses the likely significant effects with respect to the water environment.

NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2), July 2011

- 2.35 Paragraph 2.3.16 of EN-2 states the following in terms of how ‘good design’ should be considered in the context of energy infrastructure projects:

‘Applicants should demonstrate good design particularly in respect of landscape and visual amenity as set out in Section 2.6.3 below, and in the design of the project to mitigate



impacts such as noise and vibration, transport impacts and air emissions’.

- 2.36 Each of the specific matters noted in the policy extract are now considered in turn.

Landscape and visual amenity

- 2.37 Paragraph 2.6.2 of EN-2 provides the following description of the principal elements of a fossil fuel generating station, various elements of which are included in a CCGT proposal:

‘The main structures for a fossil fuel generating station, including the turbine and boiler halls, exhaust gas stacks, storage facilities, cooling towers, and water processing plant, are large. They will have an impact on the surrounding landscape and visual amenity. The overall size of the development will inevitably be dependent on technology and design. Coal fired and biomass co-fired generating stations will require more space than other types of generating station for bulk material storage including coal and biomass fuels, limestone and other materials, milling plant and ash and gypsum storage prior to disposal. Night-time lighting for continuous operation will also have an impact on visual amenity.’

- 2.38 It is therefore acknowledged by EN-2 that generating stations, including CCGT proposals such as the Scheme, are necessarily large structures with commensurate visual effects and hence there is no expectation that development proposals will be concealed from view. Indeed paragraph 2.6.5 of EN-2 states that *‘It is not possible to eliminate the visual impacts associated with a fossil fuel generating station.’*
- 2.39 Accordingly, the priority in design terms is to reduce, rather than prevent, adverse landscape and visual impacts where possible, and thus paragraph 2.6.5 continues by stating: *‘Mitigation is therefore to reduce the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable’.*
- 2.40 To achieve the objective of reduced visual impacts, specific measures to be considered in the design process are described in EN-2 as follows:

2.6.6 Applicants should design fossil fuel generating stations with the aim of-providing the best fit with the existing local landscape so as to reduce visual impacts. This may include design of buildings to minimise negative aspects of their appearance through decisions in areas such as size, external finish and colour of the plant as far as compliance with engineering and environmental requirements permit. The precise architectural treatment will need to be site-specific.

2.6.7 Reduction of visual impacts may often involve enclosing buildings at low level as seen from surrounding external viewpoints. This makes the scale of the plant less apparent, and helps conceal the lower level, smaller scale features of the plant. Earth bunds and mounds, tree planting, or both may be used for softening the visual intrusion and may also help to attenuate noise from site activities. Where the existing landscape is more industrial, design may involve other forms of visual impact mitigation.’

2.41 In accordance with EN-1 and EN-2, the design of the Scheme has been informed by a process of landscape and visual impact assessment, along with other assessments undertaken as part of the Environmental Impact Assessment and described in the ES. Likewise, in accordance with paragraph 2.6.9 of EN-2, where statutory and technical requirements associated with the CCGT plant within the Power Station Complex give rise to specific design parameters or constraints, these are explained.

2.42 Summarising the role of the design process in mitigating landscape and visual impacts, paragraph 2.6.10 of EN-2 states:

‘For the reason given in paragraph 2.6.5 above if, having regard to the considerations in respect of other impacts set out in EN-1 and this NPS, the IPC is satisfied that the location is appropriate for the project, and that it has been designed sensitively (given the various siting, operational and other relevant constraints) to minimise harm to landscape and visual amenity, the visibility of a fossil fuel generating station should be given limited weight.’

2.43 For the reasons outlined in this Statement and Chapter 10 of the ES main statement (Document reference 6.2), WPL considers that the Scheme is sensitively designed and minimises adverse landscape and visual effects.

Noise and vibration

2.44 Paragraph 2.7.1 of EN-2 identifies a number of sources of noise and vibration arising from fossil fuel generating stations, as follows:

- ‘milling of coal to create pulverised fuel and crushing of other materials for use in the generation cycle;
- delivery to, and movement of, fuel and materials at coal-fired generating stations;
- the gas and steam turbines that operate continuously during normal operation; and
- external noise sources such as externally-sited air-cooled condensers that operate continuously during normal operation.’

2.45 In the case of the Scheme, only the latter two points are relevant. EN-2 outlines a broad approach for the mitigation of noise from fossil fuel generating stations through good design, with measures such as:

- ‘enclosure of plant and machinery in noise-reducing buildings wherever possible’ (paragraph 2.7.5);
- ‘minimise the potential for operations to create noise’ (paragraph 2.7.5);
- in the case of gas turbines, reducing noise ‘by attenuation of exhausts to reduce any risk of

low-frequency noise transmission' (paragraph 2.7.5);

- carefully selecting plant to reduce noise from apparatus external to the main plant (paragraph 2.7.6).

2.46 WPL has undertaken a design process with careful consideration to noise and vibration effects, reducing potential effects in accordance with the above objectives.

Transport impacts

2.47 Paragraphs 2.2.5 and 2.2.6 of EN-2 consider the principal transport considerations arising from fossil fuel generating stations, stating:

'2.2.5 New fossil fuel generating stations need to be accessible for the delivery and removal of construction materials, fuel, waste and equipment, and for employees.'

2.2.6 Government policy encourages multi-modal transport and materials (fuel and residues) may be transported by water or rail routes where possible. (See Section 5.13 of EN-1 on transport impacts). Applicants should locate new fossil fuel generating stations in the vicinity of existing transport routes wherever possible. Although there may in some instances be environmental advantages to rail or water transport, whether or not such methods are viable is likely to be determined by the economics of the scheme. Road transport may be required to connect the site to the rail network, waterway or port. Any application should therefore incorporate suitable access leading off from the main highway network. If the existing access is inadequate and the applicant has proposed new infrastructure, the IPC should satisfy itself that the impacts of the new infrastructure are acceptable as set out in Section 5.13 of EN-1.'

2.48 In transport terms, the WIE is inherently suitable for a fossil fuel generating station, benefiting from recently improved connections to the A5156 and A483 and the wider strategic road network by means of dual carriageways. Chapter 3 of this Statement describes WPL's approach to access and transport and Chapter 7 of the ES main statement (Document reference 6.2) sets out the transport and traffic assessment undertaken in respect of the Scheme. Rail and water transport options are not available in the locality.

Air emissions

2.49 EN-2 does not give detailed guidance on how emissions to air should be dealt with through the design process. However, applicants are required to apply a range of mitigation measures to minimise nitrogen oxides and other emissions, and to consider appropriate forms of mitigation (paragraph 2.5.3).

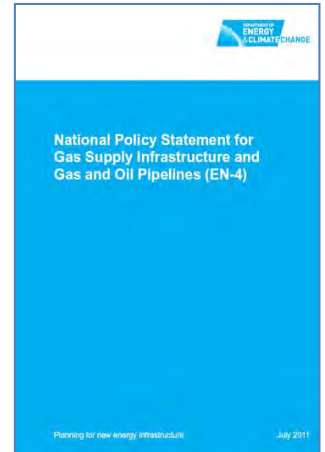
2.50 WPL's response to these in design terms is set out in Chapter 3 of this Statement.

NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

2.51 Section 2.3 of EN-4, ‘*Consideration of Good Design*’, does not set out detailed guidance in relation to gas supply infrastructure and gas and oil pipelines. Instead, it refers back to Section 4.5 of EN-1, relevant provisions of which are considered earlier in this chapter.

2.52 However paragraph 2.19.8 of EN-4 considers design in terms of the routing of new pipelines and states that:

‘When designing the route of new pipelines applicants should research relevant constraints including proximity of existing and planned residential properties, schools and hospitals, railway crossings, major road crossings, below surface usage and proximity to environmentally sensitive areas, main river and watercourse crossings. These can be undertaken by means of desk top studies in the first instance, followed up by consulting the appropriate authority, operator, or conservation body if necessary.’



2.53 As described in chapter 4 of this Statement, the National Grid Gas NTS is accessible from the Power Station Complex Site by means of a Gas Connection measuring 3.5km in length which, in accordance with EN-4, minimises effects on the sensitivities noted in the above extract.

Planning Policy Wales

2.54 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government and is supplemented by a series of Technical Advice Notes (TANs). PPW and TANs comprise national planning policy and are material to decisions on individual planning applications.

2.55 For design and access the following are particularly relevant:

- PPW Section 3.4: Ensuring access for all
- PPW Section 4.11: Promoting sustainability through good design
- TAN 12: Design.

2.56 PPW Section 3.4 sets out that appropriate design and layout of spaces within, between and around buildings including parking provision and movement routes is important to ensure good accessibility. Negotiation is encouraged to ensure provision for everyone. Consultation including with Disability Action Groups is needed and development must conform with the Equality Act 2010.

2.57 PPW Section 4.11 describes the Welsh Government's vision of design's role in sustainable development, including social, environmental, and economic aspects in relation to a proposal's surroundings. Design is seen therefore as about more than aesthetics. Five key aspects of good design are identified as:

- Access
- Character
- Community Safety
- Environmental Sustainability
- Movement

2.58 The following diagram is Figure 4.5 of PPW, explains how these five key aspects interrelate, and provides greater explanation of their meaning.



2.59 Section 4.11 defines good design as being inclusive, that is acknowledging diversity and difference; efficient in use of resources (including land), achieved through for example site selection; contributory to tackling climate change and adaptive to its consequences; cognisant of the scale of proposals and their relationship to surroundings and context. Innovation in design should not be inhibited.

- 2.60 Early and full consultation is encouraged by PPW Section 4.11 and Design and Access Statements should be living documents forming a key part of the communication between project promoters and communities and interested parties. Design and Access Statements should set out design principles and should include illustrative material where relevant.

Technical Advice Note 12: Design

- 2.61 TAN 12 states that Design and Access Statements are mandatory to accompany certain planning applications and provides detailed guidance on them. This guidance (within Appendix 1 to TAN 12, particularly Table 1) broadly replicates the approach summarised in PPW Figure 4.5 (the circular diagram above).
- 2.62 The design process for a project is encouraged to be collaborative and pro-active.
- 2.63 TAN 12 advises on the delivery of good design, emphasizing the importance of appraising context and listing techniques that might be used. Environmental sustainability, effects of climate change, and character form part of context. Innovative design may be appropriate depending on the context, once appraised.
- 2.64 Achieving good design is the responsibility of all involved in the design process and TAN 12 provides further detailed advice on the themes of access, character, community safety, environmental sustainability, and movement, which are introduced in PPW Section 4.11 and illustrated in its Figure 4.5 (the above circular diagram).

Conclusions on PPW and TAN 12

- 2.65 The design process for the Scheme commenced with the iterative way in which the project adapted to the challenge of site selection. The scale and content of the Scheme reflects the local circumstances.
- 2.66 A great deal of pre-application consultation has occurred including with a wide range of interest groups whose views have been considered carefully. Whilst the Scheme is by its nature technical it is also a facility which will not be widely accessed by the community in their day to day lives. Nevertheless, as a location of moderate significance in the local labour market, it has been important to include the views and aspirations of the community as broadly as possible. Hence accessibility will be greater than that mandated by the Equality Act 2010.
- 2.67 Of the key themes set out and repeated through PPW and TAN 12 those appearing of greatest significance to the Scheme are environmental sustainability, character, and community safety. Within character is appearance and whilst it is undeniable a project of this scale will be visible, its siting and the design of screening are important. In addition, in accordance with the draft Order, Requirement 3 requires detailed design of the Scheme to be submitted to and approved by WCBC prior to construction.

- 2.68 Environmental sustainability is at one level the main reason for the Scheme in that the carbon intensity of the energy it will produce will be better than that which, in the main, it will replace – that is coal-generated electricity. The scope for a heat network in the WIE and supplied by the Scheme is also significant and this would lead to a further enhancement of climate change reduction potential. The Scheme’s detailed siting and design also addresses sustainability objectives and these include adaptation to climate change in that the Scheme has been carefully assessed in terms of its vulnerability to flooding.
- 2.69 Community safety is also important. The location of the Scheme and its components minimise the potential risks to people’s safety that infrastructure of this nature can at least theoretically pose. Being connected to the electrical distribution network, together with the potential of the district heat network, the Scheme increases the robustness of the local community and businesses to future energy crises such as may occur if for example supply and demand on the National Grid power transmission network fell seriously out of balance.

Development Plan Policy

- 2.70 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that ‘where in making any determination under the Planning Acts, regard is to be had to the development plan, the determination shall be made in accordance with the plan unless material considerations indicate otherwise’. In the current context, the relevant development plan is the Wrexham UDP 1996-2011, adopted on 14 February 2005. Its replacement, the Wrexham Local Development Plan 2 2013-2028, is not programmed to be adopted until March 2018.
- 2.71 Part 1 of the UDP, entitled Strategic Policies, identifies objectives relevant to the whole plan area, with the first four policies (relating to the broad location of development) each being relevant to the Scheme:
- **Policy PS1** directs new development to within existing settlement and employment areas;
 - **Policy PS2** aims to ensure that new development does not detrimentally affect the countryside, landscape/townscape character, or the quality of the natural environment;
 - **Policy PS3** sets out the Council’s preference for new development to be on brownfield sites, stating that where greenfield sites are to be developed, sites of ecological, landscape or amenity value and good quality should be avoided;
 - **Policy PS4** states that development should maintain the existing settlement pattern and character and be integrated with the existing transport network.
- 2.72 In design terms, the siting of a power station on a partly brownfield site on Wrexham Industrial Estate, close to the main A5156 / A534 link road between WIE and the strategic highway network (A483 and A5), fulfils these objectives.
- 2.73 UDP Policy E3: *Large single user employment site* states the following:

Land is allocated at Owens Corning Fibreglass, Wrexham Industrial Estate for a major single user employment project that requires a site of over 30 hectares for an employment development that cannot be accommodated on allocated employment land or employment land with planning permission. Any development proposed will need to incorporate extensive high quality landscaping in order to mitigate the visual impact of the development on the appearance of the neighbouring countryside and local landscape.'

2.74 The design objectives of UDP Policy E3 are met by WPL's proposals in the following respects:

- (i) whilst the area encompassed by Policy E3 is the subject of a planning permission for commercial/industrial uses (planning application reference P/2008/0993), this was in outline only, and a specific user of the site has not come forward pursuant to that permission. Steps are being taken to renew this planning permission (planning application reference: P/2013/0270). However, the Scheme is the first new proposal in over ten years that would implement an employment-generating use on the site;
- (ii) a power station necessarily requires a large site and benefits from an industrial context, and hence the land allocated by policy E3 is an ideal location to bring forward a project of this kind;
- (iii) extensive planting, ecological and landscape works are incorporated in the Scheme to mitigate adverse landscape and visual effects;
- (iv) once the Power Station Complex is built, approximately 9ha of land will still be available on the Kingmoor Park South site for employment use.

2.75 Other Wrexham UDP policies to which the current proposals have regard include the following.

- *Policy GDP1: Development objectives.* This sets out eleven criteria relevant to all new development, including design, access, layout, safety, environmental impacts, and public infrastructure. Such criteria have been considered in the design of the Scheme and specifically in the routing of the Gas Connection, and also by means of an appropriate response to environmental considerations.
- *Policy EC2: Agricultural Land.* This policy safeguards high quality agricultural land. Greenfield land within the WEC Site is not of high agricultural land quality. Whilst the Power Station Complex Site would lead to permanent loss of land, it is noteworthy that this land is not currently farmed other than for casual grazing. All effects on agricultural land associated with the Gas Connection Route would be temporary with the land returned to agricultural use once construction works have been completed.
- *Policy EC4: Hedgerows, trees and woodland.* This policy promotes the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features. The Scheme has responded to these criteria through the selection of a part brownfield site and through the provision of an illustrative landscape and ecological mitigation master plan (Document reference 2.9). The proposed Gas Connection follows a

route that seeks to avoid specimen trees and minimise hedgerow loss. Following construction, the land above the underground Gas Pipeline would be comprehensively restored. The predicted effects of the Scheme on ecology are reported in the Environmental Statement (Document reference 6.2).

- *Policy EC5: Special Landscape Areas* advises that in Special Landscape Areas, priority will be given to the conservation and enhancement of the landscape. Part of the underground section of the Gas Connection Route is located in a Special Landscape Area. The landscape and visual effects associated with this part of the Scheme have been considered within Chapter 10 of the ES (Document reference 6.2).
- *Policy PS10: Waste* requires new development to prioritise sustainable waste management and minimise waste generation. Waste considerations have been considered in Chapter 15 of the ES: Waste (Document reference: 6.2).
- *Policy PS11: Biodiversity* encourages proposals to improve the biodiversity value of sites. The Scheme incorporates a number of inherent mitigation measures that are described in the ES (Document reference: 6.2). These seek to enhance the landscape character and habitat diversity of the Power Station Complex Site. Along the Gas Connection Route, new native hedge, tree and woodland planting would replace any existing vegetation lost as a result of construction.

Wrexham County Borough Council guidance

2.76 Wrexham CBC has published a Planning Information Sheet on Design and Access Statements⁵. The Council's guidance does not expand significantly on the Town and Country Planning (Development Management Procedure) (Wales) Order 2012, as outlined in Chapter 1 of this Statement. It notes that *'the length of a Design and Access Statement will vary depending on the type and size of the development and how complex the associated design and access requirements are'* and indicates that statements should address five objectives of good design:

- (i) accessibility,
- (ii) environmental sustainability,
- (iii) character,
- (iv) community safety
- (v) movement to, from and within the development.

2.77 The information sheet also advises that Design and Access Statements should:

- explain the vision for the site;

⁵ http://www.wrexham.gov.uk/assets/pdfs/planning/info_sheets/design_access_statements.pdf

- provide information about the site, its location, what it is currently used for and existing features of it;
- identify the key character of nearby buildings and the surrounding area;
- identify any constraints affecting the site;
- set out relevant planning policies and supplementary planning guidance;
- include details of any pre-application consultation that has been carried out [...]

2.78 Each of the above provisions has been incorporated into this Statement for the Scheme.

CHARACTERISTICS OF THE POWER STATION COMPLEX SITE

Location and surroundings

2.79 As shown in Figure DAS1 below, the Power Station Complex Site is located on the eastern side of the Wrexham Industrial Estate (WIE), 3.5km east of Wrexham. It is situated to the east of Bryn Lane on land allocated for major employment development in policy E3 of the Wrexham UDP.

Figure DAS1: Location of the Power Station Complex Site



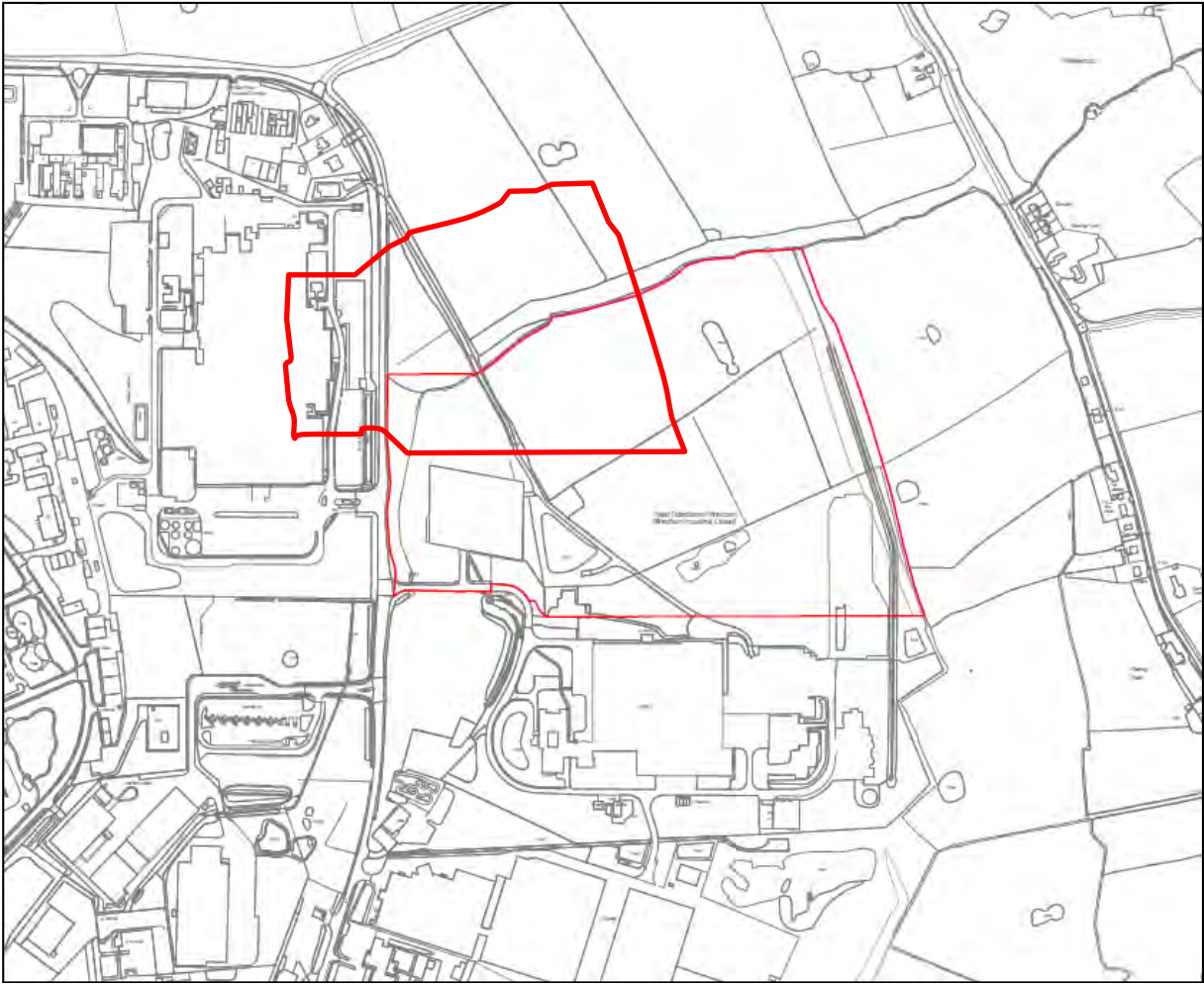
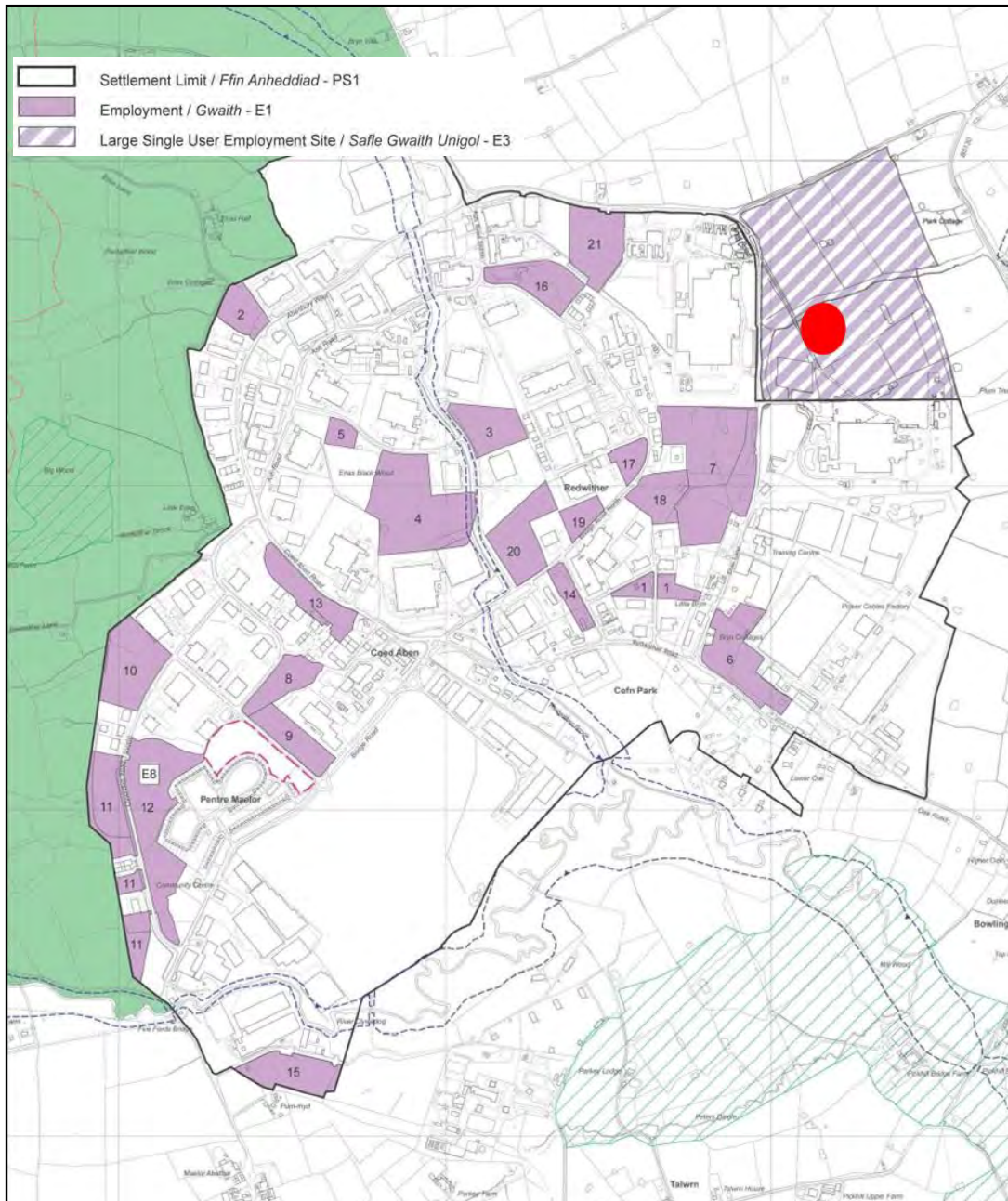


Figure DAS2: Excerpt from Wrexham UDP Map 2 (Side 2, inset 3) Location of Power Station Complex Site indicated by red dot



2.80 The WIE is one of the largest industrial estates in Wales, being approximately 550 ha in size and employing around 7,000 people. Its scale and characteristics are made clear from the aerial photographs in figures DAS3 and DAS4.

Figure DAS3: aerial photograph of the WIE. *Looking north-east, circa 1990s, with the Power Station Complex site identified.* Source: WPL

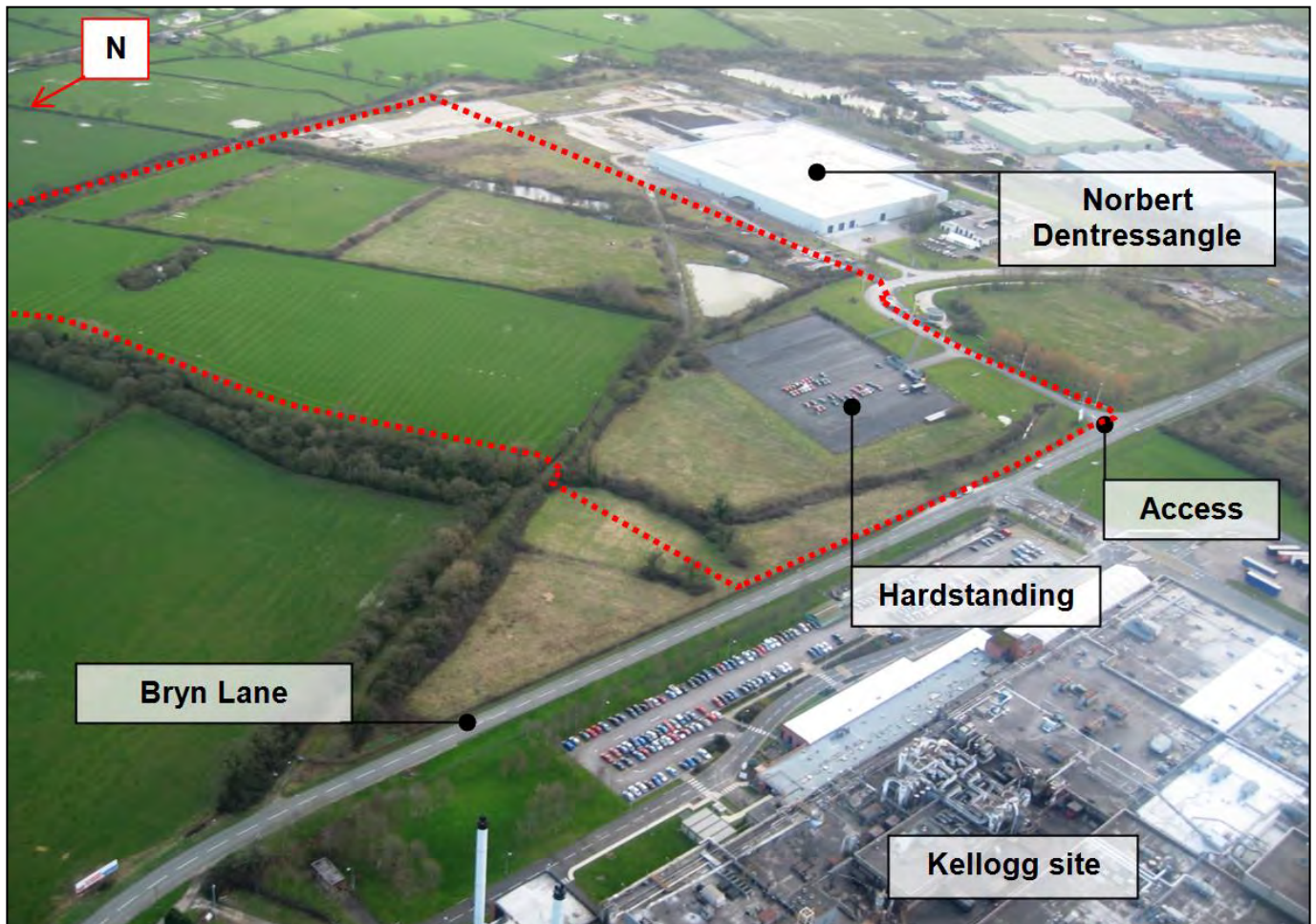


Figure DAS4: Aerial photograph of the WIE. *Contemporary image looking north-east, with the Power Station Complex Site identified.* Source WPL



- 2.81 As shown in Figure DAS5, much of the land surrounding the Power Station Complex Site is occupied by large scale industry. A large logistics warehouse and distribution centre operated by Norbert Dentressangle is located to the south, a Kellogg's food processing complex is located immediately to the west on the western side of Bryn Lane, and there is planning permission for a B8 storage and distribution warehouse on land immediately to the north, known as the Kingmoor Park North site. In contrast, the area to the east predominantly comprises farmland.

Figure DAS5: Oblique aerial photograph of site, looking south-east. *Source: google maps*



Former use

- 2.82 The Power Station Complex Site includes an area of land occupied formerly by the Owens Corning fibreglass factory, which closed in 2002 and was demolished in 2005.

Figure DAS6: Aerial photograph when Owen Corning was in operation. *Power Station Complex Site boundary shown in red.*



Figure DAS7: Structures from the Owen Corning factory formerly present on the Power Station Complex Site. *Images from 2005, shortly before demolition.*



Current characteristics of the Power Station Complex Site

- 2.83 The western area of the Power Station Complex Site is largely laid to hardstanding, having been the former staff car park for the fibreglass factory, and it has a broadly level terrain. A small brook flows along the western and northern boundary of the Power Station Complex Site in a north easterly direction. A line of mature trees separates this area from the eastern area of the Power Station Complex Site.

Figure DAS8: View north-west across hardstanding area towards the Kellogg site. *January 2015.*



Figure DAS09: View from the southern boundary across the hardstanding area *January 2015.*



- 2.84 The western boundary of the Power Station Complex Site is formed by Bryn Lane. As noted, immediately to the west of Bryn Lane is a Kellogg's food processing complex. This includes a range of tall industrial structures, including chimneys.

- 2.85 The remainder of the Power Station Complex Site comprises open pasture with hedgerows defining three main fields. The terrain slopes gently downwards to the north-east, towards a pond in the north-eastern area. A ditch and an overgrown hedgerow form the eastern boundary of the Power Station Complex Site. The ditch discharges water into the small brook immediately to the north of the Power Station Complex Site.
- 2.86 To the south of the Power Station Complex Site is a large logistics warehouse and distribution centre operated by Norbert Dentressangle. The Power Station Complex Site is bounded along its northern extents by a small brook. Immediately beyond the brook to the north is a woodland belt which, along with an overgrown hedgerow along the eastern boundary, provides some visual containment at ground level.
- 2.87 Road access to the Power Station Complex Site and also the Norbert Dentressangle site is gained currently from Bryn Lane on the Wrexham Industrial Estate. The proposed road access for the Power Station Complex, pictured in figure DAS10, connects to Bryn Lane a short distance south of the Kellogg factory.

Figure DAS10: View along existing Kingmoor Park Access Road towards Bryn Lane. January 2015, looking westwards, Kellogg factory visible on far right.

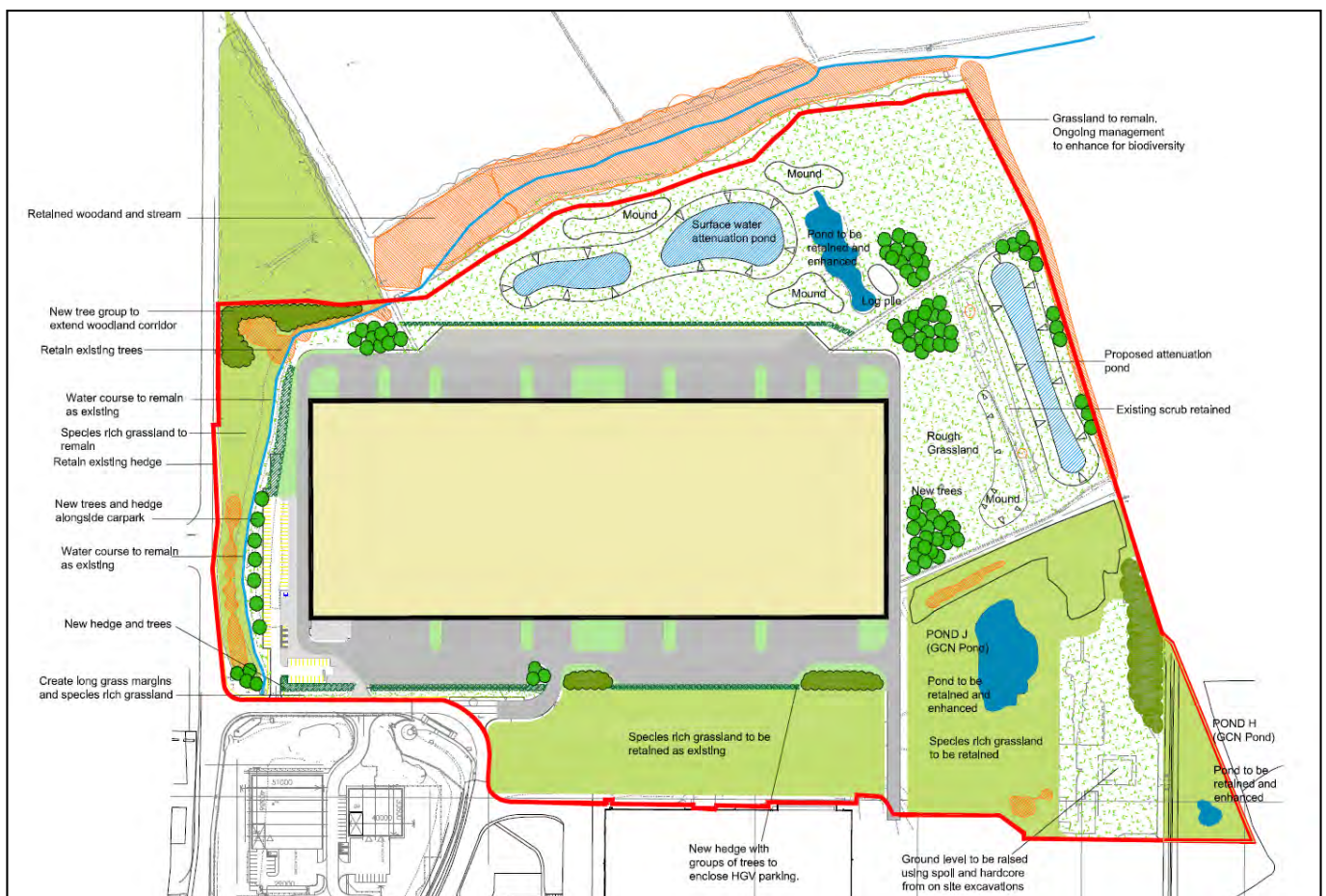


- 2.88 More generally the estate is well served by highways connections, including the recently-built new Wrexham Industrial Estate Road (N) that connects Bryn Lane to the A534, and improvements to the southern access to the industrial estate.

Planning history

- 2.89 The Power Station Complex Site is the subject of an outline planning permission (Ref P/2008/0993) by Kingmoor Park Properties Ltd for 'B2/B8 development and associated ecological mitigation area including means of access and siting'.
- 2.90 Following refusal by Wrexham Borough Council in July 2009, planning permission was granted at appeal in May 2010 (Appeal Ref App/H6955/A/09/2113258). The appeal decision recognised (paragraph 40) that no alternative sites were available on the Wrexham Industrial Estate that could provide the scale or nature of the development proposed on the appeal site.
- 2.91 As indicated in Figure **DAS11** below, the permission includes a large rectangular building, along with extensive areas of landscape works, planting and habitat mitigation.

Figure DAS11: Excerpt from approved plan from appeal scheme⁶



⁶ Drawing no. D1792.2.001B (Landscape and Ecology Mitigation Plan, 8.1.2010)

- 2.92 The planning permission included a time-limiting planning condition, and thus to allow further time to implement the planning permission, a further planning application was submitted to the Council (P/2013/0270) in April 2013. A decision by Wrexham County Borough Council on that application is still pending.

CHARACTERISTICS OF THE GAS CONNECTION ROUTE

- 2.93 The required fuel for the Power Station Complex is natural gas, which is piped around the UK by the National Grid via the National Transmission System (NTS).
- 2.94 As shown in the map at DAS12 below, an NTS pipeline connects to Wrexham close to the Maelor Gas Works, approximately 2.2km south of the Power Station Complex Site. A Gas Pipeline connection between the Power Station Complex Site and the Maelor Gas Works is thus required as part of the Scheme.

Figure DAS12: Location of National Transmission System pipelines



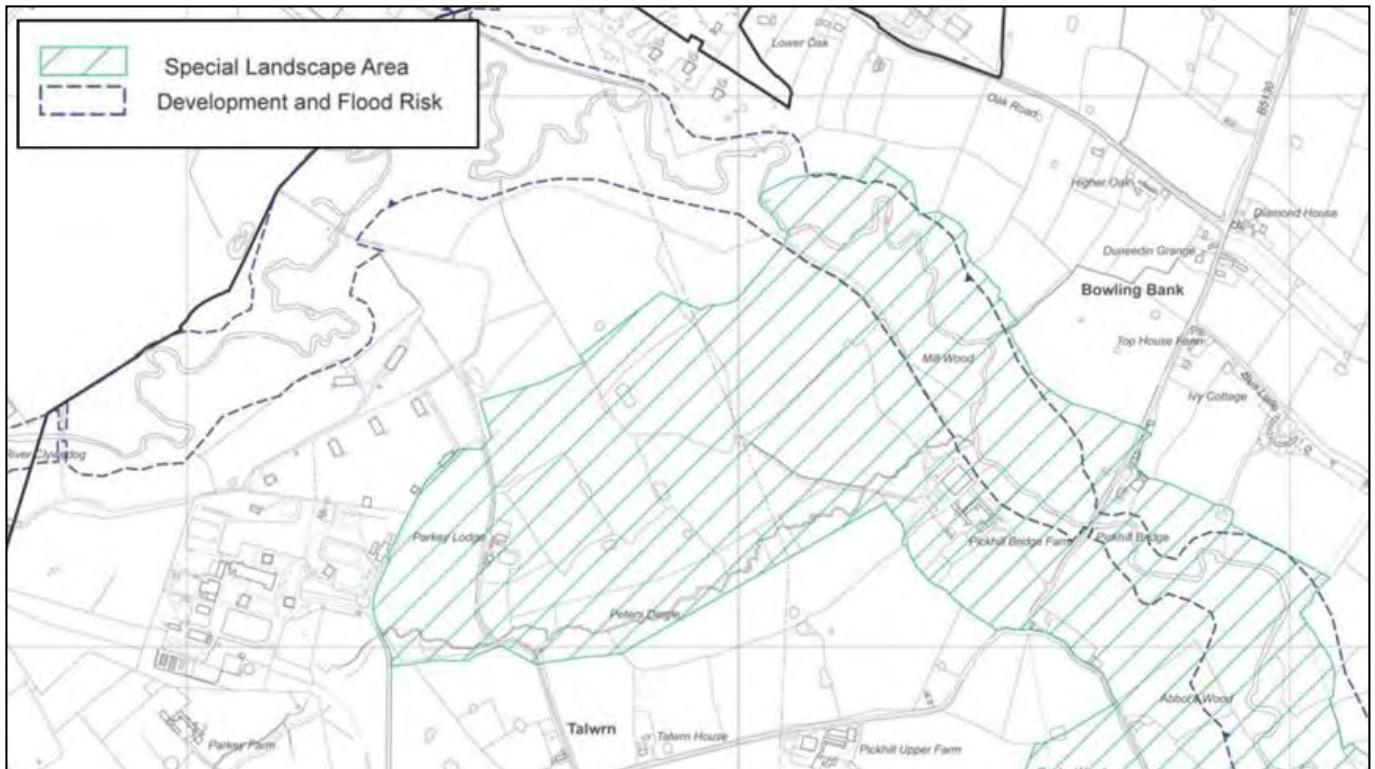
- 2.95 As indicated in the aerial image at Figure DAS13 below, the area between the Power Station Complex Site and Maelor Gas Works comprises a mixture of land uses including land on the edge of the open countryside. The countryside areas predominantly comprise pasture and hedgerows, with pockets of woodland, ponds and isolated properties.

Figure DAS13: Aerial image of the context to the NTS and Power Station Complex Site. Source: google maps



- 2.96 As indicated in Figure DAS14, certain areas to the north east of the Maelor Gas Works are under a Special Landscape Area designation in the Wrexham UDP.

Figure DAS14: Excerpt from the Wrexham UDP showing the designated Special Landscape Area and flood risk areas



2.97 UDP policy EC5 states the following in respect of development proposals within Special Landscape Areas:

'Within Special Landscape Areas, priority will be given to the conservation and enhancement of the landscape. Development, other than for agriculture, small-scale farm-based and other rural enterprises, and essential operational development by utility service providers, will be strictly controlled. Development will be required to conform to a high standard of design and landscaping, and special attention will be paid to minimising its visual impact both from nearby and distant viewpoints.'

2.98 Overall, the topography of the area is generally flat and level. The land use is generally farmland with mature hedgerows and woodland, and it is possible to identify a route that would minimise the loss of trees within the defined Order Land. In addition the Gas Pipeline will avoid small ponds and other potential habitats for notable and protected species along the route.

THE DESIGN OBJECTIVES

2.99 From the various considerations reviewed in this statement, the principal design objectives for the WEC can be summarised as follows:

- the Power Station Complex should be as compact as practicable, both in vertical terms to avoid landscape and visual intrusion;
- the layout should, wherever possible, promote a neat, ordered design, relating to the existing large structures and buildings nearby, avoiding visual 'clutter' and complexity and promoting natural surveillance;
- its siting and orientation should be optimised in respect of technical and environmental constraints taking into account the existing buildings in the WIE and views from surrounding countryside areas being protected where possible;
- particular care should be taken to reduce the effects on residential properties on Bryn Lane, Ridley Wood Road and the B5130, as well as the nearby village of Isycoed;
- given the proximity of open countryside, all buildings and structures should be of high-quality design, employing a palette of appropriately-graded colouring, avoiding bright, prominent or reflective materials;
- the Gas Connection should be aligned, designed and implemented to minimise effects;
- external lighting should be kept to the minimum necessary for safety reasons;
- parking and access shall be suitable and sufficient for workers and visitors to the Power Station Complex;
- planting and landscape features should be incorporated to promote visual continuity with the existing industrial setting of the WIE, 'soften' the appearance of the Power Station Complex, promote wildlife connectivity and generally enhance the attractiveness of the Power Station Complex Site;
- the design shall seek to minimise waste.

2.100 The next chapter of this Statement explains how the proposed Scheme has responded to these design objectives.

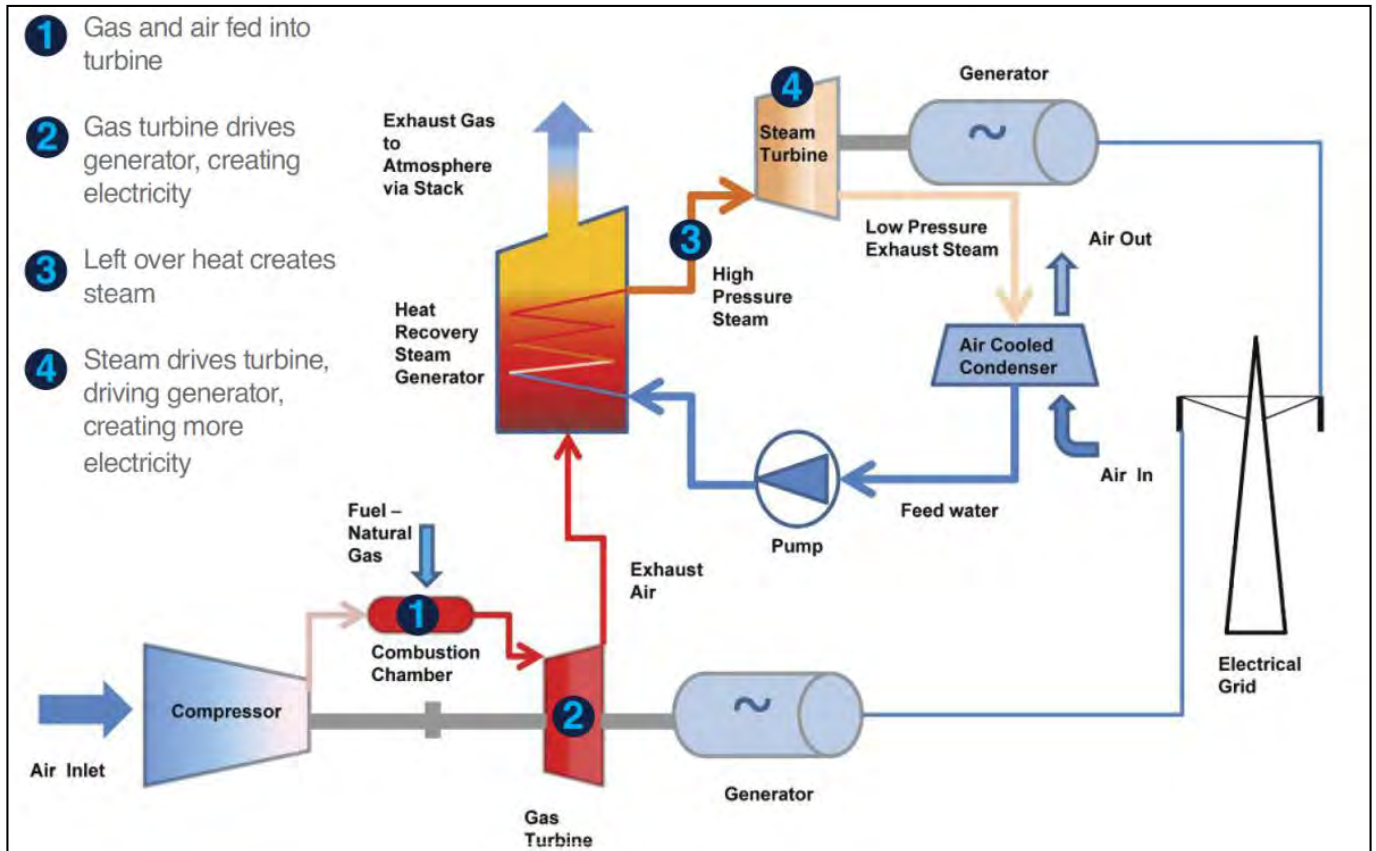
Chapter 3 ♦ The Power Station Complex

INTRODUCTION; GENERAL REQUIREMENTS

- 3.1 The Wrexham Energy Centre is the product of an iterative design process extending over a period of approximately three years, during which functional and physical requirements have been developed into a sustainable, deliverable scheme. The main stages in this process will now be outlined.

Overall physical and functional requirements

- 3.2 Combined cycle gas turbine (CCGT) technology has a combination of both a gas turbine/s to generate electricity from the combustion of gas, and a steam turbine/s that generates more electricity from the steam produced by the gas turbine. The main components of a CCGT power station, illustrated in Figure DAS15 below, are:
- gas and steam turbines, which generate the electricity;
 - a Heat Recovery Steam Generator (HSRG), which turns excess heat from exhaust gases into steam;
 - a vent stack, to channel the release of exhaust gases and vapour;
 - a cooling system, to condense steam output from the HSRG;
 - a water treatment plant, to provide demineralised water for the steam system;
 - switchgear, to enable the export of electricity to the grid.

Figure DAS15: illustrated summary of a CCGT operation

3.3 Corresponding to these elements, the basic site requirements for a CCGT power station of this scale include:

- a broadly level site of at least three hectares, ideally with more land and further space nearby for a construction and maintenance laydown area;
- undeveloped corridors of land to the gas connection points;
- road access suitable for construction and operational traffic;
- the avoidance of areas of planning and environmental constraint including protected landscapes, areas of natural or heritage interest, and flood risk areas;
- land with the potential to supply surplus heat to nearby users;
- a location suitably remote from housing and other sensitive land uses such as schools;
- previously developed or 'brownfield' land, and/or land allocated for industrial use that the landowner is prepared to lease or sell on commercial terms.

3.4 Other requirements of a more technical nature include:

- a suitable medium (air and/or water) to provide cooling to the steam turbine exhaust steam condenser and for all other auxiliary cooling requirements;
- the availability of a suitable source of water for the boilers and for all other auxiliary requirements;
- the ability to discharge surface water run-off and other environmentally benign liquid effluents to a local watercourse or sewer;
- the ability to discharge liquid effluents to a suitable sewer or treated on-site;
- ground conditions suitable for installing structures and major plant items;
- the ability to adequately mitigate the effects of the facility;
- all necessary permits and licences being in place or can be reasonably obtained;
- the ability to minimise visual effects on residential receptors.

STRATEGIC SITE SEARCH

- 3.1. The site selection process is described in Chapter 3 of the Environmental Statement for the Scheme. It involved an initial UK-wide search for strategic development locations, through which the Wrexham area was identified as a location worthy of more detailed evaluation. Assessment of the Wrexham area identified the WIE as a suitable location for a CCGT power station.

Selection of Wrexham Industrial Estate

- 3.2. All of the physical requirements described above are present at the WIE, leading to its selection for a CCGT project.
- 3.3. A CCGT power station complex of the scale proposed (299MW) would require only approximately 60% of the 32.2 hectare area allocated for a large single user employment site under Policy E3 of the Wrexham UDP, suggesting that the development could take place alongside other employment-generating uses and potentially supply heat direct to incoming occupiers.

SITING WITHIN WREXHAM INDUSTRIAL ESTATE

- 3.4. In considering the specific siting of a CCGT scheme in the Wrexham Industrial Estate, considerations included:
- environmental and physical constraints, including landscape, heritage and ecological considerations, site levels and the presence of existing electricity transmission infrastructure

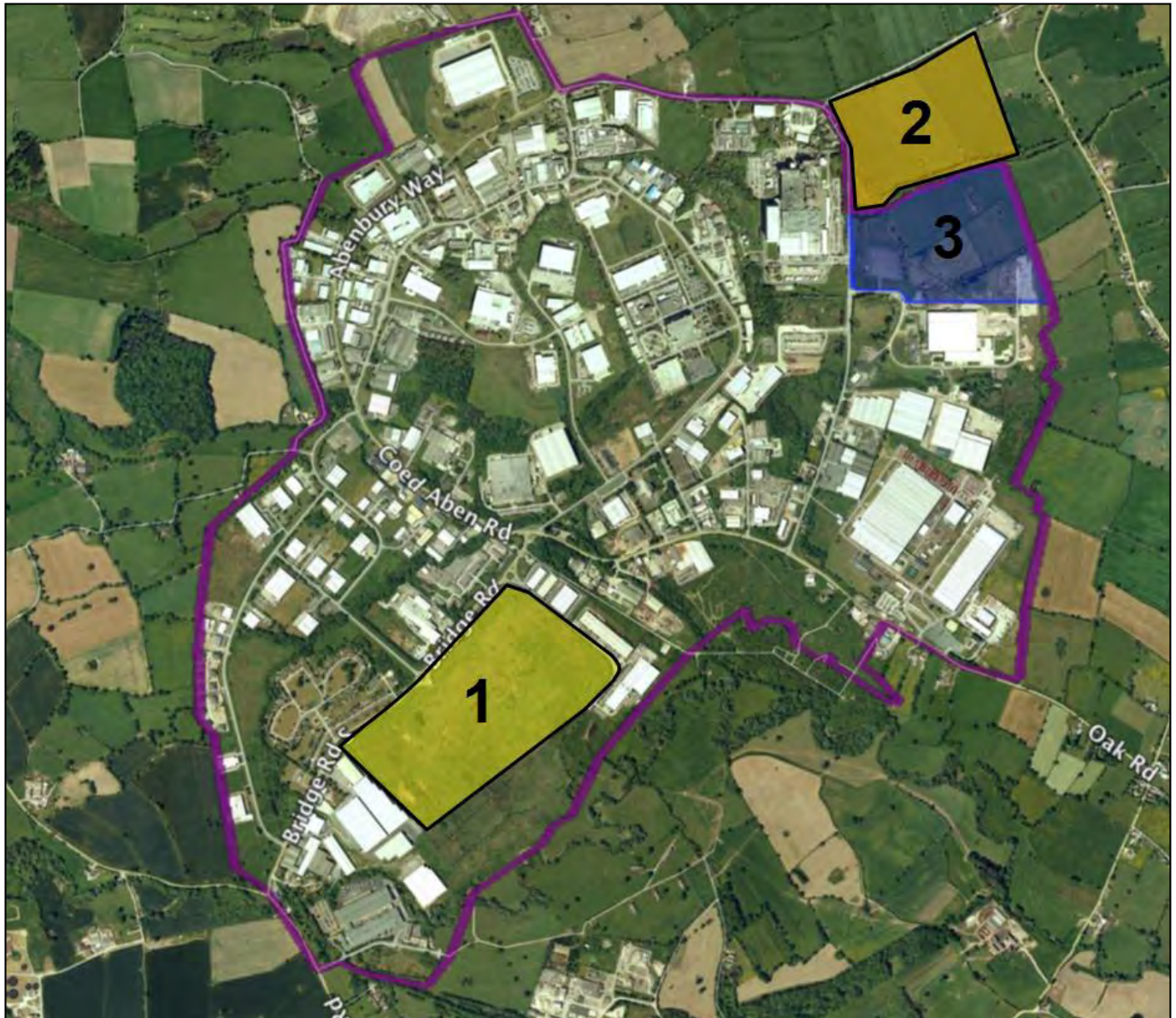
on the site;

- options for gas connections and access to the public highway;
- planning considerations including the existing UDP allocation and planning consent for major employment development on the site.

3.5 Taking these considerations into account, WPL conducted a broad search for sites in the WIE area and identified three options, shown in Figure DAS16:

- (i) the former Firestone factory site at Pentre Maelor to the south of the WIE;
- (ii) Kingmoor Park North, off Bryn Lane, which is being promoted by the owner for industrial development;
- (iii) Kingmoor Park South, including the former Owens Corning fibreglass factory.

Figure DAS16: Location of three preliminary site options



- 3.6 In July 2012, WPL undertook a non-statutory public consultation for the three sites.
- 3.7 Views gathered through the consultation process were on the whole supportive of the WEC and WPL's preferred Kingmoor Park South site, which was found by many stakeholders to be the most suitable location. Only a small number of consultees suggested another site as being their preference, including the Former Firestone Factory and other locations outside the Wrexham area, with this preference coming particularly from the villages of Isycoed and Holt and surrounding areas.
- 3.8 WPL thus concluded that Kingmoor Park South would be the most suitable site, because:
- it is within the WIE boundary, is allocated for a large single-user development and has an

historic planning permission for major development;

- it is a broadly level site with sufficient space for all operational requirements and for a generous boundary landscape treatment;
- it has undeveloped corridors of land leading to the gas connection points;
- it benefits from road access suitable for construction and operational traffic;
- it avoids areas of flood risk and of designated landscape, natural or heritage interest;
- it provides the potential to supply surplus heat to existing and future occupiers on the industrial estate;
- it is compatible with the neighbouring industrial land uses and is suitably separated from dense housing and other sensitive land uses such as schools;
- it comprises partly brownfield land and has an historic planning permission for a large scale industrial use on a similar footprint to a power station;
- its landowner is prepared to lease or sell to WPL on commercial terms.

3.9 Overall the Kingmoor Park South site was thus considered the preferred option and was taken forward to the next stage of design development.

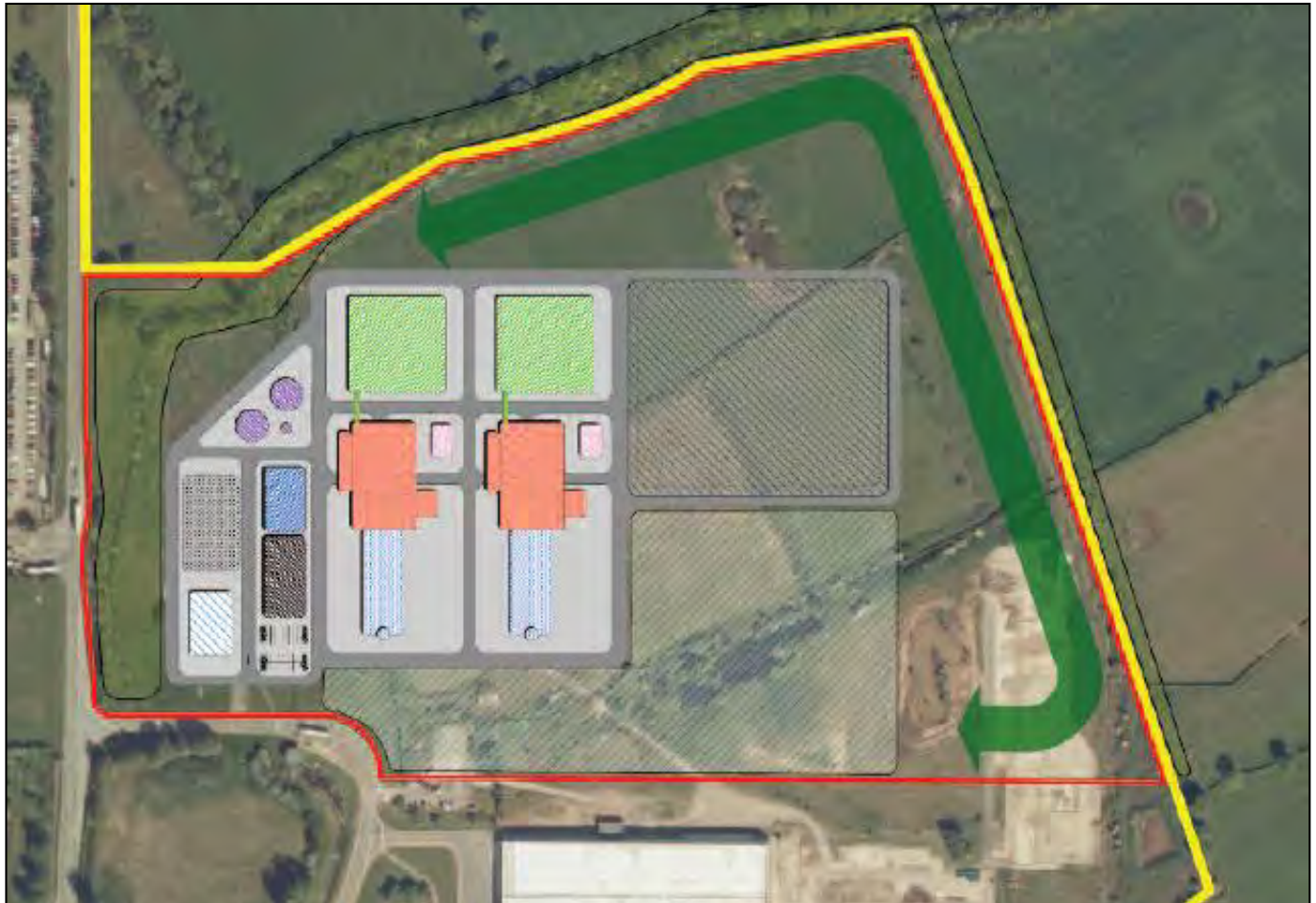
LAYOUT OF THE POWER STATION COMPLEX

Preliminary layout options

3.10 At an early stage, diagrammatic layouts for the Power Station Complex were prepared. These formed part of the non-statutory consultation process undertaken in July 2012 and indicated how future WEC infrastructure could be orientated at the Kingmoor Park South site. Three options were prepared:

- (a) **North – South orientation:** The vent Stacks, the tallest buildings and the noise generating equipment are located close to the existing industrial estate to minimise visual impact and provide separation from the residential neighbourhoods to the east (DAS17);

Figure DAS17: Initial conceptual layout (North-South orientation)



	Turbine Hall Neuadd Tyrbinau		Maintenance Laydown Area Man Storio ar gyfer Cynnal a Chadw
	Heat Recovery Steam Generator & Stack Generadur Ager Adfer Gwres a Chorn Simnai		Control & Administration Building Rheolfan a Man Gweinyddu
	Air Cooled Condenser Cyddwysydd Aer Oer		Area Reserved for Carbon Capture Uned Celdwir ar gyfer Dal Carbon
	Transformer Newidydd		Car Parking Maes Parcio
	Electrical Substation Isbwerdy Trydan		Existing Mature Woodland / Hedgerow Coetir Aeddfed/Gwrych Presennol
	Demineralised Water Plant Orsaf Cynhyrchu Dŵr wedi'i Ddihallwyno		Landscape Planting Plannu Tirwedd
	Water Storage Tanks Tanciau Storio Dŵr		Development Site Boundary Tertyn Safle'r Datblygiad
	Workshop & Stores Gweithdy a Storfeydd		Wrexham Industrial Estate Tertyn Ystad Ddiwydiannol Wrecsam

- (b) **East-West orientation:** The Stacks and tallest buildings are relatively close to the industrial estate, but noise generating equipment is a little closer to the residential neighbourhoods to the east (DAS18);

Figure DAS18: Initial conceptual layout (East / West orientation)



	Turbine Hall Neuadd Tyrbinau		Maintenance Laydown Area Man Storio ar gyfer Cynnal a Chadw
	Heat Recovery Steam Generator & Stack Generadur Ager Adfer Gwres a Chorn Simnai		Control & Administration Building Rheolfan a Man Gweinyddu
	Air Cooled Condenser Cyddwysydd Aer Oer		Area Reserved for Carbon Capture Uned Celdwir ar gyfer Dal Carbon
	Transformer Newidydd		Car Parking Maes Parcio
	Electrical Substation Isbwerdy Trydan		Existing Mature Woodland / Hedgerow Coetir Aeddfed/Gwrych Presennol
	Demineralised Water Plant Orsaf Cynhyrchu Dŵr wedi'i Ddihalu		Landscape Planting Plannu Tirwedd
	Water Storage Tanks Tanciau Storio Dŵr		Development Site Boundary Terfyn Safle'r Datblygiad
	Workshop & Stores Gweithdy a Storfeydd		Wrexham Industrial Estate Terfyn Ystad Ddiwydiannol Wrecsam

- (c) **North East/South West orientation:** Stacks and tall buildings including noise generating equipment are in close proximity to the existing industrial estate, offering good separation from the residential neighbourhoods to the east (DAS19).

Figure DAS19: Initial conceptual layout (North East / South West orientation)



	Turbine Hall Neuadd Tyrbinau		Maintenance Laydown Area Man Storio ar gyfer Cynnal a Chadw
	Heat Recovery Steam Generator & Stack Generadur Ager Adfer Gwres a Chorn Simnai		Control & Administration Building Rheolfan a Man Gweinyddu
	Air Cooled Condenser Cyddwysydd Aer Oer		Area Reserved for Carbon Capture Uned Celdwir ar gyfer Dal Carbon
	Transformer Newidydd		Car Parking Maes Parcio
	Electrical Substation Isbwerdy Trydan		Existing Mature Woodland / Hedgerow Coetir Aeddfed/Gwrych Presennol
	Demineralised Water Plant Orsaf Cynhyrchu Dŵr wedi'i Ddihallwyno		Landscape Planting Plannu Tirwedd
	Water Storage Tanks Tanciau Storio Dŵr		Development Site Boundary Terfyn Safle'r Datblygiad
	Workshop & Stores Gweithdy a Storfeydd		Wrexham Industrial Estate Terfyn Ystâd Ddiwydiannol Wrecsam

Refinements to the design of the Power Station Complex

3.11 Following a decision in 2013 to promote the current Scheme with a capacity of up to 299MW, a revised east/west layout (which was predicated on a capacity of up to 1200MW) was identified as the optimal layout and subsequently presented for the purpose of statutory consultation and Environmental Impact Assessment, taking into account the following factors:

- positioning gas turbine air intake structures to the south of the cooling system to avoid warm air recirculation for the majority of operating/climatic conditions;
- maximising distances between built structures, construction laydown area and areas of ecological sensitivity, including mature boundary trees;
- maximising the distance between the proposed power station structures and residential neighbourhoods to the east of the scheme, to reduce visual impact and disruption during construction and operation;
- accounting for potential noise impacts on sensitive receptors, including by siting the power station complex as far as possible from residential receptors;
- re-using existing areas of hard-standing on the site, reducing habitat loss;
- locating Power Station Complex buildings as close together as possible to reduce the footprint of the development.

Figure DAS20: Isometric view of the proposed Wrexham Energy Centre. *Used as part of the statutory consultation process in July-August 2014.*

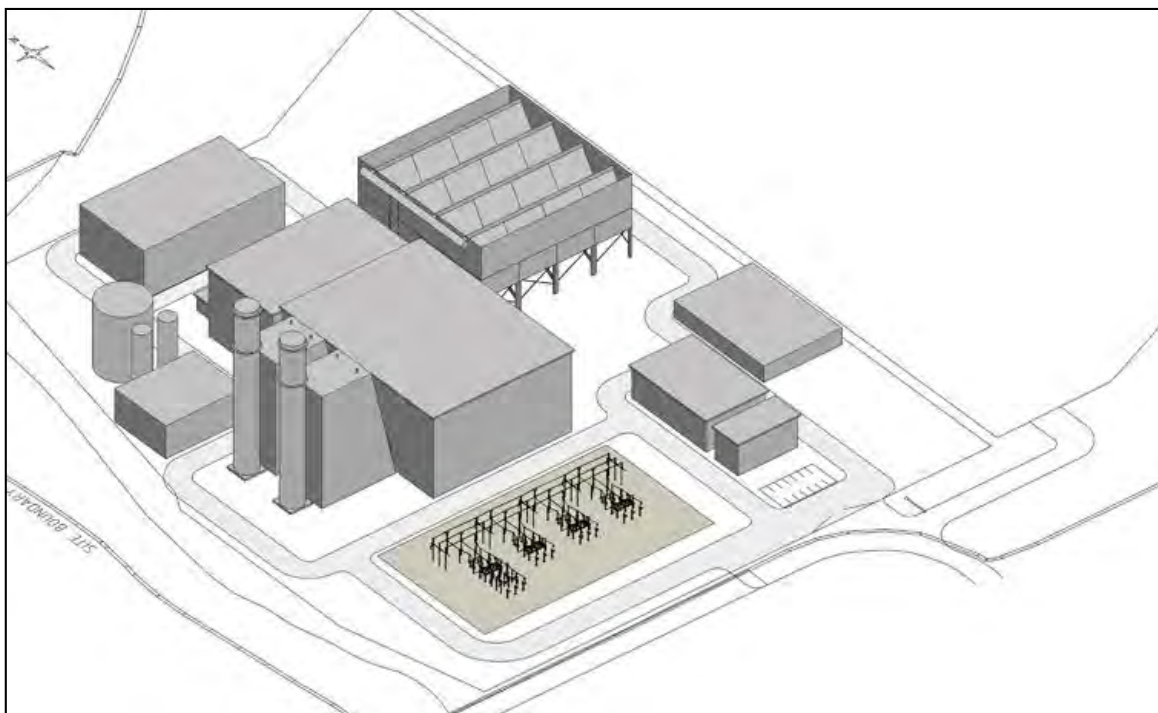


Figure DAS21: Revised layout of the Power Station Complex Site. *Included in Preliminary Environmental Information Report, July 2014.*

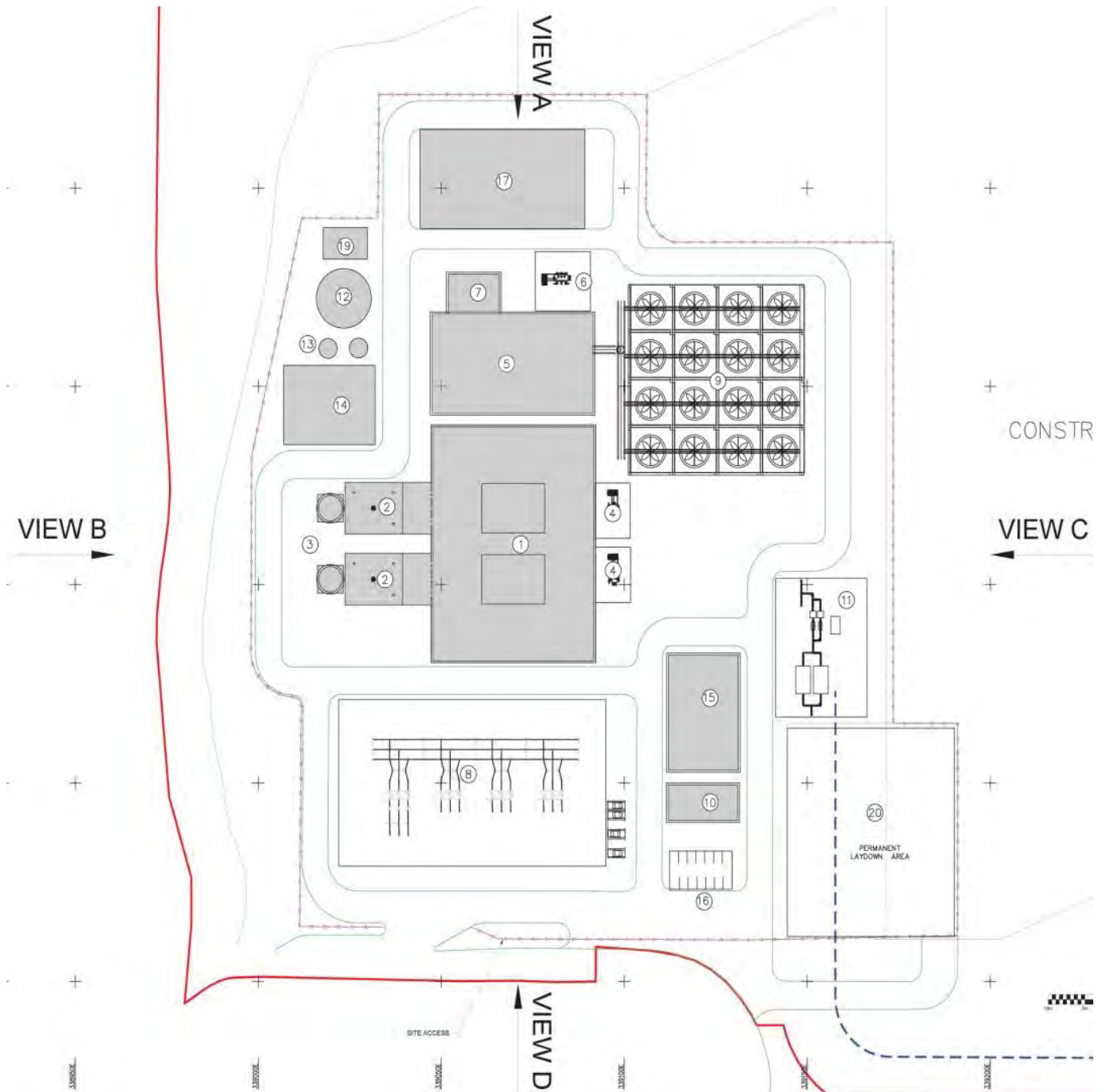


REF	Title		
1	Gas turbine building	9	Air cooled condenser
2	Heat recovery steam generator	10	Administration building
2	Heat recovery steam generator	11	Pressure regulating installation
3	Stack	12	Water tank
4	Transformer	13	Water tank
4	Transformer	13	Water tank
5	Steam turbine building	14	Water treatment system
6	Transformer	15	Workshop
7	Switchgear room	16	Parking
8	132kV switchyard	17	Heat network interface (optional)

Final layout proposal

3.12 The final layout of the Power Station Complex site is shown in Figure DAS22 below. As is apparent, the overall layout is largely unchanged from the previous version, although refinements have been made to ensure it operates as effectively as possible, responding to technical and environmental considerations.

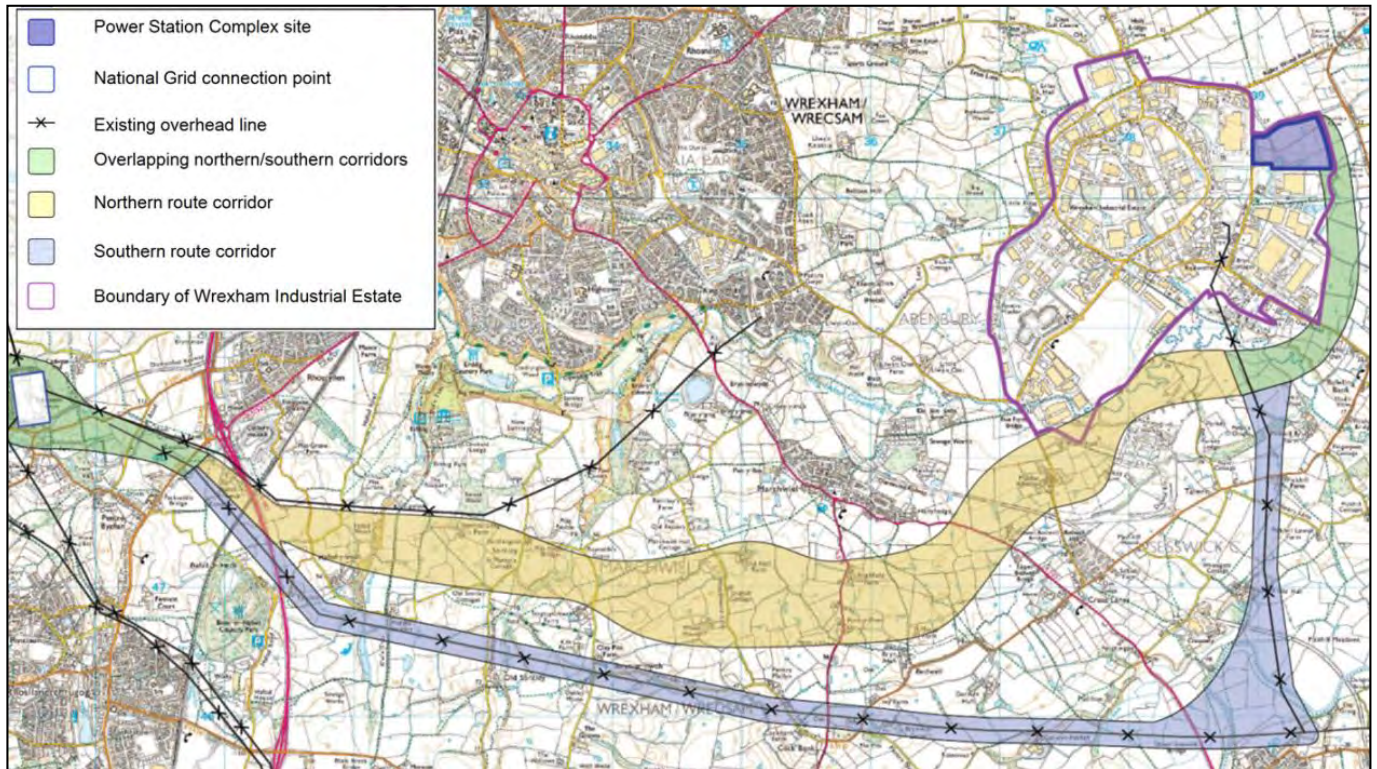
Figure DAS22 Excerpt from final illustrative Power Station Complex Site Layout Plan. For the full version of the below, refer to drawing no.5105324-WRX-DRG-C-404 (Document Reference 2.5.1)



POWER STATION CAPACITY

- 3.13 As detailed above, non-statutory consultation was undertaken in summer 2012.
- 3.14 Following this non-statutory consultation, WPL submitted an EIA scoping report (the "Previous Scoping Report") to the Secretary of State ("SoS"). The Previous Scoping Report concerned the likely significant environmental effects that might arise as a result of the Previous Scheme. A Scoping Opinion (the "Previous Scoping Opinion") was issued by the SoS in January 2013 and forms Appendix 5.1 to the ES (Document reference: 6.1-6.4) (this document is appended for reference only, as the relevant Scoping Opinion for the Scheme is that of May 2014 (see below)).
- 3.15 For the reasons explained in Chapter 3 of the ES, WPL subsequently set aside the Previous Scheme following consultation feedback from various statutory consultees and the local community. WPL considered that the current Scheme would result in different environmental impacts compared with the Previous Scheme and, as a result, WPL set aside the Previous Scoping Report and Previous Scoping Opinion and submitted a scoping request on 19 March 2014 relating to the Scheme (the "Scoping Request") to the SoS. A Scoping Opinion relating to the Scheme (the "Scoping Opinion") was issued by the SoS on 12 May 2014, taking into account the representations that it received from statutory bodies and other consultees.
- 3.16 The non-statutory consultation carried out in 2012 made provision for a power station capacity of 1,200MW_e, which would require a new 400kV overhead electricity line connection to the National Grid's electricity transmission system at the Legacy substation to the south-west of Wrexham. Two options for this electricity transmission line were presented to members of the public and consultees ranging between 13km and 16km in length, referred to as the Northern and Southern corridor options.

Figure DAS23: Previous route corridor options for electrical connection. Presented as part of non-statutory public consultation in 2012



- 3.17 During public consultation it became evident that securing an electrical connection by this means was the element of the proposed Scheme of greatest concern to local residents. It was clarified through the design process that by promoting the current Scheme comprising a power station with a capacity of up to 299MW_e, there would be no need for a new 400kV overhead line electrical connection. The current Scheme's 299MW_e generating capacity would also require a smaller power station footprint, with a reduction in stack height from 60-90m to 45-50m and no requirement to reserve a substantial area of land for potential carbon capture and storage. This, in turn, further reduces the overall development footprint and responds to local concern.
- 3.18 For these reasons, WPL decided to proceed the current Scheme, rather than the Previous Scheme. Design considerations for the principal components of the Power Station Complex will now be described.

DESIGN CONSIDERATIONS FOR PRINCIPAL COMPONENTS OF THE POWER STATION

1: Gas turbine building

- 3.19 In a gas turbine building for a CCGT power station, air is compressed and passed into a combustion chamber where it is mixed with natural gas fuel to produce hot combustion gases at high pressure. This thermal and pressure energy is converted to mechanical energy by expanding the combustion gas through the gas turbine to drive a power turbine and air compressor. The turbine is connected to a generator that produces electrical power. These requirements give rise to the need for a large rectangular building.
- 3.20 As explained in Chapter 4 of the ES main statement (Document reference 6.2), the design of the Power Station Complex contains flexibility to enable the Scheme to be configured in two different turbine arrangements:
- up to two gas turbines and up to two HRSGs, one steam turbine, and a generator for each turbine (a '2+1' arrangement);
 - a single larger gas turbine, one HRSG, one, steam turbine and two separate generators (a '1+1' arrangement).
- 3.21 A 2+1 arrangement would fit on a site of the same order of magnitude as a 1+1 arrangement. However, a 2+1 arrangement might require a single, larger gas turbine hall, or two separate gas turbine halls with combined dimensions greater than that of a 1+1 layout.
- 3.22 Consequently the maximum dimensions of the gas turbine hall, in terms of the 'Rochdale Envelope', are as follows:

Maximum combined 'envelope' for gas turbine hall ⁷		
Height (m)	Length (m)	Width (m)
25	60	45

- 3.23 In the draft Development Consent Order for the Scheme, the proposed gas turbine building formally comprises part of Work No. 1A. This will be the largest single building footprint on the Power Station Complex Site and hence, in line with the design objectives identified in Chapter 2 of this document, consideration will be given to minimising landscape and visual effects.

⁷ All heights quoted are measured from 30m AOD.

Figure DAS24: Interior of a typical CCGT power station turbine hall. *For illustrative purposes only.*



2: Heat recovery steam generators

- 3.24 The hot exhaust gases from the gas turbine are passed to an unfired boiler, referred to as Heat Recovery Steam Generators (HRSG) to produce steam. Up to two HRSG buildings would be developed, with maximum dimensions as follows:

Maximum dimensions of HSRG(s)		
Height (m)	Length (m)	Width (m)
35	25	13

- 3.25 The 2+1 arrangement has two HRSGs, while only one is required for the 1+1 arrangement. The 2+1 arrangement therefore represents a 'worst case' with regard to building mass and footprint.
- 3.26 In the draft Order for the Scheme, the HRSG buildings are part of Work No. 1A. The HRSGs are located between the gas turbine building and the Stacks, which contributes to a 'stepped' approach that minimises their overall visual prominence.

- 3.27 The HRSGs are large installations of functional design. As such the ability to adapt the appearance of HRSGs in response to amenity considerations is particularly limited, although the design objectives set out in Chapter 2 of this Statement would be applied where possible at the detailed architectural design stage.

3: Stacks

- 3.28 Each HRSG has a self-supporting steel Stack whose function is to disperse emissions from the Scheme. Up to two Stacks would be included in the development, with two possible Stack arrangements:

- a 2+1 arrangement, with two separate Stacks; and
- a 1+1 arrangement, with a single Stack.

- 3.29 The dimensions of the Stacks are determined by operational factors, most notably the need for a sufficient height to attain an appropriate dispersal of emissions. In light of a detailed assessment of such factors, reported in more detail in Chapter 8 of the ES main statement (Document reference 6.2), the maximum dimensions of the Stacks are as follows:

Maximum dimensions of Stacks	
Height (m)	Diameter (m)
50	6.5

- 3.30 In the draft Order, the Stacks form part of Work No. 1A. The Stacks will be of a relatively simple cylindrical form, although other functional steel structures such as stairways, ladders, maintenance platforms, and monitoring equipment would also be included. To minimise visual impacts, the proposed Stacks are positioned close to the western boundary, as close as possible to Bryn Lane and the tall structures at the Kellogg factory, and as remote as possible from open countryside to the east including the village of Isycoed. The Stacks would also be positioned relatively close to existing mature tree cover along Bryn Lane, contributing to visual containment from lower levels.

Figure DAS25: View of a typical operational HRSG and Stack. *(For illustrative / explanatory purposes only.)*



4: Transformer Compounds (for output of gas turbine/s)

- 3.31 Up to two transformer compounds would be positioned adjacent to the gas turbine building, to manage its electrical output. These will comprise comparatively small structures, whose maximum dimensions are as follows:

Maximum dimensions of gas turbine transformers		
Height (m)	Length (m)	Width (m)
6	15	10

- 3.32 In the draft Order, the transformers comprise part of Work no. 1D. Transformers are functional in appearance, but given their scale and positioning adjacent to the much larger gas turbine building, will have a limited visual impact.

5: Steam turbine building

- 3.33 Steam produced by the HRSGs will be piped to a turbine located within this separate building, located to the north of the gas turbine building, HRSGs and Stacks. By necessity this building will be large, with the following maximum dimensions:

Maximum dimensions of steam turbine building		
Height (m)	Length (m)	Width (m)
21	45	26

- 3.34 In the draft Order, the steam turbine building comprises part of Work No. 1A. As with the gas turbine building, in line with the concluding part of Chapter 2 of this Statement, consideration will be given to minimise landscape and visual effects.

6: Transformer Compound (for output of steam turbine)

- 3.35 Adjacent to the steam turbine building will be a separate transformer, a comparatively small structure with the following maximum dimensions:

Maximum dimensions of steam turbine transformer		
Height (m)	Length (m)	Width (m)
6	15	15

- 3.36 In the draft Order the transformers comprise part of Work No. 1D, and will again be of a functional appearance.

7: Switchgear room

- 3.37 The electricity generated by the Power Station Complex must pass through various electrical systems and plant, which are required to manage the transmission of electricity into the distribution network.

- 3.38 These are proposed to be housed within a switchgear room, a small building adjacent to the steam turbine building. In the draft Order, this will form part of Work No. 1A. The maximum dimensions for the switchgear room are:

Maximum dimensions of switchgear room		
Height (m)	Length (m)	Width (m)
5	15	10

- 3.39 The switchgear room would comprise a functional, single-storey building, designed in a manner consistent with the surrounding Power Station Complex.

8: 132 kV switchyard

- 3.40 A switchyard would be positioned close to the southern boundary of the Power Station Complex. In the draft Order, this will form part of Work No. 1D. The maximum dimensions for the switchyard are:

Maximum dimensions of switchyard		
Height (m)	Length (m)	Width (m)
10	73	42

- 3.41 As indicated in the figure below, the switchyard would comprise a fenced compound within which electrical equipment is positioned in open surroundings.

9: Air cooled condenser

- 3.42 Due to limitations on water supply in the area, the Scheme will be air cooled, with no requirement to abstract ground or surface water for cooling. The air cooled condenser is thus an integral part of the Power Station Complex and has the function of cooling turbine exhaust steam, and returning it to water which is then used again. The condenser comprises a large structure, square in form, mounted on stilts and up to 13 metres in height.

Maximum dimensions of air-cooled cooling condenser		
Height (m)	Length (m)	Width (m)
26	48	48

- 3.43 In the draft Order the air-cooled condenser comprises part of Work No. 1A. A position towards the north-east of the Power Station Complex has been identified in order to optimise its position in terms of landscape, and also to place it downwind of the air intakes of the turbines.
- 3.44 As indicated by Figure DAS26 below, air condensers have an industrial, functional appearance, although from more distant views the supporting structures become less apparent, with the elevations of the main condenser unit itself the main visible element. In its detailed design, therefore, the selection of an appropriate palette of colours will be a high priority in minimising landscape and visual effects.

Figure DAS26: Exterior of an air-cooled condenser for a power station. *Enfield Energy Centre: For illustrative purposes only*



10: Administration/control building

- 3.45 It is proposed to develop an administration/control building within the Power Station Complex with the following dimensions:

Maximum dimensions of administration building		
Height (m)	Length (m)	Width (m)
10	20	10

- 3.46 In the draft Order, the administration/control building comprises part of Work No. 1E. This building would be the administrative and control hub of the Power Station Complex, containing an office, welfare and reception facilities. Given these functions, it would be positioned towards the south of the Power Station Complex, close to the entrance.
- 3.47 The architectural treatment of the elevations of the administration/control building has not been determined at this stage. Its role as a 'gateway' and its continuous use by staff and visitors requires a functional architectural design to be employed, albeit distinguished from the more process-driven industrial design of much of the Power Station Complex.

11: Pressure regulating installation

- 3.48 The pressure regulating installation (PRI) comprises a compound where gas is received, treated and managed in order to feed the gas turbine(s) at the appropriate specification. The PRI comprises various plant and machinery such as compressors, valves, filters, separators and gauges, along with small kiosks to house instrumentation and other equipment.

Maximum dimensions of PRI		
Height (m)	Length (m)	Width (m)
5	35	25

- 3.49 In the draft Order, the PRI comprises part of Work no. 1B. It is proposed to locate the PRI towards the eastern part of the Power Station Complex Site close to where the Gas Connection Route connects with it.
- 3.50 Chapter 4 of this Statement provides a more detailed description of this Gas Connection corridor.

12: Raw/fire tank, 13: Water tank, and, 14: Water treatment system

- 3.51 A CCGT power station requires significant quantities of water. This includes both 'raw' water for the purpose of fire safety and demineralised water to act as a cooling medium during power generation. Substantial water storage tanks are therefore required on the site, along with a water treatment system. The maximum dimensions of these will be as follows:

Maximum dimensions of water tanks		
	Height (m)	Diameter (m)
Water tank (12)	20	15
Water tank (13)	20	5

Maximum dimensions of water treatment system (14)		
Height (m)	Length (m)	Width (m)
10	20	25

- 3.52 In the draft Order these facilities comprise part of Work No. 1C, and are sited towards the western boundary of the Power Station Complex, contributing towards the ‘stepped’ arrangement.

No. 15: Workshop

- 3.53 It is proposed that a workshop building is constructed as part of the Power Station, Complex with the following maximum dimensions:

Maximum dimensions of workshop building		
Height (m)	Length (m)	Width (m)
10	30	20

- 3.54 In the draft Order, the workshop building comprises part of Work No. 1B. This building would act as a workshop and storage facility for the Power Station Complex and is an essential component of its effective management, maintenance and operation. As a comparatively low building, it is proposed to be located towards the Power Station Complex’s southern boundary, again contributing to the overall ‘stepped’ arrangement.

No. 16: Parking

- 3.55 Parking is required on the Power Station Complex, sufficient in scale to accommodate workers and visitors, with provision being made for an appropriate number of disabled spaces. Up to 20 car parking spaces are proposed, close to the administration/control building and the access to the Power Station Complex. In the draft Order, the car park comprises part of Work No. 1G.

No. 17: Heat network interface building

- 3.56 Provision is made within the Power Station Complex for a building from which it would be feasible to process and supply surplus heat to future neighbouring businesses through a local heat distribution network. The inclusion of such a facility would be consistent with the aims of National Policy Statement EN-1 paragraph 4.6.6, and would enhance the attractiveness of the Wrexham Industrial Estate in economic terms. In the draft Order, the heat network interface building, with the following maximum dimensions, comprises part of Work No. 1F.

Maximum dimensions of heat interface building		
Height (m)	Length (m)	Width (m)
15	45	25

No. 18: Pumping Station

- 3.57 Ground levels are such that foul flows can drain by gravity to a pumping station within the Power Station Complex Site, towards its north-west corner. A proposed pumping station in this location will lift the flows out of the Scheme to enable them to flow to a Welsh Water combined sewer manhole approximately 130m south of the Power Station Complex Site. In the draft Order, the Pumping Station has the following maximum dimensions:

Maximum dimensions of pumping station		
Height (m)	Length (m)	Width (m)
-	12	8

LANDSCAPE, VEGETATION, BOUNDARY AND LIGHTING TREATMENTS

- 3.58 A landscape and visual assessment of the Scheme is provided in Chapter 10 of the ES (Document reference 6.2). It is recognised that the Power Station Complex would be a major new feature in the landscape, although the wider site previously accommodated tall structures when the Owen Corning fibreglass factory was in operation.
- 3.59 Landscape and planting schemes can, if effectively designed, implemented and managed, soften views of major industrial installations such as CCGT power stations, whilst also providing ecological and hydrological mitigation.
- 3.60 The design of the Scheme has therefore incorporated landscape, planting, and boundary treatment works from the outset. These are shown on the illustrative *landscape and ecological Master Plan* (document reference 2.9), and a landscape and planting scheme will be secured by a Requirement of the draft Order. Such a scheme must be substantially in accordance with the illustrative landscape plan and would be submitted to WCBC for approval.

Proposed landscape measures

- 3.61 The illustrative landscape plan includes the retention and protection of the following existing landscape features:
- the woodland tree belt on the northern boundary of the Power Station Complex Site that is subject to a Tree Preservation Order;
 - existing tree and shrub groups on the eastern boundary of the Power Station Complex Site;
 - hedgerows and existing tree and shrubs alongside Bryn Lane, which form a buffer between the public highway and the Power Station Complex.
- 3.62 New landscape features would include:
- new native woodland planting to reinforce the screening effect of existing vegetation on the eastern boundary. Envisaged tree species include oak, cherry, hawthorn and holly;
 - an ecological mitigation area, measuring 34,567 m² in total including an open grassland habitat corridor to compensate for the loss of semi-improved grassland;
 - the provision of three ponds to compensate for the loss of a pond within the footprint of the Power Station Complex and provide mitigation for great crested newts;
 - individual tree planting, groups of salix planting, marginal wetland planting and open water floating and submerged plants;
 - a 5m hedgebank, planted with native trees and shrubs to define ecological mitigation area;
 - a 5m ditch with open natural vegetation to link to the wetland area.
- 3.63 As well as providing benefits and mitigation in landscape, visual, ecological and drainage terms, these measures will improve the general amenity of the Power Station Complex Site, the surrounding Wrexham Industrial Estate and countryside beyond.

Figure DAS27 Excerpt from final illustrative landscape within WEC Site. For the full version of the below, refer to drawing no.5105324-WRX-DRG-L-420 (Document Reference 2.9.1)



Lighting and perimeter fencing

- 3.64 It is proposed that the whole of the perimeter of the Power Station Complex Site is enclosed by security fencing up to a maximum of 2.5 metres in height. Street lights will be erected within the Power Station Complex and the perimeter fence will also be lit. It is proposed that all external lighting will be the subject of a DCO Requirement, requiring a detailed lighting scheme to be submitted to WCBC for approval.

SURFACE WATER AND WASTEWATER

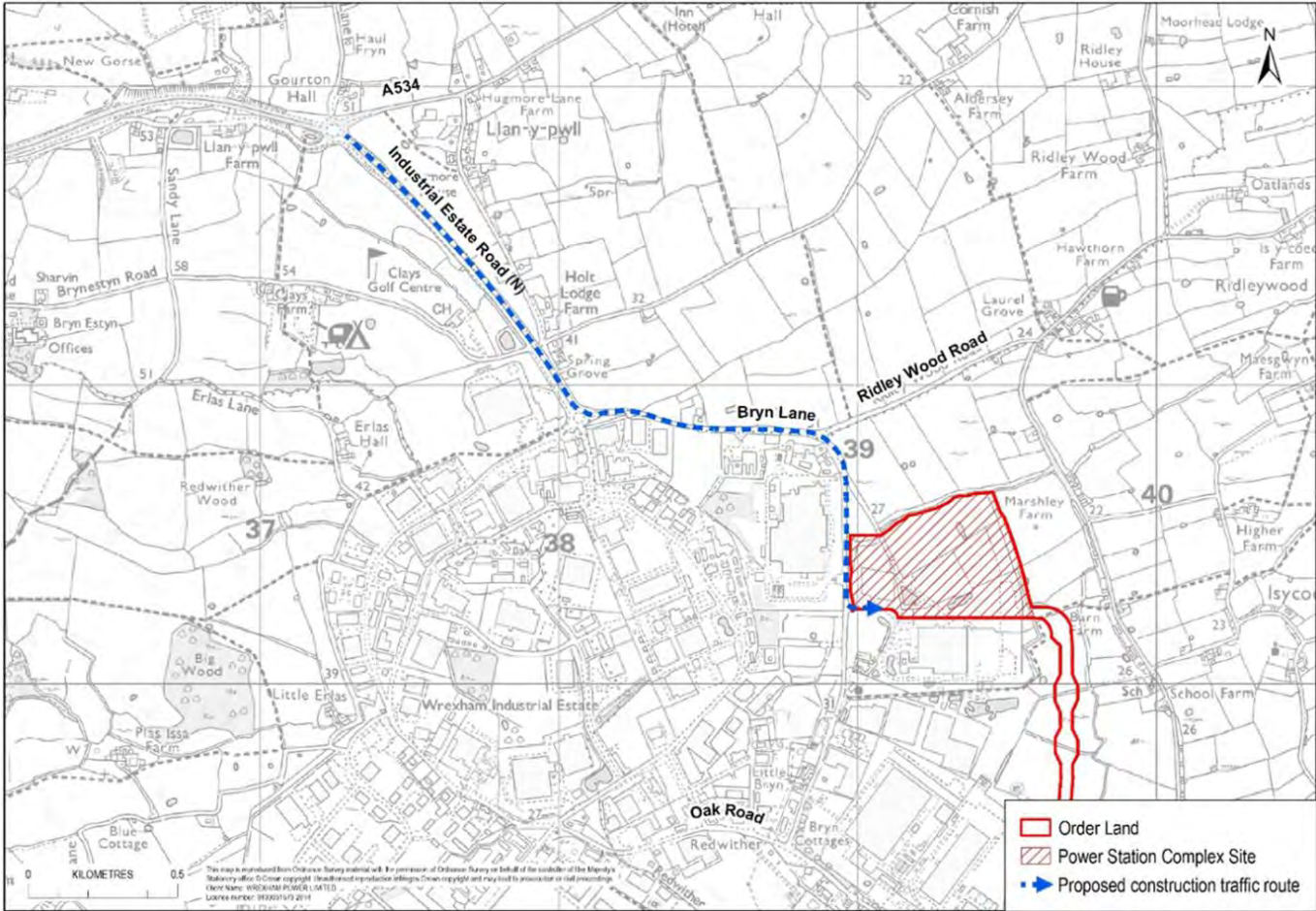
- 3.65 All run-off from impermeable areas such as roofs, hardstanding and highway areas at the Power Station Complex Site would be intercepted by trapped gullies, permeable paving or filter drains to the surface water storage / attenuation area via a system of pipework. Surface water would then flow along an open channel or swale to the ponds in the north-eastern corner of the Power Station Complex Site prior to discharge into the watercourse along the northern boundary.

- 3.66 Foul water flows from the Scheme would be conveyed via the Pumping Station to the Welsh Water combined manhole located adjacent to an amenity tip approximately 130m south of the Power Station Complex.
- 3.67 The cooling water system and HRSG would periodically emit spent cooling and blowdown water as part of normal operations and maintenance. This would be directed to the foul water system and treated as trade effluent, being directed via underground pipes to the Pumping Station.

ACCESS

- 3.68 Road access to the Power Station Complex Site would be by means of a T-junction on the existing Kingmoor Park Access Road, which connects into Kingmoor Park South Industrial Estate to Bryn Lane. The existing access junction to Bryn Lane has sufficient visibility and is of a suitable standard to accommodate traffic during the construction, operational and decommissioning stages, subject to suitable signage being provided.
- 3.69 Construction traffic delivering materials to the Power Station Complex Site (i.e. HGVs) would use the route from the north via the A534, the new Industrial Estate Road (N) and Bryn Lane before turning left onto Kingmoor Park Access Road. All construction staff visiting the Scheme would also be encouraged to enter and exit via Bryn Lane, the new Industrial Estate Road (N) and A534, in order to avoid more sensitive roads such as Ridley Wood Road and the village of Hugmore. The A534(W) provides good access to Wrexham and onto the national strategic road network
- 3.70 The access route for construction vehicles is illustrated in Figure DAS28. In the draft Order, the alteration and use of the Kingmoor Park Access Road comprises part of Work No. 5.
- 3.71 Internal access roads are required in the Power Station Complex to facilitate the movement of staff, maintenance vehicles and emergency vehicles. These roads would range from 5 to 7m in width necessary to serve the largest buildings and structures on the Power Station Complex, including the turbine building and Stacks.

Figure DAS28: Power Station Complex Site - Construction Access Route. Source: WPL

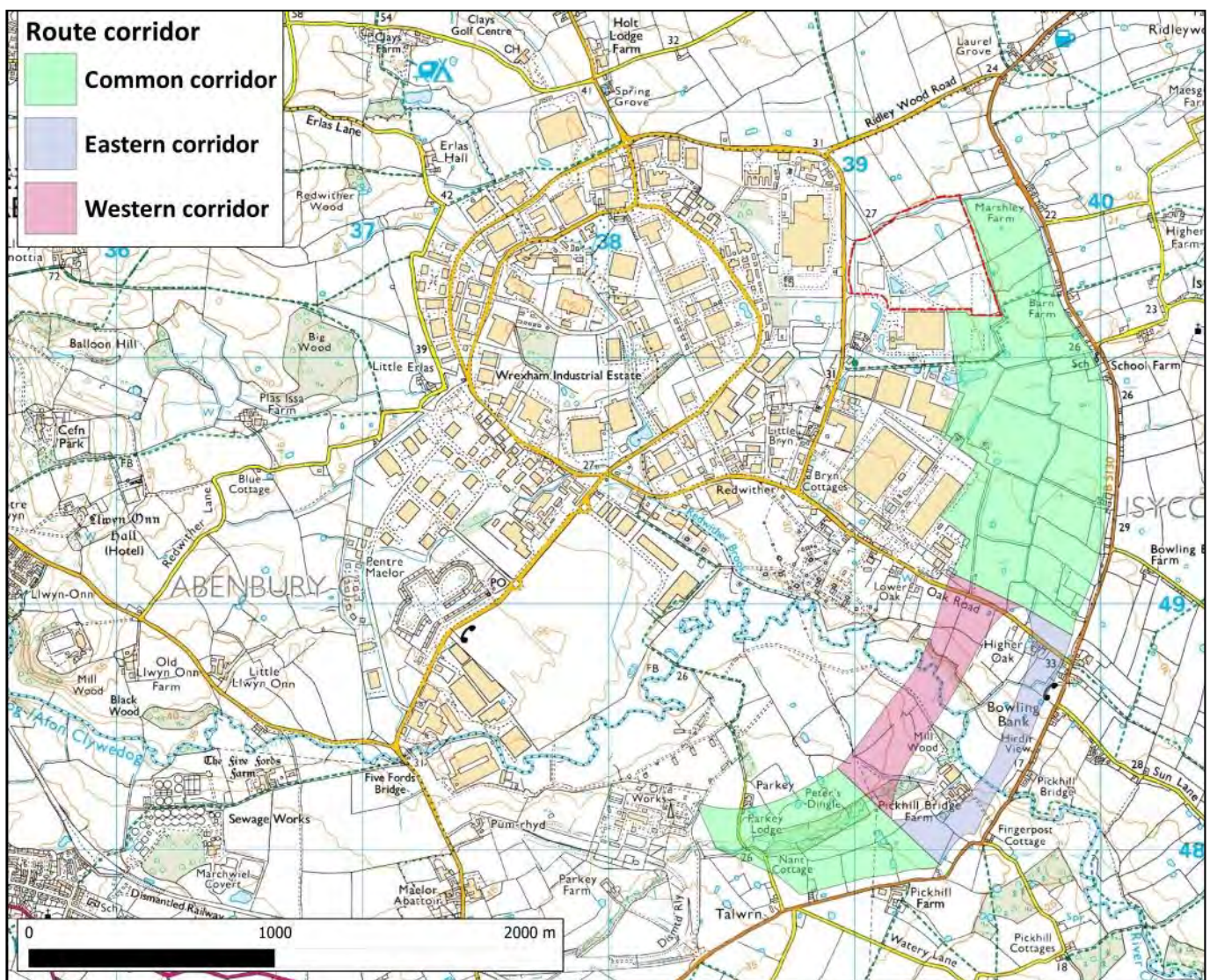


Chapter 4 ♦ Gas Connection

GAS CONNECTION ROUTE

- 4.1 As part of the Previous Scheme, two potential route corridors were initially identified for the Gas Connection Route, within which it was considered the gas connection might pass. These are shown in Figure DAS29 below:

Figure DAS29: Initial indicative Gas Connection Corridors. From WPL's Previous Scoping Report, November 2012

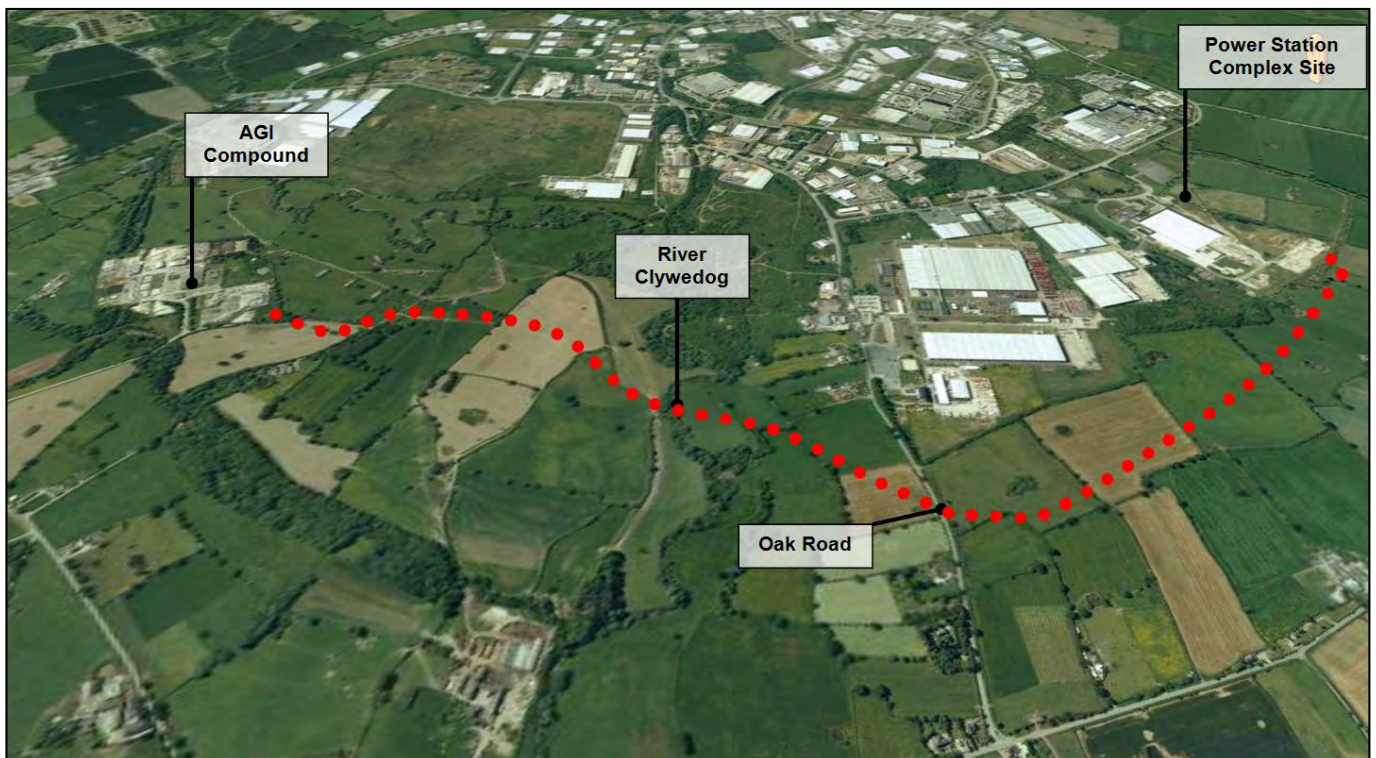


- 4.2 Further environmental surveys were undertaken to inform the location of the pipeline, with the following considerations taken into account:

- a general preference for a route running close to the edge of the Wrexham Industrial Estate;
- avoidance of residential properties;
- avoidance of specimen trees and woodland;
- avoidance of surface water bodies such as ponds, which could provide breeding habitats for great crested newts;
- Use of directional drilling beneath the River Clywedog to avoid any adverse effects on sensitive aquatic habitats.

4.3 The main features of the proposed Gas Connection Route will now be described.

Figure DAS30: Overview of the proposed Gas Connection Route. *Oblique aerial view, looking NW. Source: Google Maps*



- 4.4 From the connection with the NTS, approximately 75m south-east of the Maelor Gas Works; the Gas Pipeline crosses a field and the Maelor Gas Works Access Road before entering the AGI Site.
- 4.5 The AGI Site comprises an area of hardstanding and a smaller grassed area. The hardstanding is currently used as a general storage area in connection with the existing Maelor Gas Works, which forms the western and south-western boundaries of the AGI Site. Access to the Maelor Gas Works is gained from an access road off the B5130.

- 4.6 The AGI would comprise a 47m by 46m compound, secured by fencing with a maximum height of 2.5m. The compound would contain an instrument kiosk, a series of pipes and valves with a flow meter, isolation control valves, and a pipeline inspection gauge (PIG) function for cleaning and inspection. From this compound natural gas would be conveyed to the Power Station Complex by means of a pipeline with a maximum diameter of up to 400 mm.
- 4.7 The northern boundary of the AGI Site is vegetated with scrub and mature trees, beyond which is an area of farmland with scattered mature trees and redundant brick buildings. The eastern boundary is formed by the minor road to the gasworks, which continues north to provide a farm access. To the east of the road is an agricultural field with scattered mature trees, through which the Gas Pipeline would run to connect to the AGI.

Figure DAS31: Aerial image of Maelor Gas Works. Location of Above Ground Installation identified.

Source: Google Maps

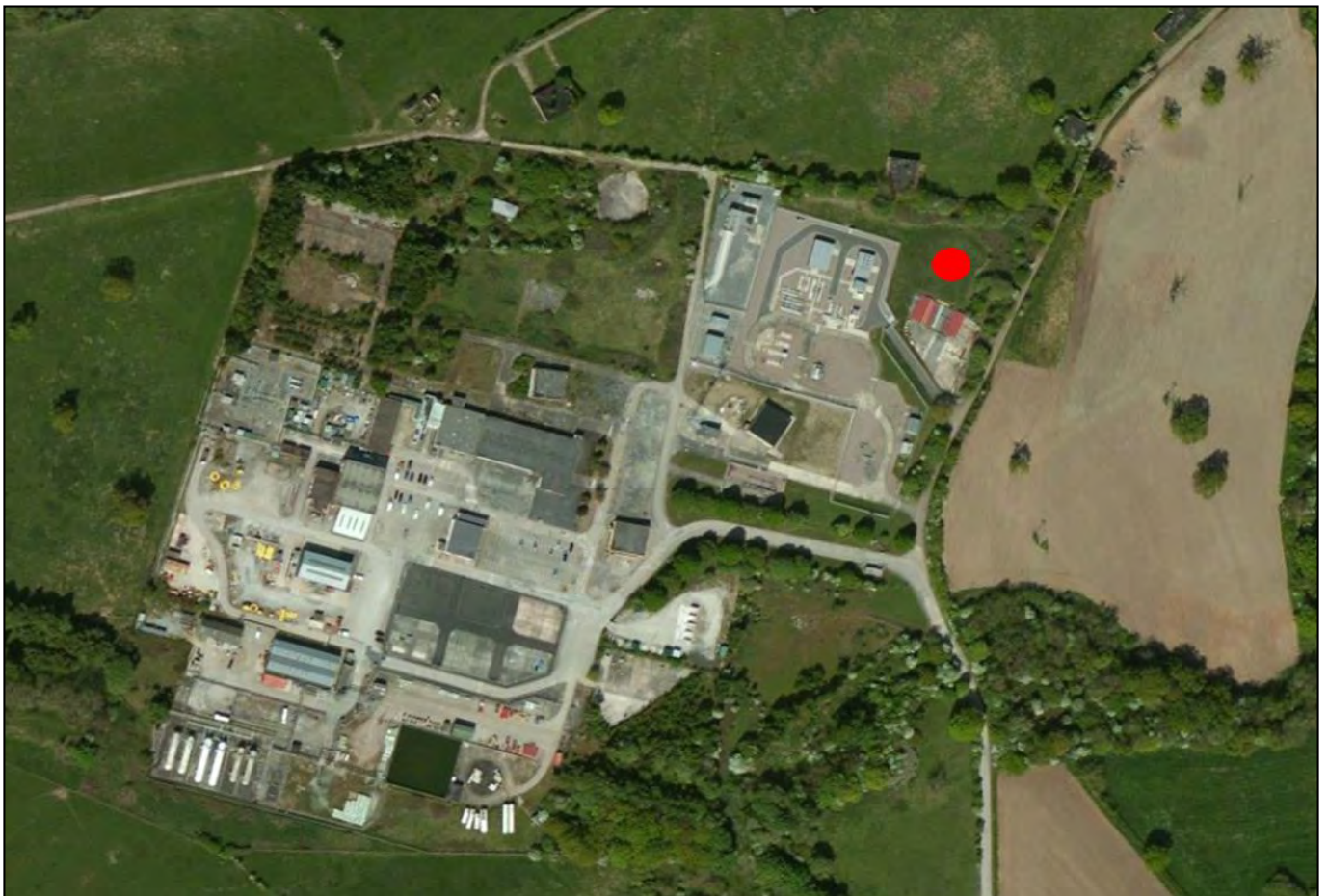


Figure DAS32: Countryside close to AGI Site. *Looking N/ NE from position close to Parkey Farm. Source: WPL*



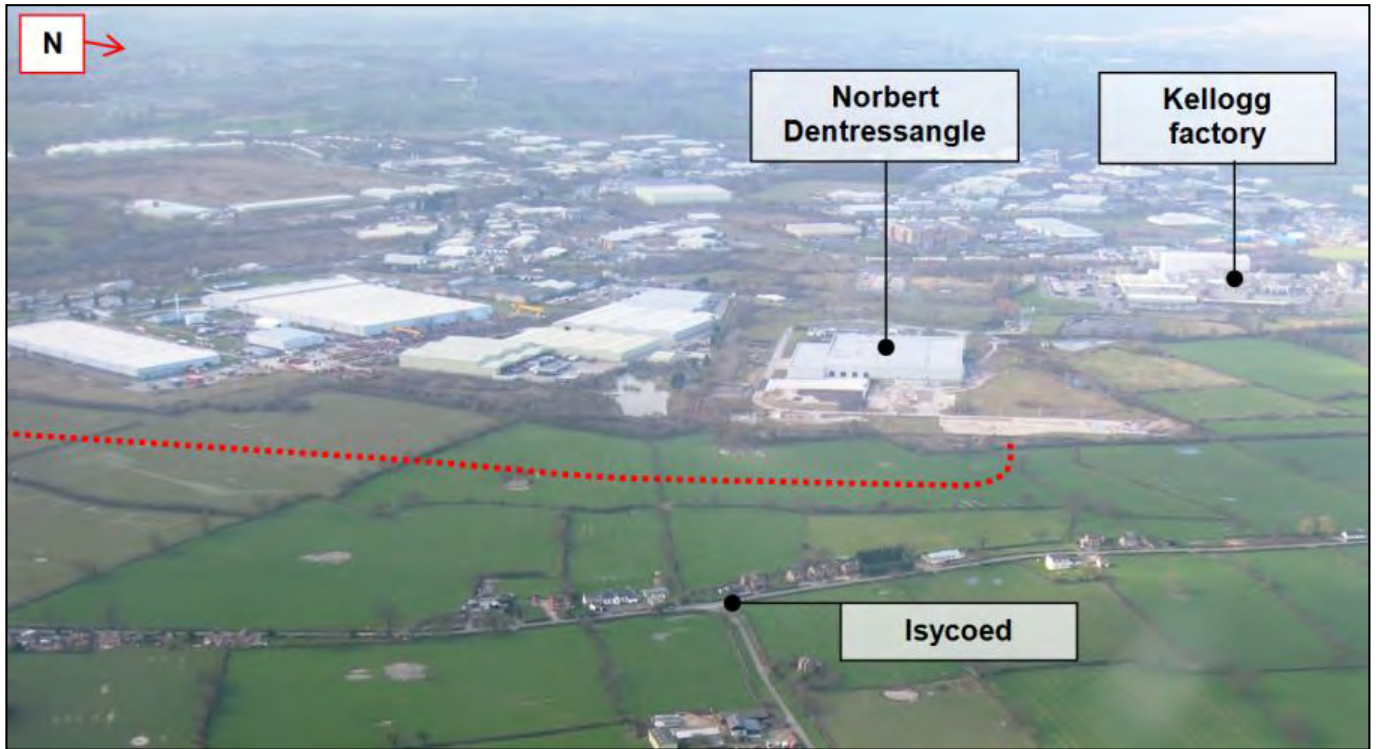
- 4.8 On leaving the AGI, the Gas Pipeline route heads east, passing under the Maelor Gas Works Access Road into a field before heading north to a track to the north of Parkey Lodge Lane, which is also a footpath (PRoW SESS / 25). After crossing the track the Gas Pipeline continues north-east, crossing agricultural fields towards the River Clywedog. The Gas Pipeline would cross underneath the River Clywedog and Oak Road. Between the River Clywedog and Oak Road, the Gas Pipeline would turn towards the north-east and pass close to a small area of woodland.

Figure DAS33: Oak Road, close to position of Gas Connection Route. *Looking SW towards Ourholme.*



- 4.9 After passing beneath Oak Road, the Gas Pipeline would run north through fields to the east of the Wrexham Industrial Estate, crossing field boundaries marked by hedgerows, isolated trees and drainage ditches. The Gas Pipeline route then turns west and enters the Power Station Complex Site.

Figure DAS34: Oblique aerial view of the northern part of Gas Connection Route. *Looking west towards WIE.* Location of Gas Connection Route indicative only. Source: Google Maps



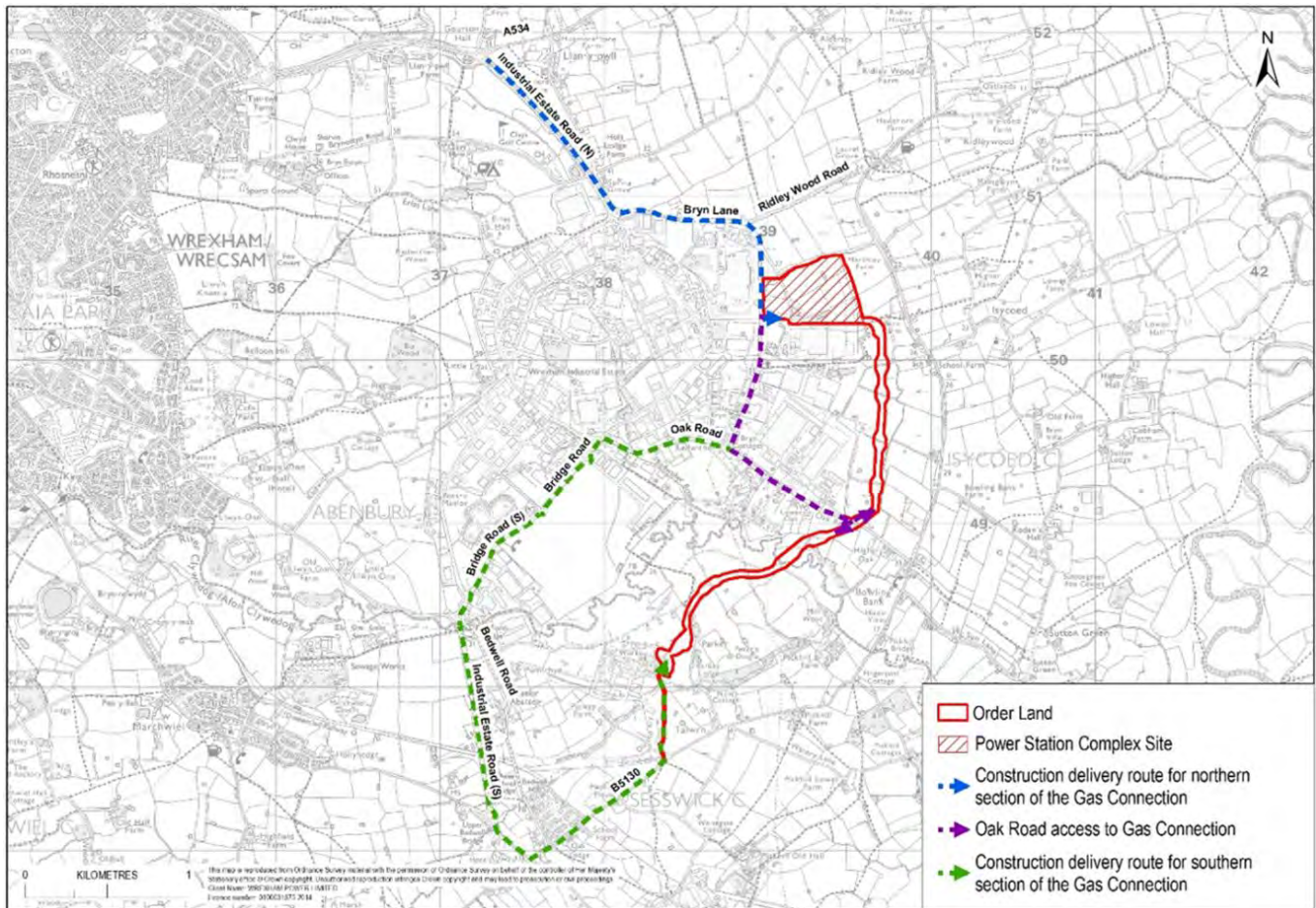
IMPLEMENTATION OF THE GAS CONNECTION

- 4.10 The Gas Connection would be provided during the main construction period of the Scheme.
- 4.11 In order to minimise the effects of the Gas Connection, a range of inherent mitigation measures are proposed. These include:
- Where possible, align the final location of the Gas Pipeline to retain existing landscape features including: hedgerows and trees, water bodies, river and tributaries, etc;
 - adopting best practice measures during construction to minimise any adverse effects on existing landscape features to be retained;
 - positioning of the AGI to avoid loss of trees where possible;
 - new native hedge, tree and woodland planting to replace existing vegetation unavoidably removed from the Gas Connection Route
- 4.12 This approach is consistent with the design objectives set out in Chapter 2 of this Statement.

ACCESS TO THE GAS CONNECTION ROUTE

4.13 The construction access route for the Gas Connection is shown in Figure DAS36 below. As indicated, access to the Gas Connection will be required at three locations, covering (1) the northern section near the Power Station Complex; (2) the section around Oak Road; and (3) the section south of the River Clywedog.

Figure DAS36: Gas Connection - Construction Access Route



4.14 Construction traffic delivering materials to the northern section of the Gas Connection Route will use the same route as that serving the Power Station Complex Site. Equipment and materials for the Gas Connection would be stored at the Power Station Complex Site and then transported to the Gas Connection Route. However, when the Gas Pipeline is passing underneath Oak Road, vehicles might need to cross the fields directly from Oak Road.

- 4.15 For the southern section of the Gas Connection Route, to the south of the River Clywedog, construction vehicles would again approach from the north via the new Industrial Estate Road (N), and Bryn Lane to minimise the effect on surrounding roads. They would pass the Power Station Complex Site and follow Bryn Lane southwards before turning eastwards onto Oak Road. There is a weak bridge on the B5130 (with a 13 tonne limit) south of Oak Road. An alternative route is proposed along Bridge Road, Bridge Road South and the Southern Industrial Estate Access Road. At the southern end of the Southern Industrial Estate Access Road the construction traffic would use the A525 before turning left onto the B5130. After approximately 1 km, construction traffic would use the Maelor Gas Works Access Road to reach the southern section of the Gas Connection Route.
- 4.16 Further details in respect of the transport and highways implications of the Scheme are described in Chapter 7 of the Environmental Statement (Document reference 6.2).

Chapter 5 ♦ Conclusions

- 5.1 WPL has identified and responded to design considerations relevant to the formulation of the Scheme. The design process for the Scheme has taken into account the particular matters identified in National Policy Statements, Planning Policy Wales, TAN 12, the Development Plan and other specified documents, and has benefited from iterative design inputs from stakeholder consultation and the environmental impact assessment process. The outcome is a refined and self-contained design solution.
- 5.2 A number of recurring themes relevant to design and access emerge from consideration of the policy framework detailed in Chapter 2. These are effectively summarised in the diagram below taken from PPW Section 4.11, where it forms figure 4.5:



- 5.3 Through the evolution of the Scheme from identification of need to formulation of concept and then through the processes of site finding, scheme definition (including determination of scale) and then design and layout, the consideration of environmental sustainability, community safety, and character have been uppermost with those of access and movement being also ever-present.

- 5.4 These views have been gathered by a range of consultation techniques such that the design of the Scheme has been as inclusive – an important consideration of the NPSs, PPW, and development plans – as possible.
- 5.5 The description of the design processes and the consideration of access for the Power Station Complex and the Grid Connection set out in Chapters 3 and 4 of this Design and Access Statement summarise how the Scheme has evolved in consultation with key stakeholders and reflecting the requirements of policy and the advice of TAN 12.
- 5.6 The overall conclusions of this Statement are as follows:
- From inception of the Scheme concept, site finding and scheme definition has sought, successfully, to deliver a scheme that reflects the design and access objectives of policy;
 - a sensitive response has been taken within the setting of the Wrexham Industrial Estate and the surrounding countryside and local villages, through a combination of site planning and siting of the Scheme;
 - the Scheme is of its nature, nationally significant infrastructure requiring buildings and structures of industrial scale and appearance. The form, scale, massing and landscaping have been designed so that the Power Station Complex blends in as far as possible with its surroundings;
 - the design and layout of the Scheme have sought to respond to, and integrate with, the Wrexham Industrial Estate. The Power Station Complex is located to optimise the screening benefits of existing trees and existing major built structures;
 - the design process has, as is reported in the Environmental Statement, led to a Scheme with a small number of likely significant effects. Mitigation has been carefully designed and targeted such that the overall residual effects are minimal and are outweighed by the overall benefits of the Scheme;
 - access arrangements, particularly for vehicular movements for construction and demolition, are appropriate;
 - an efficient Power Station Complex layout is being promoted;
 - The Gas Pipeline has been designed to be located underground and to provide the most direct route between the Power Station Complex and the NTS, routed to avoid areas of sensitivity.
- 5.7 In view of the above, therefore, the Scheme is considered to meet all statutory and policy requirements in terms of design and access and supports the approval of the Scheme.