

Appendix 4

Response from Welsh Government (WG001)
PINS advice with regard to Welsh Government Response (WG001.1)
Response from CADW (CW001)
Applicant Reply to CADW (CW001.1)
CADW Reply (CW001.2)
Response from Natural Resources Wales (NRW001 - NRW004)
Applicant Reply to Natural Resources Wales (NRW001.1)
Response from the Coal Authority (CA001)
Response from Neath Port Talbot Council (NPT001 - NPT003)
Applicant Reply to Neath Port Talbot Council (NPT001.1)
Response from Joey Pickard (JP001)
Applicant Reply to Joey Pickard (JP001.1)

From: Spencer.Conlon@gov.wales
Sent: 17 August 2020 17:58
To: Chris Jackson
Subject: RE: Upper Ogmores Wind Farm and Energy Storage Facility - Pre Application Consultation

Mr Jackson,

As it is my responsibility to provide advice to Welsh Ministers on applications under section 16 of the Commons Act 2006 I do not feel it would be appropriate to comment.

Regards

Spencer

Spencer Conlon
Llywodraeth Cymru/Welsh Government
Teras Picton/Picton Terrace
Caerfyrddin/Carmarthen
Ffôn/Tel: 03000 255068 Ffon Symudol/Mobile 07974433259

From: Chris Jackson <Chris.Jackson@res-group.com>
Sent: 13 August 2020 15:33
To: Conlon, Spencer (ESNR - ERA - Agriculture, Sustainable Development Division) <Spencer.Conlon@gov.wales>
Subject: RE: Upper Ogmores Wind Farm and Energy Storage Facility - Pre Application Consultation

Dear Mr Conlon,

I would be grateful if you will let me know when you will be able to respond to my e-mail of 25 June 2020.

Kind regards,

Chris Jackson
Senior Development Project Manager

D +44 2920 021 074 | M +44 7500 058 463
chris.jackson@res-group.com | www.res-group.com



Committed to a future where everyone has access to affordable zero carbon energy

Renewable Energy Systems Limited, registered in England and Wales with Company Number 1589961
Registered Office: Beaufort Court, Egg Farm Lane, Kings Langley, Hertfordshire WD4 8LR

From: Chris Jackson
Sent: 25 June 2020 13:00
To: spencer.conlon@gov.wales
Subject: Upper Ogmores Wind Farm and Energy Storage Facility - Pre Application Consultation

Dear Mr Conlon,

The attached letter and notice relate to a Development of National Significance application, which includes a secondary application for consent under Section 16 of the Commons Act 2006. To ensure that I consult correctly, I would be very grateful if you will confirm whether you are the correct consultee, and let me know if there is anyone else at Welsh Government with whom I should consult in respect of the Section 16 application.

If you have any questions, please do not hesitate to contact me.

Kind regards,

Chris Jackson

Senior Development Project Manager

D +44 2920 021 074 | M +44 7500 058 463

chris.jackson@res-group.com | www.res-group.com



Committed to a future where everyone has access to affordable zero carbon energy

Renew able Energy Systems Limited, registered in England and Wales with Company Number 1589961
Registered Office: Beaufort Court, Egg Farm Lane, Kings Langley, Hertfordshire WD4 8LR

NOTICE TO RECIPIENT: This e-mail is meant for only the intended recipient of the transmission, and may be a communication privileged by law. This e-mail, including any attachments, contains information that may be confidential, and is protected by copyright. If you received this e-mail in error, any review, use, dissemination, distribution, or copying of this e-mail is strictly prohibited. Please notify us immediately of the error by return e-mail and please delete this message from your system. Any communication of a personal nature in this e-mail is not made by or on behalf of any RES group company. E-mails sent or received may be monitored to ensure compliance with the law, regulation and/or our policies. Thank you in advance for your cooperation.

Disclaimer

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

This email has been scanned for viruses and malware, and may have been automatically archived by **Mimecast Ltd**, an innovator in Software as a Service (SaaS) for business. Providing a **safer** and **more useful** place for your human generated data. Specializing in; Security, archiving and compliance. To find out more [Click Here](#).

Sganiwyd y neges hon am bob feirws hysbys wrth iddi adael Llywodraeth Cymru. Mae Llywodraeth Cymru yn cymryd o ddifrif yr angen i ddiogelu eich data. Os cysylltwch â Llywodraeth Cymru, mae ein [hysbysiad preifatrwydd](#) yn esbonio sut rydym yn defnyddio eich gwybodaeth a sut rydym yn diogelu eich preifatrwydd. Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn anfon ateb yn Gymraeg i ohebiaeth a dderbynnir yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi. On leaving the Welsh Government this email was scanned for all known viruses. The Welsh Government takes the protection of your data seriously. If you contact the Welsh Government then our [Privacy Notice](#) explains how we use your information and the ways in which we protect your privacy. We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

From: dns.wales <dns.wales@planninginspectorate.gov.uk>
Sent: 18 August 2020 10:14
To: Chris Jackson
Subject: RE: 3213662 Pre-Application Consultation

Hello Chris,

As far as the Inspectorate is concerned, you have complied with the requirements of the Procedure Order; I think you should include the response in your Consultation Report, but there is no need for you to consult anyone else in respect of the secondary consent.

Regards

Rob

Robert Sparey

Swyddog Cynllunio / Rheolwr Cynllunio a'r Amgylchedd
Planning Officer / Planning & Environment Manager

Yr Arolygiaeth Gynllunio | The Planning Inspectorate
Adeilad y Goron | Crown Building,
Parc Cathays, | Cathays Park
Caerdydd, | Cardiff,
CF10 3NQ

<http://planninginspectorate.gov.wales/>
Twitter: [@PINSgov](https://twitter.com/PINSgov)
robert.sparey@planninginspectorate.gov.uk
0303 444 5958

Mae cwsmeriaid wrth galon popeth a wnawn – gweler ein [Siarter Cwsmeriaid](#)
Customers are at the heart of everything we do – view our [Customer Charter](#)

Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

From: Chris Jackson <Chris.Jackson@res-group.com>
Sent: 18 August 2020 09:43
To: dns.wales <dns.wales@planninginspectorate.gov.uk>
Subject: RE: 3213662 Pre-Application Consultation

Rob,

Thank you for your e-mail. I have now received the attached reply from Mr Conlon. Noting his reply and your comment below, is there anyone else whom I should/could consult on the Commons Act application?

Kind regards,

Chris Jackson

Senior Development Project Manager

D +44 2920 021 074 | **M** +44 7500 058 463
chris.jackson@res-group.com | www.res-group.com



Committed to a future where everyone has access to affordable zero carbon energy

Renew able Energy Systems Limited, registered in England and Wales with Company Number 1589961
Registered Office: Beaufort Court, Egg Farm Lane, Kings Langley, Hertfordshire WD4 8LR

From: dns.wales <dns.wales@planninginspectorate.gov.uk>

Sent: 18 August 2020 09:34

To: Chris Jackson <Chris.Jackson@res-group.com>

Subject: RE: 3213662 Pre-Application Consultation

Hello Chris,

Further to our conversation yesterday, my colleague has now given me the relevant contact telephone numbers for the team in Welsh Government that are responsible for Common Land.

Spencer Conlon's number is 03000 255068. You could also try his colleague Sophie Hawkins on 03000 255248.

My reading of the Procedure Order is that whilst Article 9 requires you to consult their team (in effect acting for the Welsh Ministers) as the 'relevant person' who would normally determine the secondary consent Common Land application, I do not think they have a statutory duty to respond, unlike specialist consultees who fall under Article 10.

Best wishes,

Rob

Robert Sparey

Swyddog Cynllunio / Rheolwr Cynllunio a'r Amgylchedd
Planning Officer / Planning & Environment Manager

Yr Arolygiaeth Gynllunio | The Planning Inspectorate
Adeilad y Goron | Crown Building,
Parc Cathays, | Cathays Park
Caerdydd, | Cardiff,

CF10 3NQ

<http://planninginspectorate.gov.wales/>

Twitter: [@PINSgov](#)

robert.sparey@planninginspectorate.gov.uk

0303 444 5958

Mae cwsmeriaid wrth galon popeth a wnawn – gweler ein [Siarter Cwsmeriaid](#)

Customers are at the heart of everything we do – view our [Customer Charter](#)

Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

From: dns.wales

Sent: 10 August 2020 15:26

To: Chris Jackson <Chris.Jackson@res-group.com>

Subject: Pre-Application Consultation

Hello Chris,

Further to our call earlier, it is [Article 10](#) of the Developments of National Significance (Procedure) (Wales) Order 2016 ([as amended](#)) that sets out the duty for specialist consultees to respond to your formal pre-application consultation.

Sorry I am not able to be of further assistance at this stage.

Best wishes,

Rob

Robert Sparey

Swyddog Cynllunio / Rheolwr Cynllunio a'r Amgylchedd
Planning Officer / Planning & Environment Manager

Yr Arolygiaeth Gynllunio | The Planning Inspectorate
Adeilad y Goron | Crown Building,
Parc Cathays, | Cathays Park
Caerdydd, | Cardiff,
CF10 3NQ

<http://planninginspectorate.gov.wales/>



Plas Carew, Uned 5/7 Cefn Coed
Parc Nantgarw, Caerdydd CF15 7QQ
Ffôn 0300 025 6000
E-bost cadw@llyw.cymru
cadw.gov.wales

Plas Carew, Uned 5/7 Cefn Coed
Parc Nantgarw, Caerdydd CF15 7QQ
Ffôn 0300 025 6000
E-bost cadw@llyw.wales
cadw.gov.wales

Chris Jackson
Senior Development Project Manager
RES

Chris.Jackson@res-group.com

Eich cyfeirnod
Your reference

02959- 002232

Ein cyfeirnod
Our reference

Dyddiad
Date

5 August 2020

Llinell uniongyrchol
Direct line

0300 0250566

E-bost
Email:

cadwplanning@gov.wales

Dear Chris,

PRE-PLANNING APPLICATION – UPPER OGMORE WIND FARM AND ENERGY STORAGE FACILITY

Thank you for your email of 25 June 2020 inviting our comments on the pre-planning application consultation for the above development.

Advice

We have significant concerns about the likely impact of the proposed development on the setting of (1) Carn y Hyrddod and Neighbouring Cairn (GM243), (2) Round Barrow on the Werfa (GM499), (3) Bwlch yr Avan Dyke (GM246) and the lack of any compensatory or off-setting measures. Our full assessment is provided below and we recommend that the applicant considers compensatory and offsetting measures to counteract these significant impacts in order to avoid us objecting to the planning application.

Our role

Our statutory role as a specialist consultee is to provide advice concerned with the likely impact that a proposal will have on (1) scheduled monuments, (2) registered historic parks and gardens, (3) registered historic landscapes where an Environmental Impact Assessment is required and (4) development likely to have an impact on the outstanding universal value of a World Heritage Site. We do not provide an assessment of the likely impact of the development on listed buildings or conservation areas as these are matters for the local planning authority. It is also a matter for the local planning authority to weight our assessment against all the other material considerations in determining whether to approve planning permission.

National Policy and Guidance

Applications for planning permission are considered in light of the Welsh Government's land use planning policy and guidance contained in Planning Policy

Mae Gwasanaeth Amgylchedd Hanesyddol Llywodraeth Cymru (Cadw) yn hyrwyddo gwaith cadwraeth ar gyfer amgylchedd hanesyddol Cymru a gwerthfawrogiad ohono.

The Welsh Government Historic Environment Service (Cadw) promotes the conservation and appreciation of Wales's historic environment.

Rydym yn croesawu gohebiaeth yn Gymraeg ac yn Saesneg.
We welcome correspondence in both English and Welsh.



ALDODDODDOR MENN FODD
EXETER OR EN PRIGLE



Wales (PPW), Technical Advice Notes and related guidance.

PPW ([planning-policy-wales-edition-10.pdf](#)) explains that it is important that the planning system looks to protect, conserve and enhance the significance of historic assets. This will include consideration of the setting of an historic asset which might extend beyond its curtilage. Any change that impacts on an historic asset or its setting should be managed in a sensitive and sustainable way.

The conservation of archaeological remains and their settings is a material consideration in determining a planning application, whether those remains are a scheduled monument or not. Where nationally important archaeological remains are likely to be affected by proposed development, there should be a presumption in favour of their physical protection in situ. It will only be in exceptional circumstances that planning permission will be granted if development would result in a direct adverse impact on a scheduled monument (or an archaeological site shown to be of national importance)

[Technical Advice Note 24: The Historic Environment](#) elaborates by explaining that when considering development proposals that affect scheduled monuments or other nationally important archaeological remains, there should be a presumption in favour of their physical preservation in situ, i.e. a presumption against proposals which would involve significant alteration or cause damage, or would have a significant adverse impact causing harm within the setting of the remains.

Assessment

The following designated historic assets are located inside 5km of the application area.

Scheduled Monuments

1. Mynydd Maendy Hillfort (GM099), 2. Clawdd Mawr, Mynydd Caerau (GM231), 3. Mynydd Caerau Round Cairns (GM232), 4. Crug yr Afan Round Cairn (GM233), 5. Bachgen Carreg Round Cairn (GM234), 6. Cairn Lwyd (GM238), 7. Carn y Hyrddod & Neighbouring Cairn (GM243), 8. Bwlch yr Avan Dyke (GM246), 9. Round Cairn 567m East of Bryn Defaid (GM249), 10. Croes y Bwlchgwyn Round Cairn (GM250), 11. Earthwork 360m NNE of Crug yr Avan (GM278), 12. Pebyll Ring Cairn (GM330), 13. Round Barrow on the Werfa (GM499), 14. Bwlch y Clawdd Dyke (GM500), 15. Incline Haulage Systems, Cefn Ynysfeio, Treherbert (GM508) and 16. Mynydd Ton Cairns (GM540).

Registered Historic Landscape

1.The Rhondda and 2.Margam Mountain

The proposed development comprises seven three-bladed, horizontal axis wind turbines. Four of the proposed turbines are up to a maximum tip height of 149.9m, and three will be up to a maximum tip height of 130m. The proposed development will also require new access tracks, including a new access onto the A4107, the provision of a substation compound and associated energy storage containers.

The consultation includes an environmental statement prepared by RES. The information that forms *Chapter 7 Cultural Heritage* is based on an archaeological and heritage desk-based assessment and an *Assessment of the Significance of the Impact of Development on Historic Landscapes* (ASIDOHL) both prepared by the *Heritage Collective* (and both presented in full as annexes to the environmental statement).

The ASIDOHL report concludes that the proposed development will have a slight but not significant impact on both registered historic landscapes and we agree with this conclusion.

The archaeological and heritage desk-based assessment considers the impact of the proposed development on all of the scheduled monuments listed above and has determined that there will be adverse impact on seven of them. In the case of scheduled monuments GM231 Clawdd Mawr, Mynydd Caerau and GM278 Earthwork 360m NNE of Crug yr Avan it has concluded that this impact will be “very slight”. The impact on scheduled monuments GM233 Crug yr Afan Round Cairn, GM246 Bwlch yr Avan Dyke and GM232 Mynydd Caerau Round Cairns is said to be “slight” and the impact on GM243 Carn y Hyrddod & Neighbouring Cairn and GM499 Round Barrow on the Werfa “moderate”. In the assessor’s opinion the “moderate” impact on the latter two scheduled monuments will constitute a significant (although “*at the lower end of the significant scale*”) effect. The effect on the other scheduled monuments is not said to be significant. We agree with the results of this assessment except in relation to the scale of the impact on scheduled monument GM246 Bwlch yr Avan Dyke.

Bwlch yr Avan Dyke is an earthwork probably constructed in the early medieval period. It consists of two banks, with a ditch in between, crossing the ridge of Bwlch yr Avan east to west. Whilst it may have had a defensive purpose, it is more likely to have been a boundary marker. As such, whilst views from the monument may have been significant, views to it would possibly have been more significant. The significant views to the monument would be from the north and from the south. In views from the south the development would not be visible, except from very specific points on Braich yr Hydd where the columns of the turbines would intervene, but this would be a very localised issue. However, in views from the north, including those from the A4107, the scheduled monument will be seen with turbines immediately behind it, with the nearest Turbine 4 being some 300m away and Turbine 5, 570m away. The substation compound with its two masts (one 20m high and one 15m high) will also be clearly visible in this view only some 55m from the monument. Therefore the proposed development will bring large modern structures into one of the significant views of the scheduled monument. This will have an adverse impact on the way that the scheduled monument is experienced, understood and appreciated and in our opinion this will constitute, at least, a moderate impact on the setting and therefore (using the same methodology as used by the Heritage Collective), a significant effect on scheduled monument GM246.

The proposed development will therefore have a significant adverse effect on three scheduled monuments and as the Heritage Collective have stated, there are no

appropriate mitigation measures that can be instigated to reduce this impact if the current development proposals are to be achieved.

The significant impact of the development on the setting of the three scheduled monuments would be grounds for Cadw to object to the application. However, the applicant does not appear to have considered any compensatory or off-setting measures that could benefit the historic environment, especially in respect of the scheduled monuments that will be affected by the proposed development. We note that all three of the scheduled monuments that the development will have a significant effect on, are located inside the application area and therefore measures that will see them maintained and even enhanced could be instigated as part of the proposed development. Similarly, the provision of appropriate interpretation of their significance would provide additional public benefit. In conclusion, the inclusion of compensatory measures such as those outlined above could be of sufficient benefit to the historic environment for Cadw not to object to the current planning application and we recommend that the applicant considers these options.

Yours sincerely,

Jenna Arnold
Casework Team Leader



Jenna Arnold
Casework Team Leader
Historic Environment Branch
Cadw
Plas Carew
5/7 Cefn Coed
Parc Nantgarw
Cardiff
CF15 7QQ

Our Ref: 02959-1563204

22 September 2020

Dear Ms Arnold,

Re: Upper Ogmore Wind Farm and Energy Storage Facility: Pre Application Consultation

Thank you for your statutory pre-application response dated 5 August 2020, which sets out your concerns with the proposal published under Article 9(3). Your response included a detailed assessment of the proposal and your concerns were very helpfully summarised in the advice at the beginning of your letter:

'We have significant concerns about the likely impact of the proposed development on the setting of (1) Carn y Hyrddod and Neighbouring Cairn (GM243), (2) Round Barrow on the Werfa (GM499), (3) Bwlch yr Avan Dyke (GM246) and the lack of any compensatory or off-setting measures. Our full assessment is provided below and we recommend that the applicant considers compensatory and offsetting measures to counteract these significant impacts in order to avoid us objecting to the planning application.'

Our archaeology consultant, James Meek of Heritage Collective, has since held discussions and exchanged correspondence with your colleague, Neil Maylan, regarding the provision of compensatory or off-setting measures that could benefit the historic environment. One such measure considered the potential reinstatement of the break in the Bwlch Yr Avan Dyke, GM246, through which an existing track runs. Unfortunately, this reinstatement would not be possible because the track is leased to several other parties and provides essential access to two telecommunications masts. These masts support vital communications for several networks, including that used by the police. I understand that Mr Maylan accepted that this particular reinstatement would therefore not be possible. However, several other opportunities for compensatory measures were considered to be suitable off-setting measures, as follows.

It was agreed that a commitment to produce a Monument Management Plan (the Plan) would be acceptable and that this could be a condition of the planning consent. Below is an outline of the Plan, which will be fully developed and submitted for approval prior to construction commencing on site. Preparation of the Plan would be based upon the guidelines included in *Managing Scheduled Monuments in Wales, Cadw 2018*, and

Conservation Principles: for the sustainable management of the historic environment in Wales, Cadw 2011.

It is proposed that the Plan would include the following outline information:

Improving Access

As part of the wind farm proposal, new tracks will be constructed to provide access to the turbine locations and existing tracks provide further access in open areas beyond the turbines. One of these existing tracks runs very close to the western side of the Werfa Round Barrow, GM499 and Carn y Hyrddod & Neighbouring Cairn, GM243, lies some 420m to the east of the Werfa Round Barrow. The new tracks will join the existing access track, which could be maintained throughout the life of the wind farm and to help access for members of the public. The Bwlch Yr Avan Dyke, GM246, lies to the north of the proposed main access track to the wind farm and construction of this track could facilitate public access to the early medieval dyke.

Interpretation/Information Panels

Improving access to the monuments is a useful benefit which can also be enhanced by providing interpretation/information panels at the three scheduled monuments or next to the tracks which pass them. For example, the existing access track passing close to the west of the Werfa Round Barrow might be a good location to provide interpretation and information on both the Werfa Round Barrow, GM499 and the Carn Y Hyddrod and Neighbouring Cairn, GM243. Information could also be sited closer to Carn Y Hyddrod. It is proposed that panels would be a mix of bi-lingual text and images, the content of which would be agreed with CADW.

Management of the Monuments During Construction

All contractors involved in the construction phase of the development will be made aware of the locations of the scheduled monuments and their roles and responsibilities in relation to them. Temporary fences could be erected around the monuments during construction works to ensure no accidental damage or disturbance occurs. No compounds, materials storage area, vehicle parking, spoil heaps, etc would be located within or in close proximity to the scheduled monuments.

Management of the Monuments During Operation

The statutory protection of the monuments will be made clear through the interpretation/information panels. To protect the monuments throughout the life of the wind farm, the area will continue to be used for seasonal sheep grazing, which will keep scrub vegetation at bay from the monuments. If scrub does encroach into these areas, methods of careful removal would be considered in consultation with CADW. If damage occurs to the monuments, whether through overgrazing, unauthorised access or disturbance, then the developer would undertake to carry out repairs to the monuments, again, in consultation with CADW.

I trust that this letter adequately responds to your advice and that, with the inclusion of a suitable planning condition requiring a Monument Management Plan, you would find the application acceptable. But if you would like any further details, please do not hesitate to contact me.

Yours sincerely,



Chris Jackson
Senior Development Project Manager
E Chris.Jackson@res-group.com
T +44 2920 021 074

From: Jenna.Arnold2@gov.wales
Sent: 02 October 2020 12:07
To: Chris Jackson
Subject: RE: Upper Ogmores Wind Farm and Energy Storage Facility

Dear Chris

Thank you for the letter in your previous email. I would like to confirm that Cadw agree that this is appropriate. Assuming that the provision of a monument management plan is included in the planning application we would be able to conclude in our response that this was appropriate mitigation for the adverse impact on the setting of the monument and therefore Cadw would not object to the proposed development.

Kind regards
Jenna

From: Chris Jackson <Chris.Jackson@res-group.com>
Sent: 22 September 2020 10:05
To: Arnold, Jenna (ESNR-Tourism, Heritage & Sport-Cadw) <Jenna.Arnold2@gov.wales>
Cc: Maylan, Neil (ESNR-Tourism, Heritage & Sport-Cadw) <Neil.Maylan002@gov.wales>; James Meek <james@hcukgroup.co.uk>
Subject: RE: Upper Ogmores Wind Farm and Energy Storage Facility

Dear Jenna,

Please see the attached letter.

Kind regards,

Chris Jackson
Senior Development Project Manager

D +44 2920 021 074 | M +44 7500 058 463
chris.jackson@res-group.com | www.res-group.com



[Committed to a future where everyone has access to affordable zero carbon energy](#)

Renewable Energy Systems Limited, registered in England and Wales with Company Number 1589961
Registered Office: Beaufort Court, Egg Farm Lane, Kings Langley, Hertfordshire WD4 8LR

From: Jenna.Arnold2@gov.wales <Jenna.Arnold2@gov.wales>
Sent: 05 August 2020 13:17
To: Chris Jackson <Chris.Jackson@res-group.com>
Cc: Louise.Mees@gov.wales
Subject: RE: Upper Ogmores Wind Farm and Energy Storage Facility

Dear Chris

Please find attached Cadw's response to pre-application for the above.

Ein cyf/Our ref: CAS-117703-Y1M5
Eich cyf/Your ref: 02959-002230

Maes Newydd
Llandarcy
Neath Port Talbot
SA10 6JQ

Ebost/Email:
swplanning@cyfoethnaturiolcymru.gov.uk
Ffôn/Phone: 0300 065 3264

Mr Chris Jackson
Senior Development Project Manager
Renewable Energy Systems Limited
Cedar House
Greenwood Close
Cardiff Gate Business Park
Cardiff
CF23 8RD

Dyddiad/Date: 5 August 2020

Annwyl / Dear Mr Jackson,

**THE DEVELOPMENT OF NATIONAL SIGNIFICANCE (PROCEDURE) (WALES)
ORDER 2016 - FORMAL REQUEST FOR A PRE-APPLICATION CONSULTATION
RESPONSE UNDER ARTICLE 9(3)**

**BWRIAD / PROPOSAL: UPPER OGMORE WIND FARM AND ENERGY
STORAGE FACILITY AND ASSOCIATED
INFRASTRUCTURE**

**LLEOLIAD / LOCATION: UPPER OGMORE BETWEEN BLAENGWYNFI,
NANTYMOEL AND BLAENGARW IN BRIDGEND**

Thank you for consulting Cyfoeth Naturiol Cymru/Natural Resources Wales (NRW) on the above notice. We received a copy of your proposed application on 24 June 2020.

Based on the information provided, we have concerns with the proposal as submitted. To overcome these concerns, we would recommend that the following information is included prior to the formal submission, and conditions secured to address these concerns.

Requirement 1: The inclusion of a Water Vole Conservation Strategy.

Requirement 2: The inclusion of updated bird surveys.

Condition: No development including site clearance, shall commence until a site wide Construction Environmental Management Plan (CEMP) has been submitted to and approved in writing by the competent Authority.

We have reviewed the (undated) Environmental Statement in support of the above application:

- Upper Ogmore Wind Farm and Energy Storage Facility (Ref: 02959-002108, Rev: 1) by RES.

Protected Species

1. The inclusion of a Water Vole Conservation Strategy.

We note that ecological surveys of the wind farm site have been undertaken and have found both bats and water voles present on the site.

Water voles are fully protected under the Wildlife and Countryside Act 1981 (as amended).

We note that evidence of water voles was recorded in the east of the application site and that development proposals will result in some loss of wet habitats within the site which may be used by water vole (4.3 % of marshy grassland / mosaic and >1 % of wet modified bog mapped within the site).

We advise that further information is submitted to support the application in the form of a Water Vole Conservation Strategy, which sets out the likely impacts of the proposals on water voles, the measures that will be implemented to address the anticipated impacts including the long-term habitat loss, any displacement that may be required, and also proposals for long-term habitat and species monitoring required. Please note, that if any mitigation works are required on land beyond the red line planning boundary, the application should be able to demonstrate that the applicant has the legal ability to manage the land for the species conservation purposes required.

2. The inclusion of updated bird surveys.

We note as outlined in Chapter 6. Ecology and Biodiversity and in Technical Appendix 6.3: Ecology and Ornithology Survey Reports, that ornithological surveys have been submitted.

However, we note that the submitted surveys were undertaken between 2014 and 2016. Although we note that the level of survey is appropriate to the scheme and the conclusions are robust, the submitted surveys are now over two years old. We would therefore recommend updated surveys to be undertaken prior to formal submission.

Bats

We note that surveys for bats were undertaken in 2015 and 2016, with some survey work updated in 2019 (static detectors at turbine locations, and visual inspection of the Werfa mast compound).

In view of this information we have no further comment to make. We note that in line with good practice guidance, that update surveys may be required depending on when construction of the wind farm is proposed.

Great Crested Newts (GCN)

We note that no GCN were found in the ponds surveyed and, as such, the species is unlikely to be affected by the proposals. We have no further comment to make with regards to this species.

Protection of Controlled Waters

We note the site has sensitive hydrological receptors including unnamed tributaries leading towards the Afon Garw, Afan Afan and Ogwr Fawr, and peat accumulations present within the locality of the site. In addition, the development site is also with close proximity of the Mynydd Ty Isaf SSSI. We note that the protected site has a slightly lower elevation. With the movement of large vehicles through the site entrance, there is the potential for dust, mud and silty run-off to move onto the SSSI.

To prevent this from happening, we would require that pollution prevention measures are put in place. We understand as outlined in section 3.103 – Construction Environmental Management Plan in ‘Chapter 3: Proposed Development’ that a Construction Environmental Management Plan (CEMP) will be prepared and implemented through the Construction and Decommissioning Management (CDMS). We advise this is submitted to ensure any likely significant effects are appropriately managed.

We advise the CEMP should include but is not limited to:

- Construction methods: details of materials, how waste generated will be managed.
- General Site Management: details of the construction programme including timetable, details of site clearance; details of site construction drainage, containments areas, appropriately sized buffer zones between storage areas (of spoil, oils, fuels, concrete mixing and washing areas) and any watercourse or surface drain.

- Biodiversity Management: details of tree and hedgerow protection; invasive species management; species and habitats protection, avoidance and mitigation measures.
- CEMP Masterplan: details of the extent and phasing of development; location of landscape and environmental resources; design proposals and objectives for integration and mitigation measures.
- Control of Nuisances: details of restrictions to be applied during construction including timing, duration and frequency of works; details of measures to minimise noise and vibration from piling activities, for example acoustic barriers; details of dust control measures; measures to control light spill and the conservation of dark skies.
- Resource Management: details of fuel and chemical storage and containment; details of waste generation and its management; details of water consumption, wastewater and energy use
- Traffic Management: details of site deliveries, plant on site, wheel wash facilities
- Pollution Prevention: demonstrate how relevant Guidelines for Pollution Prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan.

The CEMP shall be implemented as approved during the site preparation and construction phases of the development.

Further Advice on the Application

In addition to the above, we have the following comments to make on the application as submitted.

Peat

As outlined in Planning Policy Wales (PPW) Edition 10, peat bogs are of significant nature conservation interest. We note that consideration has been given to the impacts of the proposals on peat locally. We understand that no turbines will be located in the vicinity of deep peat (depth greater than 0.5m) and that the access track layout has been developed to avoid areas of deep peat. In areas where unavoidable, consideration is given to installing sections of floating track to be placed across the areas of peat (Section 3.44 Access Tracks of 'Chapter 3: Proposed Development').

However, we note a borrow pit is likely to be installed in quite close proximity to the areas of peat on site. This will need to be assessed as part of the hydrology and drainage assessment as it may lead to impacts on the adjacent areas as it may drain water from adjacent peat and lower the water table.

In addition, we seek clarity from the following statement “additional peat required to address local deficits for track verges should be taken from the closest possible source of peat excavation.” (Section 8.84 Chapter 8 hydrology and hydrogeology). It is unclear if peat will be used for track verges. We advise that peat should not be used for track verges as they are likely to be dry. We advise this is clarified in your formal submission.

Foul Drainage

We note from the application that a septic tank is proposed. A permit (or registration as exempt from the requirement for a permit) under the Environmental Permitting (England and Wales) Regulation 2010, is required from Natural Resources Wales. Further guidance on this matter is available from our website:

<http://naturalresourceswales.gov.uk/apply-buy-report/apply-buy-grid/water/discharge/?lang=en>

Water Abstraction

We understand that it is proposed to abstract water from the borrow pits, however the extent of borrow pit extraction is currently unknown. We advise if the abstraction is less than 20 cubic metres per day OR between 20 and 100 cubic metres per day for less than 6 consecutive months, you do not need a permit. If it is between 20 and 100 cubic metres per day and for more than 6 consecutive months OR if it is more than 100 cubic metres per day, you will need to apply for an abstraction licence. If you use the water on site (e.g. for wheel washing etc) and are abstracting more than 20 cubic metres, you will need to apply for an abstraction licence. Further guidance on this matter is available on our website:

<https://naturalresources.wales/permits-and-permissions/water-abstraction-and-impoundment/find-out-if-you-need-a-water-abstraction-or-impoundment-licence/?lang=en>)

Other Matters

Please note, if further information is prepared to support an application, it may be necessary for us to change our advice in line with the new information.

Our comments above only relate specifically to matters included on our checklist, *Development Planning Advisory Service: Consultation Topics* (September 2018), which is published on our [website](#). We have not considered potential effects on other matters and do not rule out the potential for the proposed development to affect other interests, including environmental interests of local importance.

In addition to planning permission, you are advised to ensure all other permits/consents/licences relevant to the development are secured. Please refer to our [website](#) for further details.

Further advice on the above matters could be provided prior to your planning application being submitted, however there would be a charge for this service. Additional details are available on our [website](#).

Yn ddifffuant / Yours sincerely

Lisa Jones

Gynghorydd - Cynllunio Datblygu / Advisor - Development Planning

E-bost/E-mail: swplanning@cyfoethnaturiolcymru.gov.uk



Lisa Jones
Natural Resources Wales
Maes Newydd
Llandarcy
Neath Port Talbot
SA10 6JQ

Our Ref: 02959-1539110
Your Ref: CAS-117703-Y1M5

18 September 2020

Dear Ms Jones,

Re: Upper Ogmere Wind Farm and Energy Storage Facility: Pre Application Consultation

Thank you for your statutory pre-application response dated 5 August 2020, which sets out your concerns with the proposal published under Article 9(3). I trust that the following response adequately addresses the points in your e-mail, but if you would like any further details, please do not hesitate to contact me. For ease of reference, I have adopted the same section headings used in your response.

Recommendations

To overcome your concerns, you recommended that the following information be included in the formal application:

1. The inclusion of a Water Vole Conservation Strategy; and
2. The inclusion of updated bird surveys.

We intend to include a Water Vole Conservation Strategy in an Ecological Management Plan (EMP) and Construction Environmental Management Plan (CEMP), to be submitted to and approved by the competent Authority prior to site preparation and commencement of construction. The EMP and CEMP will set out the methods to be implemented to avoid killing or injuring water vole, as well as protection and management of habitats that may be used by water vole. Environmental Statement (ES) Chapter 6: Ecology and Biodiversity has been revised to include reference to this Water Vole Conservation Strategy.

The revised ES Chapter 6 has also been updated with the records and assessment of the updated bird surveys, which were completed during the breeding season of this year.

The final version of ES Chapter 6 will be submitted with the formal application to the Planning Inspectorate, but for your ease of reference when you are consulted by the Inspector, I enclose a copy of that revised chapter with the amendments shown as tracked changes.

Condition

I agree with your proposal that a Construction Environmental Management Plan (CEMP) should be submitted to and approved in writing by the competent Authority and implemented during the site preparation and construction phases of the development.

Peat

Referring to your comment about the proximity of areas of peat to a proposed borrow pit, I confirm that the extent of the proposed borrow pit shown in the ES is the worst case, maximum area. The area shown would be the subject of further site investigation to establish the suitability of the stone for use on site and, in practice, the actual area of the borrow pit is likely to be much smaller than shown in the ES. Prior to excavation of a borrow pit, a borrow pit management plan will be included in the CEMP for approval by the competent Authority and will include an assessment of and proposals for addressing hydrology. In the event that this borrow pit management plan cannot be agreed, then stone could be imported to the site. The ES Chapter 9: Traffic, Transport and Access has assumed a worst case traffic scenario, ie that no stone is sourced on site, but to reduce traffic on the public highways we would prefer to use site won stone if possible.

Regarding the use of peat for track verges, I confirm that peat will not be used for track verges and this bullet point will be removed from the final version of ES Chapter 8: Hydrology and Hydrogeology, paragraph 8.84. Thank you for bringing this to my attention.

Other Matters

I am grateful to you for bringing my attention to other environmental authorisations which might be required to enable the development, such as a foul water permit and water abstraction licence.

I trust that this letter adequately responds to the concerns raised in your 5 August 2020 consultation response and that the application now fulfils the requirements of those matters which are within NRW's remit. I note from your response that your comments only relate to matters included in your checklist and that you do not rule out the potential for the proposed development to affect other interests of local importance. I trust that, as far as NRW is concerned, if there are any other interests affected then these can be addressed through the discharge of planning conditions, rather than matters which might affect the determination of this application.

In the meantime, if you have any questions about the project, please do not hesitate to contact me.

Yours sincerely,



Chris Jackson
Senior Development Project Manager
E Chris.Jackson@res-group.com
T +44 2920 021 074
Enc

6. Ecology and Biodiversity

Introduction

- 6.1 This chapter considers the likely significant effects on ecology associated with the construction, operation and decommissioning of the proposed Development. The specific objectives of the chapter are to:
- describe the ecological baseline;
 - describe the assessment methodology and significance criteria used in completing the impact assessment;
 - describe the potential effects, including direct, indirect and cumulative effects;
 - describe the mitigation measures proposed to address likely significant effects;
 - assess the residual effects remaining following the implementation of mitigation.
- 6.2 The assessment has been carried out by Senior Ecologist Gareth Lang ACIEEM, of BSG Ecology.
- 6.3 The chapter is supported by:
- Appendix 6.1 - Legislation and Planning Policy
 - Appendix 6.2 - Consultation Meeting Minutes
 - Appendix 6.3 - Baseline Ecology and Ornithology Reports
 - Appendix 6.4 - Collision Risk Analysis
- 6.4 Figures 6.1 - 6.11 are referenced in the text where relevant.

Legislation & Planning Policy

- 6.5 There are a number of national, regional and local policies and guidance documents that relate to nature conservation and ecology within the planning process that are relevant to the Development. Reference to these provides an indication of the likely requirements and expectations of statutory authorities and others in relation to planning applications and nature conservation and ecology within a given area. There are also legislative requirements of new development. The relevant national, regional and local planning policies are listed below (further detail of the below policies are provided in Appendix 6.1).
- Planning Policy Wales (Edition 10, December 2018).
 - Technical Advice Note (TAN) 5 Nature Conservation and Planning (2009).
 - Bridgend County Borough Local Biodiversity Action Plan (2014)

- Bridgend Local Development Plan (2006-2021), including:
- Strategic Policy SP4 Conservation and Enhancement of the Natural Environment
- Policy ENV4 Local/Regional Nature Conservation Sites
- Policy ENV5 Green Infrastructure
- Policy ENV6 Nature Conservation
- The Environment (Wales) Act (2016).
- The Conservation of Habitats and Species Regulations 2017.
- The Wildlife and Countryside Act (1981) as amended.

6.6 This chapter has been based principally on relevant parts of the 2018 Guidelines for Ecological Impact Assessment in the United Kingdom developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, September 2018).

Site Description

- 6.7 The site is an area of upland moorland located at the head of the Garw and Ogmere Valleys. The majority of the site is a mosaic of acid and marshy grassland, with the former occurring in the better drained areas.
- 6.8 Small areas of wet modified bog and marshy grassland are present in the north-eastern part of the site, and acid dry dwarf shrub heath occurs locally where grazing pressure is reduced. Enclosed semi-improved and improved pasture fields are present in the eastern part of the site.
- 6.9 Several small flushes are present beyond the eastern and western sides of the developable area (defined by <15% slope as described in Chapter 2; the extent of the developable area is shown in Figures 6.1-6.11) where the ground slopes steeply down and groundwater emerges. These areas are frequently punctuated by rock escarpments. Below the natural exposures there are large scree slopes present amongst a mosaic of acid dry dwarf shrub heath and unimproved acid grassland.
- 6.10 A transmission mast and associated buildings are present in the central part of the site within a fenced compound. The area is accessed via a concreted road leading from the A4107 to the north.
- 6.11 A larch *Larix decidua* dominated plantation is present immediately beyond the site boundary to the east, much of which has been felled. Plantations are also present to the north and west of the site boundary.

- 6.12 The proposed Development includes seven turbines and associated infrastructure (see Chapter 1). The maximum height of the turbines is 149.9 m. These will all be positioned on the flatter ground within the developable area.
- 6.13 The proposed access route will follow the existing NRW Forestry track between the southern extent of the operational Pen-y-Cymoedd Wind Farm to the Bwlch forestry access point at the A4107 (a distance of approximately 3.6 km). Localised widening of the forestry track will be required to allow passage of abnormal indivisible loads. The site and forestry track are presented in Figure 1.2.

Scope of Assessment

- 6.14 The methods for ecological survey of the site, results and evaluation of receptors are provided in this assessment. The assessment considers potential effects on habitats and protected species at each of the construction, operational and decommissioning phases of the proposed Development.
- 6.15 Survey work at the site to inform this assessment has included:
- An extended Phase 1 Habitat Survey of the site and proposed access route
 - A Phase 2 botanical survey of an area of higher quality habitat
 - Vantage point bird survey (two years)
 - Targeted honey buzzard survey
 - Moorland breeding bird survey
 - Wintering bird walkover survey
 - Targeted breeding merlin survey
 - Bat activity survey (seasonal walked transect and automated detector)
 - Bat roost survey
 - Great crested newt survey
 - Water vole survey

Consultation

- 6.16 BSG Ecology produced an Ecological Scoping Report which was issued to Natural Resources Wales on 7th December 2015 as part of pre-application consultation. The Extended Phase 1 Survey Report and Baseline Breeding Bird Report 2014 were appended to the scoping document. A response was received (ref: CAS-13525-N6P1) from David Watkins¹ of NRW on 16 February 2016. This is contained in Appendix 6.2.
- 6.17 A Discretionary Planning Advice (DPA) meeting was subsequently set up with Natural Resources Wales on the 13th December 2017 to discuss the scope of

¹ Now retired.

ornithological survey work, as well as wider ecological and peat considerations at the site. All baseline ornithology and ecology reports were provided to Natural Resources Wales prior to the DPA meeting request. NRW raised no concerns during the consultation meeting regarding the scope of ornithological survey work. The minutes of the meeting are provided in Appendix 6.2.

Assessment Methodology

Baseline Characterisation

Study Area

6.18 The extent of field survey was based on relevant industry standard guidance, as indicated in Table 6.1 below.

Table 6.1. Study area for each survey completed to inform this assessment.

Survey type	Guidance followed	Study Area
Phase 1 habitat survey	JNCC (2010)	Limited to the developable area within the site boundary and a perimeter area of approximately 200 m from the existing NRW Forestry track. Any potential groundwater dependant terrestrial ecosystems immediately beyond these limits were also considered.
Phase 2 botanical survey	N/A	Informed by an area of apparent higher quality habitat as identified in the Phase 1 survey.
Vantage point bird survey	Scottish Natural Heritage (SNH) (2014) ² .	2 km viewing arcs covering the site and a 500 m perimeter of turbine locations.
Targeted honey buzzard survey	Hardey <i>et al</i> (2013); SNH (2014)	2 km viewing arcs covering areas of suitable habitat adjacent to the site.
Moorland breeding bird survey	SNH (2014)	Suitable habitat within 620 m of turbine locations, where terrain was accessible and potentially suitable for breeding waders.
Wintering bird walkover survey	SNH (2014)	Suitable habitat within 500 m of turbine locations, where terrain allowed ³ .
Targeted breeding merlin survey	Hardey <i>et al</i> (2013)	Suitable breeding habitat within 500 m of the site.
Bat activity survey	Hundt (2012)	Sample of turbine locations within the site.
Bat roost survey	Hundt (2012) & Collins, J. (ed.) (2016)	Suitable roost features within 200 m of the developable area.
Great crested newt survey	English Nature (2001)	Ponds within 250 m of the site and NRW Forestry track.

² This has since been updated (March 2017). However, the methods used remain consistent with the latest guidance.

³ Steeply sloping land beyond the developable area was not accessed on foot.

Survey type	Guidance followed	Study Area
Water vole survey	Dean <i>et al</i> (2016)	All watercourses within the developable area and up to 100 m of it where terrain allowed. Up to 100 m up and down stream of existing culverts along the NRW Forestry track.

Baseline data collection

- 6.19 All baseline data collection was carried out by BSG Ecology between April 2014 and October 2019. Full methods and results of the baseline data collection are presented in Appendix 6.3.

Desk Study

- 6.20 The presence of statutory designated sites of nature conservation interest in relation to the site was established using the Magic website (<http://magic.defra.gov.uk/>). This was initially accessed ahead of work completed in 2014, with further checks to ensure information remained consistent⁴.
- 6.21 The South East Wales Biodiversity Records Centre (SEWBRc) was asked to provide records of non-statutory designated sites and records of protected/notable species and habitats within 2 km of the site boundary. For low and medium-risk species of bats records were requested within 5 km of the site, and statutory designated sites (designated for bats) and high-risk bats within 10 km. The data request was first made on 06 January 2015 and updated on 21 March 2016. Detailed information from SEWBRc can be provided on request.
- 6.22 The 2010 Llynfi Afan Renewable Energy Park (REP) Environmental Statement (RPS 2010) was interrogated for ornithological information relevant to the site and surrounding area. The Llynfi Afan REP Pre-Construction Ornithological Survey Report 2015 (Natural Power 2016) was also reviewed⁵.

Phase 1 habitat surveys

- 6.23 An extended Phase 1 habitat survey was completed on 21 May 2018⁶ on finalisation of the scheme design. This followed an initial extended Phase 1 habitat survey covering a wider working site boundary (since superseded) on 24 July 2014 and 02-04 September 2014. A survey of the NRW Forestry track, between the track junction with the A4107 and the southern extent of the Pen-y-Cymoedd wind farm site was completed on ~~07-04 June 2020~~^{October 2016}, covering an area of up to 200 m from the track centre (where access through dense plantation allowed). This

⁴ Completed regularly in 2016, 2017 and 2018

⁵ In addition to publicly available baseline survey data. The report was provided by Gamesa.

⁶ The survey was completed by an experienced botanist at an optimal time of year as defined in JNCC (2010).

updated the initial survey on 07 October 2016. The surveys involved mapping habitats using industry standard methods (JNCC, 2010)⁷. They were extended to include searches for signs of protected or rare species, or the presence of suitable habitats for such species following IEA (1995).

Phase 2 Botanical surveys

- 6.24 The presence of some areas of higher quality habitat, including degraded blanket bog (on deep peat), in the north-eastern part of the site were identified during the Phase 1 survey in 2014.
- 6.25 An NVC survey was carried out in this area on 08 and 09 July 2016. Areas with consistent botanical characteristics (stands of homogenous vegetation) were initially identified. Five quadrats⁸ from each area of homogenous vegetation were then taken where possible. However, it wasn't possible to achieve five quadrats for all vegetation communities due to the limited extent of some stands. The classification of habitats was made with reference to vegetative communities described in Rodwell (1991b, 1992)^{9 10}.

Ornithological surveys

Vantage point surveys

- 6.26 SNH guidance is that vantage-points (VPs) should be chosen parsimoniously in order to achieve maximum visibility from the minimum number of survey locations. An arc of up to 180 degrees extending to 2km from the observer can be effectively surveyed from each VP (subject to topography and any other constraints to effective survey).
- 6.27 SNH guidance further states that a minimum of 36 hours of survey effort should be completed at each VP during both the breeding season and winter periods, and that the timing of VP watches should be varied to ensure that all times of day are appropriately covered.
- 6.28 Two VP locations were chosen during a reconnaissance visit in April 2014. Both were located in the northern part of the Site allowing access to both locations along existing tracks linked to the A4107 (therefore not requiring the surveyor to walk through the VP viewsheds). The 2 km viewing arcs from the selected VP locations provided visual coverage of all turbine locations within the Wind Farm

⁷ JNCC (2010) Handbook for Phase 1 Habitat Survey. A Technique for Environmental Audit. JNCC

⁸ Five is the minimum recommended number of quadrats to allow a robust calculation of inter-stand frequency classes which is an important step in determining the NVC community present.

⁹ Rodwell, J S (ed.) (1991b) British Plant Communities, Vol. 2: mires and heaths. Cambridge University Press, Cambridge

¹⁰ Rodwell, J S (ed.) (1992) British Plant Communities, Vol. 3: grasslands and montane communities. Cambridge University Press, Cambridge

and approximately 88% of a 500 m perimeter area around them¹¹. All turbine locations within the current scheme design were observed throughout the 2014, ~~and 2015-2016~~ and 2020 surveys.

- 6.29 Following a change to the project design in 2015, the VP locations were adjusted ahead of the second year of survey to provide maximum coverage of the 500 m perimeter area around a revised layout. The VP locations used in the 2015/2016 and 2020 surveys are shown on Figure 6.1.
- 6.30 Vantage point survey work completed between April 2014 and August 2014 inclusive were updated in 2020 to ensure that all survey data used to inform this assessment were collected within the last five years (following recommendations in SNH 2017). The survey work completed between October 2014 and ~~March 2016~~ August 2020 inclusive resulted in a total of ~~144~~ 180 hours of observation from each of the two VP locations.

Honey buzzard surveys

- 6.31 There are records of honey buzzard *Pernis apivorus* nest sites within the Neath Valley (approximately 10 km north-west of the site); however, the specific locations of these are confidential and not described in published literature. Honey buzzard survey was recommended by consultees to inform the adjacent Llynfi Afan (REP) application.
- 6.32 There is no suitable foraging or breeding habitat for honey buzzard on the site. In addition, the nearest breeding locations are within the Neath Valley (approximately 9 km north-west of the site). However, there are areas of plantation that have some potential to support honey buzzard adjacent to the site boundary. These are: woodlands north and west of Blaengarw, and an area of plantation north of Nant-y-moel.
- 6.33 The plantation in the Nant-y-Moel valley, adjacent to the east of the site (approximately 250 m from the nearest turbine), has been largely clear-felled, but does retain some mature stands adjacent to the A4061 and surrounding Nant-y-Moel village. These areas may be too disturbed and limited in size to support breeding honey buzzard (which prefer 'extensive' woodland; Hardey *et al* 2013). Although suboptimal in terms of extent, the habitat structure remains suitable for

¹¹ The character of the site (occupying a steep-sided ridge between two valleys) restricted opportunities for selecting viable VP locations outside of the development boundary: any VP location fit for purpose would have been located on this ridge. VP locations were chosen following consideration of visual coverage and accessibility. The survey results do not suggest observer influence on bird behaviour. The level of target species activity observed in close proximity to the VP locations was no lower than that observed at distance and no alteration of target species flight trajectory or height was recorded that could be attributed to surveyor presence. The adjusted VP locations following the reduction of the scheme to eight turbines in early 2015 provided greater surveyor screening to reduce the risk of influencing bird behaviour. Again, no evidence to suggest surveyor influence was recorded during the 2015-2016 surveys

this species. The woodland to the west of the site (approximately 650 m from the nearest turbine), north and west of Blaengarw, is extensive and includes mature stands, although areas nearest the site are relatively young and have not been subject to thinning. The land between the site and this woodland is occupied by open moorland habitat on steep slopes with areas of exposed rock and scree.

- 6.34 An additional twelve hours of survey were completed from both of two additional VP locations during the period when breeding honey buzzards are likely to be displaying (late May / early June) and foraging beyond woodland cover (in late July / early August). The additional VP locations were chosen to provide visual coverage of the woodlands beyond the site, and are indicated on Figure 6.2. The locations of the additional VPs also allowed for observation of scree slopes, steep-sided streams and felled plantation, which are potentially suitable breeding habitat for merlin *Falco columbarius*. The survey for merlin was a precursor to more detailed work that was carried out in 2015.

~~Moorland breeding bird surveys~~

- 6.35 ~~Moorland bird survey using a walkover technique based on the Brown & Shepherd (1993) method, as recommended in SNH (2014) guidance¹² was undertaken during the 2014 breeding season. The survey area was defined by a 620 m perimeter area around an indicative turbine layout, where access allowed. Three visits were completed between April and June inclusive. The SNH (2014, and subsequent 2016) guidance recommends that four visits (three visits were suggested under earlier iterations of the guidance) should be completed over the breeding season, based on recommendations set out in Calladine *et al.* (2009). A fourth survey was not considered necessary, as per SNH (2014), as those species that are likely to be under-recorded by three visits (e.g. red grouse *Lagopus lagopus scotica*) were not present on the site.~~
- 6.36 ~~This survey was not repeated for a second year due to the absence of breeding waders recorded in 2014. VP survey work and other targeted raptor work did not indicate the presence of breeding waders in 2015.~~

~~Wintering bird walkover surveys~~

- 6.37 ~~Monthly wintering bird walkover surveys were completed between October 2014 and March 2015 inclusive, covering the site and a 500 m perimeter area. These were not repeated in the 2015/2016 winter period due to the low level of wintering bird interest recorded. In addition, the VPs provided a good visual coverage of the site between April 2014 and March 2016 inclusive to supplement the bird walkover survey work.~~

¹² ~~The SNH guidance has since been updated (current version was published March 2017), but the recommendations in relation to moorland breeding bird survey methods remains consistent with the 2014 guidance.~~

Merlin surveys

- 6.38 Merlin surveys were completed in 2015 following observations of merlin during the 2014 breeding bird surveys. It was considered very unlikely that merlin could breed within the site; there are no trees, suitable rocky escarpments, stream valleys or areas of moorland. Less intensively grazed, dry heath habitats occur predominantly on the steep slopes that demarcate the limits of the developable area. Given this, it was considered that merlin, if present in the locality, would breed off-site. In addition, breeding bird walkover surveys of the site and a 500 m perimeter of it completed between April and June 2014 did not result in records of breeding merlin. Survey work therefore focused on surveying suitable habitat beyond the developable area from local vantage points.
- 6.39 Surveys followed standard methods that were adapted to reflect the habitats present (which were mainly too steep to be walked). The method included a combination of short VP watches with walks in between to cover all suitable nesting habitat for the species. VP locations were selected to enable visual coverage of rocky slopes and plantation edges surrounding the site. The VP locations are shown on Figure 6.2. Surveys were completed on four days during April-June 2015 by an experienced raptor surveyor. The results did not suggest breeding on, or immediately adjacent to the site, and so additional visits to confirm breeding and/or establish the number of pairs and breeding success were not therefore necessary.
- 6.40 Observations of merlin made during the 2020 breeding season VP work suggest that merlin bred near to the Site. Two additional three-hour watches were completed from each of two VP locations overlooking the stream valley on the northern boundary of the Site in June and July to scan for merlin activity. This work supplemented raptor walkover survey work.

Raptor Walkover Survey

- 6.41 The approach to the raptor survey was based on methods provided in Hardey et al. (2013) and SNH (2017) guidance, which recommends that surveys for red kite, kestrel and merlin are completed within 2 km of a proposed wind farm. The approach was also informed by study of aerial photographs.
- 6.42 Survey to confirm occupancy of territories by red kite, kestrel and merlin included a combination of short watches from local vantage points and walking a route through areas of suitable breeding habitat¹³ on three visits between May and July 2020 inclusive. An area extending to all open common land within 2 km of indicative turbine locations was covered by the survey.

¹³ Such as stream valleys, rock outcrops and woodland edge.

Moorland breeding bird surveys

- 6.43 Moorland bird survey using a walkover technique based on the Brown & Shepherd (1993) method, as recommended in SNH (2014) guidance¹⁴ was undertaken during the 2014 breeding season and updated in 2020. The survey area was defined by a 620 m perimeter area around an indicative turbine layout, where access allowed. Three visits were completed between April and June inclusive. The SNH (2014, and subsequent 2016) guidance recommends that four visits (three visits were suggested under earlier iterations of the guidance) should be completed over the breeding season, based on recommendations set out in Calladine *et al.* (2009). A fourth survey was not considered necessary, as per SNH (2014), as those species that are likely to be under-recorded by three visits (e.g. red grouse *Lagopus lagopus scotica*) were not present on the site.
- 6.44 VP survey work and other targeted raptor work did not indicate the presence of breeding waders in 2015 or in 2020.

Wintering bird walkover surveys

- 6.45 Monthly wintering bird walkover surveys were completed between October 2014 and March 2015 inclusive, covering the site and a 500 m perimeter area. These were not repeated in the 2015/2016 winter period due to the low level of wintering bird interest recorded. In addition, the VPs provided a good visual coverage of the site between April 2014 and March 2016 inclusive to supplement the bird walkover survey work.

Bat surveys

Automated detector surveys

- 6.46 Automated detector survey was undertaken in October 2015, June and August 2016 and in September 2018 based on methods recommended in the (now superseded) Bat Conservation Trust (BCT) guidelines (Hundt, 2012)¹⁵. The BCT guidance recommended that a representative sample of turbine locations were surveyed. For open homogeneous moorland, the guidance suggested that a quarter of the turbine locations should be sampled along with paired locations on adjacent habitat features (such as hedges located relatively close to turbines). At Upper Ogmere, none of the turbine locations are close to any higher quality habitat features for bats, such as woodland, watercourses, or hedgerows. As such the use of paired detectors was not appropriate.

¹⁴ [The SNH guidance has since been updated \(current version was published March 2017\), but the recommendations in relation to moorland breeding bird survey methods remains consistent with the 2014 guidance.](#)

¹⁵ The 2012 edition of the guidance covers onshore wind farms in Chapter 10. This chapter has not yet been superseded, although the rest of the guidance has by the third edition (Collins, J. (ed.), 2016).

- 6.47 The site was categorised as ‘low risk’ for bats given the exposed, upland setting and the limited diversity and scale of the foraging and roosting habitats present for bats to exploit. Four detectors were deployed for a period of five nights during early October 2015 (in ‘autumn’) and redeployed for an additional five nights in June (‘spring’) and August (‘summer’) 2016. Further autumn sampling was completed in September 2018 to refresh the data set). The update survey comprised automated detector deployment over a period of 10 nights¹⁶. The selected automated detector locations were representative of indicative turbine locations, but were also chosen to provide some security from damage by the public and livestock (as the survey area is partly located on common land). Therefore, detector locations coincide with existing structures to mask their presence, as follows:
- Detector 1 (D1) located on the security fence of the Werfa mast compound (representative of the habitat present at turbine locations 1, 2, 3 and 4);
 - Detector 2 (D2) located on a wooden electricity pylon (adjacent to turbine 7); and
 - Detectors 3 (D3) and 4 (D4) located on stock fence posts (adjacent to turbines 5 and 6 respectively).
- 6.48 The automated detector surveys were further updated in 2019 in response to the multi-agency guidance on assessing impacts of wind farms on bats, ‘Bats and onshore wind turbines: survey, assessment and mitigation’ (SNH *et al.*, 2019). The guidance recommends that all proposed turbine locations¹⁷ are sampled for a period of 10 nights per season. Automated detectors were, therefore, set to sample at all seven proposed turbine locations during spring, summer and autumn 2019.
- 6.49 The detector locations used during the surveys are presented on Figure 6.3a and b.

Walked transect surveys

- 6.50 As per the BCT guidelines for survey of a low risk site, one walked transect survey was completed per season. These were: early October 2015 (autumn), June 2016 (spring) and August 2016 (summer). Walked transect surveys were not completed as part of the updated autumn season work in 2018¹⁸ or 2019. The transect route is illustrated on Figure 6.3.

¹⁶ Ten nights were sampled in 2018 in line with forthcoming Scottish Natural Heritage guidance for bat survey at wind farms (SNH, 2019)

¹⁷ For proposed wind farms of up to 10 turbines. Where more than 10 turbines are proposed, detectors should sample 10 locations, plus a third of additional turbine locations.

¹⁸ The walked transect work added little useful data to that collected by the static detectors during the 2015 and 2016 work. In addition, the multi-agency guidance for bat survey at wind farms (SNH, 2019) does not recommend this method..

Bat roost surveys

- 6.51 In accordance with BCT survey guidelines (Collins, J. (ed.), 2016)¹⁹, daytime inspection of a building within the Werfa mast compound, and a single emergence survey (following an assessment of the building as being of low potential to support roosting bats) was carried out as a precautionary measure during August 2016. An external daytime inspection of the building was completed again during 2019 to assess whether or not the suitability of the building to support roosting bats had changed since the 2016 survey. There are no further structures and trees suitable for roosting bats within 200m of the site. The extended Phase 1 survey of the existing NRW forestry track did not identify any trees with potential to support a bat roost.

Great crested newt surveys

- 6.52 Three ponds with potential for great crested newt *Triturus cristatus* were identified within the site. The pond locations are shown on Figure 6.4. Survey of these ponds was completed in accordance with English Nature GCN guidance (2001)²⁰ on four dates between 14th April and 19th May 2016 inclusive. Survey methods included torch survey, bottle-trapping and egg search (facilitated with the use of egg strips). These ponds were assessed again in April and May 2020, but were found to be dry in both months (due to a prolonged period of dry weather). No further survey of these ponds was possible within the recommended survey period for great crested newt.
- 6.53 Two ponds adjacent to the existing NRW Forestry track (see Figure 6.4) were surveyed on 27 April 2017 using an eDNA sample technique in accordance with the published methods (Williams, 2013)²¹ presented in DEFRA's Technical Advice Note WC1067 (Biggs *et al* 2014)²². eDNA survey was considered the most appropriate survey method due to the likelihood of the ponds returning a negative result. This initial conclusion was based on the isolation of the ponds from other ponds networks in the local area, and the absence of great crested newt from the site (inferred following survey of the on-site ponds). An updated assessment of the two ponds was made in June 2020. One of the ponds held very little standing water (> 10 cm), and was considered likely to have been dry for much of the great crested newt breeding season. The second pond was surveyed on 24 June 2020 using the eDNA sample technique.

¹⁹ The latest edition of the guidelines (2016) is used to inform the approach to assessing built structures for roosting bats.

²⁰ English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature, Peterborough

²¹ Williams, P. (2013). How to collect a water sample to detect Great Crested Newt eDNA. GCN eDNA protocol, Freshwater Habitats Trust

²² Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, RA., Foster, J., Wilkinson, J., Arnett, A., Williams, P., and Dunn, F. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford

Water vole surveys

- 6.54 Targeted survey for water vole *Arvicola amphibius* was undertaken following identification of water vole droppings and feeding stations during the Phase 1 survey of the site. Several water courses and a wet flush within the site were identified as having potential to support water vole and were therefore surveyed for the species (see Figure 6.4). The survey was completed over two visits (spaced two months apart) as recommended within the Water Vole Mitigation Handbook²³. The first visit was conducted during the first half of the water vole breeding season (08 and 09 June 2016) and the subsequent visit during the second half of the breeding season (03 August 2016). A further survey visit was completed on 17 May 2020 to update the 2016 data. All watercourses within 100 m of the existing NRW Forestry track were also searched for signs of water vole during the Phase 1 surveys on 07 October 2016 and 04 June 2020.
- 6.55 In addition to searching for field signs of water vole presence (such as latrines, feeding signs and burrows), evidence of use by otter was also considered during the survey.

Assessment Process

- 6.56 The evaluation and assessment within this chapter has been undertaken with reference to the 2018 Guidelines for Ecological Impact Assessment in the United Kingdom developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018). Although this is recognised as the industry standard for ecological assessment, the guidance is not prescriptive; rather, it aims to “provide guidance to practitioners for refining their own methodologies”.

Important Ecological Features

- 6.57 A first step in EcIA is determination of which ecological features (habitats, species, ecosystems and their functions/processes) are important. Important features should then be subject to detailed assessment if they are likely to be affected by a proposed development. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to effects of the proposal, such that there is no risk to their viability.
- 6.58 Ecological features can be important for a variety of reasons and the rationale used to identify these is explained below. Importance may relate, for example, to the quality or extent of designated sites or habitats, to habitat/species rarity, to the extent to which they are threatened throughout their range, or to their rate of decline.

²³ Dean et al. (2016) Water Vole Mitigation Handbook, Mammal Society Mitigation Guidance Series

Establishing the zone of influence for birds and bats

- 6.59 The areas / resources that may be affected by the biophysical changes caused by activities associated with a project can be referred to as the 'ecological zone of influence' (EZoI) (CIEEM, 2018). Birds and bats are highly mobile, and capable of travelling large distances to forage and during migration.
- 6.60 A 10 km EZoI for birds is used in this assessment, and is considered to be precautionary with reference to industry guidance for assessing the impacts of proposed wind farm developments on birds (SNH, 2017). The SNH guidance states: *'depending on the species using the area, there may be a need for further species or species group-specific survey to establish nest, roost or display sites up to 6 km from the proposed development site'*.
- 6.61 For bats, the area around a bat roost in which habitat availability and quality will have an influence on the resilience and conservation status of that roost (the core sustenance zone) is of particular importance. For UK bat species, core sustenance zones range from approximately 1 to 4 km (Collins, 2016), although individual flights can be longer. Given the long distances that can be travelled by bats a zone of influence of 10 km for bat species is considered appropriate for Upper Ogmores Wind Farm. This distance is supported by current guidance on assessing impacts of wind farms on bats (SNH *et al.*, 2019), which suggests that relevant bat information within 10 km of the proposed wind energy site is obtained as well as the location, number and size of turbines in other wind energy developments within the surrounding 10 km.

Evaluation: Determining Importance

- 6.62 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case:
- International and European
 - National (UK)
 - Regional (Wales)
 - County (Bridgend)
 - Local (Garw and Ogmores Valley Communities)
 - Site
- 6.63 In certain circumstances particular receptors may be valued below the Site level. In these instances they are described as being of Negligible importance.
- 6.64 The CIEEM guidance indicates that features of less than Local importance are generally considered unlikely to trigger a mitigation or policy response in EclA terms.

Characterising and Quantifying Effects and Assessing their Significance

- 6.65 The CIEEM (2018) guidelines state that ecological effects or impacts should be characterised in terms of ecosystem structure and function and reference should be made to: beneficial, adverse or neutral effects; extent; magnitude; duration; reversibility; timing and frequency; and cumulative effects. The guidelines provide a list of "aspects of ecological structure and function to consider when predicting impacts and effects" (Box 16). The terms impact and effect are used within this chapter in accordance with the following definitions (as provided by the guidelines):

Impact: Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.

Effect: Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.

- 6.66 Following the characterisation of effects, an assessment of their ecological significance is made. The guidelines promote a transparent approach in which a beneficial or adverse effect is determined to be significant or not, in ecological terms, in relation to the integrity of the defined site or ecosystem(s) and/or the conservation status of habitats or species within a given geographical area, which relates to the level at which it has been valued. The decision about whether an effect is significant or not, is independent of the value of the ecological feature; the value of any feature that will be significantly affected is then used to determine the implications, in terms of legislation and / or policy (CIEEM, 2018).
- 6.67 Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of this assessment, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'. A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. The EclA guidelines (CIEEM, 2018) state that "A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant adverse ecological effects can be lawfully permitted following EIA procedures". The assessment of significance is based on professional judgement.

Collision Risk Analysis

- 6.68 The risk of birds colliding with operating wind turbines has been assessed using the methods described by Band et al (2007).

- 6.69 Prediction of collision risk involves extrapolation of flight-data obtained during VP surveys, to calculate the number of flights likely to occur through the rotor swept area when the wind farm becomes operational. There are two variations of the model: the first assumes that flight activity occurs randomly across the airspace (and is applicable to many raptors); the second assumes that flights are direct and well defined (and is often most applicable to swans and geese).
- 6.70 The analysis follows the following process:
- Bird flights for which data can be used to model collision risk are identified (i.e. those within a defined distance of proposed turbines).
 - The length of time that each flight occurred within the rotor swept zone is determined.
 - The proportion of time that each species might occupy the rotor swept zone in a year period is calculated.
- 6.71 Bird flights were selected for use in the model based on their occupancy at collision risk height within the flight risk area (FRA), which equals a rectangular area encompassing the turbines plus a 250 m 'buffer' zone (to account for the sweep of the blades (50 m) and observer error (200 m, as recommended in the relevant guidance (SNH, 2000; Band et al, 2007)). In this instance the FRA was calculated to be 2608 m (the distance between turbines 1 and 6 plus 500 m (2 x 250 m buffer)) x 842 m (the distance between turbines 1 and 4 plus 500 m). This was calculated using ArcGIS.
- 6.72 Worked collision risk analysis for target bird species is contained in Appendix 6.4.

Assessing Potential Risk to Bats

- 6.73 Wind farms can affect bats in the following ways SNH *et al.*, 2019):
- Collision mortality, barotrauma and other injuries (although it is important to consider these in the context of other forms of anthropogenic mortality)
 - Loss or damage to commuting and foraging habitat, (wind farms may form barriers to commuting or seasonal movements, and can result in severance of foraging habitat);
 - Loss of, or damage to, roosts;
 - Displacement of individuals or populations (due to wind farm construction or because bats avoid the wind farm area).
- 6.74 To ensure that bats are protected by minimising the risk of collision, an assessment of impact at a site requires a detailed appraisal of:
- The risk of turbine-related mortality for all bat species recorded at the site during bat activity surveys.
 - The effect on the species' population status if predicted impacts are not mitigated.

- The level of activity of all bat species recorded at the site assessed both spatially and temporally.
- 6.75 The above information should be interpreted in the context of likely impacts on local populations. Relevant factors that should be considered include whether populations are at the edge of their range, cumulative effects, presence of protected areas designated for their bat interest and proximity to maternity roosts, key foraging areas or key flight routes, including possible migration routes.
- 6.76 The risk of mortality of bat species at wind farms was categorised by NE (2012) as high, medium and low, based on mortality data from monitoring studies at wind farms as well as habitat preferences, echolocation characteristics, weight, wing-shape, flight speed and height, hunting techniques, flight behaviour, and use of the landscape. This has since been amended in SNH *et al.* (2019) to re-classify common pipistrelle and soprano pipistrelle as “High Risk” based on evidence from a Defra-commissioned study (Mathews *et al.*, 2016).
- 6.77 Table 6.2 assigns species of bats a category of likely level of risk of death through interaction with operational wind turbines.

Table 6.2: The likelihood of bat species being killed by wind turbines (based on Table 2 in SNH *et al.*, 2019).

High-risk	Medium-risk	Low-risk
Nathusius’ pipistrelle	Serotine	Myotis ²⁴ species
Common pipistrelle	Barbastelle	Long-eared bats
Soprano pipistrelle		Horseshoe bats
Noctule		
Leisler’s bat		

- 6.78 In addition, SNH *et al.* (2019) guidance assesses the potential threat (high, medium or low) posed to species populations from mortality caused by collision with wind turbines. Table 6.3 lists the likely level of risk of bat populations in Wales to wind-farm related adverse effects, which are adapted from Wray *et al.* (2010).

Table 6.3: Threat to bat populations in Wales from wind turbines (based on Table 2 in SNH *et al.*, 2019).

High-risk	Medium-risk	Low-risk
Barbastelle	Common pipistrelle	Brown long-eared bat
Nathusius’ pipistrelle	Soprano pipistrelle	Daubenton’s bat
Serotine	Alcathoe bat	Natterer’s bat
Noctule	Bechstein’s bat	Lesser horseshoe

²⁴ Refers to any bat species of the genus *Myotis*.

Leisler's bat	Brandt's bat	
	Whiskered bat	
	Grey long-eared bat	
	Greater horseshoe	

Site Risk Level for Bats

- 6.79 Table 3a in SNH *et al.* (2019) sets out a matrix to derive an indicative risk for sites based on the habitats present and the scale of the proposed development. The Upper Ogmore Site has been categorised as a “low site risk” (risk level =2) according to the supporting definitions of low habitat risk and medium project size in Table 6.4 and the matrix in Table 6.5. Note that, whilst the height of the turbines within the proposed Development exceed the defined height (up to 149.9 m to tip) for medium project size, the number of proposed turbines are fewer (and meet the definition for “small” project size).

Table 6.4. Descriptions of habitat risk and project size categories used to inform the site risk level for bats.

Habitat Risk	Description
Low	Small number of potential roost features, of low quality. Low quality foraging habitat that could be used by small numbers of foraging bats. Isolated site not connected to the wider landscape by prominent linear features.
Moderate	Buildings, trees or other structures with moderate-high potential as roost sites on or near the site. Habitat could be used extensively by foraging bats. Site is connected to the wider landscape by linear features such as scrub, tree lines and streams.
High	Numerous suitable buildings, trees (particularly mature ancient woodland) or other structures with moderate-high potential as roost sites on or near the site, and/or confirmed roosts present close to or on the site. Extensive and diverse habitat mosaic of high quality for foraging bats. Site is connected to the wider landscape by a network of strong linear features such as rivers, blocks of woodland and mature hedgerows. At/near edge of range and/or on an important flyway. Close to key roost and/or swarming site.
Project Size	Description
Small	Small scale development (≤ 10 turbines). No other wind energy developments within 10km. Comprising turbines < 50 m in height.
Medium	Larger developments (between 10 and 40 turbines). May have some other wind developments within 5km. Comprising turbines 50-100m in height.
Large	Largest developments (> 40 turbines) with other wind energy developments within 5km. Comprising turbines > 100 m in height.

Table 6.5. Site risk level derived from the outcome of Table 6.4 (taken from SNH *et al.*, 2019).

Site Risk Level	Project Size			
		Small	Medium	Large
Habitat Risk	Low	1	2	3
	Moderate	2	3	4
	High	3	4	5

Bat activity assessment

- 6.80 The SNH *et al.* (2019) assessment of potential risk involves consideration of habitat and development related features, the relative vulnerability of each species of bat potentially at risk. and the bat activity output from the EcoBat tool.
- 6.81 At the current time, the EcoBat tool is in development²⁵, and the supporting database used for activity level comparison is limited²⁶. For this reason, the EcoBat tool has not been used to support this assessment. A categorisation of bat activity has instead been derived through comparison with bat activity data collected by BSG Ecology at 52 other sites²⁷ across England, Wales and Scotland.
- 6.82 Table 6.6 presents activity categories based on the spread of reference data split by 20th percentile (fifths of the data spread) for each species considered to be of high collision risk as defined in Table 6.2 above. Of those species considered to be of high collision risk, common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule bat and Leisler's bat have been recorded at Upper Ogmere. In addition, serotine, a species of high population vulnerability to wind farms in Wales, has also been recorded at Upper Ogmere. Table 6.6 also provides the reference size of the comparison data for each species. This equals the sum of the hours of each survey during which the species was recorded.

Table 6.6. Descriptions of habitat risk and project size categories used to inform the site risk level for bats.

Species	Low	Low-moderate	Moderate	Moderate-high	High	Reference Range (hours)
Nathusius' pipistrelle	<0.001	0.001-0.004	0.004-0.01	0.01-0.07	>0.07	59,188
Common pipistrelle	<0.82	0.82-2.82	2.82-8.44	8.44-13.98	>13.98	76,663
Soprano pipistrelle	<0.14	0.14-0.46	0.46-1.48	1.48-5.88	>5.88	76,663
Noctule	<0.06	0.06-0.13	0.13-0.23	0.23-0.65	>0.65	75,277
Leisler's bat	<0.003	0.003-0.01	0.01-0.05	0.05-0.12	>0.12	58,349

²⁵ Bat survey data collected at Upper Ogmere has been entered into the EcoBat database, and an analysis has been generated. However, some errors have been identified in the analysis code. Whilst the EcoBat development team are looking into this, it had not been resolved at the time of writing.

²⁶ There is an absence of data for comparable sites (both in altitude and habitat) within a 100 km reference range of the Upper Ogmere Site. In addition, the total available data within the 100 km reference range for comparison of bat activity is below the level recommended by EcoBat for meaningful analysis (the recommended comparison data set size is 2000+ nights; the maximum data set available for comparison against the Upper Ogmere survey data is 1059 nights). The reference range used for comparison is expected to grow as adoption of the EcoBat tool for analysis of data increases.

²⁷ Of which 28 sites are proposed wind farm sites; 5 are other proposed energy production sites, 12 are proposed residential and infrastructure developments, 2 are mineral extraction sites, and 5 are other non-development lowland, wetland and island sites.

Species	Low	Low-moderate	Moderate	Moderate-high	High	Reference Range (hours)
Serotine	<0.002	0.002-0.006	0.006-0.024	0.024-0.076	>0.076	33,606

Deriving an overall risk assessment

6.83 In order to derive an “overall risk assessment” for a wind farm development site, SNH *et al.* (2019) guidance suggests that an activity category is derived from comparison of the recorded activity of each species of high collision risk (as defined in Table 6.2 above) at the site against a data set (summarised in Table 6.6 above). These scores should then be set against the “site risk level” (as defined in Table 6.5 above) in the matrix presented in Table 6.7. below (based on Table 3b in the guidance document) to determine the level of overall risk.

Table 6.7: Overall risk assessment (taken from SNH *et al.*, 2019)

Site Risk Level (taken from Table 6.5)	Activity category					
	Nil (0)	Low (1)	Low-moderate (2)	Moderate (3)	Moderate-high (4)	High (5)
Lowest (1)	0	1	2	3	4	5
Low (2)	0	2	4	6	8	10
Moderate (3)	0	3	6	9	12	15
High (4)	0	4	8	12	15	18
Highest (5)	0	5	10	15	20	25

Baseline Conditions and Evaluation

6.84 This section sets out the findings of consultation, baseline ecological survey work and desk study. It then goes on to assess the interest of the identified ecological resources.

6.85 Ecological receptors are considered in the following order:

- Protected sites - both statutory (e.g. SSSI) and non-statutory (e.g. SINC).
- Habitats.
- Protected or otherwise notable species - this includes consideration of those species protected under UK or EU legislation (e.g. bats) and consideration of those species listed as being of conservation importance in accordance with Section 7 of the Environment (Wales) Act (2016).

6.86 It has been possible to “scope out” of the assessment, at this stage, some species and habitats that are not likely to be significantly affected (for example by virtue of the design or operation of the Development, or because they are very

commonplace and / or of very low conservation value) unless there are other reasons to consider them further (for example, they may be legally protected or require special care and therefore require particular mitigation measures to be adopted when developing or operating the site).

- 6.87 For birds and bats, the decision as to whether to scope species in or out of further assessment considers their known susceptibility to collision with wind turbines, their importance in nature conservation terms, and their level of use of the turbine locations and the airspace above them based on survey and desk study.
- 6.88 Where it has been possible to scope out a particular ecological feature, the rationale for doing so is outlined in the following text.

Designated Sites

- 6.89 There are four statutory sites of nature conservation interest within 5 km of the site. These are, Mynydd Ty-isaf Site of Special Scientific Interest (SSSI), Cwm Cyffog SSSI, Blaenrhondda Road Cutting SSSI, and Cwm Du Woodlands SSSI. The nearest internationally important site is the Blackmill Woodlands Special Area of Conservation (SAC) and SSSI located approximately 7.2 km south of the site, and the nearest Special Protection Area (SPA) is the Severn Estuary SPA, located approximately 34 km south-east of the site. The locations of designated sites in relation to the Wind Farm site are presented in Figure 6.5.
- 6.90 SACs and SPAs are of **International** and SSSIs of **National Importance**. This reflects the role of SACs and SPAs in maintaining a network of internationally important sites for biodiversity (the Natura 2000 network established under the EC Habitats and Birds Directives) and the role of SSSI's in providing the best examples of the UK's flora, fauna, or geological or physiographical features (notified under the Wildlife and Countryside Act 1981).

Mynydd Ty-isaf SSSI

- 6.91 The Mynydd Ty-isaf SSSI is located immediately north of the site (north of the A4107). It is of special interest for its crags, scree slopes and ffridd habitats. The higher crags are known to provide nesting sites for peregrine falcon. Although not a feature for which the SSSI is notified, effects on the breeding population of peregrine within Mynydd Ty-isaf are considered in this assessment.
- 6.92 The SSSI is separated from the site by the A4107. Construction work will not result in any loss of habitats within the SSSI. It is unlikely that direct effects will occur on the habitats of the SSSI through changes in hydrology or pollution, even in the absence of mitigation. The Mynydd Ty-isaf SSSI is therefore **not considered further** in this assessment.

Cwm Cyffog SSSI

- 6.93 The Cwm Cyffog SSSI is located approximately 3.1 km south of the site. It is notified for its upland blanket mire habitats dominated by *Molinia caerulea* with a range of Sphagnum species.
- 6.94 There is no hydrological connectivity between the site and Cwm Cyffog SSSI. In addition, because of the relatively large distance between the site and the SSSI, it is not considered likely that effects on the SSSI interest will arise as a result of the Development. Cwm Cyffog SSSI is therefore **not considered further** in this assessment.

Blaenrhondda Road Cutting SSSI

- 6.95 The Blaenrhondda Road Cutting SSSI is approximately 4.7 km north of the site and 3.1 km north-east of the existing NRW Forestry track (at its closest point). It is notified for its geological interest, including sandstones, shale and coal seams.
- 6.96 Given the distance of the Blaenrhondda Road Cutting SSSI from the site and the geological interests of the SSSI, it is unlikely that any adverse impacts upon the designated interest of the SSSI will occur as a result of the proposed Development. The Blaenrhondda Road Cutting SSSI is therefore **not considered further**.

Cwm Du Woodlands SSSI

- 6.97 The Cwm Du Woodlands is located approximately 4.5 km south-west of the site. It is notified for its ancient woodland habitats dominated by sessile oak *Quercus petraea* with alder *Alnus glutinosa* carr.
- 6.98 Given the distance of the Cwm Du Woodlands SSSI and absence of representative habitats on the site, it is unlikely that any adverse impacts upon the designated interest of the SSSI will occur as a result of the proposed Development. The Cwm Du Woodlands SSSI is therefore **not considered further**.

Blackmill Woodlands SAC/SSSI

- 6.99 The Blackmill Woodlands SAC/SSSI is designated for its expanse of sessile oak woods at the southern extreme of the habitat's range in Wales. The core management plan (dated 2008) for the SAC indicates that the primary threats to the condition of the designated habitats are livestock grazing, invasive species, and air pollution.
- 6.100 Given the distance of the site from the SAC/SSSI (7.2 km), it is unlikely that adverse effects on the condition of the designated habitats will occur. The proposed Development will not result in significant levels of air pollution during any of the construction, operational or decommissioning phases. Therefore, the Blackmill Woodlands SAC/SSSI is **not considered further** in this assessment.

Severn Estuary SPA

- 6.101 The nearest Special Protection Area (SPA) is the Severn Estuary SPA, located approximately 34 km south-east of the site. The site is classified for its wintering population of Bewick's swan *Cygnus columbianus bewickii*, curlew *Numenius arquata*, dunlin *Calidris alpina alpina*, pintail *Anas acuta*, redshank *Tringa tetanus*, shelduck *Tadorna tadorna*, and passage ringed plover *Charadrius hiaticula*.
- 6.102 None of the SPA species have been recorded using or overflying the site during the ornithological survey work completed between April 2014 and March 2016 inclusive (which included VP survey during spring and autumn passage periods). The absence of observations of SPA species over the site suggests that the site is unlikely to be on a narrow front migratory pathway for SPA birds. Given this, and the large distance of the site from the SPA, it is unlikely that any effects on the features for which the SPA was classified will arise as a result of the development. The Severn Estuary SPA is therefore **not considered further** in this assessment.

Sites of Importance for Nature Conservation (SINCs)

- 6.103 There are eight local authority designated Sites of Importance for Nature Conservation (SINCs) within 2 km of the site: four in Bridgend County Borough (BCB) and four in Rhondda Cynon Taf (RCT). There are also an additional five sites that meet SINC criteria in Neath Port Talbot (NPT); however, NPT SINC descriptions are not currently published (SEWBRc currently only hold qualifying habitat lists for each SINC). All SINCs are considered to be of **County importance**. The SINCs within 2 km of the site are listed in Table 6.8 (and illustrated on Figure 6.5). Additional sites that meet the SINC criteria in Neath Port Talbot are provided in Table 6.9.

Table 6.8. SINCs within 2 km of the site boundary

County	SINC	Description	Distance (km) and direction from site
Bridgend	Blaengarw North-East	Semi-improved neutral grassland, dense continuous scrub, semi-improved acid grassland, wet dwarf shrub heath, marsh/marshy grassland, acid/neutral flush.	The limit of the SINC is adjacent to the south-western boundary of the site.
Bridgend	Nant-y-Moel Farm	Damp semi-improved acid grassland fields including patchy bracken and scrub and several small flushes. The other parts of the valley sides support marshy grassland and small stands of broad-leaved woodland.	850 m south-east

County	SINC	Description	Distance (km) and direction from site
Bridgend	Rhiw Fer	This site follows the Nant Dyri stream from its source in an area of upland marshy grassland and down through a steep wooded valley supporting broadleaved woodland. The fields adjacent to the wooded valley support a mix of semi-improved acid grassland including waxcap fungi, and marshy grassland dominated by purple moor-grass and sharp-flowered rush with a good diversity of wetland plants including bog asphodel, star sedge, marsh violet and sphagnum mosses.	1.2 km south-east
Bridgend	Fforch Wen Mosaic	An extensive area of farmland supporting a mosaic of semi-improved acid grassland, marshy grassland, heath, bracken, over-mature hedgerows and scrub. Sessile Oak and Hawthorn are associated with field boundaries, and a few small patches of woodland support locally abundant Bluebells. The northern part of the site includes a mix of heath and acid grassland, dominated by bilberry and wavy hair-grass, with former coal tips in its lower part. Areas of species-rich marshy grassland dominated by dense purple moor-grass, with wetland plants including marsh violet, bog asphodel, star sedge and sphagnum mosses. occur on higher ground but also on low ground in the far north of the SINC.	1.73 km south

County	SINC	Description	Distance (km) and direction from site
Rhondda Cynon Taff	Cwmparc	An extensive area of wetland habitat in the bowl of Graig-fawr and Graig Fach (SSSI). The site represents a complex mosaic of grassland and marshy grasslands, intersected by streams and issues. The marshy grassland is an expanse of purple moor-grass and soft rush. These marshy expanses grade in and out of drier acid grassland. The complex of streams and issues adds diversity with wetter gullies and areas of inundated vegetation. There are smaller areas of heather and bilberry heath, and where land reclamation has occurred, areas of drier semi-improved neutral and acid grassland. There are a few areas of oak and rowan woodland.	1 km east
Rhondda Cynon Taff	Ton Pentre Slopes	A large upland SINC, which encompasses the uplands of Mynydd Maendy and Mynydd Ton and the valley of the Cwm lan. The SINC supports a complex mosaic of upland grassland and heath, crags, and forestry plantation. The upland grassland includes sheep-grazed acid and marshy grassland. Associated areas of old quarry working and crags supports areas of heather and bilberry heath and acid grassland.	1.7 km east north-east
Rhondda Cynon Taff	Mynydd Tyle-coch	The steep heavily-forested slopes on the western valleyside of the Rhondda Fawr above Treorchy. The forestry plantation is an extensive area of mixed larch, Sitka spruce, western hemlock, douglas fir, Norway spruce and lodgepole pine. Much of this conifer plantation is replanted ancient woodland and the remainder was planted onto acid grassland/heath.	1.9 km east

County	SINC	Description	Distance (km) and direction from site
Rhondda Cynon Taff	Mynydd Blaenrhondda and Mynydd Ty-isaf	An extensive upland and valley side SINC which occupies the western uplands above Blaenrhondda and Blaencwm. The lower slopes around the western valley-side of Blaenrhondda and Blaencwm support a complex mosaic of dry and wet heath, acid grassland, crags, scree, marshy grassland, acid flushes, bracken slopes and conifer and native woodland. Arctic alpine are a feature of the crags. The upland plateau supports an expanse of upland Conifer Plantation managed by the Forestry Commission. Much of this plantation lies on upland peatbog.	1.9 km north of the site; 250 m east of the NRW Forestry track

Table 6.9. Sites that meet SINC criteria in Neath Port Talbot

County	SINC	Qualifying Habitats	Distance (km) and direction from site
Neath Port Talbot	NPT Watercourses	Rivers and Streams	The limit of the SINC is adjacent to the northern boundary of the site.
Neath Port Talbot	Scotch Street	Lowland Heathland; Open Mosaic Habitats on Previous Developed Land	1.2 km north-west
Neath Port Talbot	Caroline Street	Scrub Communities; Neutral Grasslands; Purple Moorgrass and Rush Pasture; Fridd	1.6 km north-west
Neath Port Talbot	Ancient Semi-Natural Woodland	Native Woodland (Upland Oak Woodland, Lowland Beech & Yew Woodland)	1.9 km north west
Neath Port Talbot	Gwynfi Street	Scrub Communities; Neutral Grasslands; Purple Moorgrass and Rush Pasture; Fridd	2 km north-west

6.104 The SINC sites form a mosaic of woodlands, upland marshy grasslands and fridd habitats throughout the local landscape.

6.105 Impacts on SINC habitats as a result of the proposed Development are only likely to occur where there is a risk of direct adverse effects, such as pollution of watercourses or dust deposition. Such effects are only likely at those SINC sites that are hydrologically connected to the site or located adjacent to the proposed Development. This is only likely to include the NPT Watercourses SINC due to its

proximity to the site and likely hydrological influence from within the site (refer to Chapter 8).

- 6.106 The Blaengarw North-East SINC is also adjacent to the site boundary. However, the proposed Development will not extend beyond the developable boundary, and ground works will be approximately 1 km distant from the Blaengarw North-East SINC at its nearest point. It is therefore considered unlikely that any significant adverse effects on the Blaengarw North-East SINC will occur because of the proposed development.
- 6.107 It is not considered likely that direct or indirect adverse effects will occur on the remaining SINC's as a result of the proposed development given their interest features and distance from the site. The Nant-y-Moel Farm SINC, Rhiw Fer SINC, Fforch Wen Mosaic SINC, Cwmparc SINC, Ton Pentre Slopes SINC, Mynydd Tyle-coch SINC, Mynydd Blaenrhondda SINC, Mynydd Ty-isaf SINC, Scotch Street SINC, Caroline Street SINC, Ancient Semi Natural Woodlands SINC, and Gwynfi Street SINC are therefore **not considered further** in this assessment.

Habitats

- 6.108 The habitats present within the site and adjacent to the NRW Forestry Track are described below. Full habitat descriptions can be found in Appendix 6.3. The Phase 1 habitat and NVC survey maps are presented in Figures 6.6, 6.7 and 6.8 respectively.

Acid and marshy grassland mosaic

- 6.109 The site is dominated by unenclosed upland moorland which frequently grades between acid grassland and marshy grassland with a continuum of both types present as a complicated mosaic. The majority of these habitats have therefore been mapped as acid grassland / marshy grassland mosaic and are described below.

Unimproved acid grassland

- 6.110 This habitat type dominates the freer draining areas of the site such as the steep slopes that occur just outside of the study area. The freer draining area extends over the shoulder of the slopes onto the outside edge of the plateaux that forms the study area. Common bent *Agrostis capillaris* and sweet vernal grass *Anthoxanthum odoratum* are dominant, and there is occasional purple moor grass *Molinia caerulea* and heath bedstraw *Gallium saxatile*.
- 6.111 The NVC survey identified U6 *Juncus squarrosus-Festuca ovina* grassland and U5a *Nardus stricta-Galium saxatile* grassland, species-poor sub-community within areas of this habitat. However, the area of habitat sampled was not considered to provide a good fit to published NVC datasets due to modification, primarily through agricultural improvement of the surrounding areas for livestock grazing.

- 6.112 This habitat is common throughout the uplands of Wales, and is closely grazed, and modified. The value of this habitat is therefore unlikely to extend to the County level. The unimproved acid grassland is considered to be of importance at the **Local** level.

Marshy grassland

- 6.113 Grazed marshy grassland is present across much of the flatter areas and occasionally on steeper ground. With a very similar composition to the unimproved acid grassland described above but with a greater abundance of purple moor grass. In a few places soft rush *Juncus effusus* becomes dominant and this has also been mapped as marshy grassland.
- 6.114 Areas of M25 *Molinia caerulea-Potentilla erecta* mire / degraded M15d *Scirpus cespitosus-Erica tetralix* communities and U5a *Nardus stricta-Galium saxatile* grassland, species-poor sub-community were identified within this habitat during the NVC survey. An area of S9 *Carex rostrata* swamp was also identified within this habitat where a flush is formed by road drainage at the northern boundary of the site. None of the areas sampled during the NVC survey were considered to provide a good fit to published NVC datasets due to modification, primarily through agricultural improvement of the surrounding areas for livestock grazing.
- 6.115 Under the UK Biodiversity Action Plan²⁸ definition of blanket bog, the principal (NVC) types include M25. The habitat "encompasses all areas of blanket bog supporting semi-natural blanket bog vegetation, whether or not it may be defined as active".
- 6.116 The degraded nature of the unimproved acid grassland will limit its importance to below the level of the County. It is also common throughout Wales (particularly in its modified state). The marshy grassland is therefore considered to be of importance at the **Local** level.

Semi-Improved Acid Grassland

- 6.117 High grazing pressure has caused changes in the species composition and the sward structure of the common land in some parts of the site. In these areas sweet vernal grass dominates with common bent and frequent purple moor grass, abundant sheep's fescue *Festuca ovina* and springy turf-moss *Rhytidiadelphus squarrosus*. Soft rush dominates where localised wetter ground conditions occur (where ground water emerges).

²⁸ The UK list of priority habitats has been used to help draw up the statutory Section 7 lists of priority habitats.

- 6.118 Small areas of acid grassland are also present along the A4107 between the southern extent of the NRW Forestry track and site entrance. The verges are close grazed and likely to be influenced by run-off and salting of the road.
- 6.119 This habitat is common throughout the uplands of Wales, is relatively limited in extent on the site (occupying 10.69 ha) and is intensively grazed and lacking in species diversity. It is considered to be of importance at the level of the **Site**.

Improved grassland and arable

- 6.120 A number of enclosed fields are present in the north-eastern part of the site; the flatter areas of these fields all support improved acid grassland. The extent of these areas is defined by the ability of a tractor to access the land, with all accessible areas demonstrating evidence of having been cultivated and reseeded in the past, apart from a few areas which have very wet ground conditions.
- 6.121 The update Phase 1 survey in May 2018 identified that an area of this habitat (at the location of turbine 6) had been ploughed and re-seeded with perennial ryegrass *Lolium perenne*; therefore, conforming to the arable habitat classification.
- 6.122 Improved grassland and highly-managed arable habitats are of little ecological value and are widely represented in both lowland and upland farmland. The importance of these habitats is likely to be **negligible**. Improved grassland and arable habitats are not considered further in this assessment.

Wet modified bog

- 6.123 Two large areas of degraded blanket bog are present in the northern part of the site. Peat depths in excess of two metres were recorded during the 2014 survey. Under Phase 1 guidance on habitat classification, peat depth is an important factor in differentiating marshy grassland from wet modified bog. The results of the 2017 peat depth survey (refer to Chapter 8 - Hydrology) have therefore been incorporated into the classification of habitats at the site and used as a guide to broadly estimate the extent of both habitat types.
- 6.124 The plant communities associated with wet modified bog on the site are similar to that of the marshy grassland but have a higher proportion of deer grass *Scirpus cespitosus* in the sward.
- 6.125 The NVC survey identified an area of this habitat as an M19 (*Calluna vulgaris* - *Eriophorum vaginatum* blanket mire) / M20 (*Eriophorum vaginatum* blanket and raised mire) transition, with localised M6 (*Carex echinata*-*Sphagnum recurvum/auriculatum* mire) / M23 (*Juncus effusus/acutiflorus*-*Galium palustre*) communities present in gullies. However, none of the areas of this habitat sampled during the NVC survey were considered to provide a good fit to published NVC datasets due to modification, primarily through agricultural improvement of the surrounding areas for livestock grazing.

- 6.126 This habitat is likely to be included within the Section 7 (Environment (Wales) Act 2016) blanket bog definition and wet habitat networks are a key feature of the Mynydd Llangeinwyr Uplands Area as defined in the Bridgend LBAP. However, the importance of this habitat is likely to be lower than the County level because of its modified and intensively grazed condition. The wet modified bog within the site is therefore of importance at the **Local** level.

Bog pool

- 6.127 There is a circular bog pool occupying approximately 3 m² in the northern part of the site. It is dominated by common cottongrass *Eriophorum angustifolium* and pill sedge *Carex pilulifera*. Applying community identification keys (Rodwell *et al* (1995)) suggests that the bog pool has an M3 *Eriophorum angustifolium* bog pool community with *Eriophorum angustifolium* being a constant where other vascular species and bog mosses (Sphgnum species) play a relatively minor role. The community description describes the habitat as being typically found as small stands on barer exposures of acid raw peat soils in depressions, erosion channels or shallow peat cuttings.
- 6.128 This bog pool is likely to qualify as a Section 7 (Environment (Wales) Act 2016) habitat. However, it is limited in extent, relatively isolated and likely to be influenced by surface run off from the A4107, all of which affect its biodiversity value. Notwithstanding this, it is not a common habitat locally or in BCBC and this would elevate its importance. It is assessed as important at the **local** level.

Dry heath

- 6.129 Acid dry dwarf shrub heath also occurs where grazing pressure is reduced. Common heather typically dominates areas of this habitat within the site, with abundant bilberry *Vaccinium myrtillus* dominates, and occasional bell heather *Erica cinerea*. Small saplings and stunted semi-mature rowan *Sorbus aucuparia* are also occasionally present.
- 6.130 Heathland is a priority habitat in Wales (with reference to Section 7 of the Environment (Wales) Act 2016). It is also a feature of the Mynydd Llangeinwyr Uplands Area as defined in the Bridgend LBAP and identified as an important local resource for pollination.
- 6.131 The areas of dry heath within the site are limited in extent but may connect similar areas of heath as a pollination resource across the Mynydd Llangeinwyr Uplands. The value of the dry heath on the site is therefore likely to be of Local importance.
- 6.132 Dry heath is not present within the developable area of the site, being confined to the steeper slopes in the eastern part of the site. Because the extent of dry heath

within the site lies beyond the developable area it is unlikely to be affected by the proposed Development. Dry heath is **not considered further** in this assessment.

Streams and flushes

- 6.133 Several small flushes were identified around the edges of the developable area, where the ground slopes steeply down and groundwater emerges. The flushes are typically dominated by purple moor grass and soft rush with abundant sphagnum species.
- 6.134 Rivers and streams are Environment (Wales) Act 2016 priority habitats. The relatively natural course of the streams within the site are likely to qualify them as priority habitats. As they all rise within the site and are minor and seasonal within the bounds of the site, their interest is lessened, but they contribute to the surface water resource of the locality and are considered likely to be of ecological interest in a **Local** context.

Ponds

- 6.135 Two ponds and one section of flooded track (indicated on Figure 6.4) are present within the site. Pond P1 is an oval shaped pond approximately 15 m by 7 m. The margins are poached by livestock with soft rush dominating the less trampled sections. Common haircap *Polytrichum commune*, water crowfoot *Ranunculus sp.*, water starwort *Callitriche sp.*, toad rush *Juncus bufonius* and marsh foxtail *Alopecurus geniculatus* occur occasionally. Pond P2 is a circular pond approximately 10 m in diameter. The pond margins are dominated by soft rush with occasional floating sweet grass *Glyceria fluitans*, Sphagnum mosses, marsh foxtail, water crow foot and toad rush. The section of Flooded Track (P3) which appears to hold water year-round is approximately 2 m wide and 40 m long. Aquatic vegetation is limited to very occasional water starwort and water crowfoot species.
- 6.136 The habitat immediately surrounding the ponds consists of wet modified bog and acid/marshy grassland (grazed by cattle and sheep) with occasional ditches. This habitat, particularly the grass tussocks, is likely to provide refuge for newts and other amphibians when they leave the ponds.
- 6.137 Two additional Ponds (P4 and P5) are present adjacent to the existing NRW Forestry track (as indicated on Figure 6.4). These ponds are small (approximately 3 x 5 m and 7 x 8 m respectively) and located in plantation edge habitats, with small areas of marshy grassland dominated by purple moor-grass around the margins.
- 6.138 Ponds qualify as an Environment (Wales) Act 2016 Section 7 habitat when they meet one or more of the following criteria: they support species of high conservation importance; they support exceptional assemblages of key biotic groups; they are of high ecological quality; or they represent individual ponds or

groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context. None of the ponds meet these criteria. Given the isolated nature of the ponds, and their failure to meet the criteria required for a Section 7 habitat, it is likely that their importance is at the level of the **Site**.

Rock escarpments and scree slopes

- 6.139 The slopes present just outside the developable area are frequently punctuated by rock escarpments. In places these exposures have been quarried and are of more significant proportions. Below the natural exposures there are substantial areas of scree and patches of acid dry dwarf shrub heath and unimproved acid grassland.
- 6.140 Inland rock outcrop and scree habitats are a Section 7 habitat of principal importance to biodiversity conservation in Wales. However, this habitat is well represented throughout the local area, and is a feature of valley ridges throughout the County and south-east Wales. Rock escarpments and scree slopes are therefore unlikely to be of importance at more than the **County** level.
- 6.141 All examples of this habitat within the site are located beyond the developable area and will not be affected either directly or indirectly by the proposed Development. Rock escarpments and scree slopes are **not considered further** in this assessment.

Plantation woodland

- 6.142 A larch *Larix decidua* dominated plantation is present immediately beyond the site to the east, much of which has been felled. Sitka spruce *Picea sitchensis* plantations are also present to the north and west of the site.
- 6.143 The existing NRW Forestry track passes through sitka spruce plantation, with stands of varying stages of maturity present between the northern and southern extents of the track.
- 6.144 Planted coniferous woodland is a common habitat throughout the uplands of Wales and has limited biodiversity value when semi-mature. Plantations are harvested on rotation and are therefore of low importance in EIA terms when considered alone. However, coniferous and larch plantations can support species of bird protected under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) (such as common crossbill *Loxia curvirostra* and goshawk *Accipiter gentilis*) and provide a valuable habitat for these species locally. The plantation woodland adjacent to the site and NRW Forestry track is therefore considered to be of potential importance at a **Local** level.

Birds

- 6.145 Ornithological survey work recorded a low number and diversity of breeding and wintering bird species present within the Site.
- 6.146 There is no evidence (from survey work completed at the site) that any target species breed within ~~or adjacent to~~ the site, although kestrel *Falco tinnunculus* and merlin *Falco subbuteo* are likely to breed within suitable habitats locally, and red kite *Milvus milvus* are present in low number throughout the year. Other target species recorded during the work include hen harrier *Circus cyaneus*, goshawk, peregrine, ~~merlin *Falco subbuteo*, kestrel *Falco tinnunculus*,~~ hobby, short-eared owl *Asio flammeus* and golden plover. Flights within the FRA recorded during the 2014 - 2016 VP survey work are presented in Figures 6.9a (red kite), 6.9b (kestrel) and 6.9c (merlin, goshawk, peregrine, and golden plover). Flights within the FRA recorded during the 2020 VP survey work are presented in Figure 6.9d (red kite, kestrel, merlin, and goshawk).

Red kite

- 6.147 Data obtained from SEWBReC included nine breeding season and five winter season records of red kite *Milvus milvus* within the 2 km search area of the site.
- 6.148 Ornithological survey work between April 2014 and ~~March 2016~~August 2020 inclusive recorded red kite in generally low numbers²⁹.
- 6.149 A total of 14 flights were recorded during the breeding season 2014; 19 flights during the winter 2014/15; 23 flights during the breeding season 2015; ~~and 30 flights during the winter 2015/16;~~ and 53 flights during the breeding season 2020. Of these, ~~63-72~~ passed within 250 m of the turbine locations at least partly at collision risk height. The total combined duration of flights passing (at least in part) within 250 m of the turbine locations and at collision risk height was ~~45-72~~ minutes and ~~15-30~~ seconds during a total ~~288-360~~ hours of observation.
- 6.150 Flight activity appeared to be randomly distributed in the local landscape with no particular concentrations of activity. However, peaks in activity were observed during watches on 28 October 2014 (11 flights); 13 May 2015 (9 flights) and 19 October 2015 (8 flights). Flights were generally made by single birds, but up to four birds were noted in flight together (on 13 May 2015), and three birds recorded on 25 April 2014, 17 July 2014 and 19 October 2015. Two birds were noted in flight together on two dates in 2020: 16 April and 06 May. One of the flights recorded on 16 April was made by two birds soaring at collision risk height over the valley in the south-eastern part of the Site for a total of 50 minutes.

²⁹ When compared to other Welsh upland moorland areas surveyed by BSG Ecology.

- 6.151 The site is not considered to provide an exceptional foraging resource for red kite, with carcasses unlikely to be frequent. Foraging opportunities within the site are likely to be greatest during lambing periods and in the improved fields in the eastern parts of the site following soil stripping / re-seeding activity (thereby exposing worms).
- 6.152 The conservation status of red kite was amended from amber-listed in the UK to green-listed in 2015 on account of its rapidly expanding range (Eaton *et al*, 2015). The species is listed as a locally common resident in the northern part of the recording area of East Glamorgan (Glamorgan Bird Club, 2017); and an increasingly widespread resident breeder throughout Wales with a breeding population of at least 1,200 pairs (WOS, 2014)³⁰. Data from the Welsh Kite Trust estimate a 286 % increase in the national population between 2000 and 2010 from 259 to in excess of 1,000 pairs in Wales.
- 6.153 Data from monitored nests has demonstrated that approximately 65 % tend to be productive, and that 1.4 young birds typically fledge per pair (Welsh Kite Trust, 2011). This has resulted in continued national population growth, and the species is now increasingly common in East Glamorgan, as well as in West Glamorgan and Pembrokeshire (areas in which monitored populations were very small when the last population data was published by the Welsh Kite Trust in 2011). Populations in both core and expansion areas are now not actively monitored at a scale that allows the size of the national population to be accurately assessed. However, even if a modest year-on-year increase of 10 % in the national breeding population is assumed from 2010 onwards, the Welsh breeding population is likely to be well in excess of 2,000 pairs¹⁹, and there are also likely to be large numbers of sub adult / non-breeding birds.
- 6.154 Given the rapidly expanding populations throughout both mid and south Wales, low quality of foraging habitat within the site, and generally low levels of recorded activity, it is unlikely that the importance of the site for red kite will extend beyond the **Local** level.

Hen harrier

- 6.155 The SEWBRc data search did not return any breeding season records of hen harrier from within the search area but did include one winter season record from moorland approximately 800 m south of the site dated December 2006.

³⁰ Kelvin Jones (Wales Development Officer at the British Trust for Ornithology; pers. comms.) has suggested that the population is now over 2000 pairs.

- 6.156 Hen harrier flights were noted on 28 October 2014 (4 flights), 28 August 2015 (1 flight) and 29 September 2015 (2 flights). No flights by this species were recorded in 2020. All flights were of single ringtail (female or juvenile) birds.
- 6.157 Flight activity by hen harrier was generally of low, quartering flights. Of the total of seven flights recorded, none were at collision risk height within 250 m of the turbine locations.
- 6.158 Hen harrier are a scarce winter visitor and passage migrant in East Glamorgan (Glamorgan Bird Club, 2015) and in Wales (WOS, 2014) with a long-term decline in the national population evident (18 % between 2004 and 2010) (Balmer *et al*, 2013). Hen harrier is red-listed in Wales (Johnstone *et al*, 2010) and the UK (Hayhow *et al* 2017) and listed in Section 7 of the Environment (Wales) Act 2016.
- 6.159 The timing of the observations suggest that the birds were on passage and did not breed or overwinter on the site. The level of activity within the airspace over the site is insufficient to allow a valid assessment of collision risk to be made for hen harrier. Therefore, despite the national vulnerability of hen harrier, the importance of the site for this species is likely to be **negligible**. Hen harrier is **not considered further** in this assessment.

Honey buzzard

- 6.160 No honey buzzard were recorded during the targeted survey work in 2014 or other ornithological survey work at Upper Ogmere in 2014, ~~or 2015~~, or 2020. In addition, desk study data indicated that no evidence of honey buzzard had been found during targeted survey completed by RPS in 2005 and 2008 to support the adjacent Llynfi Afan REP. The SEWBRc data search returned one record of honey buzzard approximately 2 km west of the site, to the west of Blaengarw, dated August 2006.
- 6.161 No honey buzzard territories were identified during the updated 2015 Llynfi Afan REP survey work. A single bird was noted during survey on 05 July but was not seen again during the remainder of the work. It was suggested in the report that the bird was likely to have been a foraging bird from a known nest site approximately 7 km distant from the Llynfi Afan REP site (9 km distant from the site).
- 6.162 Honey buzzard are a scarce spring and autumn migrant in East Glamorgan, with sightings remaining erratic and infrequent (Glamorgan Bird Club, 2017). The species breeds in small numbers in Wales with little evidence that their population is increasing (Balmer *et al*, 2013).
- 6.163 There is no suitable breeding or foraging habitat for honey buzzard on the site, and monitoring work completed by Steve Roberts³¹ indicates that, for at least the last

³¹ Steve Roberts has led long-term honey buzzard monitoring work within the Neath Valley and wider area.

ten years, territories have been typically present in areas in excess of 9 km from the site. Honey buzzard are therefore unlikely to overfly the site with any regularity.

- 6.164 It is concluded that the site is of **negligible** importance to honey buzzard. Honey buzzard is **not considered further** in this assessment.

Goshawk

- 6.165 The nearest record of goshawk returned by SEWBRc is dated May 2011 and located approximately 300 m east of the site at the head of the Nant-y-moel valley. Other records include single birds at approximately 800 m south of the site, 1 km south-east of the site, and 2 km south-west of the site towards Maesteg.
- 6.166 Goshawk was recorded flying over the site on 16 February 2016. The bird was first noted over the Nant-y-moel valley being mobbed by several carrion crow. It then flew north-west, over the site toward the plantation at Mynydd Blaenafan, north of the site boundary. The flight was timed at 1 minute; 45 seconds of which was spent at collision risk height. No further observations of this species were made during the 2015/16 or 2014/15 VP survey work. Two separate flights (one bird was identified as a female) were recorded overflying the eastern part of the site, heading to the plantation at Nant y Moel on 16 April 2020. No further observations of goshawk were made on other watches in 2020.
- 6.167 ~~However, t~~Two birds (a female and juvenile) were recorded over the plantation at Mynydd Blaenafan during merlin survey on 11 June 2015, approximately 1.2 km north of the site. The birds were noted flying up from the canopy in pursuit of a flock of racing pigeons *Columba livia domestica*. The juvenile returned to the plantation (following the unsuccessful attack) and the adult continued west towards Blaengwynfi.
- 6.168 Goshawk is an introduced, increasingly reported resident breeder in the East Glamorgan recording area (Glamorgan Bird Club, 2017), and an increasing breeding resident in all Welsh counties (WOS, 2014). Goshawk breed in dense, mature woodland areas, only leaving regularly during periods of territorial display between early-February and mid-April (Hardey *et al*, 2013); although they will hunt grouse and lagomorphs over open areas throughout the year (Marquiss & Newton, 1982).
- 6.169 There is no breeding habitat for goshawk on the site, and plantation blocks (primarily of mature sitka spruce) present in the wider area will limit the availability of suitable breeding habitat locally. However, the observation of a juvenile bird during the survey work in 2016 and two birds in 2020 does indicate likely breeding within 2 km of the site. Despite this, the site supports no suitable prey and, therefore, it is unlikely that goshawk use the airspace over the site on a

regular basis (and are therefore unlikely to collide with the Wind Farm), as evidenced by the low encounter rate of this species during the survey work. The open moorland and pasture habitats typifying the site are unlikely to be of importance to goshawk at any geographic level. However, plantation edge adjacent to the existing NRW Forestry track may support breeding goshawk, and likely to be important at the **Local** level (owing to their status as an increasingly reported breeder in the County).

Peregrine

- 6.170 The data search returned four breeding season records of peregrine from within 2 km of the site. The nearest peregrine record to the site is approximately 300 m south-west of the site boundary within the Blaengarw Valley³². The remaining 3 records are greater than 1.5 km to the west of the Site, between Blaengarw and Caerau. The search returned a single winter period record located more than 2 km to the west of the site, west of Blaengarw, dated March 2007.
- 6.171 Five flights of peregrine falcon were recorded during VP work between April and September 2015 inclusive; one flight was recorded on each of 31 July and 24 August 2015, and three flights on 09 September 2015. The bird recorded on 31 July 2015 passed over VP2 from Mynydd Ty-isaf, heading south-west over the site. The flight was observed for approximately 120 seconds and was entirely above collision risk height. On 09 September 2015 a bird was recorded taking a similar flight path but spent 135 seconds at collision risk height.
- 6.172 The flight recorded on 24 August 2015, and two of the three flights recorded on 09 September 2015 were recorded over the valley east of Mynydd Ty-isaf and were entirely beyond the site boundary. The two flights recorded on 09 September 2015 were of separate birds flying up from the crags at Mynydd Ty-isaf concurrently: one bird flew east out of view, and the other returned to the crags in rapid descent.
- 6.173 One peregrine was recorded on 22 April 2020 commuting east through the site. The bird was recorded for 45 seconds; 15 seconds of which were at collision risk height.
- 6.174 Five flights of peregrine were recorded over three dates during the merlin survey work: 22 April (1 flight of two birds), 15 May (2 flights), and 11 June 2015 (2 flights). The pair of birds noted on 22 April were detected flying up from the cliffs at Graig Fach to attack the merlin recorded on the same date. A bird was also noted flying up from this area to mob the hen harrier recorded on 11 June. Two peregrine were also noted flying east over plantation at Mynydd Blaenafan on the same date
- 6.175 Peregrine was recorded on one date during the 2014 breeding season VP work (the flight was entirely below collision risk height)) and incidentally on two moorland wader visits (one bird in April and June 2014 respectively).

³² The resolution of this record was provided to 100m²

- 6.176 A total of 4 minutes of flight time was observed at collision risk height within 250 m of the turbine locations between April 2014 and March 2016 inclusive.
- 6.177 The location of the sightings in 2015 suggests that peregrine are likely to have bred in a traditional location north of the site. Breeding was confirmed at this location in 2015 by Natural Power (2016), having recorded two fledged young at the nest. The traditional breeding area was scanned for peregrine during breeding raptor walkover surveys on 26 April, 17 May, 24 June and 14 July 2020, but no evidence of presence was recorded.
- 6.178 Peregrine is a locally common resident breeder in the East Glamorgan recording area (Glamorgan Bird Club, 2017) and an increasing breeding species in all counties in Wales, with a current estimated population of 300 pairs (WOS, 2014). The crags of the Mynydd Ty-isaf SSSI are known to provide nesting sites for peregrine falcon (albeit with unknown frequency).
- 6.179 Despite the proximity of the site to known nesting sites within the Mynydd Ty-isaf SSSI, the absence of suitable prey supported by the site and low-level activity recorded in the airspace over it suggest that the site is of low value to the species. The value of the site for peregrine is therefore unlikely to extend beyond the **Local** level.

Merlin

- 6.180 The data search returned one winter record of merlin (from the Pontycymer area approximately 1.5 km west of the site).
- 6.181 The targeted merlin survey work completed between April and June 2015 resulted in one flight of merlin being recorded. The flight was made by a female bird to the north of the site, heading north over Graig Fawr (approximately 500m north of the site) on 22 April 2015.
- 6.182 Merlin were also recorded during VP survey work on four dates in 2014 (06 June, 17 July, 28 October, 18 November 2014) and three dates in 2015 (31 July, 28 August and 09 September). Of these, only one flight (on 28 October 2014) was at collision risk height and was timed at 45 seconds.
- 6.183 A flight by merlin was also recorded during moorland wader survey in May 2014 and a bird was noted flying low in direct flight over the grazed fields in the eastern part of the site during a winter walkover survey in November 2014.
- 6.184 Merlin was recorded at collision risk height within 250 m of the turbine locations for a total of 10 seconds during the VP work between April 2014 and March 2016 inclusive.

- 6.185 Three flights of merlin were recorded during VP work in 2020. Two flights were recorded on 16 April 2020. One bird was identified as a female in low flight over the eastern part of the site; the second was a high and distant flight of a bird in pursuit of a meadow pipit to the east of the site. A third flight was recorded during a watch on 03 June 2020 and involved a male bird commuting across the western part of the site.
- 6.186 No observations of merlin were made during targeted watches over the western part of the site, or during breeding raptor walkover surveys in 2020.
- 6.187 Merlin is a scarce breeding resident, uncommon passage migrant and winter visitor in the East Glamorgan recording area (Glamorgan Bird Club, 2017). It is a generally rare breeder and winter resident throughout Wales (WOS, 2014).
- 6.188 The observations made during 2020 indicate that merlin may breed within areas of suitable habitat locally. However, breeding is very unlikely to occur within 500 m of the proposed turbine infrastructure. The infrequency of observations of this species during survey work between 2014 and 2016 does not suggest that merlin regularly use the site. The results of the targeted survey in 2015 does not suggest nearby breeding. No nest sites were recorded during merlin survey within the Llynfi Afan REP site in 2015 (Natural Power, 2016).
- 6.189 It is considered unlikely that merlin could breed within the developable area on the site. The majority of merlin nests identified in a study by Rebecca (2011) were located on the ground (48% of nests found in Wales). Despite this, conifer plantation was the principal habitat for 45% of nest sites in Wales, with 36% of identified sites being associated with dry heath. There are no trees within the developable area, and less intensively grazed, dry heath habitats occur predominantly on the steep slopes that demarcate the site boundary. The moorland and dwarf heath habitats present at the periphery of the site provide suitable breeding and foraging opportunities for the species.
- 6.190 Given the low level of use of the site by merlin, it is unlikely to be of importance at more than a local level. The level of activity recorded for merlin during VP survey is insufficient to accurately inform collision risk and has therefore not been modelled. However, the suitability of habitats present (suitable prey, rocky outcrops and forest edge at the site boundary) the value is greater than negligible. It is concluded that the site is of **Local** importance for merlin.

Kestrel

- 6.191 SEWBrEC returned four breeding season and six winter period records of kestrel within 2 km of the site. None of the records are reported from within the site. The nearest is approximately 1 km north of the site (recorded September 2015).

- All other records are located west of Blaengarw, in excess of 1.5 km west of the site.
- 6.192 Kestrel was the most commonly encountered target species during the 2015 breeding season VP work with a total of 41 flights (76 minutes and 45 seconds of flight time) being recorded. This contrasts markedly to the total two flights (one in each of May and September) recorded for this species during the 2014 breeding season work. Eight flights were recorded during VP watches in 2020, of which two were at collision risk height for a combined duration of 2 minutes and 45 seconds.
- 6.193 Flights by this species recorded in 2015 appeared to be concentrated over areas of less intensively grazed grassland, with avoidance of the enclosed acid grassland fields in the eastern part of the site. Highest activity was observed over areas of rougher vegetation on sloping ground, and this is reflective of the presumed higher density of prey items, such as field vole *Microtus agrestis*, in these areas. The flights recorded in 2020 were also over common land and stream valleys on the periphery of the site.
- 6.194 Two kestrel were recorded flying north-east from a valley at the southern boundary of the site during a raptor walkover survey on 15 July 2020. A juvenile kestrel was also recorded hunting beyond the western site boundary during a merlin VP survey on 15 July 2020.
- 6.195 The level of activity recorded for kestrel in 2015, observation of juvenile birds in 2020, and frequent observation of two birds in flight, —suggests local breeding. However, breeding opportunities on the site are limited to structures within the Werfa mast compound and associated pylons. These structures were scanned during VP watches throughout thein 2015 and 2020, —survey workand during breeding raptor survey visits in 2020, but no nests were observed. There are no trees, rock shelves, or other structures not visible from the VP locations within the site.
- 6.196
- 6.197 A contrast in activity by kestrel between years was also observed during the winter work. A total of ten flights were recorded between October 2014 and March 2015 inclusive. Only three flights (one flight on 12 October 2015, and two flights on 19 October 2015) were recorded during the winter 2015/16. However, five of the total ten flights recorded during the winter 2014/15 were noted during one three-hour watch on one date (18 November 2014).
- 6.198 Kestrel spent a total of 26–29 minutes and 40–25 seconds at collision risk height within 250 m of the turbine locations during a total 288–360 hours of observation.

- 6.199 Kestrel is included in Section 7 of the Environment (Wales) Act 2016 and is red-listed in Wales (Johnstone *et al*, 2010) and amber-listed in the UK (Hayhow *et al*, 2017). Kestrel is noted as being a rather scarce breeding resident throughout Wales (WOS, 2014). Bird atlas work reports a contraction of range by 6 % across the UK since 1968/72, with losses occurring throughout Wales (Balmer *et al*, 2013). However, kestrel is a common resident breeder in East Glamorgan, with reports of this species being widespread throughout the recording area (Glamorgan Bird Club, 2017).
- 6.200 Survey results suggest that kestrel may have bred locally in 2015 and 2020, but that local breeding was unlikely in 2014. In addition, the site offers limited breeding features for kestrel, and it is unlikely that kestrel bred on the site in either survey year. Use of the site by kestrel in the winter appears to be irregular; however, the habitats on and surrounding the site clearly do provide foraging opportunities for this locally declining species. Given this, it is likely that the site is of **Local** importance for kestrel.

Hobby

- 6.201 No records of hobby within a 10-year period were provided by the data search.
- 6.202 Hobby was recorded flying east over the central part of the site during a watch on 31 July 2015.
- 6.203 The bird was observed to make a (failed) attempt at catching a meadow pipit as it passed through. The flight was timed at 45 seconds, entirely below collision risk height.
- 6.204 A flight was also recorded during a VP watch on 06 May 2020. The bird was flying east over the southern part of the site, entirely below collision risk height.
- 6.205 Hobby was not recorded during the 2014 breeding season work, and no further observation of the species were made during any other site visit.
- 6.206 Hobby is an uncommon spring, summer and autumn visitor to the East Glamorgan recording area (Glamorgan Bird Club, 2017). It is a rare breeder in Wales with a total breeding population of approximately 30 pairs (WOS, 2014).
- 6.207 There is no suitable breeding habitat for hobby within the site, and the single (late) breeding season observation of hobby suggests that it is unlikely to breed locally. The low number of records during the survey work at Upper Ogmore further indicate that the site is unlikely to be of value to foraging birds.
- 6.208 It is concluded that the site is of **negligible** importance for hobby, and the low-level of flight activity within the airspace of the site is insufficient to accurately inform collision risk. Hobby is **not considered further** in this assessment.

Short-eared owl

- 6.209 No records of short-eared owl were returned by the data search.
- 6.210 Short-eared owl was recorded during a watch at VP1 on 12 February 2015. Two flights were noted, both approximately 700 m south west of VP1, entirely below collision risk height. No further observations of this species were made during the survey work between April 2014 and March 2016 inclusive.
- 6.211 Short-eared owl is an uncommon winter visitor and passage migrant in East Glamorgan (Glamorgan Bird Club, 2017), and present in small numbers in all counties in Wales (WOS, 2014).
- 6.212 The infrequent observations of short-eared owl during the survey work indicate that the species is unlikely to use the site for foraging or roosting with any regularity.
- 6.213 It is concluded that the site is of **negligible** importance for short-eared owl, and the low-level use of the site is insufficient to accurately inform collision risk. Short-eared owl is **not considered further** in this assessment.

Golden plover

- 6.214 Four records of golden plover *Pluvialis apricaria* were returned by the data search, all of wintering or passage birds. One record was returned for the site, and comprised 48 birds recorded in February 2005. The nearest off-site record of golden plover is approximately 700 m south of the Site (5 birds during December 2006).
- 6.215 Three golden plover were noted during moorland wader survey on 24 April 2014: the first was identified as a nonbreeding adult or second year bird at approximately 100 m south west of the transmitter mast and the second, identified as an adult male, approximately 1.5 km further south³³. A third bird was later noted flying south near the southern part of the developable area.
- 6.216 One golden plover flight (involving one bird) was recorded during a watch on 15 May 2020. The bird made a low flight of 45 seconds duration over the common land in the south-eastern part of the site. One bird was also recorded loafing in this area during a wader survey on 26 April 2020. The area was searched for evidence of nesting, but none were found. No observations of this species were made on subsequent visits.

³³ The plumage of breeding golden plover is similar between sexes, and this makes sexing difficult in the field. However, breeding males do have more extensive black than females making identification to sex possible with good views. First and second calendar year birds cannot be reliably sexed and, without exceptional views, resemble non-breeding adult birds. Therefore, unless a bird is confirmed to be breeding, it should be recorded as a non-breeding adult or an immature bird.

- 6.217 Golden plover were recorded during winter walkover surveys on 16th December 2014 (five birds) and 6th January 2015 (one bird).
- 6.218 Nine flights of golden plover were recorded over five survey days during the winter 2014/15 VP work. Four flights were recorded on 26 January 2015, two flights on 12 February 2015, and one flight on each of 28 October 2014, 19 January 2015 and 26 February 2015. The largest flock size was 43 on 12 February 2015. All other flights comprised flocks of between 1 and 14 birds.
- 6.219 Four flights of golden plover were recorded over three survey days during the winter 2015/16 VP work. These were: 12 October 2015 (2 flights), 25 November (1 flight), and 25 February 2016 (1 flight). Golden plover were also heard calling to the north-east of VP 1 on 12 October 2015, and on the slope to the Nant-y-moel valley, immediately south of the site on 21 March 2016, but no flight was observed on either occasion. Flocks were small, with a maximum count of 7 birds present on 25 November 2015 and 24 February 2016. The two flights recorded on 12 October 2015 were made by one bird.
- 6.220 Flights were generally recorded at the centre of the site where the land slopes away to the south-east from the Werfa mast compound.
- 6.221 Golden plover were recorded at collision risk height within 250 m of the turbine locations for a total of 6 minutes and 30 seconds during the VP work between April 2014 and March 2016 inclusive.
- 6.222 Golden plover is included in Section 7 of the Environment (Wales) Act 2016 and is a locally common winter visitor and passage migrant in East Glamorgan (Glamorgan Bird Club, 2017). They are a scarce and declining breeding species in Wales (WOS, 2014) with Welsh breeding densities being low (following a loss of a fifth of their British range over the last 40 years) in comparison to the core UK breeding range (in the uplands of Scotland) (Balmer *et al* 2013).
- 6.223 The site is beyond the current breeding range of golden plover (Glamorgan Bird Club, 2017). It is likely that the birds observed during the 2014 and 2020 surveys were on passage given the timing of the observations made during the 2014 moorland wader survey records, presence of single birds, and lack of subsequent sightings beyond mid-May of this species, suggest that these birds were on passage. No evidence of breeding was recorded on the site during the 2014, ~~or 2015~~ or 2020 breeding season work
- 6.224 The survey results indicate that golden plover do use areas of common land on and around the site during the winter, but peak numbers are likely to occur in late autumn and are largely represented by passage birds. The airspace above the site is not likely to be of high value to golden plover (based on observation), although birds will inevitably fly through it on occasion if roosting or feeding nearby. Given

this, the importance of site for golden plover is likely to be limited to the **Local** level.

Other waders

- 6.225 A common snipe *Gallinago gallinago* was noted calling in the north-western part of the site during a moorland wader survey on 20 June 2014. No further registrations of this species were made during moorland wader survey in 2014 or breeding season VP survey work in 2014 and 2015.
- 6.226 Snipe were recorded in low number (total of 18 observations) on all survey dates during the 2014/15 winter walkover surveys with the exception of the 16 December 2014. Registrations of snipe were distributed across the site, with a broad association with marshier areas.
- 6.227 Jack snipe *Lymnocyrtus minimus* was recorded during walkover survey on 06 January 2015. The bird was flushed by the surveyor at close range in the north western part of the site. Records of snipe and jack snipe made during the winter walkover survey work are presented in Figure 6.10.
- 6.228 Snipe is an amber-listed species in the UK (Eaton *et al*, 2015) and an occasional summer visitor at suitable breeding sites in the East Glamorgan recording area (Glamorgan Bird Club, 2017). They are present in 'substantial numbers' during winter in Wales, breeding in all counties, but declining in number (WOS, 2014).
- 6.229 Jack snipe are a locally common winter visitor and passage migrant (Glamorgan Bird Club, 2017) and are a fairly common passage and winter visitor in Wales (WOS, 2014). There are no records of this species having bred in Britain (Balmer *et al*, 2013)
- 6.230 The low level of activity reported during the survey work suggests that snipe and jack snipe use the moorland on and adjacent to the site in low number during the winter. No flights of either species were recorded during the VP work. Given the status of the wintering snipe population in East Glamorgan, and the extensive availability of suitable wintering habitat available locally, the importance of site for snipe and jack snipe likely to be at the level of the **Site**.

Other species

- 6.231 Buzzard *Buteo buteo* were recorded frequently during all VP survey work. Up to five birds were recorded using the airspace adjacent to the site in mid-winter 2014 and late winter 2015, and up to ~~four~~ five birds during breeding season work in ~~2015~~ 2020.
- 6.232 Buzzard is a common and widespread breeding resident throughout Wales. The species is categorised as being of 'least concern' in conservation terms, and has

increased considerably in number over the past twenty years at both the UK and European levels. Atlas work has demonstrated that the largest concentrations in the UK are in Wales and the south-west of England (Balmer *et al*, 2013), and the UK population is estimated at 57,000-79,000 pairs (Musgrove *et al*, 2013). Given the size of the population, and low quality of the habitats on site for foraging, the site is unlikely to be of value to buzzard populations at any geographic level. Buzzard is therefore **not considered further** in this assessment.

- 6.233 Raven *Corvus corax* was recorded frequently during all survey work, with up to twenty-four birds recorded overflying the site on 31 July 2015. Raven are common and widespread throughout Wales and the west and north UK, and have shown an expansion in their range by around 70 % since the late 1970's (Balmer *et al*, 2013). The current UK population is estimated at 7,000 pairs. The use of the airspace over the site is unexceptional, and the habitats within it are unlikely to provide a rich foraging resource for raven. Therefore, the importance of the site for the local population is likely to be negligible. Raven is therefore **not considered further** in this assessment.
- 6.234 Herring gull *Larus argentatus* and greater *Larus marinus* and lesser black-backed gulls *Larus fuscus* were noted flying through the area infrequently during the survey work between 2014 and 2016 (herring gull on ten dates, greater black-backed gull on one date, and lesser black-backed gull on two dates). A peak count of to 14 herring gull and 9 lesser black-backed gull were recorded in the area during the 2020 survey work. Aside from the occasional scavenging opportunity provided by livestock fatality, the site is unlikely to support foraging gulls. Therefore, gulls are **not considered further** in this assessment.
- 6.235 A grey heron *Ardea cinerea* was recorded in flight to the east of the site in June 2014, and heading south over the site on 19 March 2015. This species was not recorded during watches in 2016 or 2020.
- 6.236 Given the low level of activity recorded for grey heron, it can be concluded that the airspace above the site is used infrequently, and therefore, this species is **not considered further** in this assessment.
- 6.237 Cuckoo *Cuculus canorus* was recorded at Nant-y-Moel beyond the eastern boundary of the site during the moorland wader surveys in 2014 and 2020, and during VP work on two dates in 2015. Jackdaw *Corvus monedula* were regularly recorded in sheep grazed pastures near Nant-y-Moel to the east of the site, and carrion crow were noted on the majority of survey dates, typically foraging on semi-improved fields in flocks of up to 37 birds in the south-eastern part of the site.
- 6.238 The breeding passerine bird community of the site was dominated by skylark *Alauda arvensis* and meadow pipit *Anthus pratensis*, and reflective of the homogenous moorland present on the site. Wheatear *Oenanthe oenanthe* and

stonechat *Saxicola rubicola* territories were generally associated with landscape features, such as infrequent rocky outcrops and the Werfa mast compound; while other common species were confined to stream valleys and plantation edge beyond the site boundary.

- 6.239 Ring ouzel *Turdus torquatus* were recorded breeding at a crag on the eastern boundary of the site during a water vole survey visit on 09 June 2016. No use of the site was detected during ornithological survey work in 2014-16 or in 2020.
- 6.240 The data search returned 14 records of common crossbill (10 breeding season records and 2 winter period records), and one record of firecrest *Regulus ignicapilla* (October 2010), all of which were from areas more than 1.5 km west of the site, west of Blaengarw. Common crossbill and firecrest are protected under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended). There is no suitable habitat within the site for common crossbill, and therefore the site is unlikely to be important for the species. However, they may be present in areas of plantation adjacent to the existing NRW Forestry track.
- 6.241 All territories recorded during the breeding bird survey work in 2014 are presented in Figure 6.11.
- 6.242 The breeding passerine community is considered to be typical of the habitats present within the site, which are unremarkable in the context of the wider landscape. The breeding passerine community is therefore considered to be important at the level of the **Site**.
- 6.243 Collision and displacement of passerines are not generally considered issues for wind farm developments (SNH (2017) guidance does not recommend passerine surveys for wind farm proposals). Any effect on populations arising as a result of collision with turbines is likely to be very localised owing to the high reproductive rates and low annual survival of passerines. However, some adverse effects may occur as a result of loss of breeding habitat and disturbance during construction phase works.

Bats

- 6.244 The site was categorised as 'low risk' for bats given the exposed, upland setting and the limited diversity and scale of the foraging and roosting habitats present for bats to exploit. This was confirmed by the survey results which recorded consistently low bat activity across the site for all sampling periods, and absence of evidence that the Werfa Mast buildings are used for roosting. Most bat passes were recorded within the first two of hours after sunset, when they are typically foraging (Altringham, 2003). A lack of calls close to sunset and sunrise suggests that it is unlikely that there is a significant roost nearby for any of the species

- recorded. This conclusion is supported by the lack of roosting habitat within or near to the site.
- 6.245 Figure 6.3a illustrates the locations of automated detectors during the work in 2015, 2016 and 2018, and the transect route walked in 2015 and 2016. The locations of recorded bat passes are also presented in the Figure. Figure 6.3b illustrates the locations of automated detectors during the work in 2019.
- 6.246 The review of bat records provided by SEWBRcC indicated that brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Nathusius's pipistrelle *Pipistrellus nathusii*, lesser horseshoe bat *Rhinolophus hipposideros*, Leisler's bat *Nyctalus leisleri*, Noctule *Nyctalus noctula*, Daubenton's bat *Myotis daubentonii*, and Natterer's bat *Myotis nattereri* have been recorded within 10 km of the site.
- 6.247 The closest bat record for the site was for common pipistrelle 1.2 km to the south east in the bottom of the valley (Nant-y-moel). This is also the closest bat roost record to the site.
- 6.248 There were 37 bat roosts recorded within 5 km of the site, all of which were located in buildings at the base of valleys within the search area.
- 6.249 The extended 10 km search for noctule, Leisler's bat and Nathusius' pipistrelle returned 79 records. These included:
- 61 records of noctule, the closest being 3 km to the south of the site;
 - Five records of Leisler's bat, the closest being 10 km to the south east of the site; and,
 - Nine records of Nathusius' pipistrelle, the closest being 10 km to the south east of the site.
 - Four records of bats in the genus *Nyctalus*³⁴ (unidentified to species level), all beyond 9 km south-east of the site.
- 6.250 Bats and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended), and by the Conservation of Habitats and Species Regulations 2010 (as amended). In summary, these make it an offence to damage, destroy or obstruct any place used by bats for breeding and shelter, disturb a bat, or kill, injure or take any bat. In Wales, eight bat species are listed as Section 7 species of principal importance under the provisions of the Environment (Wales) Act 2016.
- 6.251 Article 16 of the Habitats Directive establishes in which situations Member States are allowed to make exceptions (i.e. derogate) from the strict species protection provisions. Where European Protected Species are present and affected by development proposals, Local Planning Authorities must take into account the 'three tests' as set out in Article 16. These include whether the proposed

³⁴ Includes Leisler's bat and noctule.

development: (i) is of overriding public interest; (ii) there is no satisfactory alternative; and (iii) the action will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their range. Demonstration of overriding public interest and satisfactory alternatives are planning issues which will be detailed within the planning statement.

Nathusius' pipistrelle

- 6.252 There was one Nathusius' pipistrelle bat call recorded during the survey period, on 9 June 2016 at 03:59. No confirmed passes of this species were recorded during the 2019 survey work
- 6.253 There were 196 passes recorded during the 2015, 2016 and 2018 survey work that could have been either Nathusius' pipistrelle or common pipistrelle but could not be determined to species level due to overlapping call parameters. These were recorded in spring and summer 2016 and autumn 2018 (165 passes in spring 2016, 16 passes in summer 2016, 15 passes in autumn 2018, 2 passes in spring 2019, and 13 passes in summer 2019), and occurred most frequently at the beginning and end of the night (the same pattern as common pipistrelle, and therefore most likely to be this species).
- 6.254 There were 15 passes during the 2019 survey work that could have been either Nathusius' pipistrelle or common pipistrelle. The majority of passes (13) were recorded during the summer period. None were recorded during the autumn
- 6.255 Nathusius' pipistrelle is a relatively rare species (although records have increased in recent years (BCT, 2017)) with an estimated UK population of around 16,000. Historic population trends do not exist for this species due to its relatively recent discovery as a resident species in the UK (Battersby, 2005). Insufficient data has been collected by the BCT to inform a calculation of population trends for Nathusius' pipistrelle (BCT, 2017).
- 6.256 The population of Nathusius' pipistrelle in the UK is at least partly migratory (Hutterer *et al.* 2005) although low numbers of maternity roosts are known to be present in east England. There are currently no maternity roosts reported in Wales, and records of the species are scattered (JNCC, 2019). Nathusius' pipistrelle are known to be heavily associated with large water bodies, riparian habitats, broadleaved and mixed woodland and parkland. Roost sites are typically in trees, with use of buildings also reported (Dietz *et al.*, 2009; JNCC, 2019).
- 6.257 The absence of habitats with which the species is known to be associated suggests that the site is unlikely to be of importance to a local population. However, the site may be located on a broad-front migratory route for the species, and may occasionally support over-flying individuals (as indicated by the very low number

of confirmed passes for this species recorded during survey work). The site is therefore considered to be of **Site-level** importance for Nathusius' pipistrelle.

Common pipistrelle

- 6.258 Common pipistrelles were recorded in spring and summer 2016 and autumn 2018, and at all detector locations during the survey period. Bat activity was highest in spring (20.8 bat passes per hour (B/h)), followed by autumn (1.0 B/h)³⁵, with summer having lowest level of activity (0.2 B/h).
- 6.259 The highest activity was recorded from 41 minutes and 100 minutes after sunset (10.6-11.0 B/h), this reduced during the middle of the night (1.4 B/h). There was a secondary peak in activity between 120 minutes and 61 minutes before sunrise (4.6-7.6 B/h). No bat passes were recorded later than 39 minutes before sunrise, and only two passes (both at detector D4 on 26 September 2018) were recorded earlier than 40 minutes after sunset, suggesting that the presence of a local roost is unlikely.
- 6.260 During the 2019 survey work, common pipistrelles were recorded during all sample periods, and at all detector locations. Bat activity was highest in summer (1.1 B/h), followed by spring (0.2 B/h), with autumn having lowest level of activity (<0.1 B/h).
- 6.261 The highest activity was recorded from 41 minutes to 60 minutes after sunset (2 B/h). This reduced during the middle of the night (0.2 B/h). There was a secondary peak in activity between 100 minutes and 81 minutes before sunrise (0.8 B/h). No bat passes were recorded later than 40 minutes before sunrise, and only two passes (both at detector D3 on 02 August 2019) were recorded earlier than 30 minutes after sunset (25 minutes and 27 minutes after sunset respectively).
- 6.262 Common pipistrelle is the most abundant species of bat across the UK with a UK population of around 3,040,000 (Matthews *et al.*, 2018). Breakdowns by country are not available, although Harris *et al.* (1995) suggest a population of 200,000 bats in the genus *Pipistrellus* in Wales. The species is thought to have undergone declines of around 55% since the 1960s although there is evidence of populations becoming stable or possibly increasing within the last ten years (Battersby, 2005). BCT field data indicates that populations may have increased by 25.5 % since 2006 (BCT, 2017). No population estimate for this species is available at the local authority or regional levels.
- 6.263 Given the abundance of the common pipistrelle in the UK, and the fairly low activity levels recorded for this species within the site, it considered that the value of the site for the species does not extend beyond the **Site** level.

³⁵ No passes by this species was recorded during the autumn 2015 sampling period

Soprano pipistrelle

- 6.264 Soprano pipistrelles were recorded at D1, D3 and D4 during spring 2016 and autumn 2018. Passes by this species were only recorded at D2 during autumn 2018. The highest level of overall activity was recorded at D1 (0.4 B/h) followed by D3 (0.3 B/h) then D4 (0.2 B/h). These results are shown in Figure 6.3.
- 6.265 The highest activity was recorded from 81-120 mins after sunset (1.5-1.2 B/h), activity then dropped to 0.1 B/h and remained low for the rest of the night period.
- 6.266 There were 67 bat passes that could have been either common pipistrelle or soprano pipistrelle, based on overlapping call parameters. The majority of passes were recorded during the middle of the night, and patterns in activity matched those for both common and soprano pipistrelle species.
- 6.267 During the 2019 survey work, soprano pipistrelles were recorded infrequently at all detector locations. The majority of passes were recorded at detector D4 (23 passes of a total 47 recorded across the Site). Of these, 12 were recorded on one night (02 August 2019) and likely to have been a single bat making multiple passes near the detector. No passes by this species were recorded during the autumn period; 43 were recorded during the summer, and 4 passes recorded during spring. These results are shown in Figure 6.3b.
- 6.268 The highest activity was recorded from 41-100 mins after sunset (0.1 B/h). Activity was less than 0.1 B/h at all other times. No bats were recorded earlier than 48 minutes after sunset or 54 minutes before sunrise.
- 6.269 There were 25 bat passes during the 2019 survey that could have been either common pipistrelle or soprano pipistrelle, based on overlapping call parameters. The majority of passes (16) were recorded during the middle of the night, with no passes recorded earlier than 40 minutes after sunset or later than 80 minutes before sunrise
- 6.270 Soprano pipistrelle is the second most common species of bat in the UK with a UK population of around 4,670,000 (Matthews, *et al.* 2018). Historic population trends do not exist for this species as it was not described until 1997 although recent work suggests the population is stable or increasing (Battersby, 2005) with an upward trend of 18.1 % since 2006 from BCT data (BCT, 2017).
- 6.271 Due to the low recorded activity, the importance of the site for this species is likely to be limited to the level of the Site.

Myotis species

- 6.272 Low numbers of *Myotis* sp. bat passes were recorded in spring (B=27) and summer (B=1) 2016, and in Autumn (B=9) 2018. The highest number of bat passes was

recorded at D3 (B=25). Bat passes were most frequently recorded in the middle of the night (B=21).

- 6.273 It is difficult to generalise about the population status of *Myotis* bats. Table 6.10 (below) lists an estimated UK population status and Welsh population size (from Battersby, 2005) for each *Myotis* species that could be found within the area of the Site.
- 6.274 During the 2019 survey work, *Myotis* sp. passes were recorded most frequently in the period between 2 hours after sunset and 2 hours before sunrise (B=128 of a total 136 passes; 0.1 B/h), and most frequently during the summer period (B=126; 0.2 B/h).

Table 6.10: Population status of *Myotis* bat species which may be found at the site (data from Matthews *et al.*, 2018 and Battersby, 2005).

Common Name	Scientific Name	UK population status	UK population	Welsh population
Whiskered bat	<i>Myotis mystacinus</i>	Local	Not available	8,000
Brandt's bat	<i>Myotis brandtii</i>	Common in north and west, rare or absent elsewhere	Not available	22,500
Natterer's bat	<i>Myotis nattereri</i>	Fairly common throughout much of the UK	973,000	70,000
Daubenton's Bat	<i>Myotis daubentonii</i>	Common throughout much of the UK	1,030,000	95,000
Bechstein's bat	<i>Myotis bechsteinii</i>	Very rare	21,800	1,500

- 6.275 It is considered unlikely that Bechstein's bat is present due to its rarity and preference for woodland habitats (Battersby, 2005). Whiskered bat and Brandt's bat are also predominantly woodland species (Dietz *et al.*, 2009), and unlikely to use open habitats at Upper Ogmere. The species recorded at Upper Ogmere are therefore likely to be the more widespread and common Natterer's bat or Daubenton's bat. The number of recordings of *Myotis* bat passes is low, and it is unlikely that this species group uses the site with regularity. Natterer's bat and Daubenton's bat are also considered to have a low population vulnerability (see Table 6.3). The site is therefore considered to be of **negligible** importance for this species group. *Myotis* sp. bats are therefore not considered further in this assessment.

Long-eared bat sp.

- 6.276 One long-eared bat *Plecotus* sp. pass was recorded at D3 at 03:44 on 11 October 2015, and 31 passes recorded during the autumn 2018 sampling period. Passes were recorded at all detector locations in autumn 2018, with most passes at detector

- D3 (B=14). No activity by this species was recorded during the spring and summer sampling periods.
- 6.277 Long-eared bats were recorded infrequently during 2019. The majority of activity (B=43 of a total 49 passes; 0.1 B/h) were recorded during the summer period.
- 6.278 It is unlikely that these records relate to grey long-eared bat *Plecotus austriacus* due to its rarity in the UK and restricted confirmed distribution for this species (primarily confined to the southern English counties and south-west Wales (Razgour, 2012)). Therefore, it is considered that the species recorded at the site is brown long-eared bat.
- 6.279 This species has an estimated population in the UK of 934,000 (Matthews *et al.* 2018) and 17,500 in Wales (Harris *et al.*, 1995). It primarily roosts and forages in woodland, but has shown a preference for roosting in large loft spaces. Brown long-eared bats are foliage gleaning specialists, and do not typically cross open spaces (Battersby, 2005). Given the ecology of this species, absence of recorded passes at the site in spring and summer 2016 and low activity recorded during the autumn period, it is not likely that brown long-eared bats use the site on more than an occasional basis. The site is therefore considered to be of **negligible** importance for long-eared bats, and they are not considered further in this assessment.

Noctule, Leisler's bat and Serotine ('Big Bats')

- 6.280 No big bats were recorded during survey work during 2015-2018.
- 6.281 Noctule, Leisler's bat and serotine *Eptesicus serotinus* were recorded infrequently during the 2019 surveys. For noctule, a total of 11 passes (<0.1 B/h) were recorded, all during the summer period. Passes were recorded at all detectors except D1. Two passes of Leisler's bat were recorded during the survey: one on 02 June (at D2) and one on 01 August 2019 (at D6). Three passes were recorded for serotine (two on 01 August and one on 27 July 2019), all at detector location D4.
- 6.282 Noctule has an estimated population in Wales of 91,900 (Matthews *et al.* 2018), and serotine an estimated population in the UK of 136,000 (Matthews *et al.* 2018) (population estimates for noctule in the UK, Leisler's bat, and serotine in Wales are not available).
- 6.283 Noctule, Leisler's bat and serotine are all considered to be at high population vulnerability on account of their risk of collision and relative abundance in Wales (see Tables 6.2 and 6.3). Given the absence of recorded passes at the site during the 2015, 2016 and 2018 sampling periods and low activity recorded during 2019 for all species of big bat, it is unlikely that noctule, Leisler's bat or serotine bats use

the site on more than an occasional basis and the site is considered to be of importance at the **Site** level.

Amphibians

- 6.284 No records of great crested newt within 2 km of the site were returned by SEWBrEC. The closest 1 x 1 km Grid Square in which great crested newt records have been recorded is approximately 8.8 km to the south-east of the Site, in Penygraig.
- 6.285 No great crested newts were found in any of the ponds during the surveys. Palmate newts were present in all ponds, with a peak count of nine individuals. eDNA samples from two ponds adjacent to the NRW Forestry track returned negative results for presence of great crested newt.
- 6.286 The absence of the species from suitable habitat within the site indicates that the site is of **negligible** value to the species. Great crested newts are therefore not considered further in this assessment.
- 6.287 Common species of amphibian, including palmate newt *Lissotriton helveticus*, common toad *Bufo bufo* and common frog *Rana temporaria*, were found in low numbers during the 2016 surveys. Given their widespread and common status throughout Wales, it is unlikely that the importance of the site for these species extends beyond the level of the **Site**.

Reptiles

- 6.288 SEWBrEC provided one record of common lizard *Zootoca vivipara* from within 2 km of the site (Nant-y-Moel grassland in August 2003). No further records of reptiles were returned by the search.
- 6.289 The habitats on the site are likely to support common lizard³⁶, slow worm *Anguis fragilis* and adder *Vipera berus* (likely to be confined to areas of drier habitat on less intensively grazed slopes and woodland edge beyond the developable area).
- 6.290 Common lizard, slow worm *Anguis fragilis* and adder are Section 7 species of principal importance for biodiversity in Wales as a result of national population declines. The habitats present in the wider landscape are broadly similar to those found on the site, but more suitable, drier habitats can be found throughout BCB. The value of the site for reptiles is therefore unlikely to extend to the level of the County. However, the habitats on site, particularly on the drier slopes, are likely to be of value to reptiles at a level greater than the Site itself. The site is therefore considered to be important to reptiles at the **Local** level.

³⁶ A juvenile common lizard was observed basking on a rock exposure within the site during the Phase 1 habitat survey in 2014.

Water vole

- 6.291 No records of water vole within the search area were held by SEWBRcC.
- 6.292 Field signs of water vole (including latrines and a feeding station) were found alongside a watercourse within the site, and within a wet flush area approximately 100 m north of the site boundary during the Phase 1 survey in 2014. Further droppings and feeding signs were found in the off-site wet flush area during targeted survey work in 2016. The targeted work also identified some burrows alongside watercourses within the site that had dimensions suitable for use by water vole and/or bank vole *Myodes glareolus* and brown rat *Rattus norvegicus*, but did not exhibit signs of current use. No evidence of water vole were recorded during a survey visit in May 2020, suggesting that the area is unlikely to be frequently used by this species. The locations of water vole field signs recorded during the work are illustrated on Figure 6.4.
- 6.293 Water vole are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are a Section 7 species of principal importance for biodiversity under the Environment (Wales) Act 2016. A species action plan for water vole was included within the 2002 Bridgend LBAP. Species action plans do not form part of the most recent 2014 LBAP, but water vole remain a notable species, providing an indicator of the condition of riverine and wetland habitats within the county.
- 6.294 Water vole are a native and locally common species but vulnerable to extinction in the UK. The UK population of water vole has seen significant declines (estimated at 90%³⁷) since the introduction of the American mink *Neovison vison* in the 1960's. Unsympathetic riverside management, urbanisation of floodplains, and water pollution have also impacted on populations.
- 6.295 There are a number of water vole reintroduction projects in South Wales (such as at Magor Marsh and Cosmeston Lakes) that have attempted to reconnect fragmented water vole populations occurring across the area. Local populations are likely to be an important constituent of fragmented meta-populations and, therefore, and in this context are considered important at the **County** level.

Otter

- 6.296 SEWBRcC did not hold any records for otter *Lutra lutra* within 2 km of the site. No evidence of otter, such as prints or spraints, was recorded along any of the watercourses during the water vole survey work in 2016 and 2020.

³⁷ Source: <https://ptes.org/campaigns/water-voles>

- 6.297 The watercourses on the site are considered to be sub-optimal for use by otters for foraging due to the small nature of the channels (all sourced within the site) and the assumed lack of (large) fish prey and other prey items such as amphibians. The wet flushes on and adjacent to the site are similarly considered to be of little value to otter. The lack of suitable shelter opportunities also reduces the likelihood of otter using the site. For this reason, otters are **not considered further**.

Badger

- 6.298 SEWBrEC provided two records of badger *Meles meles* from the area of search: approximately 1.5 km east of the site (July 2014) and 2 km south-east of the site (September 2011) respectively. No further information regarding the type of record (i.e. sett or individual) was provided in either case.
- 6.299 No evidence of the presence of badger, such as setts, latrines, or trails, was recorded on the site through all the survey visits, and it is unlikely that badgers use the site on more than an occasional basis.
- 6.300 Given that no setts were found on the site, it is very unlikely that badgers will be affected, or that an offence under the Protection of Badgers Act 1992 would occur as a result of the Development. Notwithstanding this, areas within the developable area considered to be suitable for sett excavation (particularly drier areas of acid grassland) will be subject to a pre-construction check for evidence of badger use and the presence of setts. This will be prescribed in the Construction Environment Management Plan (CEMP) for the proposed Development. Badgers are **not considered further** in this assessment.

Invertebrates

- 6.301 The SEWBrEC data search did not return any records of invertebrate species of principal importance for biodiversity conservation in Wales (with reference to Section 7 of the Environment (Wales) Act 2016) within 2 km of the site for the last 10 years.
- 6.302 The habitats present within the site are modified and heavily grazed. Whilst the habitats on steeper parts of the site (particularly areas of dry heath) may support Section 7 species (such as shrill carder bee *Bombus sylvarum*), these areas will not be affected by the proposed Development. No evidence of devil's bit scabious *Succisa pratensis* (the host plant of marsh fritillary *Euphydryas aurini*) was found during the Phase 1 and NVC survey work.
- 6.303 The loss of low quality and degraded moorland and grassland habitats as a result of the proposed Development is only likely to result in a minor effect on commonly occurring species. Therefore, invertebrates are **not considered further** in this assessment.

Summary of Evaluation of Resources

Table 6.11. Summary of evaluation of resources

Receptor		Evaluation	Further consideration required
Statutory Sites	Mynydd Ty-isaf SSSI	National	No
	Cwm Cyffog SSSI	National	No
	Blaenrhondda Road Cutting SSSI	National	No
	Cwm Du Woodlands SSSI	National	No
	Blackmill Woodlands SAC/SSSI	International	No
	Severn Estuary SPA	International	No
Non-Statutory Sites (SINCs)	NPT Watercourses	County	Yes
	Blaengarw North-East, Nant-y-Moel Farm, Rhiw Fer, Fforch Wen Mosaic, Cwmparc, Ton Pentre Slopes, Mynydd Tyle-coch, Mynydd Blaenrhondda and Mynydd Ty-isaf, Scotch Street, Caroline Street, Ancient Woodland, Gwynfi Street	County	No
Habitats	Acid and marshy grassland mosaic	Local	Yes
	Improved grassland and arable	Negligible	No
	Semi-improved acid grassland	Site	No
	Wet modified bog	Local	Yes
	Bog pool	Local	Yes
	Dry heath	Local	No
	Streams and flushes	Local	Yes
	Ponds	Site	Yes
	Rock escarpments and scree slopes	County	No
	Plantation woodland	Local	No
Birds	Red kite	Local	Yes
	Hen harrier	Negligible	No
	Honey buzzard	Negligible	No
	Goshawk	Local	Yes (construction phase only)
	Peregrine	Local	Yes
	Merlin	Local	Yes
	Kestrel	Local	Yes
	Hobby	Negligible	No

Receptor		Evaluation	Further consideration required
	Short-eared owl	Negligible	No
Birds	Golden plover	Local	Yes
	Other waders	Site	Yes
	Other Species	Site (for breeding passerines only)	Yes (construction phase only: standard practice avoidance of impacts breeding passerines)
Bats	Nathusius' pipistrelle	Site	Yes
	Common pipistrelle	Site	Yes
	Soprano pipistrelle	Site	Yes
	Myotis sp.	Negligible	No
	Long-eared bat sp.	Negligible	No
	Noctule	Site	Yes
	Leisler's bat	Site	Yes
	Serotine	Site	Yes
Amphibians	All species	Site	Yes
Reptiles	All species	Local	Yes
Other mammals	Water vole	County	Yes
	Otter	Negligible	No
	Badger	Negligible	No (but pre-construction checks for setts required)
Invertebrates	All species	Negligible	No

Likely Significant Effects

6.304 This section of the chapter includes:

- A detailed assessment of potential effects on each ecological and ornithological receptor identified in the evaluation of resources section as requiring further assessment;
- Conclusions with regard to the significance of these impacts that could arise in the absence of mitigation.

Construction Effects

- 6.305 Construction of the Proposed Development is likely to extend over 10 months. Construction activities will include ground clearance (including selected felling of trees adjacent to the NRW Forestry track - refer to Chapter 3 for further information), excavation and construction of the turbine bases and access tracks, the erection of the turbines and the movements of machinery and construction personnel.
- 6.306 Temporary land take will be needed for construction compounds and borrow pits which total approximately 11.7 ha. There would be temporary disturbance on land surrounding the turbine bases and some of the access road that would be subject to restoration once construction is complete.
- 6.307 The grid connection cable will be installed underground to the north-western corner of the site. It will then continue south along the western boundary of the site above ground on wooden poles to join the existing 66kV wood pole connection from the Llynfi Afan Wind Farm to Pyle. The underground section within the site will follow the track infrastructure from the substation.

Protected Sites

- 6.308 The NPT Watercourses SINC is important at **County** level. The SINC extends to the site boundary, and sections of included watercourses are adjacent to the NRW Forestry track (see Figure 6.5).
- 6.309 The nearest watercourses included within the SINC are 150 m distant from the proposed Development. This is also the nearest point to the SINC at which ground works will occur on the site. Given the nature of the SINC (which will likely be fed by ground and surface water collecting within the site and areas adjacent to the NRW Forestry track), there is the potential for an adverse effect on the SINC arising because of sedimentation and pollution during the construction phase.
- 6.310 The proposed Development has been designed to avoid direct effects on watercourses (no channel crossings or other alterations to watercourses are required). Residual effects on watercourses following mitigation as outlined in Chapter 8 - Hydrology and Hydrogeology is likely to be negligible to minor.
- 6.311 Chapter 8 - Hydrology and Hydrogeology also notes that the track widening works to the existing NRW Forestry track are considered to have negligible impact on hydrology as works are limited to minor widening of the existing forestry track and diversions of existing drainage features, e.g. swales. It follows that there are unlikely to be any significant effects on the nature of the NPT Watercourses SINC as a result of the proposed track upgrade works.

- 6.312 Overall, impacts on the NPT Watercourses SINC is likely to be **negligible** without further mitigation measures over and above those applied as standard practice.

Habitats

Acid and marshy grassland

- 6.313 The acid and marshy grassland mosaic habitats are assessed as important at the level of the **Site**. The proposed Development will result in a permanent loss of 5.29 ha of the acid and marshy grassland mosaic within the site. This habitat is widely represented on the site (total 120.3 ha, of which 111.5 ha has been mapped as mosaic and 8.8 ha mapped as marshy grassland only), and a small proportion (4.3 %) will be lost through construction of site infrastructure.
- 6.314 The grid connection cable will be installed within the same trenches as the internal Wind Farm cables (located alongside access tracks). The cable route will continue west from turbine T1 to the north-western corner of the site. It will then continue south along the western boundary of the site as an overhead line supported by wooden poles spaced at approximately 35 m intervals.
- 6.315 Approximately 0.21 ha will be lost as a result of trenching works during installation of the grid connection cable from the track at turbine T1 to the western boundary of the site. This loss will be temporary in nature, and it is anticipated that the disturbed area will begin re-colonise within the first growing season.
- 6.316 The grid connection cable will be supported by wooden poles as an overhead line along the western boundary of the site (a length of approximately 0.4 km within the site).
- 6.317 Additional habitat loss resulting from installation of the overhead section will be limited to the footprint of the wooden poles (spaced at approximately 35 m intervals) and will be negligible in relation to the extent of the acid and marshy grassland mosaic within the site.
- 6.318 Given that a small proportion of this modified and grazed habitat will be affected, impacts are likely to be adverse, but **significant** at the level of the **Site** only.

Wet modified bog

- 6.319 The wet modified bog habitats are assessed as important at the **Local** level. A loss of 0.08 ha (of a total 11.4 ha mapped within the site) of this habitat will occur during construction phase works to allow for construction of access tracks. The access tracks in this area will follow the principles of a floating track design (see Chapter 8 - Hydrology and Hydrogeology): stone and/or geotextile will be laid directly onto existing vegetation in order to maintain the existing hydrology. Given this, it is likely that impacts will be temporary (for the life of the Wind Farm) and

the habitat would be expected to recolonise following decommissioning. Indirect, hydrological impacts on surrounding areas of this habitat are not likely to occur.

- 6.320 Given the limited, temporary nature of impacts on wet modified bog habitat the significance of effects is likely to be low, and unlikely to extend beyond the level of the **Site**.

Bog pool

- 6.321 The bog pool is assessed as important at the **local** level. It is set within an area of wet modified bog and will not be directly impacted by construction phase works. Short-term indirect hydrological effects from nearby groundworks are unlikely due to the use of a floating track design. The significance of effects is likely to be **negligible**.

Streams and flushes

- 6.322 The streams and flushes are assessed as important at the **Local** level. All streams present on site source from within the site boundary and are therefore minor in extent and seasonal in nature. None of the streams will be crossed by infrastructure and will therefore not be directly affected during the construction phase. Residual impacts on streams are assessed as being “Negligible to Minor” (see Chapter 8 - Hydrology and Hydrogeology, and as described in the Protected Sites section above). Therefore, impacts on stream ecology are also likely to be **negligible**.

Ponds

- 6.323 The ponds are assessed as important at the level of the **Site**. The on-site ponds will not be directly affected during the construction phase. The nearest works will be 300 m north of the ponds, and there is no hydrological connection between the ponds and nearest works area. No track upgrade works will be required in areas adjacent to the ponds alongside the existing NRW Forestry track. Use of the track by construction traffic may result in minor and temporary dust deposition and sedimentation. However, these effects will be mitigated through standard control measures as specified in the CEMP for the proposed Development. The significance of effects is likely to be **negligible**.

Plantation woodland

- 6.324 The plantation woodland habitat has been assessed as important at the **Local level**. Removal of small areas³⁸ of mature plantation woodland will result in a permanent,

³⁸ Whilst only a metre or two of additional track width is required at most, there might be a need to fell larger blocks (up to approximately 8.6 ha). The maximum felling requirements have been agreed in consultation between RES and NRW and have been designed to ensure that trees will be felled back to a firm edge to avoid wind throw. However, it is anticipated that significantly less felling will be required, as only minor widening of the forest track is required. Exact felling requirements will be agreed with the AIL delivery haulier prior to construction.

adverse impact. However, the effects are unlikely to be significant because of the small extent of the loss in respect of the total extent of this habitat locally, and the nature of the affected habitat (mature sitka spruce is of low biodiversity value). Notwithstanding the potential for impacts on breeding birds (which will be mitigated through standard practices (see the following section)), the significance of the loss of small areas of mature sitka spruce plantation is considered to be **negligible**.

Birds

- 6.325 Effects of land take (i.e. decreased resource availability) on birds are likely to be negligible as only common ground-nesting passerines (meadow pipit and skylark) have been shown to use the open areas of the site for breeding. The main construction phase consideration is disturbance leading to displacement.
- 6.326 The extent of the effects of construction on birds would depend upon the timing of disturbing activities, the degree of displacement (spatially and temporally) that occurs, the size, suitability and proximity of habitats available to displaced birds, and their capacity to accommodate them.
- 6.327 There is little readily available literature that details how birds respond to construction-related disturbance associated with proposed Development. This is likely to be because disturbance during construction is short term and can often be mitigated by avoiding sensitive areas and certain times of year. Most studies of bird wind farm interactions have concentrated on operational phase disturbance and collision.
- 6.328 Notwithstanding the above, there is a risk that if construction work is undertaken in the breeding season (the species recorded during baseline breeding bird survey work will predominantly breed between March and August inclusive) the active nests or eggs of ground-nesting birds, and those breeding in the Bwlch Forestry could be damaged or destroyed, or young birds killed or injured. Without mitigation this would contravene the provisions of the Wildlife and Countryside Act 1981 (as amended). The effect of this has not been assessed as measures would inevitably need to be taken to ensure legislative compliance. There is specific guidance, last updated in March 2016, on the SNH website with regard to this³⁹. The measures to manage the implementation of appropriate protection measures would be included in the CEMP.

³⁹ <https://www.nature.scot/sites/default/files/2017-09/Guidance%20note%20-%20Dealing%20with%20construction%20and%20birds.pdf>

Red Kite

- 6.329 The population of red kite using the site is considered to be of importance at the **Local** level. There is no breeding habitat for red kite within the site, and no evidence was found to indicate breeding red kite within woodland edges immediately adjacent to the site during breeding season survey work in 2014, ~~and~~ 2015 and 2020. In addition, the low level of recorded activity of this species over the site suggests that any adverse effect that could arise from disturbance or foraging habitat loss during the Construction Phase would not be significant. Impacts on red kite as a result of habitat loss and disturbance could be adverse but would be **not significant** at any geographical level.

Goshawk

- 6.330 The value of the site to goshawk is considered to be **negligible**. However, goshawks breed in the local area, and the plantation adjacent to the NRW Forestry track is considered to be of **Local** importance for the species.
- 6.331 It is possible, in the absence of mitigation, that disturbance to nest sites could occur if felling in areas adjacent to the NRW Forestry track takes place within 250 - 450 m (FCS, 2006) during the breeding season.
- 6.332 Such disturbance effects could be adverse, but likely to be **not significant** at any geographical level in terms of the local and favourable conservation status of goshawk. However, in the absence of mitigation measures disturbance could represent an offence under the Wildlife & Countryside Act 1981 and mitigation needs to be considered.

Peregrine

- 6.333 The population of peregrine using the site has been considered to be of **Local importance**. However, breeding season survey work completed in 2014, ~~and~~ 2015 and 2020 did not record peregrine breeding within the site. Peregrine are likely to overfly the site on an occasional basis, although the lack of supporting habitat for suitable prey (such as wood pigeon *Columba palumbus*) makes it likely that habitat loss during the Construction Phase would be of **negligible significance**. Disturbance effects are also assessed as being **not significant** at any geographical level given that the nearest known breeding territory (located at Mynydd Ty Isaf) is beyond the published minimum distance of disturbance for the species (FCS, 2006).

Merlin

- 6.334 The site is considered to be of importance at the **Local** level for merlin. The habitats within the developable area have limited potential for breeding merlin, and no evidence of breeding was recorded during the 2014-~~16~~, 2015, 2016 and 2020

survey work. Therefore, direct impacts to breeding birds (through potential disturbance or destruction of nests) are considered unlikely. The habitats within the site are considered to be of value to foraging merlin as they support breeding passerines. Loss of a small proportion of these habitats during the construction phase is likely to result in an adverse effect. However, the limited extent of habitat lost (11.7 ha) is a small proportion of the total available locally and is not likely to result in a significant effect on the local population of merlin. Habitat loss during construction is considered to be **adverse** but **not significant**. Foraging birds may be temporarily displaced as a result of construction phase disturbance; however, effects are likely to be very localised (around active machinery), and **not significant** at any geographical level when taken with the area of foraging habitat available locally.

Kestrel

- 6.335 The site is considered to be of importance at the **Local** level for kestrel. The available breeding habitat for kestrel within the site is limited to the Werfa Masts and associated powerline poles. No breeding was observed on these features during breeding season survey work in 2014, ~~and 2015~~ and 2020.
- 6.336 Kestrel were recorded foraging over the site irregularly during the survey work. The habitats on the site are likely to support suitable prey items for kestrel (such as small mammals and amphibians). However, the loss of approximately 11.7 ha (6.5 % of the total available habitat (177.43 ha) within the developable area, and a very small proportion of the total habitat available locally) during construction is likely to be **not significant**. As is the case for merlin, foraging birds may be temporarily displaced as a result of construction phase disturbance, but effects are likely to be very localised, and **not significant** at any geographical level.

Golden plover

- 6.337 The site is considered to be of importance for golden plover at the **Local** level. The site is beyond the breeding range for golden plover. Effects of habitat loss are likely to be **not significant** given the availability of suitable habitat locally. Disturbance effects on wintering and passage birds will be localised and short-term and, given the low-level use of the site recorded for this species, the local conservation status of these species is likely to be **not significant** at any geographical level.

Other Waders

- 6.338 The site is considered to be of importance for wintering and passage snipe and jack snipe at the **Site** level. Effects will be limited to habitat loss and localised and short-term disturbance of roosting birds. Habitat loss effects will be **not**

significant given the total area of similar habitat available locally. It is considered likely that a small number of birds will be disturbed during construction given the low-level use of the site recorded for both species. Disturbance effects are likely to be **not significant** at any geographical level.

Passerines

- 6.339 The breeding bird population is considered likely to be of interest at a **Site** level. The effect on breeding passerines will be the long-term loss of 11.7 ha of suitable breeding habitat from within the site. The direct effect of the loss of a small amount of ground-nesting habitat is assessed as being permanent and adverse, but of negligible significance when taken with the total area of available habitat locally. Indirect effects arising from direct disturbance of nesting birds adjacent to the Wind Farm infrastructure would also be limited in extent and be temporary, especially given the low density of common ground nesting birds present on the site. The overall direct and indirect disturbance effects are assessed as adverse, but **not significant** at any geographical level.

Bats

- 6.340 The site is considered to be of importance for Nathusius' pipistrelle, common pipistrelle, soprano pipistrelle, noctule bat, Leisler's bat and serotine at the **Site** level.
- 6.341 The relatively low value of the habitats (as foraging habitat) and the limited extent of these habitats to be lost during Construction Phase works will not give rise to a significant effect on the bat community. The effect of habitat loss will therefore be neutral and will not impact on the local or favourable conservation status of any species. No significant nocturnal disturbance through lighting, noise or vibration is anticipated, and indirect effects on bats will be **not significant** at any geographical level.

Amphibians

- 6.342 The site is considered to be of interest at the **Site** level for amphibians.
- 6.343 Common species of amphibian were found at low density in aquatic habitats during the 2015 surveys and are likely to be present in low number in surrounding terrestrial habitat. The limited extent of effects on terrestrial habitat arising from Construction Phase Works makes it likely that any direct effects on amphibians would be temporary, adverse, but of **negligible significance**. No direct adverse effects are likely to occur on the ponds on the site or adjacent to the NRW Forestry track.

Reptiles

- 6.344 The site is of importance to reptiles at the level of the **Site**. In the absence of mitigation, the Construction Phase Works carry a risk of killing or injury of reptiles. The extent of habitat loss during the Construction Phase Works will be limited, and the majority of available habitat for reptiles within and adjacent to the site will be retained. General good practice measures will be implemented as prescribed in the CEMP to avoid killing or injury of reptiles during ground works within the site and localised upgrade works to the NRW Forestry Track. The significance of the effects on the population of reptiles at this stage is therefore likely to be **negligible**.

Water Vole

- 6.345 The site is considered to be of importance to water vole at the **County** level. Adverse effects to the water courses within the site will not occur (see Streams and Flushes section above). Measures to avoid indirect effects on watercourses arising as a result of pollution and sedimentation will be implemented as standard practice and further details are included in Chapter 3 and Chapter 13.
- 6.346 The Construction Phase works will result in minor loss of wet habitats within the site which may be used by water vole (4.3 % of marshy grassland / mosaic and >1 % of wet modified bog mapped within the site). The loss of habitat is considered adverse but is not likely to have a significant effect on the local water vole population on account of its limited extent, and likely low-level use of the site (based on the absence of any signs of presence in 2020). In addition, the infrastructure layout will avoid any direct impacts on watercourses, and the location of new tracks (near to an existing road) will not result in habitat fragmentation. However, wWorks in these areas carry a low risk of killing or injury to of water vole; ~~however, the limited extent of works is unlikely to result in a high risk of this occurring.~~ Measures to avoid the risk of killing or injury ~~of water vole~~ will be implemented as part of the CEMP. Given the low risk of impacts and employment of standard practice avoidance measures, it is considered that direct adverse effects on water vole are likely to be **significant** at the level of the **Site**.

Operational Effects

Protected Sites and Habitats

- 6.347 Land take resulting from access tracks, turbine bases, areas of hard standing and ancillary structures will result in the permanent loss of approximately 11.7 ha hectares of habitat. This equates to approximately 0.3 % of the total land area within the site boundary.

- 6.348 Aside from loss of area due to land take, no additional effects are likely to occur on protected sites or habitats during Wind Farm operation. There is the potential for hydrological effects to occur as a result of alterations to ground and surface water flows around the built infrastructure. However, the residual operational phase hydrological effects are considered to be Negligible or Minor (see Chapter 8 - Hydrology and Hydrogeology).
- 6.349 It is likely that the energy storage facility will be installed during the operational phase of the Wind Farm. However, this will be sited within the construction compound area and therefore no additional land-take will be required⁴⁰.

Birds

- 6.350 There are two ways in which birds can be affected by operational wind farms: through displacement due to ongoing disturbance caused by the machines (and by periodic servicing of them), and through collision with moving blades or associated infrastructure, e.g. the guy lines of meteorological masts.
- 6.351 A range of studies have concluded that most bird species are not significantly affected by operational wind farms (e.g. Vauk, 1990; Phillips, 1994; Percival, 2005, 2000 Devereux *et al* 2008; Winkelmann, 1994; Langston & Pullan, 2003; Hotker *et al*, 2006). This is reflected by SNH Guidance (2017) on birds and wind farms which does not, for example, normally recommend surveys for breeding passerines. SNH Guidance, which is the UK standard, indicates that effort should focus on species / species groups that are thought to be susceptible to the effects of wind farms or highly protected species on which effects remain unclear. In the context of the site, those species that are most susceptible are likely to be those that have a low tolerance to disturbance (such as golden plover; Pearce-Higgins *et al*, 2009), that breed on open moorland (such as merlin), and are susceptible to collision (such as red kite and kestrel; inferred from collision data presented by the Brandenburg Institute: Dürr, ~~2018~~2020⁴¹).

Displacement

- 6.352 Survey work ~~in 2014-16~~between April 2014 and March 2016 inclusive, and between April and August 2020 inclusive did not record any breeding raptors on the site. Potential disturbance effects will be limited to foraging birds.
- 6.353 There appear to be few if any studies of red kite displacement as a result of wind farms. In deriving an avoidance rate for red kite, Urquhart & Whitfield (2016) reference an unpublished report⁴² that concluded any background change in post-

⁴⁰ Additional cables will pass directly from the energy storage facility to the adjacent substation

⁴¹ <https://ifu.brandenburg.de/cms/detail.php/bb1.c.312579.de> (last updated ~~March 2018~~January 2020)

⁴² Fielding, A.H. & Urquhart, B. 2013. Modelling the potential impacts of wind farm mortality on the Central Scotland red kite *Milvus milvus* population. Unpublished report to the Braes of Doune Wind Farm Ornithology Steering Group.

- construction potential for flight activity [as a result of displacement] would be unlikely at the study wind farm (Braes of Doune) due to the effect of an expanding population. In addition, baseline survey data to support repowering and extension of life schemes, such as that at Bryn Titli (Powys) indicate that flights regularly occur within 200 m of turbines, which therefore suggests that displacement effects are minimal. Authors such as Bellebaum *et al* (2013) have concluded that kites are not displaced based on finding corpses close to turbines in Germany. However, this may not be entirely representative of the situation on the site, as in the German study the turbines are in arable land and kites are more likely to forage in the habitat around the turbine bases than elsewhere.
- 6.354 It is concluded that very localised displacement of red kite may occur in the immediate vicinity of turbines, but the principal issue for assessment is potential for collision.
- 6.355 The VP survey work in 2014-16 and 2020 resulted in ~~one~~ three flights of goshawk being recorded over the site. There is no breeding habitat for goshawk within the site, and the value of the site for goshawk has been assessed as of negligible importance for the species.
- 6.356 There are no breeding peregrine within the site, and the site is of little value to foraging birds (evidenced by the low level of recorded activity during the 2014-16 and 2020 work). The eyrie at Mynydd Ty-isaf is beyond the published minimum distance of disturbance for peregrine (FCS, 2006). It is therefore concluded that displacement of peregrine during operation of the Wind Farm is unlikely to occur.
- 6.357 There is limited breeding habitat for kestrel within the site, and breeding was not recorded during the 2014-16 or 2020 work. Given this, displacement of breeding birds is unlikely to occur. Kestrel do use the site for foraging (albeit irregularly); however, they are known to continue foraging activity close to turbines, showing low levels of turbine avoidance (Pearce-Higgins *et al*, 2009).
- 6.358 Golden plover do not breed on the site, and use of the site during passage and winter months is irregular involving low numbers of birds. Hotker *et al* (2006) reported that of 22 operational wind farm sites for which monitoring of wintering golden plover was conducted, six sites showed a minimum disturbance (displacement) distance of 50 m, nine of 150 m, four of 250 m, two of 350 m and one 850 m. The latter result appears likely to reflect localised circumstances (such as a lack of alternative habitat closer to the site), as it is exceptional. McLoughlin *et al* (2012) conducted post construction monitoring at Out Newton Wind Farm, in the East Riding of Yorkshire. This study, which recorded considerable baseline use of the area by plovers pre-construction, did not suggest that birds were displaced,

as slightly elevated use of the airspace close to the turbines was recorded after construction.

- 6.359 Recent studies by BSG Ecology⁴³ at a wind farm in East Yorkshire have recorded golden plover in winter flocks foraging close to the base of an operational wind turbine, suggesting that golden plovers are tolerant of turbines outside of the breeding season.
- 6.360 Taking a worst-case scenario, if golden plovers are displaced from the turbine locations, based on their frequency of use of the site and the maximum flock size recorded, the effect is likely to be negligible.
- 6.361 Snipe and jack snipe do not breed on the site. Studies indicating disturbance and displacement of snipe at wind farms have focussed on breeding birds (e.g. Pearce-Higgins *et al*, 2009). As with golden plover, displacement of birds (if construction phase work is carried out during the winter period) is likely to result in a minor and temporary adverse effect that is unlikely to be significant.
- 6.362 It follows that displacement effects during operation of the Wind Farm on any raptor or wader species at any geographical level are **not significant**.

Collision

- 6.363 The level of collision will depend on the extent to which birds are displaced, and their ability to detect and manoeuvre around rotating turbine blades. Birds that collide with blades are likely to be killed or fatally injured.
- 6.364 NRW and other nature conservation consultees recommend that collision risk of birds at wind farms is calculated using the model developed by Bill Band of SNH (in de Lucas *et al*, 2007). The extent to which outcomes of modelling reflect observed mortality rates has always been questionable, and the subject of academic debate (Chamberlain *et al.*, 2005; Chamberlain *et al*, 2006; Madders & Whitfield, 2006; Drewitt & Langston, 2006; Fernley, Lowther & Whitfield (2006)). The main limitations of the model are that pre-construction use of the airspace above a site by birds is assumed to be representative of the use of the airspace following wind farm construction, and that the rate of avoidance applied to the output of the model is often arbitrary. Where empirical estimates of avoidance can be applied, the model becomes a far more useful tool.
- 6.365 Red kite, kestrel, peregrine, goshawk, merlin and golden plover were recorded flying at collision risk height within 250 m of the Turbine Array. SNH accepts avoidance rates of 98 % can be applied when modelling collision risk for red kite, peregrine. For kestrel, the accepted avoidance rate is 95 % to reflect the increased

⁴³ <http://www.bsg-ecology.com/golden-plover-operational-wind-farm/>

- susceptibility to collision due to the species' flight behaviour (including hovering) (Urquhart, 2010)⁴⁴.
- 6.366 The approach that has therefore been taken has been to look at empirical data for avoidance or typical flight characteristics that may have a bearing on likelihood of collision in each species seen, while also considering modelled collision risk where data have been collected that allow calculations to be made.
- 6.367 Various published studies have concluded that collisions are rare events, often occurring in situations where there are large numbers of birds (such as on narrow-front migratory flyways), or where the behaviour of birds leads to high risk situations (such as where wind turbines are located on the shortest route between a breeding colony and a foraging area) (e.g. Langston & Pullan, 2003 ; Drewitt & Langston, 2006 ; Hotker *et al.*, 2006). Any source of additional mortality may be significant for long-lived species with low productivity and slow maturation rates, especially if these species are relatively rare or in decline. Assessment of collision risk therefore concentrates on these species, as relevant to the site.
- 6.368 Knowledge of the susceptibility of bird species to collision with wind turbines has taken many years to emerge. Before empirical data were available, it was assumed that species with a high wing loading and low manoeuvrability in flight were likely to be most susceptible to collision with turbine blades. However, as data have emerged it has become clear that this initial assessment was too simplistic.
- 6.369 Table 6.12 below provides a summary of current knowledge of the UK and European population sizes and the known collisions of red kite, kestrel, peregrine and golden plover. It is based on mortality data collated by Dürr (2018/2020), with context provided by European bird population estimates from Birdlife International (2004) and Mebs & Schmidt (2006) and UK population estimates by Musgrove *et al* (2013).

Table 6.12 Known collisions of birds with Wind Turbines in Europe (in the context of populations).

Species	Known collisions in Europe to date (UK component in brackets where relevant)	UK population estimate		European population estimate	
		Breeding	Winter	Breeding	Winter
Red kite	468-605 (5)	2,800 pairs	N/D*	25-33,000 pairs	N/D

⁴⁴ An avoidance rate of 99 % is accepted for hen harrier, and 98 % for merlin, and goshawk; although insufficient 'at risk' flight data was generated for these species to complete a meaningful analysis with regard to the site.

Kestrel	557 598	46,000 pairs	N/D	300,000-440,000	N/D
Peregrine	28-31 (1)	1,500 pairs	N/D	100,000-499,999	N/D
Goshawk	16	280-420 pairs	N/D	166,000-220,000	N/D
Merlin	4	900-1,500 pairs	N/D	32,000-51,600	N/D
Golden plover	39 42	38,000-59,000 pairs	420,000	1300,000-1750,000	N/D

*N/D = Data not available

- 6.370 Robust monitoring of bird mortality at wind farms is uncommon, and collisions may be under recorded. There will also be biases in the data, as wind farms in some parts of Europe are more frequently and effectively monitored than others, and bird species show differences in abundance across their range which may influence their likelihood of encountering wind farms. Many collisions of raptors have occurred around migratory bottlenecks, particularly Southern Spain where wind farms are located close to the Strait of Gibraltar, and some individual wind farms account for a disproportionately large proportion of total collisions.
- 6.371 Despite these shortcomings and biases, however, the data collated by Dürr on behalf of the Brandenburg Institute indicate that some species and species groups appear more susceptible to collision than others. There is very little evidence, for example, of collision of swans or geese, and in the context of populations, the number of collisions of wader species such as golden plover and snipe is very small. For some raptor species collisions are clearly higher in the context of populations.

Red kite

- 6.372 Data collated by Dürr (~~2018~~2020) indicate there have been ~~468-605~~ collisions of red kites with wind turbines recorded in Europe to date (latest update ~~19 March 2018~~07 January 2020). Of these, ~~398-532~~ have been in Germany, 1 in Denmark, 30 in Spain, ~~48-19~~ in France, 5 in Great Britain and 12 in Sweden. Other sources suggest that at least 7 collisions of red kites have now occurred in Great Britain (Duffy & Urquhart, 2014), with three at the Braes of Doune Wind Farm (Stirlingshire), one at Fairburn Wind Farm in Ross-shire, one at Llandinam Wind Farm (Powys) a collision near a feeding station at Bwlch Nant-yr-Arian (Aberystwyth, Ceredigion) and one reported from Craig Cefn Parc (Swansea)⁴⁵.
- 6.373 At the Braes of Doune Wind Farm, post construction monitoring has included the radio tracking of red kites, in combination with regular surveys of the area and corpse searches informed by scavenger removal and searcher efficiency studies. Three collisions of kites have been recorded in 4.5 years, which is less than the estimated number of collisions predicted through modelling to support the

⁴⁵ Online information suggests that this collision has been incorrectly attributed to the Swansea area, and in fact refers to a collision that occurred in Powys in 2003. There is a wind farm above Craig Cefn Parc (Mynydd y Betws), but this only became operational in 2013.

- planning application for the site (albeit not all corpses may have necessarily been detected). The other UK collisions were not recorded as part of structured post construction monitoring work.
- 6.374 The population of red kite in Germany is between six and nine times larger than that of the UK based on Birdlife International (2004) data and more recent UK population estimates (Musgrove *et al*, 2013).
- 6.375 Uncultivated land around turbines in arable areas has been linked to mortality in Germany, i.e. the areas that cannot be ploughed become far richer in terms of small mammal prey than surrounding arable land, and kites therefore preferentially forage close to turbines (putting themselves at risk of collision). Red kites in northern Europe also have a far greater tendency to migrate, with many birds moving to the Iberian Peninsula in winter, whereas UK birds tend to be relatively sedentary. It is possible that birds moving through unfamiliar landscapes are more susceptible to collision mortality than their UK counterparts. The Braes of Doune work is therefore considered to be more applicable to the site than statistics from continental Europe until further research is completed.
- 6.376 A total of 80 red kite flights were recorded through the turbine locations (and a 'buffer' area of 250 m around them) at collision risk height during the 2014-16 work. Modelling has resulted in a predicted rate of collision of 0.31 kites per year (on the basis of 98 % avoidance. Details are presented in Appendix 6.4).
- 6.377 During the breeding season 2020, a total of 10 red kite were recorded through the turbine locations (and a 'buffer' area of 250 m around them) at collision risk height. Modelling on the 2020 data has resulted in a predicted rate of collision of 0.27 kites per year (on the basis of 98 % avoidance. Details are presented in Appendix 6.4).
- 6.378 Survey work completed on extension of life schemes by BSG Ecology (for example, BSG 2017) has resulted in observations of frequent avoidance behaviour by red kite within the airspace over existing wind farms. Birds were typically seen to adjust their course to avoid the rotor swept area of a turbine and, occasionally, were observed to fly into areas of turbulence created by the rotors and remain there for a few seconds before proceeding on their flight path. No kites were observed to collide with turbines during survey work over the course of a year. This, together with the low number (5) of reported collisions in the UK, suggests that the actual avoidance rate for red kite is likely to be higher than the published rate of 98 %.
- 6.379 Notwithstanding this, the collision rate of 0.31 kites per annum (based on 2014-16 data) and 0.27 kites per annum (based on 2020 data), as predicted by the model, equates to the loss of approximately 1 bird every three years. Should the predicted collisions affect young (first winter / sub adult) birds the effect on the population is likely to be imperceptible, as rates of overwinter survival for first year birds are

likely to be low. If adult / birds of breeding age were killed, this would potentially open up an opportunity for the recruitment of sub adults into the local population to replace them (which is likely given the expanding regional population). Adverse effects on red kite arising as a result of collision are considered to be **not significant** at any geographical level.

Kestrel

- 6.380 Of a total of ~~557~~598 officially documented collisions in Europe, none are from the UK. Large proportions of the total collisions across Europe were reported from Germany (~~419~~135 collisions) and Spain (273 collisions) (Dürr, ~~2018~~2020). Thirty-six of the collisions in Spain have been recorded at the Park Pesur, Gibraltar, and are likely to include migrating birds.
- 6.381 A review of data by Whitfield and Madders (2006) suggest that kestrel appear to be relatively vulnerable to collision strikes. This observation was based on collision fatality data collected at 13 wind farms in northern Spain by Lekuona & Ursúa (2006). During the two-year study, a total of 457 observations of kestrel were made, and 12 birds were found dead as a result of collision.
- 6.382 Martin (2017) notes that some collision-prone species (including species of crane, bustard, vulture and eagle) have frontal binocular fields that are of restricted vertical extent and include extensive blind areas above and below them. In these birds a relatively small change in the pitch of the head brings this blind area forwards in the direction of travel. The aforementioned species typically spend time looking downwards for habitats in which to forage or roost or for prey / carrion. This is likely to make them susceptible to collision. It is possible, given the manner in which kestrel forage, that this is also a reason why relatively large numbers of collision victims have been recorded in that species in Europe.
- 6.383 Survey work in 2014-16 recorded 25 kestrel flights that passed through the turbine locations and a 'buffer' area of 250 m around them at collision risk height. In 2020, three flights were recorded at collision risk height within 250 m of turbine locations. Modelling of the 2014-16 data has resulted in a predicted rate of collision of 0.28 kestrel per year or 1 bird every 3 years (on the basis of 95 % avoidance). Insufficient flight activity within 250 m of turbine locations was recorded for kestrel in 2020 to complete a meaningful analysis, and therefore, collision risk based on 2020 data has not been modelled. Details are presented in Appendix 6.4.
- 6.384 As with kite, the risk of collision may be weighted towards newly fledged, inexperienced birds. If this were to be the case, then impacts on the local population would be imperceptible due to likely low winter survival rates. However, the local population status is unclear and therefore, the loss of adult birds from the population would be significant, particularly given reported regional

declines (Balmer *et al*, 2017) and red conservation status in Wales (Johnstone *et al*, 2010).

- 6.385 The East Glamorgan Bird Atlas⁴⁶ indicates that breeding season records of kestrel occurred in 159 tetrads within the recording area between 2008 and 2011. Of these, breeding was likely to have occurred in 101 tetrads. Given this, the productivity at the County level would be likely to exceed the loss of breeding adults as a result of collision (even if, in the worst case scenario, the risk of collision was weighted towards breeding adults).
- 6.386 Considering the model prediction, collisions of kestrel over the life of the 35-year Wind Farm are likely and effects are considered to be **significant** at the **Local** level. This conclusion is precautionary; in the event that juvenile or first winter birds were killed, the potential for a discernible impact on the population at any geographical level would be minimal.

Peregrine

- 6.387 Dürr (2020~~18~~) reports 28 collisions in Europe for peregrine, one of which is from the UK (at Burgar Hill, Scotland). The majority of reported collisions are from Germany (19 collisions), with six reported from Spain, three from Belgium, one from Austria and one from Netherlands.
- 6.388 Five flights of peregrine were recorded through the turbine locations (and a 'buffer' area of 250 m around them) at collision risk height. No flights at collision risk height were recorded during the 2020 survey work. -The model (based on 2014-16 data) predicts a rate of collision of 0.017 peregrine per year (on the basis of 98 % avoidance), or 1 collision every 55 years.
- 6.389 Given the model prediction, the likelihood of collision of peregrine over the term of the Wind Farm is negligible and **not significant** at any geographical level.

Goshawk

- 6.390 Data collated by Dürr (2020) indicate there have been 16 collisions of goshawk with wind turbines recorded in Europe. Of these, nine were reported from Germany, and four from Spain; none have occurred in the UK.
- 6.391 Two flights of goshawk were recorded within 250 m of turbine locations at collision risk height during the 2020 survey work. No flights were observed within the collision risk zone during the 2014-16 survey work. Given the very low number of flights recorded for this species, the collision risk data is unlikely to be robust, and therefore, modelling has not been undertaken for goshawk.

⁴⁶ <http://www.eastglamorganbirdatlas.org.uk>

- 6.392 It is reasonable to conclude that the likelihood of collision of goshawk over the term of the Wind Farm is negligible and not significant at any geographical level.

Merlin

- 6.393 Dürr (2020) reports four collisions in Europe for merlin: two of which are from Germany, one from Spain and one from Norway.
- 6.394 One flight of merlin was recorded within 250 m of turbines at collision risk height during the 2020 survey work. No flights were observed within the collision risk zone during the 2014-16 survey work. Collision risk modelling has, therefore, not been undertaken as it would be unlikely to provide a meaningful result.
- 6.395 Given the very low level use of the airspace within the collision risk zone by merlin, it can be concluded that the likelihood of collision over the term of the Wind Farm is negligible and not significant at any geographical level.

Golden Plover

- 6.396 A total of 39 golden plover fatalities in Europe have been reported by Dürr (~~2018~~2020), with none occurring in the UK. In the context of European breeding and wintering populations, this level of mortality is very low.
- 6.397 A total of 189 flights by golden plover were made through the turbine locations and a 250 m buffer area around them. No flights at collision risk height were recorded during the 2020 survey work. Modelling has predicted a collision rate of 0.24 birds per annum (based on 2014-16 data ~~on and applying the~~ default 98 % avoidance rate). However, collision risk modelling, which either assumes a random flight path is taken by (typically) a single bird (such as an eagle or a kite) or a predictable flight path is taken by flocks of birds (such as geese or swans), is not suitable for flocking species that undertake non-directional, wheeling flights, such as golden plover. SNH reportedly accept the limitations of their model, and it is not always used for modelling likely effects on the basis that there is little faith in the outputs.
- 6.398 Given the unexceptional nature of the habitats on the site (in relation to those available in the wider area), the low level of use recorded, and the very low levels of fatality recorded in Europe to date, it is considered that the calculated collision risk for the site is an over-estimate of the likely scenario. Studies by Whitfield (2007) concluded that the American golden plover *Pluvialis dominica* was able to take avoidance action in more than 99% of potential collision events. Given the close relationship (in both phylogeny and behaviour) between the two species, it is reasonable to assume that a 99% avoidance rate can also be applied to European golden plover, resulting in a calculated collision rate at Upper Ogmere of one bird every 7 years. It is likely, given the exceptionally low mortality rate recorded by Dürr (~~2018~~2020), that the predicted number of collisions is an overestimate.

Notwithstanding this, the risk of collision is considered unlikely to result in a significant impact on the local population, and effects will be indiscernible over the life of the Wind Farm. It is considered that collision effects on non-breeding golden plover will be adverse but **not significant** at any geographical level.

Bats

Vulnerability to collision

- 6.399 The potential risk to bats colliding with operating wind turbines has been assessed using professional judgement with reference to the methods described by SNH *et al.* (2019) and outlined in the Assessment Methodology section of this chapter.
- 6.400 A study undertaken by the University of Exeter on behalf of Defra (Mathews *et al.*, 2016) indicated the mortality rate of bats at wind turbines in the UK ranged from 0 to 5.25 bats per turbine per month across 46 sites sampled over a three year period.
- 6.401 The study indicated that bat casualty rates are highly variable and cannot be simply correlated with activity levels (Mathews *et al.*, 2016). I.e. higher levels of baseline activity do not necessarily result in a higher risk to bats. Notwithstanding this, the Defra study indicated that the UK bats which were most likely to be killed at wind farm sites were common and soprano pipistrelle and noctule bats.
- 6.402 Table 6.13 below provides a summary of current knowledge of the UK population sizes⁴⁷ and the known collisions of Nathusius' pipistrelle, common pipistrelle, soprano pipistrelle, noctule, Leisler's bat and serotine. It is based on mortality data collated by Dürr (2019), with context provided by Matthews *et al.*, (2018).

Table 6.13 Known collisions of birds with Wind Turbines in Europe (in the context of populations).

Species	Known collisions in Europe to date (UK component in brackets)	UK population estimate
Nathusius' pipistrelle	1538 (1)	16,000 ⁺
Common pipistrelle	2362 (46)	3,040,000
Soprano pipistrelle	439 (52)	4,670,000
Noctule	1538 (11)	656,900 (exc. Scotland)
Leisler's bat	711 (0)	10,000 [!]
Serotine	611 (0)	136,000

*N/D = Data not available

⁺Estimated by BCT (2017).

[!]Taken from Harris *et al.* (1995) and graded as poor reliability by the authors.

⁴⁷ There are no currently published reliable estimates of population sizes in Europe.

Nathusius' Pipistrelle

- 6.403 Mathews *et al.*, (2018) indicates that there is insufficient basis to form a reliable population estimate of Nathusius' pipistrelle in the UK. However, BCT (2017) suggest a UK population of 16,000 bats. The UK is likely to be at the edge of the species' range, with strongholds in central Europe (Dietz *et al.*, 2009) and this is reflected in the collision data reported by Dürr (2019) for the UK and Europe respectively. The IUCN Red List status for Nathusius' pipistrelle is Least Concern (Paunović & Juste, 2016).
- 6.404 The likelihood of collision of Nathusius' pipistrelle is increased due to the tendency of the species to commute over open habitats. Nathusius' pipistrelle is, therefore, at high risk of collision with wind turbines and that populations of this species have a high likelihood of being threatened by collision events.
- 6.405 However, the level of activity recorded within the site is "low" for Nathusius' pipistrelle. One confirmed pass of this species was recorded in a total of 1061.5 hours of survey time during the 2015, 2016 and 2018 work, and a further 2107 hours of survey time during 2019. This equates to an overall average encounter rate of 0.0003 B/h, and falls below the 20th percentile of bat activity data collected by BSG Ecology at 52 other sites across England, Wales and Scotland (20th percentile = 0.001 B/h. see Table 6.6). The overall risk assessment for Nathusius' pipistrelle is therefore Low in accordance with the matrix presented in Table 6.7.
- 6.406 It is reasonable to conclude, given the very low recorded use of the site by Nathusius' pipistrelle, that collision events are unlikely to occur (despite a high risk of collision at the individual level), and the proposed Development is unlikely to have any discernible impact on the population at any geographic level. The risks to Nathusius' pipistrelle are, therefore, considered to be **not significant**

Common and Soprano Pipistrelle

- 6.407 Dürr (2019) reports 2362 collisions of common pipistrelle and 439 collisions of soprano pipistrelle in Europe, with 46 and 52 collisions respectively reported in the UK.
- 6.408 Both common and soprano pipistrelle bats are considered common at the local, county and national level (Wray *et al.*, 2010). In addition, they are known to favour foraging in edge habitat (Natural England, 2014); therefore there is a low likelihood that individuals of these bat species will collide with the turbines at Upper Ogmores at a level which would adversely affect the favourable conservation status of the local population. Presence of woodland within 1.5 km of wind farms has been found to reduce risk to pipistrelle bats (Mathews *et al.*, 2016). In this case, there are areas of woodland adjacent to the western and eastern boundaries of the site and within 240 m to the north of the site.

- 6.409 The level of activity recorded within the site is “low” for both species based on 2019 survey data (0.3 B/h for common pipistrelle and <0.1 B/h for soprano pipistrelle) in comparison to bat activity data collected by BSG Ecology at 52 other sites across England, Wales and Scotland⁴⁸ (median = 4.1 B/h for common pipistrelle and 0.8 B/h for soprano pipistrelle. See Table 6.6). The overall risk assessment for both species is therefore Low in accordance with the matrix presented in Table 6.7.
- 6.410 Given that the favourable conservation status of common and soprano pipistrelle bats using the site will be maintained, the risks to these species are considered to be **not significant**.

Noctule, Leisler’s bat and Serotine

- 6.411 Dürr (2019) reported 1538 collisions of noctule in Europe, including 11 in the UK⁴⁹. This is the third highest number of collisions for a species reported by Dürr (following common and Nathusius’ pipistrelle with 2362 and 1564 reported collisions respectively). Comparatively few collisions of Leisler’s bat and serotine have been reported in Europe (with no records for the UK). However, this is likely to be reflective of relatively lower populations (based on the UK estimates (in the absence of European population estimates) provided in Table 6.13)
- 6.412 The level of activity recorded within the site is “low” for noctule, Leisler’s bat and serotine based on 2019 survey data (noctule = 0.005 B/h; Leisler’s bat = 0.0009 B/h; serotine = 0.001 B/h) in comparison to other bat activity data collected by BSG Ecology at 52 other sites across England, Wales and Scotland (20th percentile = 0.06 B/h (noctule), 0.003 B/h (Leisler’s bat); and 0.002 B/h (serotine) respectively. See Table 6.6). None of these species were recorded over the site during the survey work in 2015, 2016 and 2018.
- 6.413 The overall risk assessment for noctule, Leisler’s bat and serotine is therefore Low in accordance with the matrix presented in Table 6.7, and the risks to these species are considered to be **not significant**.

Other Species

- 6.414 It is not anticipated that further adverse effects on amphibians, reptiles or water vole will occur during operation of the Wind Farm. Operational phase hydrological effects are considered to be Negligible or Minor (see Chapter 8 - Hydrology and Hydrogeology) and no further land take will occur.

⁴⁸ Based on this activity rate falling into the lower fifth of activity rates (split by 20th percentile) from results from similar surveys carried out by BSG at 52 locations in England, Wales and Scotland where these species were recorded.

⁴⁹ The date and location(s) of the UK collisions are not provided.

- 6.415 For amphibians and water vole, operational phase effects will be **neutral**. The creation of access tracks and associated drainage features may provide basking and sheltering opportunities for reptiles. This could constitute a **minor, beneficial effect**.

Decommissioning Effects

- 6.416 The effects of decommissioning have the potential to be similar to those during construction phase but are likely to occur over a shorter time period.
- 6.417 In the absence of any significant residual hydrological effects (see Chapter 8 - Hydrology and Hydrogeology) there are unlikely to be any effects on protected sites, or habitats that are present within the site at the time of decommission. Habitats lost during the construction phase will be allowed to regenerate to a condition representative of the baseline (such as the area of wet modified bog) due to the floating track construction that will be removable in its entirety. Turbine foundations may be left in situ but will be buried with top-soil to allow colonisation of species present within the surrounding sward.
- 6.418 Species most likely to be disturbed and displaced from the site during decommissioning are those that breed, roost or forage within it at that time.
- 6.419 It is reasonable to expect that there will be changes in legislation concerning protected species, as well as changes in local populations and distribution over the operational life of the Wind Farm. These may be driven by climatic change, landscape-scale land management, increased effectiveness / policing of protection, changes in the attitude of land managers to birds, the spread of reintroduced populations, changes on the wintering and staging grounds of migrant species and other factors.
- 6.420 Predictions are not therefore possible, with any confidence, over a 35-year period (particularly given the rate of change in number and distribution of many protected species over the past 35 years). It follows that effects on birds, bats, reptiles, amphibians and water vole would be best addressed through a decommissioning phase Environmental Management Plan.

Mitigation

- 6.421 Measures to avoid or minimise the severity of impacts on ecological features and that are not already designed into the CDMS (as set out in Chapter 3: Proposed Development), are set out in this section. Also set out are other measures to ensure compliance with wildlife legislation in the case of protected species.
- 6.422 Full mitigation measures will be set out in an Ecological Management Plan, as referenced in Chapter 13. This will detail all measures to avoid killing or injury to protected species, and habitat protection methods.

Ecological Management Plan

- 6.423 Documentation will be produced that sets out the initial broad objectives for mitigation, monitoring, and ecological protection. This can be incorporated into the CEMP for the proposed Development, or as a standalone Ecological Management Plan (EMP). The EMP will include a Water Vole Conservation Strategy (WVCS) which will detail the construction phase working methods to be implemented to avoid killing or injury of water vole, as well as protection and management of habitats that may be used by water vole.
- 6.424 In addition to the requirements of the WVCS, tThe Ecological Management PlanEMP should set out a framework for more general ecological measures throughout the lifetime of the Wind Farm, including any pre-work measures that are required. The EMP and WVCS will be submitted to Statutory Consultees for review prior to the commencement of construction.
- 6.425 Key aims of the Ecological Management Plan should be agreed with Statutory Consultees and are expected to include:
- Identification of broad objectives of the Ecological Management Plan;
 - Appointment of an ecologist to monitor the project and ensure compliance with all relevant regulatory and other requirements, method statements and plans, and to report to the principal contractor and statutory consultees;
 - Detailed methods for all species and habitat protection including aftercare and including timescales for each element;
 - Detailed methods for all habitat re-instatement measures include detailed timescales for each element;
 - An agreed programme of monitoring and / or identification of practical options for input into local initiatives. This should be drawn up in consultation with statutory consultees; and
 - The identification of appropriate ecological awareness training for site staff and contractors in respect of the presence of protected and sensitive species and the importance of species mitigation measures.
- 6.426 An outline of specific methods to mitigate impacts on habitats and protected species is provided below.

Habitats

- 6.427 Measures for topsoil and peat removal, storage and replacement are set out in Chapter 8 - Hydrology. Common land de-registered as a result of land-take during construction of the Wind Farm will be replaced through a land swap agreement. The replacement land is within the site boundary (see Figure 12.2), and primarily comprises semi-improved grassland with areas of improved grassland, marshy

grassland and flush habitats. It is considered likely that the replacement land would develop into an acid and marshy grassland mosaic, reflective of the common land lost to the development, when taken out of active agricultural improvement.

- 6.428 The potential for on-site habitat enhancement is very limited, and any enhancement measures are unlikely to provide biodiversity resilience in the long term (due to the isolated nature of the Site). Off-site habitat enhancement will be delivered through contributions to local initiatives. The availability of suitable local habitat restoration and management initiatives has been confirmed with the BCBC Ecologist, Robert Jones (pers. comm. 03 February 2020). The allocation of contributions will be agreed with NRW and BCBC, and secured prior to commencement of construction works.

Birds

- 6.429 For any elements of the work that cannot be completed outside the breeding season, construction phase surveys for active nests ahead of ground works will take place.
- 6.430 If breeding birds are found within the development footprint, work in the affected area will be re-scheduled until after the young birds have successfully fledged (or breeding has failed).
- 6.431 It may be possible to clear areas for subsequent development ahead of the breeding season, and keep these areas cut short to prevent birds from nesting. Maintenance of the sward in these areas would have to be regular and informed by checks by an ecological clerk of works.
- 6.432 Impacts on kestrel can be mitigated through contributions to local initiatives focussed on management of moorland habitats (as suggested in para. 6.407). Improvement of off-site foraging resources will aim to improve reproductive success and allow expansion of local populations.

Bats

- 6.433 The overall risk to all species of bat recorded at Upper Ogmere has been assessed as being “Low” in accordance with assessment methods outlined in SNH *et al.*, (2019). It is therefore not considered necessary to provide a curtailment regime during operation of the proposed Development.
- 6.434 SNH *et al.* (2019) further indicates that post-construction monitoring is “*normally only required where the mitigation involves curtailment*”. Therefore, post-construction casualty searches are not considered necessary at Upper Ogmere.
- 6.435 However, SNH *et al.* (2019) guidance recommends that, wherever it is practically possible, turbine blades are pitched out of the wind (feathered) to reduce their rotation speeds below 2 rpm when idling. This is only applied when the turbines

are not generating a commercial output, and may reduce fatality rates by up to 50 % (SNH *et al.*, 2019). The feathering of blades when idling is also a mitigation measure proposed in the Action Plan for the Conservation of All Bat Species in the European Union 2018-2024 (Barova & Streit, 2018). Therefore, it is proposed that the turbines at Upper Ogmere will be feathered when not generating a useable output.

Reptiles and Amphibians

- 6.436 All vegetation within the footprint of the proposed Development should be managed prior to commencement of the construction phase. All vegetation within the footprint of the Wind Farm infrastructure will be reduced to ground level over a two-stage cutting regime to allow reptiles and amphibians to disperse from the construction area. These areas will be checked by an ecologist prior to ground works taking place. Vegetation in these areas will not be allowed to re-grow once reduced down to ground and cutting should be carried out regularly as required throughout the construction period.

Water vole

- 6.437 The proposed Development has been designed to avoid effects on watercourses within the site (see Chapter 3: Proposed Development and Chapter 8 - Hydrology). However, other wet habitats within the site (such as marshy grassland and wet modified bog) may be used by water vole. Further measures to avoid indirect effects (such as pollution or sedimentation of wet habitats and killing or injury of water vole) will be set out in the WVCS and implemented through the project CEMP. Thorough checks of areas of wet habitats within the footprint of the proposed Development will be completed immediately prior to vegetation management (as detailed above) to ensure absence of water vole. Vegetation management will prevent water vole colonising the construction footprint for the duration of the works. These measures will avoid killing or injury of water vole during construction.

Other protected species

- 6.438 Although no impact on badgers is predicted, and no setts have been located, it is possible that badgers could move on to the site and create a sett that would have to be taken account of appropriately prior to work starting. During the construction phase, checks should be made by ecologists while on the site for any evidence of badgers using the site more frequently. If a sett is located at any time then its implications for development should be assessed at that point and an appropriate mitigation identified and documented. NRW and the LPA will be informed of how this was dealt with and consulted when necessary if the situation is considered complicated.

Cumulative Effects

Guidance

- 6.439 SNH (2012) guidance states that a cumulative ornithological assessment should assess the effects of the proposal in combination with:
- existing development, either built or under construction;
 - approved development, awaiting implementation; and,
 - proposals awaiting determination within the planning process with design information in the public domain.
- 6.440 Cumulative effects are most likely to result with regard to those receptors for which a significant residual effect is predicted, particularly if the core range of these receptors includes other planned, consented or built development. Based on the baseline data collected in relation to the scheme, there are no ornithological receptors that occur regularly on or in the airspace over the site that would be expected to range beyond 10km from it. This distance has therefore been taken as a reasonable distance over which cumulative effects should be considered.

Wind farm Developments Considered

- 6.441 There are nine consented or operational wind farms within 10 km of the site for which information has been sought. These are presented in table 6.14 (below).

Table 6.14 Wind farm developments considered as part of cumulative assessment.

Wind Farm	Easting	Northing	Distance (km) ⁵⁰	Status
Llynfi Afan	290057	195043	1.6	Operational
Pant y Wal Extension	294934	191615	4.5	Operational
Pant y Wal / Fforch Nest	296123	190975	5.8	Operational
Abergorki	295989	199006	6.1	Consented
Pen y Cymoedd	289656	200850	6.5	Operational
Maerdy	295548	200072	6.7	Operational
Ferndale	298901	196403	7.5	Operational
Ffynnon Oer	284567	198831	8.2	Operational
Mynydd Bwllfa	295411	201989	8.2	Operational
Melin Court	284952	200550	8.9	Consented ⁵¹

⁵⁰ Distances are taken from centre point of the Wind Farm to the centre point of each scheme considered in the assessment.

⁵¹ An amendment to increase the height of the turbines (from 145 m to 149.9 m) has been submitted)

- 6.442 The twelve turbine Llynfi Afan Renewable Energy Park is characterised by a mosaic of acid, improved and species poor semi-improved upland grasslands. Other habitats, including marshy grassland (which is the most frequent), scree, dense scrub and bog occur more locally.
- 6.443 While a variety of protected and scarce bird species were noted using the site / the airspace above it, no significant adverse ornithological effects were predicted in the ES for the site⁵². Wider ecological impacts were assessed as being slight (adverse) with regard to two SINC, reptiles, amphibians and a variety of representative habitats during construction, and on bats and marshy grassland during operation. A commitment was made to a Habitat Management Plan aimed at the restoration and management of semi-natural moorland and woodland habitats in the area and to a commuted sum to a community scheme with similar aims, and to monitoring of locally-breeding raptors in the ES.
- 6.444 The twenty-one turbine Pant y Wal wind farm (which incorporates the Fforch Nest wind farm) and the twelve turbine Pant y Wal Extension site are located in upland moorland (open and rushy pasture) to the east of the Ogmore Valley. The Non-Technical summary for the Pant y Wal Extension (WYG, 2014) noted that residual impacts of the site were not considered significant, as the design had sought to avoid loss of sensitive habitats (such as bog and watercourses) and mitigation and habitat management was proposed to minimise effects on otter, goshawk and reptiles. The Pant y Wal site is subject to a Landscape and Ecological Management Plan, while it is understood from planning information⁵³ contained on the BCBC website that it was recommended that consent of the Extension was also subject to conditions relating to a Construction Environmental Management Plan and a Habitat Management Plan.
- 6.445 The consented three turbine Abergorki wind farm, will essentially form an extension to the operational Pen y Cymoedd and Maerdy wind farms (detailed below). The Non-Technical Summary of the Environmental Statement for the site (LUC, 2013) identified that impacts on blanket bog and valley mire habitats had been minimised through avoidance, and collision of bats and peregrine falcon (the only bird species to generate a collision risk) would not result in significant effects. A habitat management plan to restore bog and dry heath habitats was proposed; it is expected that this has been conditioned.
- 6.446 Pen y Cymoedd is the largest onshore wind farm in Wales (76 turbines) and became fully operational in Spring 2017. It is located in upland conifer plantation across two local authority areas, Neath Port Talbot and Rhondda Cynon Taf.

⁵² Effects on kestrel were not considered the ES.

⁵³ <https://democratic.bridgend.gov.uk/documents/s4013/4%20P%2014%20293%20FUL.pdf>

- 6.447 The residual impacts of the Pen y Cymoedd wind farm were stated as being:
- The direct loss of 0.85 ha of bog and marshy grassland (along with 250 ha of plantation of which 55 ha was on peat), and indirect impacts (through drainage) on a further 172 ha of peat. However, it was noted that 200 ha of the area to be cleared would be allowed to regenerate as semi-natural habitat, and that up to 327 ha of bog and 50 ha of river corridor would be restored in connection with the development.
 - Potential collision risk to birds and bats. This was assessed as being a slight risk, and unlikely to significantly impact local populations.
- 6.448 Habitat restoration, monitoring of impacts on bats (collision) and breeding birds (location and productivity of nests of honey buzzard and nightjar) were conditions of the Pen y Cymoedd planning consent.
- 6.449 Maerdy is an eight-turbine wind farm located in upland moorland adjacent to Pen y Cymoedd. It has been operational since 2013. There is very little information publically available in relation to the scheme, but key ecological issues are likely to have been impacts on typical upland habitats, raptors and bats.
- 6.450 Ffynnon Oer is a sixteen-turbine wind farm located in an open area of sheep-grazed, rushy moorland adjacent to the Pen y Cymoedd wind farm. It has been operational since 2006. Public domain information is not freely available (assumedly due to the age of the scheme); however, it is likely that the main ornithological and ecological considerations for the site will have been collision of birds (and potentially bats) during the operational phase of the scheme.
- 6.451 The consented five-turbine Melin Court wind farm would also be located on moorland adjacent to the Pen y Cymoedd wind farm. The non-technical summary for the site (Hyder Consulting, 2014) indicates that (following confirmation of these through scoping), the main considerations for the assessment were potential impacts on marshy grassland (including rhos pasture), bog, bats and a range of locally-occurring bird species (including honey buzzard, nightjar, red kite and kestrel). Commitments also included habitat enhancement to mitigate impacts on bats and some bird species and monitoring of honey buzzard. Further measures to mitigate the ecological impacts of the scheme were the subject of planning conditions. These included the production of a Construction Phase Environmental Management Plan (with various ecological requirements) and the employment an ecological clerk of works (ECoW) to ensure construction phase impacts were minimised.
- 6.452 The eight turbine Ferndale wind farm has been operational since 2011. It is located in upland moorland habitats. Limited information is publically available with regard to the scheme, but it is likely that collision of peregrine falcon and impacts

on bog, acid grassland and the local SINC network were key concerns for assessment.

- 6.453 Mynydd Bwllfa is a twelve-turbine scheme that has been operational since 2015. There is limited public domain information available with regard to the scheme, but neither the Countryside Council for Wales (now part of NRW) or RSPB Cymru objected to it, with the latter recommending appropriate conditions (such as a Habitat Management Plan) be conditions of consent. In addition, the Inspector found no compelling ecological or ornithological reasons for refusal of the scheme at planning appeal⁵⁴.

Assessment of Cumulative Effects

- 6.454 The review of wind farm impacts and measures to address these suggests that effects on habitats are largely offset on a site-by-site basis through habitat management and restoration initiatives and, where proportionate to impacts, consideration of funding of local landscape scale habitat restoration projects.
- 6.455 Cumulative impacts are therefore likely to be restricted to those species that range across a variety of sites.
- 6.456 A locally significant effect has been predicted for kestrel as a result of operation of the Wind Farm. Given that the schemes assessed for cumulative effects typically occupy similar habitats within the local landscape, it is likely that kestrel will range and disperse across them to some extent, and there is therefore the potential for a cumulative effect.
- 6.457 Impacts on kestrel have not been assessed in detail by these schemes (with the exception of Melin Court) due to the relatively recent change in status of this species in Wales.
- 6.458 The Melin Court Ornithological Impact Assessment suggested habitat creation and management within the respective application site to directly benefit kestrel and offset potential cumulative impacts in relation to the Ffynnon Oer wind farm.
- 6.459 Proposals for habitat management offered by other schemes, such as for Pen y Cymoedd, and financial input into local initiatives aimed at enhancing biodiversity as offered by Llynfi Afan may also benefit kestrel (albeit indirectly) in terms of the availability of foraging and breeding resources locally.
- 6.460 It follows that while it is possible that cumulative effects on kestrel are significant at a higher geographical level than 'Local' any effects may be partially offset by measures delivered by these schemes.

⁵⁴ <http://pennantwalters.co.uk/assets/projects/4/pdfs/2011%20RCT%20Planning%20Officer's%20Reports.pdf>

- 6.461 Given the very low levels of use of the site and the airspace above it by other bird species that have the potential to collide with or be displaced by wind farms, the limited foraging potential of the site, and typical ranging distances of these species, significant cumulative effects are unlikely to occur.
- 6.462 Bat survey resulted in very low levels of activity being recorded over the site; it follows that it would be logical to conclude that no significant effects on bats will occur from the construction and operation of the project. ~~However, the additive effect of additional fatality on wide-ranging bat species, particularly Nathusius' pipistrelle, which has been recorded at the site (individuals of which are likely to range across most or all of the sites considered above), and the conclusion of Defra-funded research (Matthews *et al.*, 2016) that pre-construction activity levels were not directly related to operational phase fatality levels dictates the need for acoustic monitoring to support this conclusion.~~

Residual Effects

- 6.463 The assessment of effects on each receptor has accounted for measures designed into the Development and those that will be committed to in the project CEMP. Residual effects for all receptors described, with the exception of kestrel, are unlikely to be significant at more than the **Site** level.
- 6.464 For kestrel, effects are currently assessed as being of significance at the **Local** to **District** level, with the latter area referring to the wider area in which turbines are located. A proposed contribution to local initiatives focussed on management of moorland habitats will aim to mitigate impacts to the local population during operation of the Wind Farm. Providing enhanced resources locally will enable greater resilience in the population should a collision event occur.
- 6.465 The proposed Development has been designed to avoid direct impacts on watercourses, and thorough checks of areas of wet habitats within the footprint of the proposed Development will be completed to avoid the risk of killing or injuring water vole. Residual effects are considered to be **not significant**.
- 6.466 This assessment has fully considered the principles of and guidance provided by Planning Policy Wales 10, TAN 5, the Environment (Wales) Act, the Bridgend LDP, Strategic Policy 4 and associated Policies ENV4, 5 and 6. In particular, consideration has been given to international responsibilities and the protection of designated sites. From an ornithological and ecological perspective, the scheme is compatible with all relevant recommendations of these policy documents.

Summary

6.467 Table 6.8 (below) summarises the residual effects of the proposed Development

Table 6.15: Summary of Residual Effects

Receptor		Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Non-Statutory Sites (SINCs)	NPT Watercourses	Negligible	None (more than already already designed into the CDMS)	Commitment to CDMS	Negligible
Habitats	Acid and marshy grassland mosaic	Habitat loss at construction phase. Site significance	Habitat protection for retained habitat areas. Replacement common land.	Ecological Management Plan / CEMP. Common land swap agreement.	Habitat loss. Site significance
	Wet modified bog	Habitat loss at construction phase. Site significance	Habitat protection for retained habitat areas	Ecological Management Plan / CEMP	Habitat loss. Site significance
	Bog pool	Indirect hydrological effects at construction and operational phase Site significance	Habitat protection for retained habitat areas.	Ecological Management Plan / CEMP Commitment to CDMS	Indirect hydrological effects Site significance
	Streams and flushes	Indirect hydrological effects at construction and operational phase Site significance	Habitat protection for retained habitat areas	Ecological Management Plan / CEMP Commitment to CDMS	Indirect hydrological effects Site significance
	Ponds	Negligible	None (more than already already	Commitment to CDMS	Negligible

			designed into the CDMS)		
Receptor		Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Birds	Red kite	Foraging habitat loss, collision and displacement effects. Not significant.	None	N/A	Not significant
	Goshawk	Habitat loss at construction phase. Adverse effect but not significant. Negligible collision and displacement effects.	Timing of works. Pre- construction check for nest sites	Ecological Management Plan / CEMP	Not significant
	Peregrine	Collision and displacement effects. Not significant.	None	N/A	Not significant
	Merlin	Foraging habitat loss, collision and displacement effects. Not significant.	None	N/A	Not significant
	Kestrel	Habitat loss not significant. Collision effects of Local significance.	Funding off- site habitat creation initiatives	Agreement with NRW and BCBC	Local to District level significance (precautionary)
	Golden plover	Habitat loss and localised disturbance during construction phase. Risk of collision	None	N/A	Not significant

		Not significant			
Receptor		Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Birds	Other waders	Habitat loss and localised disturbance during construction phase. Not significant	None	N/A	Not significant
	Passerines	Destruction of nests and disturbance of breeding birds. Not significant	Timing of works or pre-construction check for nesting birds	Ecological Management Plan / CEMP	Not significant
Bats	All species	Habitat loss and risk of collision. Not significant	Feathering turbine blades on idle.	Ecological Management Plan	Not significant
Amphibians	All species	Potential for killing or injury. Habitat destruction during construction phase. Adverse effects but not significant	Vegetation management pre-construction	Ecological Management Plan / CEMP	Not significant
Reptiles	All species	Potential for killing or injury. Habitat destruction during construction phase. Adverse effects but not significant	Vegetation management pre-construction	Ecological Management Plan / CEMP	Not significant

Receptor		Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Other mammals	Water vole	Potential for killing or injury. Habitat destruction during construction phase. Adverse effects significant at the Site level	Pre-construction survey and hand search of sensitive areas prior to ground disturbance	Ecological Management Plan / CEMP	Not significant

References

- Balmer D., Gillings, S., Caffrey, B., Swann, B., Downie, I., & Fuller, R. (2013). Bird Atlas 2007 - 2011. The breeding and wintering birds of Britain and Ireland. BTO Books, Thetford.
- Bat Conservation Trust (2012). The state of the UK's bats: National Bat Monitoring Programme Population Trends 2012. The Bat Conservation Trust.
- Bat Conservation Trust (2017). The National Bat Monitoring Programme. Annual Report 2017. Bat Conservation Trust, London.
- Bat Conservation Trust (2018). The National Bat Monitoring Programme. Annual Report 2018. Bat Conservation Trust, London.
- Band, W, Madders, M, & Whitfield, D.P. (2007) Developing field and analytical methods to assess avian collision risk at wind farms. In: Janss, G, de Lucas, M & Ferrer, M (eds.) Birds and Wind Farms. Quercus, Madrid. 259-275
- Battersby, J. (Ed) & Tracking Mammals Partnership. 2005. UK Mammals: Species Status and Population Trends. First Report by the Tracking Mammals Partnership. JNCC/Tracking Mammals Partnership, Peterborough
- Brown, A.F. & Shepherd, K.B (1993). A Method for Censusing Upland Breeding Waders. Bird Study, Vol. 40: 3, pp. 189 -195.
- CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- Cochran, W.W. & Applegate, R.D. (1986) Speed of flapping flight of merlins and peregrine falcons. The Condor. 88:397-398
- Chamberlain, D.E., Freeman, S.N., Rehfisch, M.R., Fox, T. & Desholm, M. (2005). Appraisal of Scottish Natural Heritage's wind farm collision risk model and its application. BTO Research Report 401. British Trust for Ornithology, Thetford.
- Chamberlain, D.E., Rehfisch, M.R., Fox, A.F., Desholm, M & Anthony, S.J. (2006). The effect of avoidance rates on bird mortality predictions made by wind turbine collision risk models. Ibis 148, 198-202
- Cramp, S. 1980. Handbook of the Birds of Europe the Middle East and North Africa. The Birds of the Western Palearctic. RSPB / Oxford University Press.
- de Lucas, M.G.F., Janss, S.F.E & Ferrer, M. (2007). Birds and wind farms: risk assessment and mitigation. Quercus, Madrid, Spain.

- Dean, M., Strachan, R., Gow, D., & Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds. Fiona Matthews and Paul Chanin. The Mammal Society, London
- Devereux, C.L., Denny, M.J.H. & Whittingham, M.J. (2008) Minimal effects of wind turbines on the distribution of wintering farmland birds. *Journal of Applied Ecology* doi: 10.1111/j.1365-2664.2008.01560.x
- Dietz, C., Helverson, O., Nill, D. (2009) Bats of Britain, Europe and North-West Africa. A & C Black.
- Douglas, D. J. T. , Bellamy, P.E. & Pearce-Higgins, J. W.(2011). Changes in the abundance and distribution of upland breeding birds at an operational wind farm. *Bird Study*, 58: 1, 37-43
- Drewitt, A.L & Langston, R.H.W. (2006). Assessing the impacts of wind farms on birds. *Ibis* 148: 29-42.
- Duffy, K. & Urquhart, B. (2014) Braes of Doune Windfarm Report on Red Kite Studies 2004 - 2012. Natural Research Projects Ltd.
- Dürr, T. (~~2018~~2020). Vogelverluste an Windenergieanlagen / bird fatalities at wind turbines in Europe. <http://ow.ly/wusS9>
- Dürr, T. (2019). Auswirkungen von Windenergieanlagen auf Fledermäuse / bat fatalities at wind turbines in Europe. <http://ow.ly/wusS9>
- Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA & Gregory RD (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708-746.
- English Nature (2001) The Great Crested Newt Mitigation Guidelines Peterborough, English Nature
- European Commission (1992) Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC).
- Entwistle, A., Gibson, S., Harris, S., Hutson, A., Racey, P. and Walsh, A. (2001). Habitat management for bats. A guide for land managers, land owners and their advisors. Joint Nature Conservation Committee.
- Hardey, J., Crick, H., Riley, H., Etheridge, B., and Thompson, D. (2013) Raptors: A field guide to surveys and monitoring. The Stationery Office; 3rd revised edition.
- Harris, S., Morris, P., Wray, S. & Yalden, D. (1995). A review of British mammals: population estimates and conservation status of British mammals other than cetaceans. University of Bristol.
- Hayhow DB, Ausden MA, Bradbury RB, Burnell D, Copeland AI, Crick HQP, Eaton MA, Frost T, Grice PV, Hall C, Harris SJ, Morecroft MD, Noble DG, Pearce-Higgins JW, Watts O, Williams JM (2017), The state of the UK's birds 2017. The RSPB, BTO, WWT, DAERA, JNCC, NE and NRW, Sandy, Bedfordshire.

Hötter, H., Thomsen, K-M & Koster, H. (2006) The impact of renewable energy generation on biodiversity with reference to birds and bats - facts, gaps in our knowledge, areas for further research and ornithological criteria for the expansion of renewables. NABU Report, Germany.

Huso M, Dalthorp, D and Korner-Nievergelt, F. (2017) Statistical principles of post construction fatality monitoring in Perrow, M (2017). Wildlife and wind farms, conflicts and solutions. Volume 2 Onshore: Monitoring and Mitigation. Pelagic Publishing, Exeter UK.

JNCC (2010) Handbook for Phase 1 Habitat Survey. A Technique for Environmental Audit. JNCC

JNCC (2013) European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) Supporting documentation for the Third Report by the United Kingdom under Article 17. (Bat Species Reports). Joint Nature Conservation Committee

JNCC (2019) European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC). Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013 to December 2018. Supporting documentation for the conservation status assessment for the species: S1317 - Nathusius' pipistrelle (*Pipistrellus nathusii*). Joint Nature Conservation Committee

Johnstone I.G., Thorpe R.I. & Noble D.G. (2010). The state of birds in Wales 6. RSPB Cymru, Cardiff

Langston, R.H.W. & Pullan, J.D., (2003) Wind farms and Birds: An analysis of the effects of wind farms on birds, and guidance on environmental assessment criteria and site selection issues. Birdlife International.

Madders, M. & Whitfield, D.P. (2006). Upland raptors and the assessment of wind farm impacts. Ibis 148, 43-56.

Mathews, F., Richardson, S., Lintott, P. and Hosken, D. (2016). Defra report - Understanding the risk to European Protected Species (bats) at onshore wind turbine sites to inform risk management. University of Exeter.

Mathews F, Kubasiewicz LM, Gurnell J, Harrower CA, McDonald RA, Shore RF. (2018) A Review of the Population and Conservation Status of British Mammals: Technical Summary. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

Marquiss, M., and Newton, I. (1982) The goshawk in Britain. British Birds 75, 243-260

- Morrison, M. (2002). Searcher bias and scavenging rates in bird/wind energy studies. National Renewable Energy Laboratory. Golden, Colorado, USA.
- Musgrove, A., Aebischer, N., Eaton, M., Hearn, R., Newson, S., Noble, D., Parsons, M., Risley, K & Stroud, D. (2013). Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 106: 64-100.
- Natural England (2014). Bats and onshore wind turbines: Interim Guidance. Technical Information Note. TIN051 published by Natural England, February 2009. Natural England.
- Natural Power (2016) Llynfi Afan Renewable Energy Park Pre-Construction Ornithological Surveys 2015. Gamesa Energy UK. Unpublished
- Paunović, M. & Juste, J. (2016) *Pipistrellus nathusii*. The IUCN Red List of Threatened Species 2016
- Pearce-Higgins, J.W., Stephen, L., Langston, R.H.W., Bainbridge, I.P., Bullman, R (2009) The distribution of breeding birds around upland wind farms. *Journal of Applied Ecology*. 46:1323-1331
- Pearce-Higgins, J. W., Stephen, L., Douse, A. & Langston, R. H. W. (2012) Greater impacts of wind farms on bird populations during construction than subsequent operation: results of a multi-site and multi-species analysis. *Journal of Applied Ecology*, 49, 386-394.
- Percival, S.M. (2000). Birds and wind turbines in Britain. *British Wildlife* 12:1 pp 8-15
- Percival, S.M. (2005) Birds and wind farms: what are the real issues? *British Birds* 98: 194-204.
- Razgour O. (2012) From genes to landscapes: conservation biology of the grey long-eared bat, *Plecotus austriacus*, across spatio-temporal scales. PhD thesis, University of Bristol, UK
- Rebecca, G.W. (2011) Spatial and habitat related influences on the breeding performance of Merlins in Britain. *British Birds* vol.104, pp.202-216.
- RPS Planning and Development (2010). Llynfi Afan Renewable Energy Park Environmental Statement. Chapter 9: Ornithology. Gamesa Energy UK
- Russ, J.M. (2012). *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing, Exeter.
- Rydell, J., Bach, L., Dubourg-Savage, M., Green, M., Rodrigues, L. and Hendenström, A. (2010). Bat mortality at wind turbines in northwestern Europe. *Acta Chiroptirologica* 12: 261-274.
- Scottish Natural Heritage (2000) Windfarms and Birds - Calculating a theoretical collision risk assuming no avoiding action. SNH Guidance Note. Available at <http://www.snh.gov.uk/docs/C205425.pdf>

- Scottish Natural Heritage (2013). Avoidance rates for wintering species of geese in Scotland at onshore wind farms. SNH, Inverness.
- Scottish Natural Heritage (2014). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage, Inverness.
- Scottish Natural Heritage (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2. Scottish Natural Heritage, Inverness.
- The Welsh Ornithological Society (2014) Birds in Wales. Vol.11 No.2. Welsh Bird Report No.27 for 2013. CMP UK Ltd, Poole, Dorset.
- Urquhart, B. (2010). Use of avoidance rates in the SNH wind farm collision risk model. SNH, Lochgilphead.
- Urquhart B. & Whitfield D.P. (2016) Derivation of an avoidance rate for red kite *Milvus milvus* suitable for onshore wind farm collision risk modelling. Natural Research Information Note 7. Natur
- Vauk, G. (1990) Biological and ecological study of the effects of construction and operation of wind power land ownerships. Jahrgang/Sonderheft, Endbericht. Norddeutsche Naturschutzakademie, Germany.
- Welsh Kite Trust (2011) Boda Wennol. The Newsletter of the Welsh Kite Trust. Issue 26. Autumn 2011.
- Wernham, C.V., Toms, M.P., Marchant, J.H., Clark, J.A., Sitiwardena, G.M., & Baillie, S.R. (2002). The migration atlas: movements of the birds of Britain and Ireland. T. & A.D. Poyser. London
- Whitfield, D.P. & Madders, M. (2006). Deriving collision avoidance rates for red kites *Milvus milvus*. Natural Research Information Note 3. Natural Research Ltd, Banchory, UK.
- Whitfield, D.P. & Madders, M. (2006). A review of the impacts of wind farms on hen harriers *Circus cyaneus* and an estimation of collision avoidance rates. Natural Research Information Note 1 (revised). Natural Research Ltd, Banchory, UK
- Whitfield, D.P. (2007) The effects of Wind Farms on shorebirds (Waders: Charadrii), especially with regard to wintering golden plovers. Natural Research Ltd., Banchory
- Winkelmann, J.E. (1994) Bird/wind turbine investigations in Europe. Proc. of the National Avian Wind Power Planning Meeting, Denver, Colorado, pp 43-48.
- Wray, S., Wells, D., Long, E., Mitchell-Jones, T. (2010) Valuing Bats in Ecological Impact Assessment. IEEM In Practice December 2010, 23-25.



The Coal
Authority



INVESTOR IN PEOPLE



RTPI
Learning Partner

200 Lichfield Lane
Berry Hill
Mansfield
Nottinghamshire
NG18 4RG

Tel: 01623 637 119 (Planning Enquiries)

Email: planningconsultation@coal.gov.uk

Web: www.gov.uk/coalauthority

For the Attention of: RES Ltd

[By Email: chris.jackson@res-group.com]

31 July 2020

Dear Sir or Madam

PRE-APPLICATION ENQUIRY: PRE-APP Upper Ogmores

Upper Ogmores Wind Farm and Energy Storage Facility and Associated Infrastructure.; Upper Ogmores between Abergwynfi, Blaengarw and Nanty-y-moel, in Bridgend and Neath Port Talbot

Thank you for your consultation letter of 23 June 2020 seeking the views of the Coal Authority on the above.

The Coal Authority is a non-departmental public body sponsored by the Department of Business, Energy & Industrial Strategy. As a statutory consultee, The Coal Authority has a duty to respond to planning applications and development plans in order to protect the public and the environment in mining areas.

The Coal Authority Response:

The site falls within the defined Development High Risk Area.

The Coal Authority information indicates that within the site and surrounding area there are coal mining features and hazards, which will need to be considered in relation to the determination of any planning application, specifically probable shallow coal mine associated with thick coal seam outcrops.

In considering the nature of the development proposed, and on the basis that the site is within the defined Development High Risk Area, the planning application should be supported by a Coal Mining Risk Assessment. In terms of the accompanying Ground Investigation Report (August 2018, prepared by RSK Environment Ltd), my personal opinion is that it would be sufficient to accompany any subsequent future planning application to meet the requirements of National policy.

On the basis, that commentary in Section 2.3.1 confirms that any shallow coal workings should be at sufficient depth not to pose a risk to ground stability and be away from the proposed turbines, the response from the TCA to any consultation on any planning application from the LPA would be **no objections**. Whilst the report does conclude by confirming that deep workings may present a low risk to ground stability, on the basis that these legacy features would be outside of TCA's remit (i.e. deeper than 30mbgl), it will be for the developer to ensure a safe development.

Please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely

Chris MacArthur

Chris MacArthur *B.Sc.(Hons), DipTP, MRTPI*
Planning Liaison Manager

General Information for the Applicant

Building over or within the influencing distance of a mine entry (shaft or adit) can be dangerous and has the potential for significant risks to both the development and the occupiers if not undertaken appropriately. The Coal Authority would draw your attention to our adopted policy regarding new development and mine entries:

<https://www.gov.uk/government/publications/building-on-or-within-the-influencing-distance-of-mine-entries>

Under the Coal Industry Act 1994 any intrusive activities, including initial site investigation boreholes, and/or any subsequent treatment of coal mine workings/coal mine entries for ground stability purposes require the prior written permission of The Coal Authority, since such activities can have serious public health and safety implications. Failure to obtain permission will result in trespass, with the potential for court action. In the event that you are proposing to undertake such work in the Forest of Dean local authority area our permission may not be required; it is recommended that you check with us prior to commencing any works. Application forms for Coal Authority permission and further guidance can be obtained from The Coal Authority's website at:

<https://www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property>

Disclaimer

The above consultation response is provided by The Coal Authority as a Statutory Consultee and is based upon the latest available coal mining data on the date of the response, and electronic consultation records held by The Coal Authority since 1 April 2013. The comments made are also based upon only the information provided to The Coal Authority by the Local Planning Authority and/or has been published on the Council's website for consultation purposes in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and

amendment by The Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the Applicant for consultation purposes.



Cyngor Castell-nedd Port Talbot
Neath Port Talbot Council

Date Dyddiad	13th August 2020
Direct line Rhif ffôn	01639 686744
Email Ebost	s.jenkins1@npt.gov.uk
Contact Cyswllt	Steven Jenkins
Your ref Eich cyf	
Our ref Ein cyf	P2020/0569

Chris Jackson
Renewable Energy Systems Limited
Cedar House
Greenwood Close
Cardiff Gate Business Park
Cardiff
CF23 8RD

Dear Sir/Madam

IN RELATION TO SCHEDULE 1B ARTICLES 2C & 2D PUBLICITY AND CONSULTATION BEFORE APPLYING FOR PLANNING PERMISSION OT THE TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (WALES) ORDER 2012 (AMENDMENT) ORDER 2016 PRE APPLICATION CONSULTATION AS A NEIGHBOURING LOCAL PLANNING AUTHORITY

PROPOSAL: Pre Application Consultation (neighbouring Authority) relating to development of National Significance for a wind farm and storage facility located at Upperogmore

LOCATION Upper Ogmore Wind Farm And Energy Storage Facility

APPLICANTS NAME Chris Jackson

& ADDRESS

YOUR REF:

I refer to the above Pre Application Correspondence referred to this council as a neighbouring planning Authority in accordance with the above Order. We advise that and would offer no objections, however please have regard for the Officers report attached.

Yours faithfully



Ceri Morris – Head of Planning & Public Protection

Amgylchedd ac Adfywio

Ceri Morris Pennaeth Cynllunio a Gwarchod y Cyhoedd

Y Ceiau, Ffordd Brunel, Parc Ynni Baglan, Castell-nedd SA11 2GG
Ffôn 01639 686868

Environment and Regeneration

Ceri Morris Head of Planning and Public Protection

The Quays, Brunel Way, Baglan Energy Park, Neath SA11 2GG
Tel 01639 686868

Croesewir gohebiaeth yn y Gymraeg a byddwn yn ymdrin â gohebiaeth Gymraeg a Saesneg i'r un safonau ac amserlenni.

We welcome correspondence in Welsh and will deal with Welsh and English correspondence to the same standards and timescales.

Officer Report P2020 0569

Site and context

The application site covers an area of 384 hectares (ha). The site falls across two Local Authorities 362 ha is within Bridgend and 22ha are within NPTC (however this is the access route only) the nearest settlements are Blaengwinfi and Abergwinfi which are approximately 1.5km to the West. The Brecon Beacons National Park is located approximately 12 km north of the proposed Development. The Rhondda Landscape of Special Historic Interest is located to the north of the application Site on the opposite side of the A4107. The majority of the application site is designated as Registered Common Land and includes a network of PRow's that traverse the Site, as well as one bridleway.

Operational wind farms close to the Site include: Llynfi Afan (12 turbines) immediately west of the proposed Development; Pant-y-Wal/Fforch Nest 5.8km to the south-east (29 turbines); and the 76-turbine Pen y Cymoedd scheme to the north, approximately 6.5 km away.

Please note, we understand that in accordance with the PAC regulations we have been consulted as a neighbouring Authority to the development and not as one of the two determining authorities for the part of the development within Neath Port Talbot. As such our comments reflect this and the comment provided are given without any prejudice to any application being submitted.

Description of development

The Proposed Development comprises seven horizontal axis wind turbines. Four of the turbines are up to a maximum tip height of 149.9m and three are up to a maximum tip height of 130m. The Proposed Development would include an improved site entrance, new access tracks, crane hardstanding's, control building and substation compound, electricity transformers, underground cabling, energy storage containers, drainage works and upgrades to a forestry track

The Development consists seven wind turbines,(four up to 149.9 m tip-height and three up to 130 m tip height) The seven turbines will have a total installed capacity of approximately 25.2MW. The development also consists of approximately 4.3 km of new access track, an upgraded site entrance off the A4107, substation compound, 25 containers housing energy storage devices, drainage works, two borrow pits, one temporary and two permanent PRow diversions; and The Provision of 10.00 ha of new common land.

Material considerations

The main considerations in the determination of this consultation are the impact upon the character and appearance of the Borough, the impact upon the residential amenity of the occupiers of dwellings within Neath Port Talbot's area, the impact upon ecology and the impact upon the Highway Safety of the Authority's road network. However these comments are made without prejudice.

Policy Context

Planning Policy Wales (Edition 10)

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government (WG), and is supplemented by a series of Technical Advice Notes (TANs).

PPW states the planning system manages the development and use of land in the public interest, prioritising long term collective benefit, contributing to improving the economic, social, environmental and cultural well-being of Wales. It must reconcile the needs of development and conservation, securing economy, efficiency and amenity in the use of land, ensuring the sustainable management of natural resources and protecting, promoting, conserving and enhancing the built and historic environment.

At para 5.7 PPW advises that the planning system plays a key role in delivering clean growth and the decarbonisation of energy, as well as being crucial in building resilience to the impacts of climate change. The transition to a low carbon economy not only brings opportunities for clean growth and quality jobs, but also has wider benefits of enhanced places to live and work, with clean air and water and improved health outcomes.

At 5.7.16 it further identifies that the Welsh Government targets for the generation of renewable energy are:

- for Wales to generate 70% of its electricity consumption from renewable energy by 2030;
- for one Gigawatt of renewable electricity capacity in Wales to be locally owned by 2030; and
- for new renewable energy projects to have at least an element of local ownership by 2020.

The planning system has an active role to ensure the delivery of these targets. PPW recognises that Wales has an abundant wind resource and, as a result, wind energy is a key part of meeting the Welsh Government's (WG) vision for future renewable energy production.

The Welsh Government has identified Strategic Search Areas (SSAs) which, on the basis of substantial empirical research, are considered the most appropriate locations for large scale on-shore wind farm development over 25MW.

At para 5.9.12 it states that the Welsh Government accepts the introduction of new, often very large structures for on-shore wind needs careful consideration to avoid and, where possible, minimise their impact. The SSAs are the most appropriate locations for large scale wind farm development. Large scale wind energy developments in these areas will be required to contribute to Welsh, UK and European renewable energy targets, mitigate climate change, and deliver energy security.

Para 5.9.13 states that within and immediately adjacent to the SSAs, there should be implicit acceptance that there will be significant change in landscape character from wind turbine development. Whilst cumulative impact may be a material consideration, it must be balanced against the need to meet the Welsh

Government's aspirations for energy in Wales and the conclusions reached fully justified in any decisions taken. Developers will need to be sensitive to local circumstances, including siting and design in relation to local landform, proximity to dwellings and other planning considerations

Para 5.9.16 states when determining applications for the range of renewable and low carbon energy technologies, planning authorities should take into account:

- the contribution a proposal will make to meeting identified Welsh, UK and European targets;
- the contribution to cutting greenhouse gas emissions; and
- the wider environmental, social and economic benefits and opportunities from renewable and low carbon energy development

Para 5.9.17 advises that Planning authorities **should give significant weight** to the Welsh Government's targets to increase renewable and low carbon energy generation, as part of their overall approach to tackling climate change and increasing energy security. In circumstances where protected landscape, biodiversity and historical designations and buildings are considered in the decision making process, only the direct irreversible impacts on statutorily protected sites and buildings and their settings (where appropriate) should be considered. In all cases, **considerable weight** should be attached to the need to produce more energy from renewable and low carbon sources, in order for Wales to meet its carbon and renewable targets (emphasis added).

Para 5.9.18 sets out the WGs position in how Planning Authorities need to identify and require suitable ways to avoid, mitigate or compensate adverse impacts of renewable and low carbon energy development. The construction, operation, decommissioning, remediation and aftercare of proposals. The following should be taken into account:

- the need to minimise impacts on local communities, such as from noise and air pollution, to safeguard quality of life for existing and future generations;
- the impact on the natural and historic environment;
- cumulative impact;
- the capacity of, and effects on the transportation network;
- grid connection issues where renewable (electricity) energy developments are proposed; and
- The impacts of climate change on the location, design, build and operation of renewable and low carbon energy development. In doing so, consider whether measures to adapt to climate change impacts give rise to additional impacts.

Technical Advice Note 8: Planning for Renewable Energy – July 2005

TAN8 advises that "The most appropriate scale at which to identify areas for large scale onshore wind energy development is at an all-Wales level. TAN8 (2005) identifies areas in Wales which, on the basis of substantial empirical research, are considered to be the most appropriate locations for large scale wind farm development; these areas are referred to as Strategic Search Areas (SSAs)" (12.8.13).

TAN 8 covers the land use planning considerations of all aspects of renewable energy (not just wind). The TAN is written in 2 parts comprising the main report and a series of 6 annexes.

The principal advice contained within the main body of the report can be summarised as follows:

- The provision of energy from renewable sources is an important component of the UK Government energy policy. The target is to produce 10% of electricity from renewable energy sources by 2010.
- The Welsh Government has a target of 4TWh of electricity per year to be produced by renewable energy by 2010 and 7TWh by 2020.
- On-shore wind offers the greatest potential to meet these targets in the short to medium term. To meet this requirement the WG have concluded that large scale (over 25MW) on shore wind farms should be concentrated into 'Strategic Search Areas' (SSA's).
- The TAN acknowledges that not all land within a SSA is going to be suitable but WG is satisfied that sufficient land has been allocated within these areas to meet their targets.
- The TAN advises that Councils should refine the SSA to guide developers to the most appropriate locations within the SSA but does not preclude land outside of, but close to, the SSA from being considered.

There are 7 SSA's designated within Wales (with the current site falling within SSA 'F' (Coed Morgannwg), which have been chosen to meet the following characteristics:

- large areas with a good wind resource,
- upland areas which contain a predominantly flat plateau,
- generally sparsely populated,
- dominated by conifer plantation or impoverished moor land, has little nature conservation or historic landscape features,
- can accommodate over 25MW and achieve 70MW of installed capacity, and,
- largely unaffected by broadcast transmission or military applications.

TAN 8 has considered cumulative landscape and visual interests at an all-Wales level. The strategy adopted is a means of concentrating the impact of wind turbines in a relatively small proportion of the country in areas that are, on balance technically, practically and environmentally better able to accommodate such impacts than other parts of Wales.

With regard to the 'refinement exercise' for the SSAs, Annex D states that the purposes of undertaking a refinement exercise is to achieve a finer grain of development allocation within it taking into account landscape, visual and cumulative impacts. It is anticipated that refinements/adjustments can be made to the SSA boundaries when they are translated into local planning documents. This will facilitate the inclusion of development on the margins of the SSA's where local conditions recommend. The proposed turbines are located within two of three highest ranking zones in the TAN 8 Annex D Study. These are zones considered necessary to meet the (original) TAN 8 target of 2010. These are zones considered

suitable as *'large scale, high relief landscapes capable of accommodating very large scale wind turbines'*

The wind farm will be located within Bridgend a very small section of the site where the turbines are located are within the original SSA, boundary. None of the turbines are located are within the refined SSA F boundary.

Visual amenity

A part of the site access runs through the Gwynfi Ward of Neath Port Talbot (NPT) however the wind turbines are located within the jurisdiction of Bridgend. The access track is unlikely to have a detrimental effect in terms of visual amenity to the area however will need to be carefully considered as part of the DNS submission. The main visual impact from such a development would be from the wind turbines. These are located approximately 1.5km from the nearest settlements of Abergwynfi and Blaengwynfi and 2.6km to Cymmer within NPT. Whilst it is considered that the visual impact of such a development upon Neath Port Talbot would be minimal, viewpoints from settlements where the turbines would be visible would be required to be submitted as part of the DNS application along with a cumulative impact assessments of the proposal in conjunction with operational wind farms, those that are consented and those currently within the planning process in order for NPTC to be able to fully assess the impact the development would have upon Neath Port Talbot. It is noted that you have provided some viewpoints however it's unfortunate that you have not included a view point from the settlement of Cymmer given the amount of windfarms viable from this location. It is recommended that this is included within the final DNS submission. Should you want to discuss viewpoints in more detail with us you could submit a pre application with us. As such Landscape and Visual Impact Assessment and Cumulative Impact assessment with viewpoints from within NPT as suggested are recommend as part of the DNS application submission.

Residential Amenity

Due to the distance from the proposed development, it is highly unlikely there would be any unacceptable issues in relation to shadow flicker or noise upon residential amenity to any residential properties within Neath Port Talbot. Nevertheless these report should form part of the DNS application so that we can make a formal opinion as part of the DNS process.

Highways

The Local Authorities Highways sections has assessed the proposal and have raised a possible concern over the visibility splay associated with the proposed vehicular access from the A4107 to the wind farm and energy storage facility. It reflects a speed limit of 40 mph whereas the speed limit at this location on the A4107 is 60 mph (national speed limit) which will require a visibility splay of 4.5 metres x 215 metres in both directions. There are a number of additional works that could be undertaken to improve this situation and we would strongly recommend that pre application advice is sought in relation to the matters.

This will need to be addressed prior to the submission of the DNS application, it is also recommended that a Transport Assessment, Construction and Traffic

Management Plan, AIL assessment and dry run should form part of that submission particular given the lapse in time since this was last undertaken on this route. Final comments in terms of highways and pedestrian safety would be formally provided as part of that application.

Ecology

The Local Authority's Biodiversity officer has stated that whilst there is likely to be little or no direct effect upon the ecology of Neath Port Talbot, however as the site is partly within NPT it is likely to have some species movement between jurisdictions we will make a formal response once we have view of all the necessary surveys. You should ensure the Bridgend Councils Ecologist is consulted on these matters.

Rights of Way

The application has been assessed by our rights of way officer who has advised that Footpath 1 & 7 along with Bridleway 2 & 20 enter the site, we would wish to ensure that these public rights of way are protected at all times and that no alteration or change of condition to the PROW is to be undertaken without further consultation with the NPT Countryside Team.

Land Contamination

The part of the site within NPT has the potential for land contamination, you should ensure appropriate reports are submitted with the DNS application to address any possible land contamination issues.

Conclusion

The proposed development is likely to have limited impacts upon Neath Port Talbot due to the distance from the nearest settlements to the main body of the development site. In relation to the part of the application site within NPT jurisdiction the above issues have been identified and we would strongly advise that pre application advice is sought from this authority before the submission of the DNS application.

Recommendation

No objection as a neighbouring Authority



Steve Jenkins
Planning Division
Neath Port Talbot County Borough Council
The Quays
Brunel Way
Baglan Energy Park
Neath
SA11 2GG

Our Ref: 02959-1579962
Your Ref: P2020/0569

23 September 2020

Dear Mr Jenkins,

Re: Upper Ogmore Wind Farm and Energy Storage Facility: Pre Application Consultation

Thank you for the letter of 13 August 2020 from the Head of Planning & Public Protection and for your Officer Report reference P2020/0569. In response to the very helpful points raised in your report, I have the following comments, which I hope you will find useful when you are consulted by the Inspector. For ease of reference, I have adopted the same section headings used in your Officer Report.

Visual Amenity

Your report mentions that we have not included a view point from the settlement of Cymmer and recommends that this be included with the final DNS submission. While carrying out the landscape and visual impact assessment our consultants considered Cymmer and concluded that this was not a suitable location for a viewpoint. The Zone of Theoretical Visibility (ZTV), shown in Figure 5.3b of the Environmental Statement (ES), indicates fairly limited visibility across the settlement and the paired ZTV with the Llynfi Afan turbines indicates that Upper Ogmore turbines would not introduce any 'new' visibility of turbines. As a result of this, Cymmer was scoped out of the assessment. Since receiving your report, I have asked our consultants to prepare a wireline of the view from Railway Terrace, Cymmer, which is probably the most open view from the village. I enclose a copy of that wireline which shows how the Upper Ogmore turbines sit behind Llynfi Afan turbines and that the Upper Ogmore turbines do not add to the spread of wind farms around the settlement.

Residential Amenity

Due to the locations and distances between turbines and properties, residential visual amenity was scoped out of the visual impact assessment and this point is addressed in the ES Chapter 5 at paragraph 5.34. In addition, the Upper Ogmore turbines would be located behind the Llynfi Afan turbines when viewed from Neath Port Talbot County Borough and there would be no potential for them to be overbearing. Impact assessments were carried out for noise and shadow flicker and these are set out in the ES Chapters 10 and 11 respectively. The assessment of noise concludes that, with the proposed mitigation, noise levels would meet the limits specified by the relevant guidance. Due to the distances between turbines and properties,

which are in excess of 1100m, the shadow flicker assessment concludes that no unacceptable impact is predicted.

Highways

Thank you for your comments in relation to the site access. As this section of the highway is wholly within the boundary of Bridgend County Borough, we consulted the Highways Department in that Authority. They visited the site and provided their advice on the site access during preparation of the planning application. Their advice concluded that concerns could be addressed with adequate signage and a Construction Traffic Management Plan (CTMP). A CTMP would be prepared prior to commencement of construction and we would expect this to be a condition of the planning consent. I note that your final comments in terms of highways and pedestrian safety would be formally provided as part of the application to discharge that condition.

Ecology

Your comments are noted. Thank you.

Rights of Way

Your comments are noted. Thank you.

Land Contamination

Thank you for your comments regarding the part of the site within Neath Port Talbot. Since receiving your report, we have carried out an assessment which identified no sources of contamination within the area of influence of the development. I enclose the following reports, which will be submitted with the DNS application:

- Geo-environmental preliminary assessment; and
- Upper Ogmore Forestry Track Groundsure Enviro Insight: GS-7026462

Recommendation

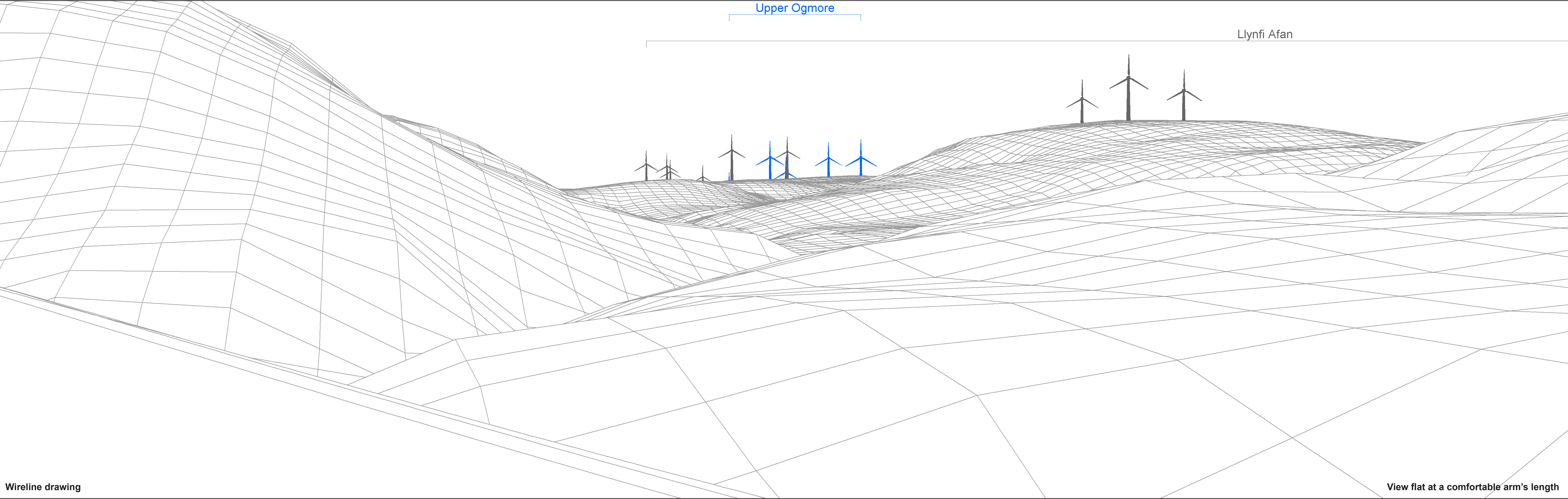
I note there is no objection from the Authority. Thank you.

I trust that these comments provide useful clarification of the points raised in your report and will help in the preparation of your response to the Inspector during determination of the application. In the meantime, if you have any questions, please do not hesitate to contact me. Once again, thank you for providing your report at this pre-application stage.

Yours sincerely,



Chris Jackson
Senior Development Project Manager
E Chris.Jackson@res-group.com
T +44 2920 021 074
cc Mr Steve Ball
Encs



Upper Ogmores Wind Farm LVIA
Additional view from Railway Terrace, Cymmer, Neath Port Talbot

OS reference:	285753 E 196243 N	Horizontal field of view:	53.5° (planar projection)
AOD:	184 m	Principal distance:	812.5 mm
Direction of view:	105°	Paper size:	841 x 297 mm (half A1)
Nearest turbine:	4.9 km	Correct printed image size:	820 x 260 mm



Geo-environmental Preliminary Assessment

Upper Ogmore Forestry Track Widening

Ref	02959-1534961
-----	---------------

Revision History

Issue	Date	Name	Latest changes
01	11/09/20	Joseph McAlpine	First Created
02	14/09/20	Joseph McAlpine	Minor Amendments to Sections 1.2 and 1.3

This document (the “Report”) has been prepared by Renewable Energy Systems Ltd (“RES”). RES shall not be deemed to make any representation regarding the accuracy, completeness, methodology, reliability or current status of any material contained in this Report, nor does RES assume any liability with respect to any matter or information referred to or contained in the Report, except to the extent specified in (and subject to the terms and conditions of) any contract to which RES is party that relates to the Report (a “Contract”). Any person relying on the Report (a “Recipient”) does so at their own risk, and neither the Recipient nor any person to whom the Recipient provides the Report or any matter or information derived from it shall have any right or claim against RES or any of its affiliated companies in respect thereof, but without prejudice to the terms of any Contract to which the Recipient is party. This Report is confidential and shall only be disclosed to duly authorised Recipients.

Contents

1	Geo-environmental Preliminary Assessment	3
1.1	Introduction	3
1.2	Past Industrial Land Uses	3
1.3	Waste and Landfill.....	3
1.4	Current Industrial Land Uses	4
1.5	Other Sources of Potential Contamination	4
1.6	Development Considerations	4
1.7	Conclusions	4

1 Geo-environmental Preliminary Assessment

1.1 Introduction

A review of the following document has been undertaken to identify potential sources of contamination and to determine whether the proposed forestry track widening works poses a contamination risk as a result.

- Upper Ogmere Forestry Track Groundsure Enviro Insight: GS-7026462

The track widening works are required to ensure component deliveries during construction and operation of for the proposed Upper Ogmere Wind farm development.

1.2 Past Industrial Land Uses

Page 11 of the Groundsure report shows the locations of past industrial land uses within 250m of the works based on a screening of historic OS Mapping.

A tabular summary has been provided below for each of the land uses identified and their respective locations in relation to the works.

Table 1 Past Industrial Land Uses

Point ID	Description	Date	Distance From Works	Elevation From Works
1	Unspecified Pit	1982	115m	+5m
2	Unspecified Pit	1965	0m	0m
3	Refuse Heap	1877	150m	-7m
4	Tunnel	1921	Below Works	-
5	Unspecified Pit	1982	20m	-1m
A	Unspecified Disused Quarry / Ground	1982/1965	10m	0m
D	Unspecified Pit	1948 / 1897 - 1921	20m	+5m

Given their positions adjacent to the existing track and recorded locations away from coal seams / outcrops, it is highly likely that the unspecified pits relate to quarrying of the underlying bedrock, with the extracted materials used to build the existing forestry track.

The refuse heap is a significant distance away from and at a lower elevation than the proposed works. Therefore, the works will have no impact on this potential source of contamination.

Rhonda Tunnel denoted as Point ID 4, runs at a depth of approximately 250m below the forestry track. Therefore, this infrastructure will have no impact on the works.

1.3 Waste and Landfill

The report screened the area for recorded waste and landfill activity data sets, but none were identified within 500m of the works.

The report concluded no such activities have taken place within 500m from the works.

1.4 Current Industrial Land Uses

Page 25 of the Groundsure report shows the locations of current / recent industrial land uses in the vicinity of the site based on a screening of OS Mapping.

A tabular summary has been provided below for each of the land uses identified and their respective locations in relation to the works.

Table 2 Current Industrial Land Uses

Point ID	Description	Distance From Works	Elevation From Works
1	Quarry	5m	0m
2	Quarry (disused)	10m	0m

These quarries would seem to serve the same purpose as the historic pits described in Section 1.2.

1.5 Other Sources of Potential Contamination

The report screened the area for a number of potential contamination data sets, but none were identified within 500m of the works.

1.6 Development Considerations

The works involve minor widening at various points along the existing forestry track which will require removal of existing soils and replacement with engineered fill consistent with the existing track.

Existing overland flow routes, channels and trackside drainage features will be maintained, preserving the site's hydrological regime.

1.7 Conclusions

An environmental preliminary assessment has been undertaken to identify whether any potential sources of contamination are present around the forestry track widening works for Upper Ogmores wind farm.

No sources of contamination have been identified within the area of influence of the development.

Material used to infill historical quarrying areas is unknown at this point, however it is unlikely to consist of any contaminants based on their locations within the forestry area.

Given the small area of proposed widening works to the existing track, the preservation of the area's hydrological regime and lack of identified contaminants in the vicinity of the works, the development poses a very low contamination risk.

A geotechnical site investigation will be undertaken along the route prior to any construction works. This will include a watching brief for any signs of contamination. Where signs of contamination are identified during the site investigation or construction of the works, appropriate geo-environmental testing will be undertaken, and the contamination risk re-assessed.

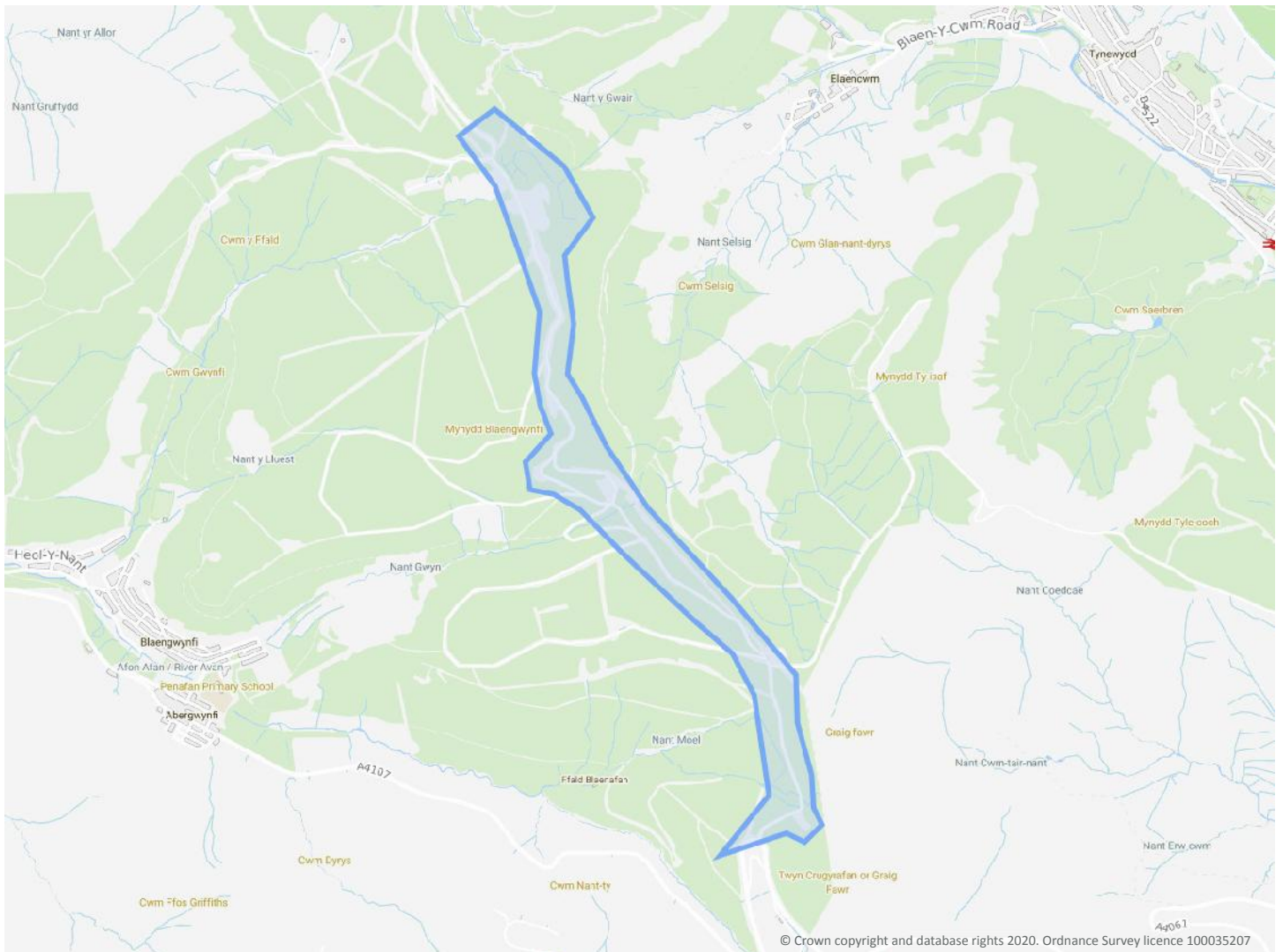
Order Details

Site Details

Location: 291876 195970

Area: 72.4 ha

Authority: [Rhondda Cynon Taf County Borough Council](#), [Castell-nedd Port Talbot - Neath Port Talbot County Borough](#)



p. 6

groundsure.com/insightuserguide

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
<u>11</u>	<u>1.1</u>	<u>Historical industrial land uses</u>	13	0	12	62	-
<u>15</u>	<u>1.2</u>	<u>Historical tanks</u>	0	0	0	1	-
15	1.3	Historical energy features	0	0	0	0	-
15	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
16	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
<u>17</u>	<u>2.1</u>	<u>Historical industrial land uses</u>	16	0	15	78	-
<u>21</u>	<u>2.2</u>	<u>Historical tanks</u>	0	0	0	1	-
22	2.3	Historical energy features	0	0	0	0	-
22	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
23	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
23	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
23	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
<u>25</u>	<u>4.1</u>	<u>Recent industrial land uses</u>	2	0	0	-	-
26	4.2	Current or recent petrol stations	0	0	0	0	-
26	4.3	Electricity cables	0	0	0	0	-
26	4.4	Gas pipelines	0	0	0	0	-
26	4.5	Sites determined as Contaminated Land	0	0	0	0	-

26	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
27	4.7	Regulated explosive sites	0	0	0	0	-
27	4.8	Hazardous substance storage/usage	0	0	0	0	-
27	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
27	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
27	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
28	4.12	Radioactive Substance Authorisations	0	0	0	0	-
28	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
28	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
28	4.15	Pollutant release to public sewer	0	0	0	0	-
28	4.16	List 1 Dangerous Substances	0	0	0	0	-
29	4.17	List 2 Dangerous Substances	0	0	0	0	-
29	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
29	4.19	Pollution inventory substances	0	0	0	0	-
29	4.20	Pollution inventory waste transfers	0	0	0	0	-
29	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Geology (basic)					
------	---------	-----------------	--	--	--	--	--

30 **5.1** **Superficial geology (625k)** Identified (within 500m)

30 **5.2** **Bedrock geology (625k)** Identified (within 500m)

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
------	---------	--------------	---------	-------	---------	----------	-----------

31 **6.1** **Superficial aquifer** Identified (within 500m)

33 **6.2** **Bedrock aquifer** Identified (within 500m)

35 **6.3** **Groundwater vulnerability** Identified (within 50m)

39 6.4 Groundwater vulnerability- soluble rock risk None (within 0m)

39 6.5 Groundwater vulnerability- local information None (within 0m)

41 6.6 Groundwater abstractions 0 0 0 0 0

42 **6.7** **Surface water abstractions** 0 0 0 0 10

44 **6.8** **Potable abstractions** 0 0 0 0 4

45 6.9 Source Protection Zones 0 0 0 0 -



45	6.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
46	<u>7.1</u>	<u>Water Network (OS MasterMap)</u>	23	5	51	-	-
53	<u>7.2</u>	<u>Surface water features</u>	1	3	33	-	-
53	<u>7.3</u>	<u>WFD Surface water body catchments</u>	2	-	-	-	-
53	<u>7.4</u>	<u>WFD Surface water bodies</u>	1	0	0	-	-
54	<u>7.5</u>	<u>WFD Groundwater bodies</u>	2	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
55	8.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
55	8.2	Historical Flood Events	0	0	0	-	-
55	8.3	Flood Defences	0	0	0	-	-
55	8.4	Areas Benefiting from Flood Defences	0	0	0	-	-
56	8.5	Flood Storage Areas	0	0	0	-	-
57	8.6	Flood Zone 2	None (within 50m)				
57	8.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
58	<u>9.1</u>	<u>Surface water flooding</u>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
60	<u>10.1</u>	<u>Groundwater flooding</u>	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
61	<u>11.1</u>	<u>Sites of Special Scientific Interest (SSSI)</u>	0	1	0	0	0
62	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
62	11.3	Special Areas of Conservation (SAC)	0	0	0	0	0
62	11.4	Special Protection Areas (SPA)	0	0	0	0	0
62	11.5	National Nature Reserves (NNR)	0	0	0	0	0
63	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
63	<u>11.7</u>	<u>Designated Ancient Woodland</u>	0	0	1	0	17
64	11.8	Biosphere Reserves	0	0	0	0	0
64	<u>11.9</u>	<u>Forest Parks</u>	0	0	0	0	1

64	11.10	Marine Conservation Zones	0	0	0	0	0
65	11.11	Green Belt	0	0	0	0	0
65	11.12	Proposed Ramsar sites	0	0	0	0	0
65	11.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
65	11.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
65	11.15	Nitrate Sensitive Areas	0	0	0	0	0
66	11.16	Nitrate Vulnerable Zones	0	0	0	0	0
67	11.17	SSSI Impact Risk Zones	0	-	-	-	-
67	11.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
68	12.1	World Heritage Sites	0	0	0	-	-
69	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
69	12.3	National Parks	0	0	0	-	-
69	12.4	Listed Buildings	0	0	0	-	-
69	12.5	Conservation Areas	0	0	0	-	-
70	12.6	<u>Scheduled Ancient Monuments</u>	2	0	2	-	-
70	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
71	13.1	<u>Agricultural Land Classification</u>	Grade 5 (within 250m)				
73	13.2	<u>Open Access Land</u>	1	1	2	-	-
73	13.3	Tree Felling Licences	0	0	0	-	-
74	13.4	Environmental Stewardship Schemes	0	0	0	-	-
74	13.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
75	14.1	Priority Habitat Inventory	0	0	0	-	-
75	14.2	Habitat Networks	0	0	0	-	-
75	14.3	Open Mosaic Habitat	0	0	0	-	-
75	14.4	Limestone Pavement Orders	0	0	0	-	-

Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2020. All Rights Reserved.

Capture Date: 26/05/2017

Site Area: 72.4ha



Recent site history - 2014 aerial photograph



Capture Date: 23/07/2014

Site Area: 72.4ha

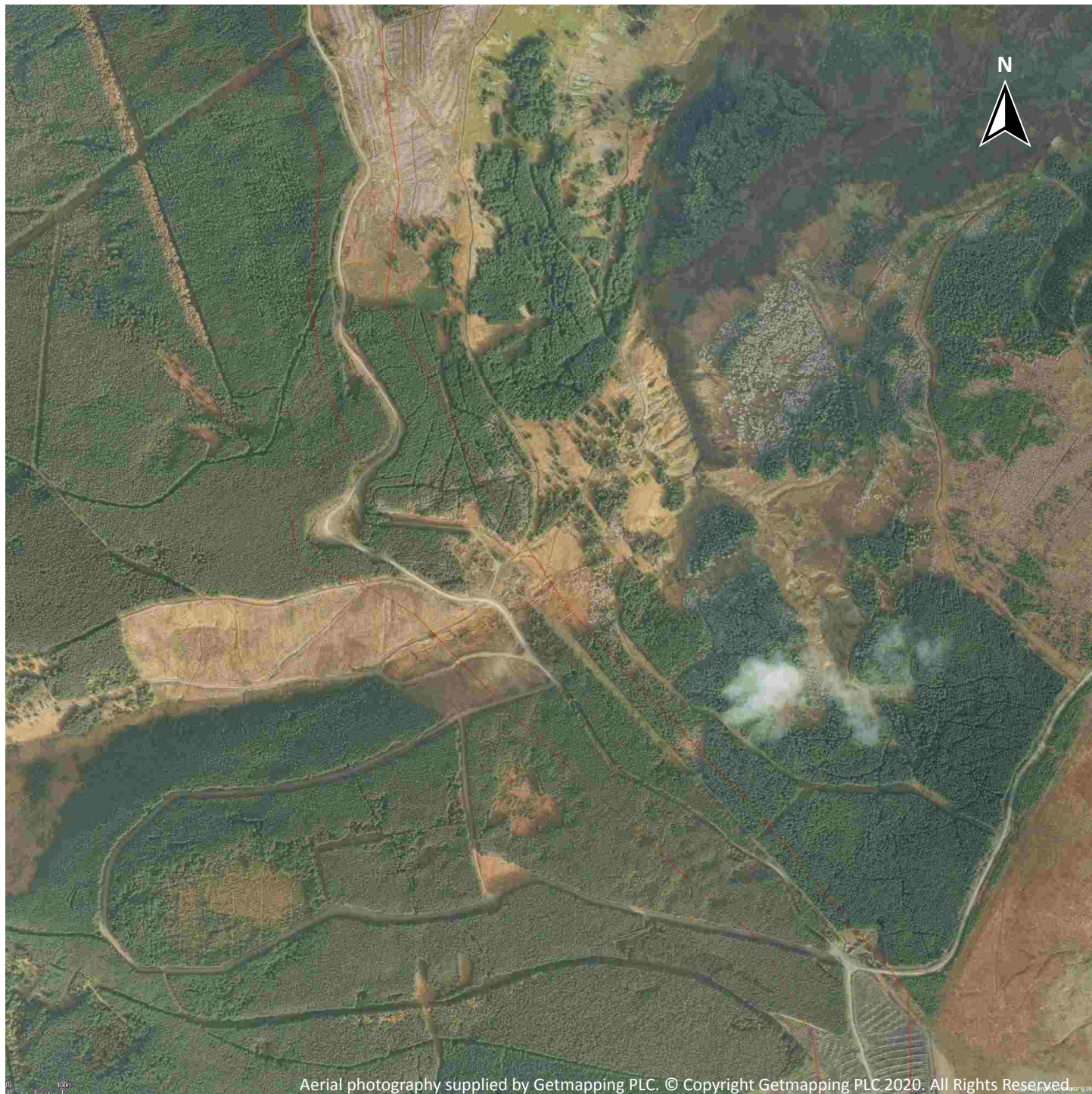
Recent site history - 2012 aerial photograph



Capture Date: 26/05/2012

Site Area: 72.4ha

Recent site history - 2009 aerial photograph



Capture Date: 13/10/2009

Site Area: 72.4ha



Recent site history - 2000 aerial photograph

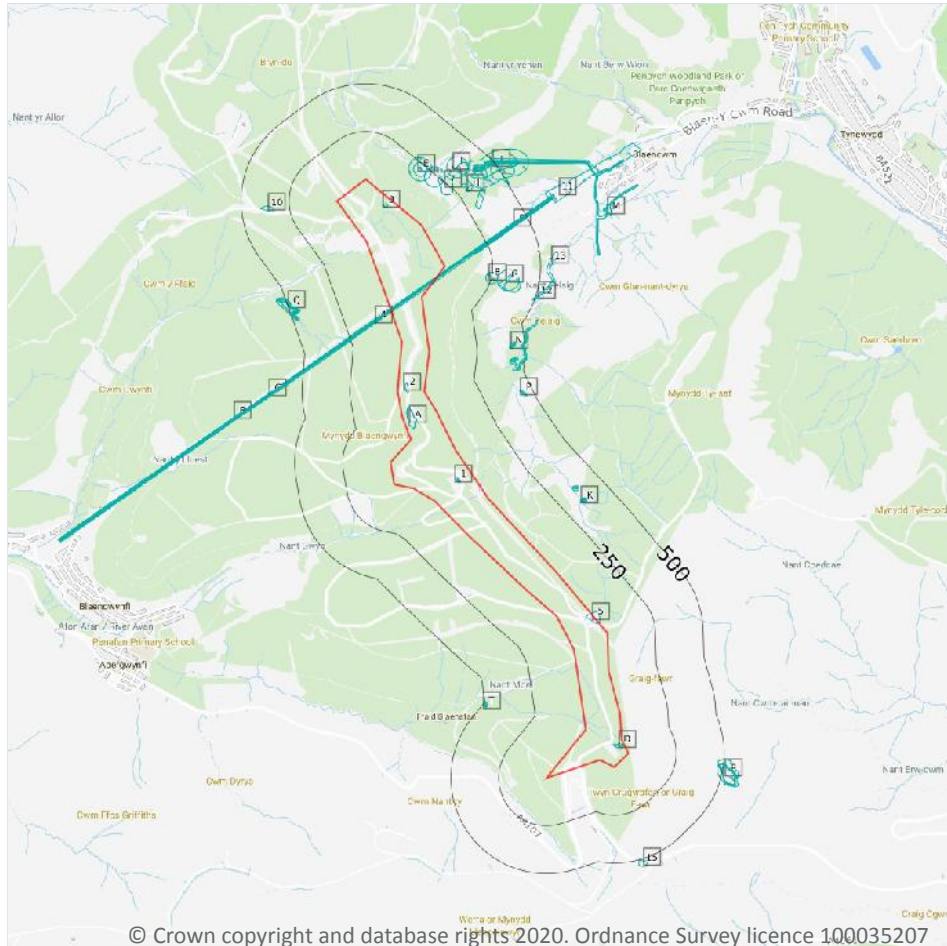


Capture Date: 18/06/2000

Site Area: 72.4ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

1.1 Historical industrial land uses

Records within 500m

87

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 11**

ID	Location	Land use	Dates present	Group ID
1	On site	Unspecified Pit	1982	336144



ID	Location	Land use	Dates present	Group ID
2	On site	Unspecified Pit	1965	336145
3	On site	Refuse Heap	1877	338917
4	On site	Tunnel	1921	357880
5	On site	Unspecified Pit	1982	336140
A	On site	Unspecified Disused Quarry	1982	319480
A	On site	Unspecified Ground Workings	1965	334052
B	On site	Tunnel	1965	339249
B	On site	Tunnel	1965	339250
C	On site	Tunnel	1897 - 1914	355960
C	On site	Tunnel	1938 - 1948	365971
D	On site	Unspecified Pit	1948	364393
D	On site	Unspecified Pit	1897 - 1921	368797
E	162m NE	Old Coal Level	1915	373672
F	174m NE	Tunnel	1915	339232
F	174m NE	Tunnel	1915	339233
F	174m NE	Tunnel	1915	339234
F	174m NE	Tunnel	1915	339235
F	184m NE	Tunnel	1897	377713
6	185m NE	Unspecified Disused Level	1897	318855
E	187m NE	Old Coal Level	1921	348901
7	199m NE	Coal Level	1877	338476
E	212m NE	Old Coal Level	1948	376439
8	222m E	Coal Level	1948	338479
E	223m NE	Old Coal Level	1915	374420
G	283m E	Unspecified Disused Level	1982	318857
H	292m NE	Unspecified Heap	1877	327380
G	293m E	Tramway Sidings	1948	324168
H	294m NE	Unspecified Heap	1921	327378

ID	Location	Land use	Dates present	Group ID
9	295m NE	Unspecified Heap	1877	327379
I	298m NE	Coal Level	1877	338477
G	327m E	Unspecified Disused Tip	1982	332876
10	331m W	Unspecified Quarry	1982	325728
J	335m NE	Unspecified Level	1921	368125
I	338m NE	Unspecified Level	1948	377611
K	345m NE	Unspecified Pit	1921	349809
K	350m NE	Unspecified Pit	1914	341663
K	355m NE	Unspecified Pit	1877	378036
K	355m NE	Unspecified Pit	1948	378077
L	356m NE	Unspecified Pit	1921	378475
J	364m NE	Refuse Heap	1948	374809
L	366m NE	Unspecified Pit	1877	355158
L	366m NE	Unspecified Pit	1948	359294
J	385m NE	Refuse Heap	1915	354421
11	392m NE	Tramway Sidings	1915	379230
J	398m NE	Tramway Sidings	1948	346353
J	401m NE	Unspecified Level	1915	344292
J	403m NE	Railway Building	1948	323716
J	404m NE	Unspecified Disused Level	1982	318856
J	406m NE	Tramway Sidings	1921	343757
J	410m NE	Unspecified Pit	1877	336150
M	412m NE	Tramway Sidings	1915	344345
M	412m NE	Tramway Sidings	1915	372789
N	423m E	Unspecified Pit	1921	357729
N	425m E	Unspecified Pit	1938	359222
N	427m E	Unspecified Ground Workings	1948	334054
O	428m E	Unspecified Pit	1914	346450

ID	Location	Land use	Dates present	Group ID
O	430m E	Unspecified Pit	1921 - 1938	355308
N	430m E	Unspecified Pit	1897 - 1914	365669
O	431m E	Unspecified Pit	1948	362209
P	437m NE	Unspecified Ground Workings	1897 - 1914	370148
P	440m NE	Unspecified Ground Workings	1948	378549
O	445m E	Unspecified Pit	1877	367979
O	445m E	Unspecified Pit	1877	336149
J	449m NE	Unspecified Disused Tip	1982	332875
Q	450m W	Unspecified Ground Workings	1897 - 1914	372674
Q	454m W	Unspecified Ground Workings	1948	374159
O	454m E	Unspecified Pit	1877	336148
Q	456m W	Unspecified Pit	1982	377700
Q	457m W	Unspecified Pit	1921	365389
J	463m NE	Drum	1915	355217
R	469m E	Unspecified Old Quarry	1897	359827
S	472m E	Unspecified Ground Workings	1921	368779
S	473m E	Unspecified Ground Workings	1948	351176
R	474m E	Unspecified Disused Quarry	1982	319485
R	477m E	Unspecified Old Quarry	1938	379132
R	477m E	Unspecified Old Quarry	1948	376171
T	477m NW	Disused Air Shaft	1965 - 1982	352134
T	477m NW	Unspecified Heap	1914	351429
R	477m E	Unspecified Old Quarry	1914 - 1921	354859
T	477m NW	Old Air Shaft	1938	367605
T	478m NW	Old Air Shaft	1948	379552
T	479m NW	Unspecified Heap	1948	348877
T	479m NW	Old Air Shaft	1921	347122
12	488m E	Unspecified Ground Workings	1948	344562

ID	Location	Land use	Dates present	Group ID
13	491m E	Unspecified Ground Workings	1897	366217
15	500m S	Cuttings	1965 - 1982	366427

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

1

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 11**

ID	Location	Land use	Dates present	Group ID
14	491m E	Unspecified Tank	1961	38415

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

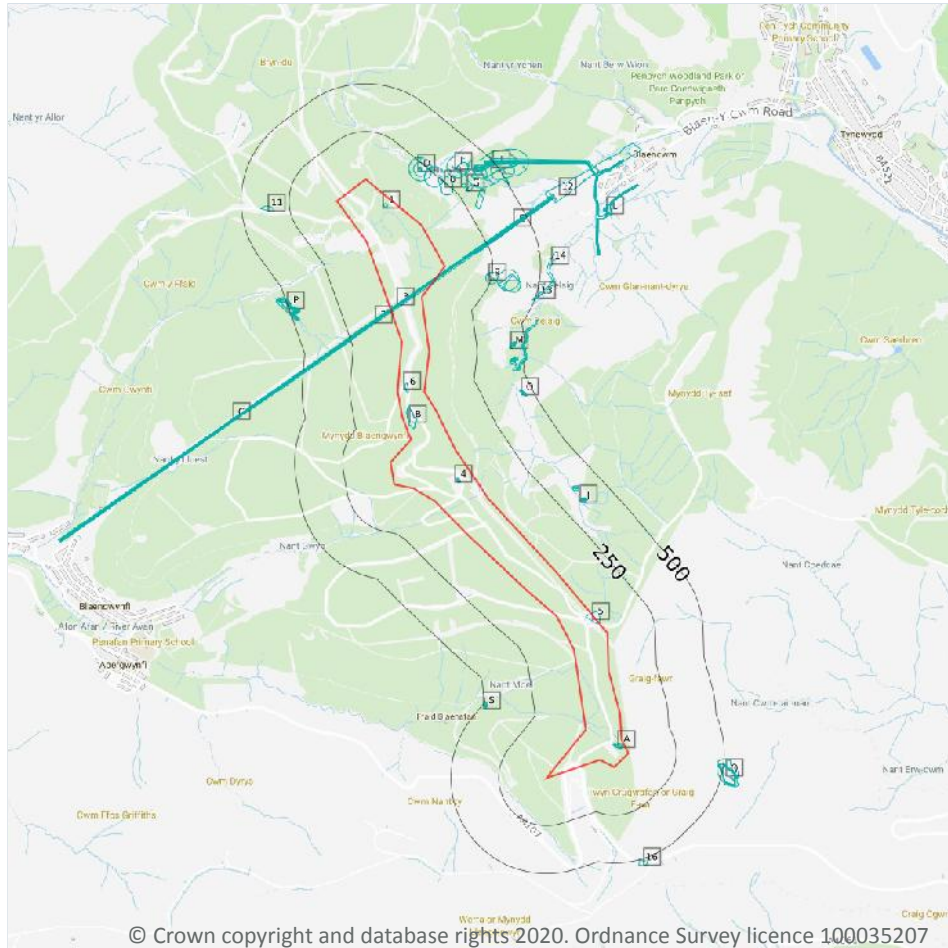
Records within 500m

0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

2.1 Historical industrial land uses

Records within 500m

109

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 17**

ID	Location	Land Use	Date	Group ID
1	On site	Refuse Heap	1877	338917
2	On site	Tunnel	1921	357880
3	On site	Tunnel	1965	339249

ID	Location	Land Use	Date	Group ID
4	On site	Unspecified Pit	1982	336144
5	On site	Unspecified Pit	1982	336140
6	On site	Unspecified Pit	1965	336145
A	On site	Unspecified Pit	1948	364393
A	On site	Unspecified Pit	1914	368797
A	On site	Unspecified Pit	1897	368797
A	On site	Unspecified Pit	1921	368797
B	On site	Unspecified Disused Quarry	1982	319480
B	On site	Unspecified Ground Workings	1965	334052
C	On site	Tunnel	1938	365971
C	On site	Tunnel	1948	365971
C	On site	Tunnel	1914	355960
C	On site	Tunnel	1897	355960
D	162m NE	Old Coal Level	1915	373672
E	174m NE	Tunnel	1915	339233
E	174m NE	Tunnel	1915	339235
E	174m NE	Tunnel	1915	339232
E	174m NE	Tunnel	1915	339234
E	184m NE	Tunnel	1897	377713
7	185m NE	Unspecified Disused Level	1897	318855
D	187m NE	Old Coal Level	1921	348901
8	199m NE	Coal Level	1877	338476
D	212m NE	Old Coal Level	1948	376439
9	222m E	Coal Level	1948	338479
D	223m NE	Old Coal Level	1915	374420
D	223m NE	Old Coal Level	1915	374420
D	223m NE	Old Coal Level	1915	374420
D	223m NE	Old Coal Level	1915	374420

ID	Location	Land Use	Date	Group ID
F	283m E	Unspecified Disused Level	1982	318857
G	292m NE	Unspecified Heap	1877	327380
F	293m E	Tramway Sidings	1948	324168
G	294m NE	Unspecified Heap	1921	327378
10	295m NE	Unspecified Heap	1877	327379
H	298m NE	Coal Level	1877	338477
F	327m E	Unspecified Disused Tip	1982	332876
11	331m W	Unspecified Quarry	1982	325728
I	335m NE	Unspecified Level	1921	368125
H	338m NE	Unspecified Level	1948	377611
J	345m NE	Unspecified Pit	1921	349809
J	350m NE	Unspecified Pit	1914	341663
J	355m NE	Unspecified Pit	1948	378077
J	355m NE	Unspecified Pit	1877	378036
K	356m NE	Unspecified Pit	1921	378475
I	364m NE	Refuse Heap	1948	374809
K	366m NE	Unspecified Pit	1948	359294
K	366m NE	Unspecified Pit	1877	355158
I	385m NE	Refuse Heap	1915	354421
12	392m NE	Tramway Sidings	1915	379230
I	398m NE	Tramway Sidings	1948	346353
I	401m NE	Unspecified Level	1915	344292
I	401m NE	Unspecified Level	1915	344292
I	401m NE	Unspecified Level	1915	344292
I	401m NE	Unspecified Level	1915	344292
I	403m NE	Railway Building	1948	323716
I	404m NE	Unspecified Disused Level	1982	318856
I	406m NE	Tramway Sidings	1921	343757

ID	Location	Land Use	Date	Group ID
I	410m NE	Unspecified Pit	1877	336150
L	412m NE	Tramway Sidings	1915	344345
L	412m NE	Tramway Sidings	1915	372789
L	412m NE	Tramway Sidings	1915	344345
L	412m NE	Tramway Sidings	1915	372789
M	423m E	Unspecified Pit	1921	357729
M	425m E	Unspecified Pit	1938	359222
M	425m E	Unspecified Pit	1938	359222
M	427m E	Unspecified Ground Workings	1948	334054
N	428m E	Unspecified Pit	1914	346450
N	430m E	Unspecified Pit	1921	355308
M	430m E	Unspecified Pit	1914	365669
M	430m E	Unspecified Pit	1897	365669
N	431m E	Unspecified Pit	1938	355308
N	431m E	Unspecified Pit	1938	355308
N	431m E	Unspecified Pit	1948	362209
O	437m NE	Unspecified Ground Workings	1914	370148
O	437m NE	Unspecified Ground Workings	1897	370148
O	440m NE	Unspecified Ground Workings	1948	378549
N	445m E	Unspecified Pit	1877	367979
N	445m E	Unspecified Pit	1877	336149
I	449m NE	Unspecified Disused Tip	1982	332875
P	450m W	Unspecified Ground Workings	1914	372674
P	450m W	Unspecified Ground Workings	1897	372674
P	454m W	Unspecified Ground Workings	1948	374159
N	454m E	Unspecified Pit	1877	336148
P	456m W	Unspecified Pit	1982	377700
P	457m W	Unspecified Pit	1921	365389

ID	Location	Land Use	Date	Group ID
I	463m NE	Drum	1915	355217
I	463m NE	Drum	1915	355217
I	463m NE	Drum	1915	355217
I	463m NE	Drum	1915	355217
Q	469m E	Unspecified Old Quarry	1897	359827
R	472m E	Unspecified Ground Workings	1921	368779
R	473m E	Unspecified Ground Workings	1948	351176
Q	474m E	Unspecified Disused Quarry	1982	319485
Q	477m E	Unspecified Old Quarry	1938	379132
Q	477m E	Unspecified Old Quarry	1948	376171
S	477m NW	Disused Air Shaft	1982	352134
S	477m NW	Disused Air Shaft	1965	352134
S	477m NW	Unspecified Heap	1914	351429
Q	477m E	Unspecified Old Quarry	1921	354859
Q	477m E	Unspecified Old Quarry	1914	354859
S	477m NW	Old Air Shaft	1938	367605
S	478m NW	Old Air Shaft	1948	379552
S	479m NW	Unspecified Heap	1948	348877
S	479m NW	Old Air Shaft	1921	347122
13	488m E	Unspecified Ground Workings	1948	344562
14	491m E	Unspecified Ground Workings	1897	366217
16	500m S	Cuttings	1982	366427

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

1

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.



Features are displayed on the Past land use - un-grouped map on **page 17**

ID	Location	Land Use	Date	Group ID
15	491m E	Unspecified Tank	1961	38415

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0
----------------------------	----------

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
----------------------------	----------

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	0
----------------------------	----------

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

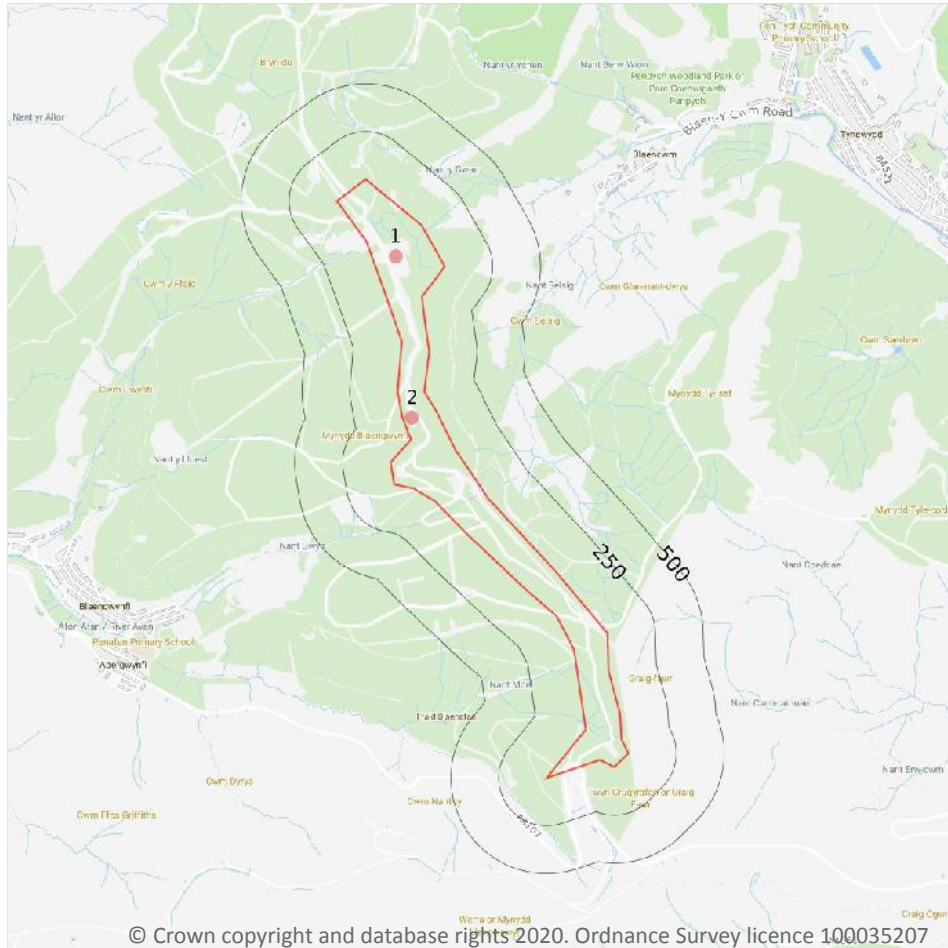
Records within 500m

0

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



— Site Outline
Search buffers in metres (m)
● Recent industrial land uses

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Company	Address	Activity	Category
1	On site	Quarry	Mid Glamorgan, CF42	Unspecified Quarries Or Mines	Extractive Industries
2	On site	Quarry (Disused)	West Glamorgan, CF42	Unspecified Quarries Or Mines	Extractive Industries

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m**0**

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m**0**

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m**0**

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m**0**

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m**0**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m**0**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m**0**

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m**0**

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m**0**

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Geology (basic)

5.1 Superficial geology (625k)

Records within 500m

2

Generalised geology data based on BGS's published poster maps of the UK (North and South). Superficial related themes digitised from 1977 first edition Quaternary map (North and South).

Location	Lex code	Description	Rock type
On site	PEAT-PEAT	PEAT	PEAT
118m NE	SLIP-UNKN	LANDSLIP	UNKNOWN LITHOLOGY (give log description in Comments field)

This data is sourced from the British Geological Survey.

5.2 Bedrock geology (625k)

Records within 500m

2

Generalised geology data based on BGS's published poster maps of the UK (North and South). Bedrock related themes created through generalisation of 1:50,000 data.

Location	Lex code	Description	Rock type
On site	SWUCM-MSCI	SOUTH WALES UPPER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE, SANDSTONE, COAL, IRONSTONE AND FERRICRETE
489m E	PSMCM-MSCI	PENNINE MIDDLE COAL MEASURES FORMATION AND SOUTH WALES MIDDLE COAL MEASURES FORMATION (UNDIFFERENTIATED)	MUDSTONE, SILTSTONE, SANDSTONE, COAL, IRONSTONE AND FERRICRETE

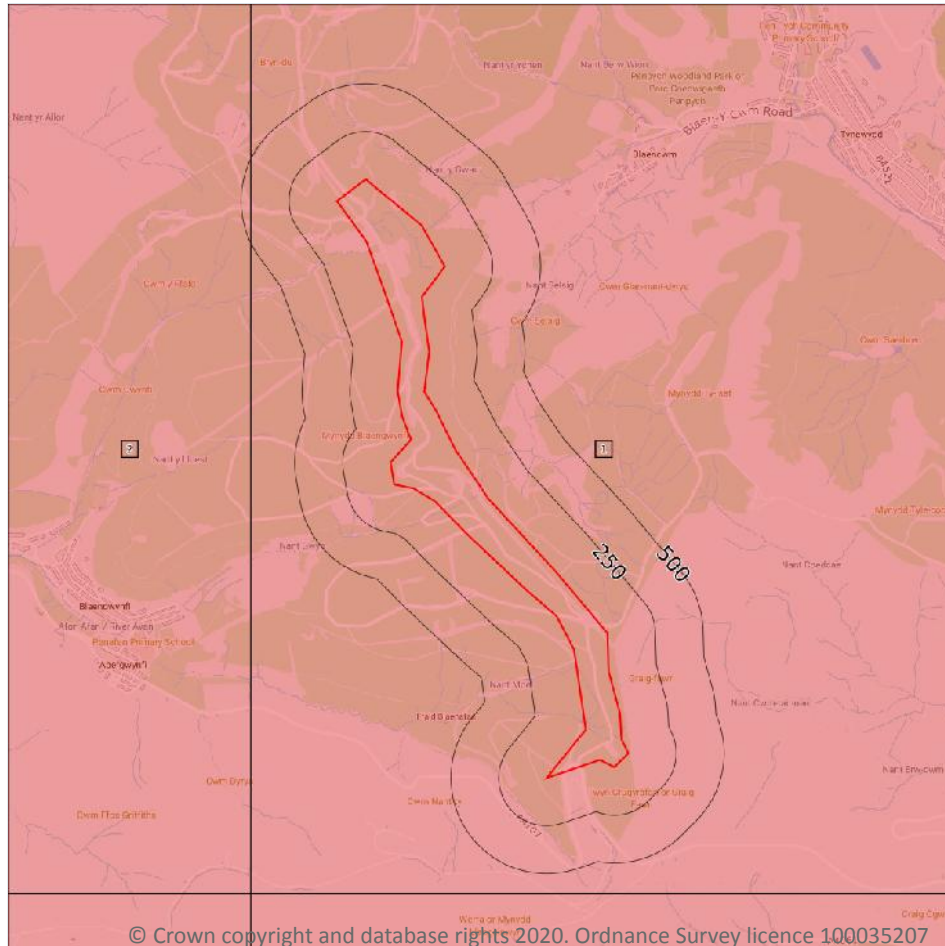
This data is sourced from the British Geological Survey.

ID	Location	Designation	Description
4	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
5	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
6	108m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
7	151m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
8	187m SW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
9	198m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
10	413m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
11	427m S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
12	450m W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
13	493m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

6.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 33**

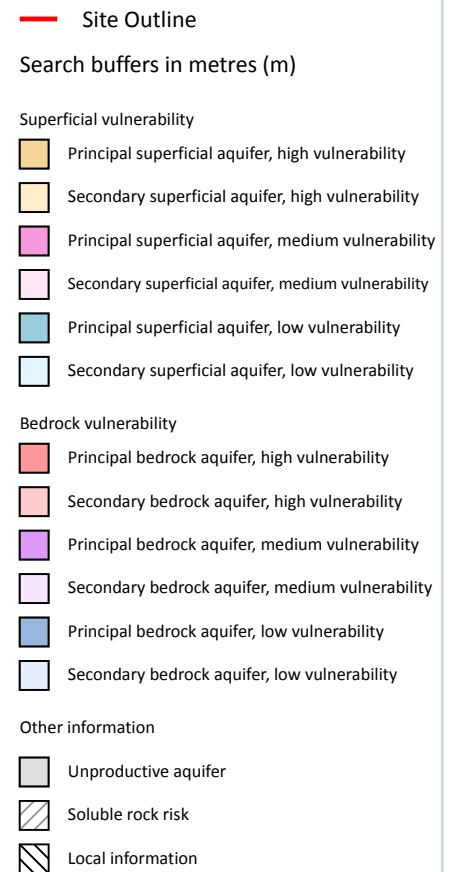
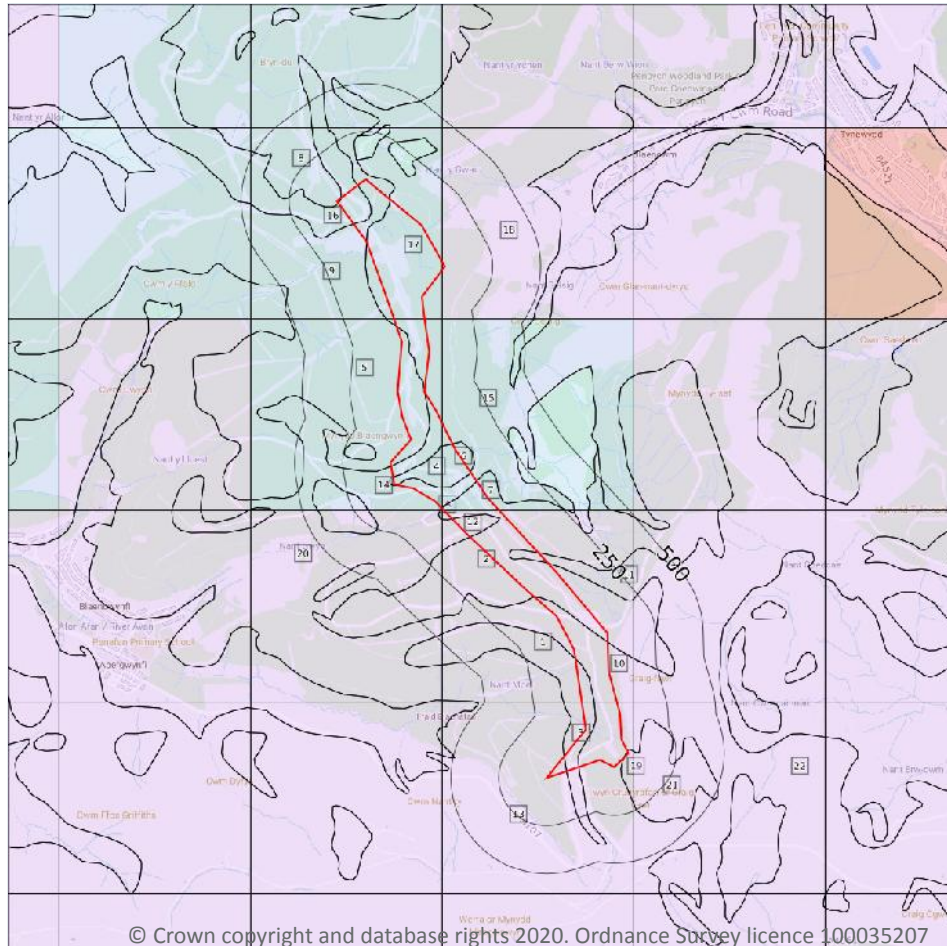
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	450m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



6.3 Groundwater vulnerability

Records within 50m

24

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 35**



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
5	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
6	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
7	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
8	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
9	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
10	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
11	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
12	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
13	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
14	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
15	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
16	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
17	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
18	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
19	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
A	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	6m SW	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
20	12m SW	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
21	28m E	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
22	29m E	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

6.4 Groundwater vulnerability- soluble rock risk

Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

6.5 Groundwater vulnerability- local information

Records on site

0

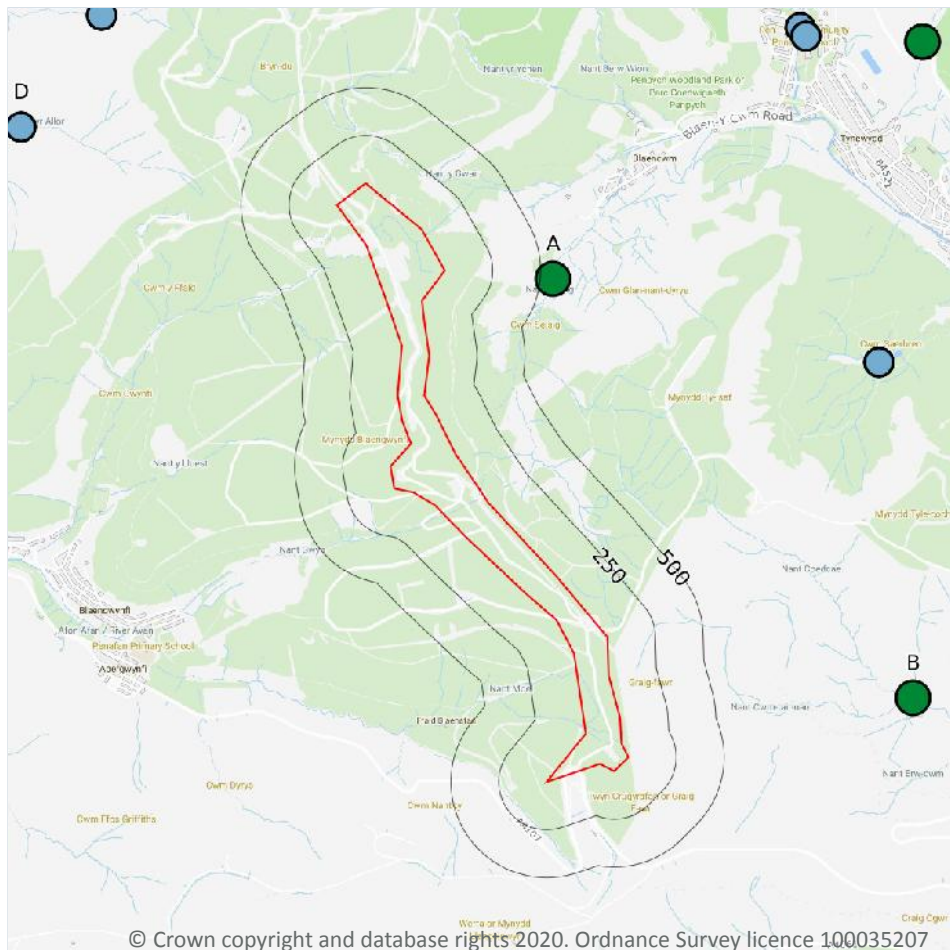
This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.



This data is sourced from the British Geological Survey and the Environment Agency.



Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

6.6 Groundwater abstractions

Records within 2000m

0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

6.7 Surface water abstractions

Records within 2000m

10

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 41**

ID	Location	Details	
A	568m E	Status: Historical Licence No: 21/57/24/0004 Details: Potable Water Supply - Direct Direct Source: EAW Surface Water Point: NANT SELSIG Data Type: Point Name: Dwr Cymru Cyfyngedig Easting: 291580 Northing: 198230	Annual Volume (m ³): 1,055,308.44 Max Daily Volume (m ³): 2891.26 Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/10/2006 Version End Date: -
A	568m E	Status: Active Licence No: 21/57/24/0004 Details: Pottable Water Supply - Direct - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 291580 Northing: 198230	Annual Volume (m ³): 1,055,308.44 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Oct 19 2006 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
B	1519m E	Status: Historical Licence No: 21/57/24/0009 Details: Potable Water Supply - Direct Direct Source: EAW Surface Water Point: NANT CWMPARC TRIB 1 Data Type: Point Name: Dwr Cymru Cyfyngedig Easting: 293460 Northing: 196040	Annual Volume (m ³): 1,659,290 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 16/04/1980 Expiry Date: - Issue No: 100 Version Start Date: 16/04/1980 Version End Date: -
B	1519m E	Status: Active Licence No: 21/57/24/0009 Details: Pottable Water Supply - Direct - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 293460 Northing: 196040	Annual Volume (m ³): 1,659,290 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Apr 16 1980 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
C	1579m NW	Status: Historical Licence No: WA/058/0061/054 Details: Hydroelectric Power Generation Direct Source: EAW Surface Water Point: NANT CWM CAS Data Type: Point Name: Easy Going Hydro Limited Easting: 289221 Northing: 199607	Annual Volume (m ³): 1,576,800 Max Daily Volume (m ³): 4320 Original Application No: - Original Start Date: 20/07/2015 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 20/07/2015 Version End Date: -
C	1579m NW	Status: Active Licence No: WA/058/0061/054 Details: Hydro-electric Power Generation - Very Low Direct Source: - Point: - Data Type: Point Name: - Easting: 289221 Northing: 199607	Annual Volume (m ³): 1,576,800 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Jul 20 2015 12:00AM Expiry Date: Mar 31 2029 12:00AM Issue No: - Version Start Date: - Version End Date: -
C	1579m NW	Status: Active Licence No: WA/058/0061/055 Details: Hydro-electric Power Generation - Very Low Direct Source: - Point: - Data Type: Point Name: - Easting: 289221 Northing: 199607	Annual Volume (m ³): 0 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Jul 20 2015 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
D	1697m W	Status: Historical Licence No: WA/058/0061/050 Details: Hydroelectric Power Generation Direct Source: EAW Surface Water Point: NANT YR ALLOR Data Type: Point Name: Easy Going Hydro Limited Easting: 288802 Northing: 199023	Annual Volume (m ³): 1,576,800 Max Daily Volume (m ³): 4320 Original Application No: - Original Start Date: 20/07/2015 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 20/07/2015 Version End Date: -
D	1697m W	Status: Active Licence No: WA/058/0061/050 Details: Hydro-electric Power Generation - Very Low Direct Source: - Point: - Data Type: Point Name: - Easting: 288802 Northing: 199023	Annual Volume (m ³): 1,576,800 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Jul 20 2015 12:00AM Expiry Date: Mar 31 2029 12:00AM Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
D	1697m W	Status: Active Licence No: WA/058/0061/051 Details: Hydro-electric Power Generation - Very Low Direct Source: - Point: - Data Type: Point Name: - Easting: 288802 Northing: 199023	Annual Volume (m ³): 0 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Jul 20 2015 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

6.8 Potable abstractions

Records within 2000m

4

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 41**

ID	Location	Details	
A	568m E	Status: Historical Licence No: 21/57/24/0004 Details: Potable Water Supply - Direct Direct Source: EAW Surface Water Point: NANT SELSIG Data Type: Point Name: Dwr Cymru Cyfyngedig Easting: 291580 Northing: 198230	Annual Volume (m ³): 1,055,308.44 Max Daily Volume (m ³): 2891.26 Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/10/2006 Version End Date: -
A	568m E	Status: Active Licence No: 21/57/24/0004 Details: Pottable Water Supply - Direct - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 291580 Northing: 198230	Annual Volume (m ³): 1,055,308.44 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Oct 19 2006 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
B	1519m E	Status: Historical Licence No: 21/57/24/0009 Details: Potable Water Supply - Direct Direct Source: EAW Surface Water Point: NANT CWMPARC TRIB 1 Data Type: Point Name: Dwr Cymru Cyfyngedig Easting: 293460 Northing: 196040	Annual Volume (m ³): 1,659,290 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 16/04/1980 Expiry Date: - Issue No: 100 Version Start Date: 16/04/1980 Version End Date: -
B	1519m E	Status: Active Licence No: 21/57/24/0009 Details: Pottable Water Supply - Direct - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 293460 Northing: 196040	Annual Volume (m ³): 1,659,290 Max Daily Volume (m ³): - Original Application No: - Original Start Date: Apr 16 1980 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

6.9 Source Protection Zones

Records within 500m	0
----------------------------	----------

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

6.10 Source Protection Zones (confined aquifer)

Records within 500m	0
----------------------------	----------

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

ID	Location	Type of water feature	Ground level	Permanence	Name
3	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
D	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Nant Gwyn



ID	Location	Type of water feature	Ground level	Permanence	Name
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
D	On site	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
G	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
H	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
K	7m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	29m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	42m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
9	43m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
M	46m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	51m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant y Bwch
O	66m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
P	67m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Q	69m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
R	84m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
P	85m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
S	102m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
T	104m SW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
U	109m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
V	109m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
T	115m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
S	125m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
W	126m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Gwyn
S	129m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
X	129m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Selsig
S	131m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Y	142m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Z	144m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AA	144m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AB	164m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Selsig
AC	166m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
S	174m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
S	175m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Y	177m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
S	178m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
AD	180m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
S	182m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AE	191m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AF	191m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant Selsig
AG	192m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Afon Afan
AH	192m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
12	197m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant y Gwair
13	197m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant y Gwair
AH	200m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nant y Bwch
AI	203m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AJ	204m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AJ	205m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
AJ	206m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
AJ	209m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
AJ	209m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AJ	214m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
AK	215m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
15	217m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
16	224m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Afon Afan
S	225m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AL	236m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AM	240m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
19	242m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AH	242m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AK	243m SW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
AN	244m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.



7.2 Surface water features

Records within 250m

37

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 46**

This data is sourced from the Ordnance Survey.

7.3 WFD Surface water body catchments

Records on site

2

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 46**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
6	On site	River WB catchment	Afan - headwaters to confluence with Corrwg	GB110058026120	Afan	Tawe to Cadoxton
1	On site	River WB catchment	Rhondda R - source to conf Afon Rhondda Fach	GB109057027200	Rhondda	South East Valleys

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 WFD Surface water bodies

Records identified

2

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on **page 46**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	On site	River	Afan - headwaters to confluence with Corrwg	GB110058026120	Good	Good	Good	2016
25	321m NE	River	Rhondda R - source to conf Afon Rhondda Fach	GB109057027200	Good	Good	Good	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 WFD Groundwater bodies

Records on site	2
------------------------	----------

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 46**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Swansea Carboniferous Coal Measures	GB41002G201000	Poor	Poor	Good	2016
I	On site	SE Valleys Carboniferous Coal Measures	GB40902G201900	Poor	Poor	Good	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

8 River and coastal flooding

8.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m**0**

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

8.2 Historical Flood Events

Records within 250m**0**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

8.3 Flood Defences

Records within 250m**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

8.4 Areas Benefiting from Flood Defences

Records within 250m**0**

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

8.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

8.7 Flood Zone 3

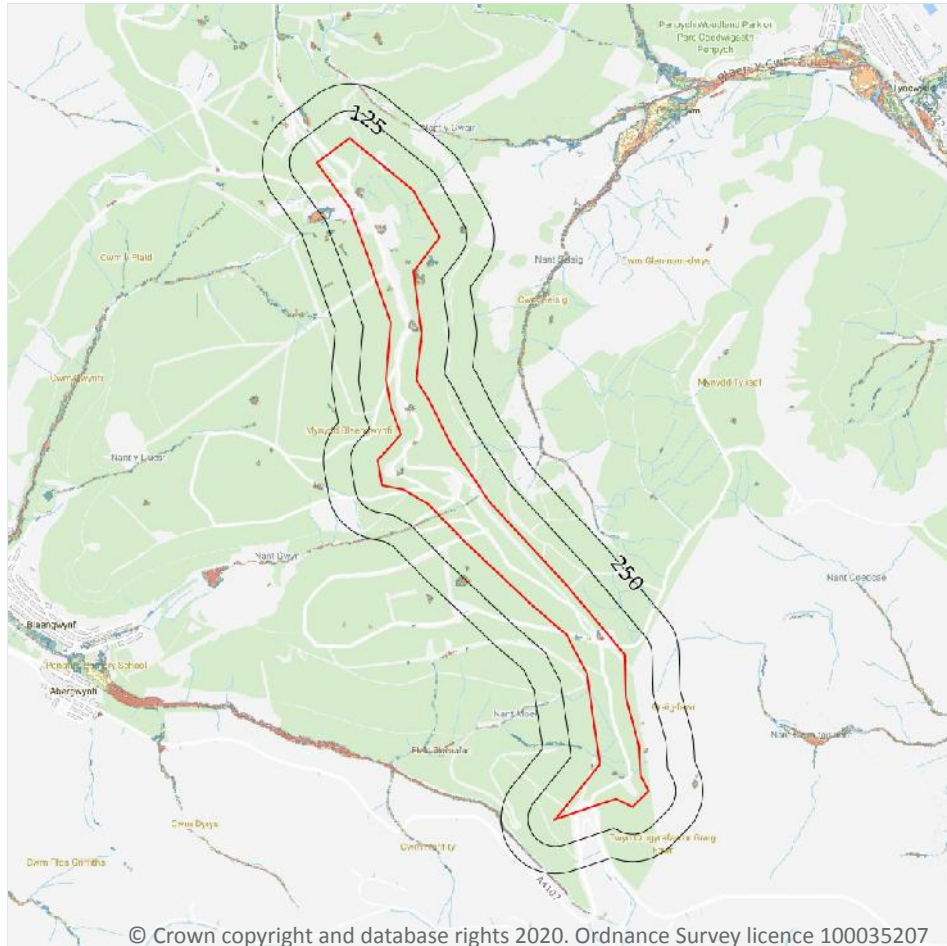
Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

9 Surface water flooding



9.1 Surface water flooding

Highest risk on site

1 in 30 year, Greater than 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 58**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

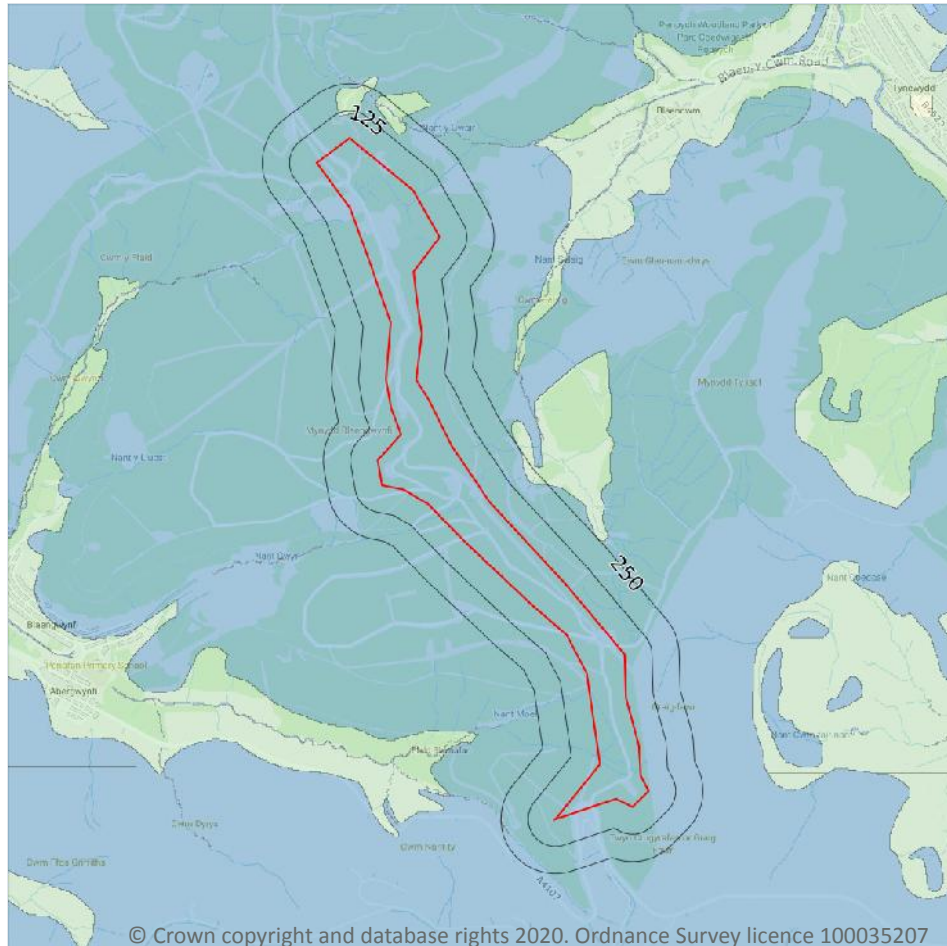
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

This data is sourced from Ambiantal Risk Analytics.



10 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

© Crown copyright and database rights 2020. Ordnance Survey licence 100035207

10.1 Groundwater flooding

Highest risk on site

Negligible

Highest risk within 50m

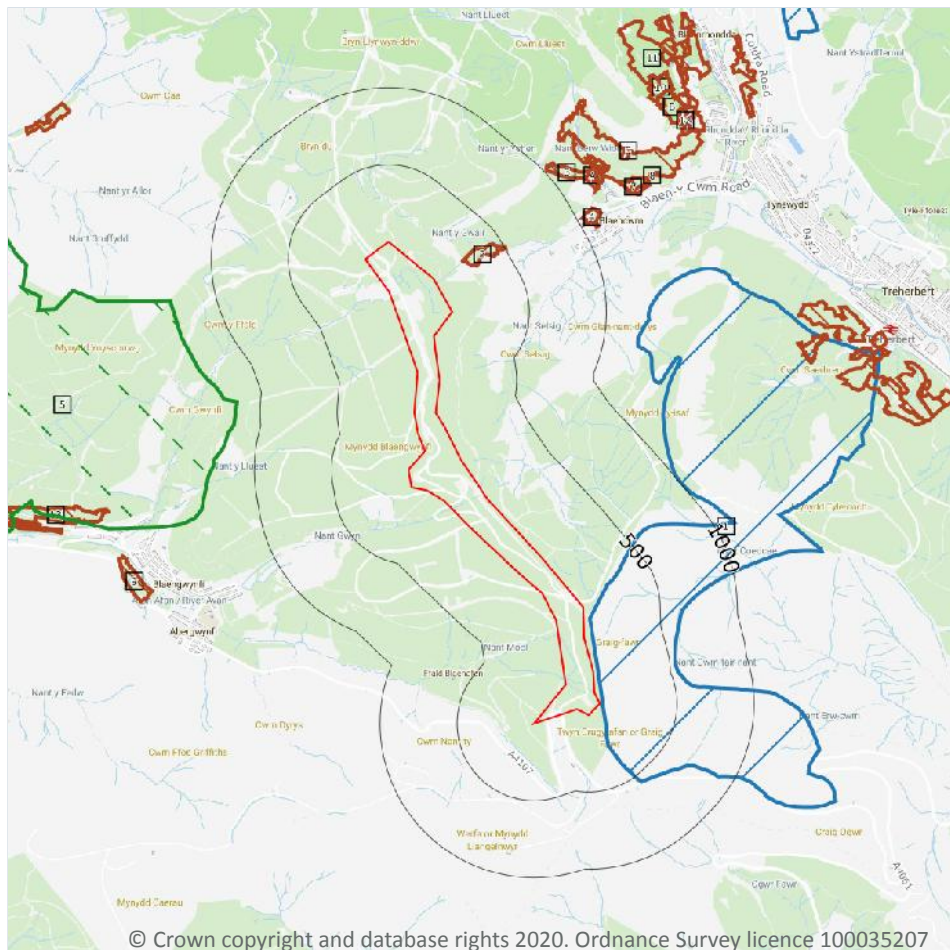
Negligible

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 60**

This data is sourced from Ambient Risk Analytics.

11 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- Designated Ancient Woodland
- Forest Parks

11.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

1

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 61**

ID	Location	Name	Data source
1	18m E	Mynydd Ty-Isaf, Rhondda	Natural Resources Wales



This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



11.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.7 Designated Ancient Woodland

Records within 2000m

18

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 61**

ID	Location	Name	Woodland Type
2	223m NE	Unknown	Plantation on Ancient Woodland Site
3	1015m NE	Unknown	Plantation on Ancient Woodland Site
4	1031m NE	Unknown	Ancient Semi Natural Woodland
A	1183m NE	Unknown	Ancient Semi Natural Woodland
6	1215m NE	Unknown	Plantation on Ancient Woodland Site
A	1239m NE	Unknown	Ancient Semi Natural Woodland
A	1261m NE	Unknown	Plantation on Ancient Woodland Site
7	1356m NE	Unknown	Ancient Semi Natural Woodland
8	1508m NE	Unknown	Ancient Semi Natural Woodland
9	1811m W	Unknown	Ancient Semi Natural Woodland
10	1829m NE	Unknown	Ancient Semi Natural Woodland
B	1841m NE	Unknown	Ancient Semi Natural Woodland
11	1871m NE	Unknown	Plantation on Ancient Woodland Site
12	1874m NE	Unknown	Plantation on Ancient Woodland Site
B	1951m NE	Unknown	Plantation on Ancient Woodland Site
13	1968m W	Unknown	Plantation on Ancient Woodland Site



ID	Location	Name	Woodland Type
B	1969m NE	Unknown	Ancient Semi Natural Woodland
B	1997m NE	Unknown	Ancient Semi Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.9 Forest Parks

Records within 2000m

1

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

Features are displayed on the Environmental designations map on **page 61**

ID	Location	Name
5	1152m W	Afan Argoed

This data is sourced from the Forestry Commission.

11.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.11 Green Belt

Records within 2000m**0**

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

11.12 Proposed Ramsar sites

Records within 2000m**0**

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

11.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

11.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

11.15 Nitrate Sensitive Areas

Records within 2000m**0**

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was



closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

11.16 Nitrate Vulnerable Zones

Records within 2000m

0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

11.17 SSSI Impact Risk Zones

Records on site

0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

11.18 SSSI Units

Records within 2000m

0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

12.2 Area of Outstanding Natural Beauty

Records within 250m**0**

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

12.3 National Parks

Records within 250m**0**

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

12.4 Listed Buildings

Records within 250m**0**

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

This data is sourced from English Heritage, Cadw and Historic Environment Scotland.

12.5 Conservation Areas

Records within 250m**0**

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from English Heritage, Cadw and Historic Environment Scotland.

12.6 Scheduled Ancient Monuments

Records within 250m

4

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

Features are displayed on the Visual and cultural designations map on **page 68**

ID	Location	Ancient monument name	Reference number
1	On site	Pebyll Ring Cairn	2277
2	On site	Bachgen Carreg Round Cairn	2880
3	169m E	Earthwork 360m NNE of Crug yr Avan	2894
4	238m SE	Crug yr Afan Round Cairn	2882

This data is sourced from English Heritage, Cadw and Historic Environment Scotland.

12.7 Registered Parks and Gardens

Records within 250m

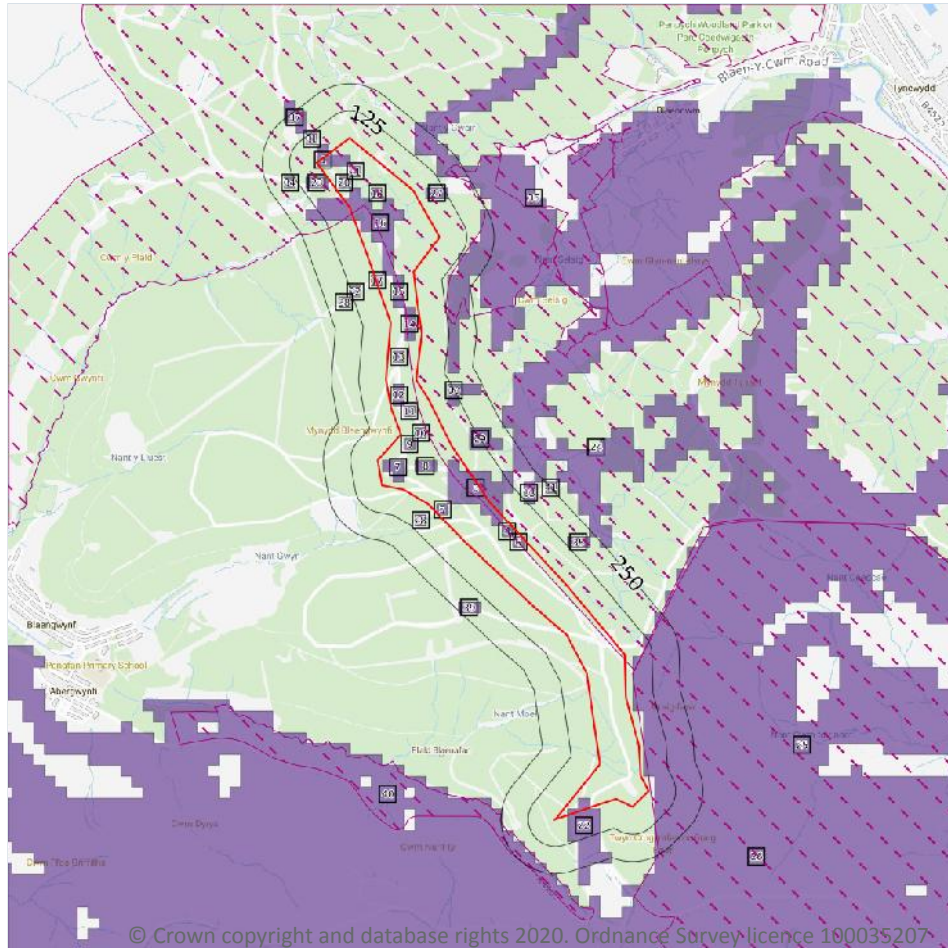
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from English Heritage, Cadw and Historic Environment Scotland.



13 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

13.1 Agricultural Land Classification

Records within 250m

35

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 71**

ID	Location	Classification	Description
1	On site	Grade 5	Very poor quality agricultural land
3	On site	Grade 5	Very poor quality agricultural land
4	On site	Grade 5	Very poor quality agricultural land

ID	Location	Classification	Description
5	On site	Grade 5	Very poor quality agricultural land
6	On site	Grade 5	Very poor quality agricultural land
7	On site	Grade 5	Very poor quality agricultural land
8	On site	Grade 5	Very poor quality agricultural land
9	On site	Grade 5	Very poor quality agricultural land
10	On site	Grade 5	Very poor quality agricultural land
11	On site	Grade 5	Very poor quality agricultural land
12	On site	Grade 5	Very poor quality agricultural land
13	On site	Grade 5	Very poor quality agricultural land
14	On site	Grade 5	Very poor quality agricultural land
15	On site	Grade 5	Very poor quality agricultural land
16	On site	Grade 5	Very poor quality agricultural land
17	On site	Grade 5	Very poor quality agricultural land
18	On site	Grade 5	Very poor quality agricultural land
20	On site	Grade 5	Very poor quality agricultural land
21	On site	Grade 5	Very poor quality agricultural land
22	On site	Grade 5	Very poor quality agricultural land
23	On site	Grade 5	Very poor quality agricultural land
26	11m NE	Grade 5	Very poor quality agricultural land
27	31m NE	Grade 5	Very poor quality agricultural land
28	42m SW	Grade 5	Very poor quality agricultural land
29	58m NE	Grade 5	Very poor quality agricultural land
30	65m NE	Grade 5	Very poor quality agricultural land
31	68m NW	Grade 5	Very poor quality agricultural land
32	76m W	Grade 5	Very poor quality agricultural land
33	109m NE	Grade 5	Very poor quality agricultural land
34	120m SW	Grade 5	Very poor quality agricultural land
35	120m NE	Grade 5	Very poor quality agricultural land

ID	Location	Classification	Description
37	138m NW	Grade 5	Very poor quality agricultural land
38	140m W	Grade 5	Very poor quality agricultural land
39	153m SW	Grade 5	Very poor quality agricultural land
41	217m NE	Grade 5	Very poor quality agricultural land

This data is sourced from Natural Resources Wales.

13.2 Open Access Land

Records within 250m	4
----------------------------	----------

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

Features are displayed on the Agricultural designations map on **page 71**

ID	Location	Name	Classification	Other relevant legislation
24	On site	-	NRW Public Forest 2014	-
25	10m E	-	Open Access Open Country	-
36	121m E	-	Open Access Open Country	-
40	187m SW	-	Open Access Open Country	-

This data is sourced from Natural England and Natural Resources Wales.

13.3 Tree Felling Licences

Records within 250m	0
----------------------------	----------

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

13.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

This data is sourced from Natural England.

13.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

14 Habitat designations

14.1 Priority Habitat Inventory

Records within 250m

0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

14.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

14.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

14.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.



From: Joseph Pickard [REDACTED] >
Sent: 29 July 2020 09:58
To: Chris Jackson
Subject: Upper Ogmore Wind Farm Consultation

Hello,

I noticed a signpost on the forestry gate close to the proposed wind farm site and have a couple of questions/comments. I have had a read over the documents available here (<http://upperogmore-windfarm.co.uk/dns-application/>) but it is possible that I missed something so if you're able to point me to a resource that would provide any further information that would be great.

My comments focus around the upland peat resource that you have within the planning area as this is my area of expertise, I'm currently employed as a peatland ecologist in Neath Port Talbot and have done some work on the neighbouring wind farm at Pen y Cymoedd where there is an extensive peat restoration programme.

I think the document identified around 11ha of modified bog within the planning area but I can't see any mitigation measures associated with changes to the peatland hydrology and the cascading effects on the floral communities present in the site. This seems to me like a missed opportunity given the presence of peat within the site and the restoration projects being progressed at wind farms across Neath Port Talbot and Rhondda Cynon Taff. There is a huge knowledge base on peat restoration in the area surrounding the application and at the moment this is not being applied to the Upper Ogmore Wind Farm.

I'm aware that within the document there is mention of a floating track design and that few impacts have been predicted however I would question this as guidance from the IUCN and data from other projects highlight the effects of any kind of constructed track on peat including a loss of hydrological connectivity and subsidence through the peat body to the mineral layer over time, with wind farm traffic being particularly mentioned within the IUCN briefing note 12 available here (http://www.iucn-uk-peatlandprogramme.org/sites/www.iucn-uk-peatlandprogramme.org/files/12%20Tracks%20on%20peatland_v2_FINAL.pdf)

I also am unable to find at present a peat depth map for the whole of the planning area, there is a peat depth map which shows depths around the proposed tracks (<http://upperogmore-windfarm.co.uk/media/2638422/figure-0801-peat-depth-map.pdf>) but not one for the entire area. Without knowing the full depths across the site I am not sure that an accurate interpretation of impacts on surrounding habitats can be made as although 11ha have been identified the volume of peat and therefore the significance of the habitat could vary significantly. Given that the eastern extent of the peat map given in the documents shows a depth of up to 1.8m and the planning application area is shown as one of few areas in Bridgend with deep peat on the unified peat map of Wales I would suggest that this could be investigated further.

Thanks for taking the time to read these comments and I look forward to hearing back from you, should I think of anything further to add I will certainly let you know.

Regards,
Joey Pickard

From: Chris Jackson
Sent: 04 September 2020 14:23
To: Joseph Pickard
Subject: RE: Upper Ogmore Wind Farm Consultation
Attachments: 02959-RES-IMP-DR-GE-001.pdf

Joey,

Thank you for your e-mail and for taking the time to review the Environmental Statement supporting the proposed planning application. I note that you saw the site notices advertising the application and am pleased that they served their purpose. I trust that the following response adequately addresses the points in your e-mail, but if you would like any further details, please do not hesitate to contact me by e-mail or on either of the telephone numbers below.

As a company, RES has developed more than 17GW of renewable energy projects, including approximately 10% of the UK's renewable energy. Some of our wind farms have been constructed on deep peat/bog, most notably in Scotland and Ireland, where we have implemented peat management and restoration schemes of significant scale. Examples of these schemes are at Glenchamber Wind Farm, Freasdail Wind Farm and Kelburn Wind Farm in Scotland; Lendrums Bridge Wind Farm in Northern Ireland; and Cark Wind Farm in the Republic of Ireland.

Limited areas of peat were identified at the Upper Ogmore site during habitat surveys and, as a result, peat depth surveys were carried out in September 2017 and June 2018. Paragraphs 8.35 and 8.36 of the Environmental Statement record that peat was found to be predominantly shallow or absent within most of the site. However, peat accumulations are present locally within the site and the extent of the peat within the vicinity of the proposed infrastructure was confirmed by the surveys and is identified in Figure 8.1: Peat Depth Plan. The peat at the site appeared severely degraded / modified by grazing and agricultural schemes. Nevertheless particular attention was paid to the risk of affecting peat, surface water hydrology and receiving watercourses during the design of the infrastructure layout and in the impact assessment.

Paragraph 8.62 confirms that the infrastructure layout has been carefully designed to provide embedded mitigation, including the avoidance of deep peat (ie greater than 0.5m deep) as far as practicable. There are no turbines located in the vicinity of deep peat and the track layout has also been developed to avoid areas of deep peat. Where this is unavoidable, excavations will be kept to a minimum and a floated track design would be adopted if necessary.

In response to your query regarding the need for a wider survey, this was not considered necessary due to existing site topography and the presence of several existing watercourses within the site boundary. The wind farm infrastructure is only impacting a small discrete area of peat. The attached drawing is a copy of Figure 8.1 onto which we have overlain the watercourses. The drawing shows the proximity of the watercourses to the peat areas and demonstrates the short flow paths through the peat into the watercourses. As such the proposed infrastructure will have negligible impact on the peat hydrology or groundwater dependant habitats given the peat is already well drained by the existing watercourses and steeply sloping topography.

Floated tracks would follow the principles of minimum disturbance of the vegetation layer and stone/geotextile would be laid directly onto existing vegetation. In order to maintain the existing hydrology where tracks cross the peat, flow balancing pipes in the form of perforated pipes or large rock fill will be utilised within the lower track layers.

Appendix 6.2 of the Environmental Statement includes notes of a meeting between RES and Natural Resources Wales (NRW). At that meeting, peat was discussed with NRW's peat specialist, who recommended that tracks should float over the underlying peat to maintain the flow of groundwater

between areas of deeper peat either side of the track. He added that this could be achieved through use of larger rocks as a permeable bed to support the relatively impermeable material forming the track surface. It should be noted that whilst these comments were made in relation to the track to turbine T8 which would have crossed deeper peat, they are equally applicable to any areas of peat within the site. For various reasons, including visual impact, turbine T8 was dropped from the proposed layout and is no longer a part of the planning application.

The Sustainable Drainage Management Plan included as Appendix 3.2 includes measures to preserve hydrology within the site, including good construction practice and methodologies which will be incorporated into the Construction Design Method Statement (CDMS) and monitored during the construction phase. Further details to be included in the CDMS are set out in paragraph 8.75 of the Environmental Statement.

For the foregoing reasons, and particularly as areas of deep peat within the site are very small and severely degraded (compared with the very large areas of deep peat/bog you mention at Pen y Cymoedd), it is considered that the embedded mitigation provided by careful infrastructure layout design will avoid any changes to the peatland hydrology or effects on the floral communities.

As I mentioned above, please do not hesitate to contact me if you would like any further details.

Kind regards,

Chris Jackson

Senior Development Project Manager

D +44 2920 021 074 | M +44 7500 058 463

chris.jackson@res-group.com | www.res-group.com



Committed to a future where everyone has access to affordable zero carbon energy

