9 Cultural Heritage

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9 Cultural Heritage

9.1 Introduction

9.1.1 This chapter considers the issues associated with the potential cultural heritage effects of the proposed Energy Isles Wind Farm (hereafter referred to as the 'Proposed Development'). The Proposed Development is for a wind farm of 29 turbines with a maximum tip height of up to 200 m and is described in detail in EIA Report Chapter 3.

9.1.2 This chapter identifies the archaeological and cultural heritage value of the site (refer to **Figure 9.1**) and known heritage features within 1 km of it (refer to **Figure 9.2**). The assessment also identifies all designated heritage assets up to 10 km from the site with the potential for significant effects on their setting (**Figure 9.3**). The assessment includes descriptions of the context of the assessment; methodology; baseline conditions; potential effects (both direct and indirect) and mitigation proposals as necessary. The assessment considers the effects of the construction, operational and decommissioning phases of the Proposed Development in detail. An assessment of potential cumulative effects is also made.

9.1.3 This chapter has been produced by AOC Archaeology Group. AOC is a Registered Archaeological Organisation of the Chartered Institute for Archaeologists (CIfA). This chapter conforms to the standards of professional conduct outlined in the Chartered Institute for Archaeologists' Standards and Guidance for Historic Environment Desk Based Assessments (CIfA 2017); Commissioning Work or Providing Consultancy Advice on the Historic Environment (CIfA 2014) and follows IEMA's EIA Guidelines (as updated) (IEMA, 2016).

9.2 Legislation, Policy and Guidelines.

Legislation

9.2.1 Relevant legislation documents have been reviewed and taken into account as part of this cultural heritage assessment. Of particular relevance are:

- The Ancient Monuments and Archaeological Areas Act 1979 (as amended);
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 (as amended);
- The Planning etc. (Scotland) Act 2006;
- Historic Environment (Amendment) (Scotland) Act 2011;
- Historic Environment (Scotland) Act 2014;
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended).

Planning Policy

9.2.2 The implications of this legislation with regard to relevant planning policy and guidance are contained within:

- Scottish Planning Policy (Scottish Government 2014);
- Historic Environment Scotland Policy Statement 'HESPS' (HES 2016a);
- PAN2/2011 'Planning and Archaeology' (Scottish Government 2011); and
- The adopted Shetland Islands Local Development Plan (SIC 2014).

9.2.3 SPP (Scottish Government 2014), HESPS (HES 2016a), PAN 2/2011 'Archaeology and Planning' (Scottish Government 2011) and policies HE1-5 of the adopted Shetland Islands Local Development

Plan (SIC 2014) deal specifically with planning policy and guidance in relation to heritage which collectively expresses a general presumption in favour of preserving heritage remains in situ. Their 'preservation by record' (i.e. through excavation and recording, followed by analysis and publication, by qualified archaeologists) is a less desirable alternative.

9.2.4 The setting of Scheduled Monuments is also a key material consideration when determining applications. This principle is outlined in paragraph 145 of SPP and polices HE2 and HE4 of The Shetland Islands Local Development Plan. These policies express the importance of preservation of the integrity of the setting of Scheduled Monuments and also the preservation of the special interest and character of Listed Buildings and their settings.

9.2.5 Historic Environment Scotland (HES) recently (December 2018) finished consultation on the draft of their new Historic Environment Policy (HEP) which is scheduled to replace HESPS in the spring of 2019, and the draft has been considered insofar as possible at this stage. The new policy will be considerably shorter than HESPS and will be underpinned by a more detailed series of 'Managing Change' guidance documents than at present. The draft guidance sets out four 'Core Principles' for the understanding and recognition of the historic environment:

- A wide range of values can contribute to cultural significance.
- Knowledge and information about the historic environment is critical to the understanding of our past, present and future. A place must be understood in order for its significance to be identified.
- The historic environment evolves over time, and so does our understanding and appreciation of it.
- We are all responsible for enhancing our knowledge and making it widely accessible.

9.2.6 Four of the policies contained within the draft policy are relevant to the consideration of cultural heritage during development management:

- HEP 1: Decision-makers should adopt a holistic approach to the historic environment, incorporating an inclusive understanding of its breadth and cultural significance.
- HEP 2: Decision-makers should ensure that the benefits, understanding and enjoyment of the historic environment are secured for the long term.
- HEP 3: Strategic plans and policies and the allocation of resources should protect and promote the historic environment. Where detrimental impacts on the historic environment arising from plans and programmes are identified and unavoidable, steps should be taken to demonstrate that other options have been explored and mitigation measures put in place.
- HEP 4: When considering changes to specific assets and their context, significant harm should be avoided. Opportunities for enhancement should be sought where appropriate. Where detrimental impacts on the historic environment are unavoidable, these should be minimised and mitigation measures put in place (HES 2018).

Guidance

9.2.7 Consideration has been taken of the following best practice guidelines/guidance in preparing this assessment:

- Policy SGHE 3 of the Supplementary Planning Guidance for Shetland Islands Council (SIC 2012);
- Chartered Institute for Archaeologists (CIfA) Standards and Guidance for Historic Environment Desk Based Assessments (CIfA 2017) and Commissioning Work or Providing Consultancy Advice on the Historic Environment (CIfA 2014);

- Historic Environment Scotland's "Managing Change in the Historic Environment" guidance note series, particularly Historic Environment Scotland's Managing Change in the Historic Environment: Setting (HES 2016b); and
- Scottish National Heritage's published guidance for 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (SNH 2012).

9.2.8 HES's setting guidance defines setting as 'the way the surroundings of a historic asset or place contribute to how it is understood, appreciated, and experienced' (HES 2016b). The guidance further notes that 'planning authorities must take into account the setting of historic assets or places when drawing up development plans and guidance, when considering various types of environmental and design assessments/statements, and in determining planning applications' (ibid). It advocates a three-stage approach to assessing potential impacts upon setting:

- Stage 1: Identify the historic asset.
- Stage 2: Define and analyse the setting.
- Stage 3: Evaluate the potential impact of the proposed changes.

9.3 Consultation

9.3.1 **Table 9.1** summarises the responses from statutory and non-statutory consultation bodies in regard to cultural heritage and the Proposed Development.

Table 9.1 – Summary of Consultation Responses

Consultee	Summary of Response	Where and how addressed
Shetland Amenity Trust (on behalf of Shetland Islands Council)	Scoping Opinion - The Historic Environment chapter (8) is rather thin and relies heavily on National guidance and advice. The comments below will enable it to come up to the standard generally expected. Relevant Guidance and Advice should include reference to the Shetland Local Development Plan, in particular policies HE1 and HE4. The Shetland SMR/HER has not been consulted for the Baseline Environment section Direct Effects - The "SIC HER" is of course housed at Shetland Amenity Trust and they should come directly to us for information and advice - Shetland Archives hold maps created by Thomas Irvine which may cover this area, and so should be checked Proposed Field Survey Methods - This should include geophysical survey in the pockets of land where the terrain is suitable for this and archaeological peat coring (which may take the form of a suitably qualified and experienced	Shetland Local Development Plan is referenced in Section 9.2.2 and has been fully considered in the preparation of this chapter, including in formulating mitigation in Section 9.7. SMR data has been obtained from Shetland Amenity Trust as detailed in Section 9.4.3 Shetland Amenity Trust consulted directly throughout project Shetland Archives consulted as detailed in Section 9.4.3 Terrain assessed for suitability during walk over survey; geophysical survey assessed as not appropriate for this

Consultee	Summary of Response	Where and how addressed
	archaeologist working with the team carrying out the environmental peat coring) - A consideration of the impact on the settings of scheduled monuments in the vicinity (eg: Burgi Geos) - The outcome of the Desk Based Assessment, Walkover and Geophysics/Coring should be the production of a mitigation strategy which would require to be approved in advance with the Regional Archaeologist on behalf of the Local Planning Authority.	landscape owing to deep peat and uneven terrain. Archaeological coring survey undertaken as part of environmental peat coring survey. The results are summarised in sections 9.5.31 - 9.5.34 and detailed in Appendix 9.4 Detailed settings assessment undertaken and presented in Appendix 9.5. Mitigation strategy outlined in Section 9.7.
Historic Environment Scotland	Scoping Opinion -We would recommend that the potential cumulative impacts of the proposed development in combination with other developments in the vicinity be assessed. This should assess the incremental impact or change when the proposal is combined with other past, present and reasonably foreseeable developments. We welcome the use of a ZTV to assist in establishing which historic environment assets should be assessed in the ES, however, we would note that even where a detailed ZTV indicates that no intervisibility would be possible from any such assets identified, the potential may remain for turbines to appear in the background of key views towards these assets, and this should be considered as part of the assessment. The design of the scheme should take into account the settings of the following assets:- Scheduled Monuments • Burgi Geos, promontory fort (SM 11274) • St Olaf's Church, remains of church, Kirk Loch, North Yell (SM 2098) • Burgi Geo, broch 510m NNE of N Brough (SM 2060) • Papil, remains of chapel and burial ground 120m WSW of, North Yell (SM 2674)	An assessment of potential cumulative impacts is included within this chapter in Section 9.9. All designated assets within the ZTV were considered for potential significant settings effects. All assets within 10k within ZTV include for detailed assessment. Assets outwith ZTV and/or beyond 10km considered in terms of key views and where applicable assessed in detail in Appendix 9.5. The setting of Burgi Geos, promontory fort (SM 11274) is considered in detail in sections 9.6.10 to 9.6.14. The setting of all other assets listed are considered in detail in Appendix 9.5. Photomontages and/or wireframes for each of the listed assets have also been

Consultee	Summary of Response	Where and how addressed
	• Bayanne House, prehistoric settlement 100m WSW of (SM 13125) • Windhouse, broch 75m W of (SM 2093) We would also note that the setting of the monuments on the E of the island may also be affected by such a large wind development proposal and consideration should be given to these assets, particularly should the design of the scheme see turbines located to the E of the ridgeline in the centre of the island, and towards Sandwater Hill. Category A listed buildings • Belmont House (LB 17474) • Brough Lodge (LB 45269) Inventory of Gardens and Designed Landscapes • Belmont House • Brough Lodge	produced **Figures 9.5.1a-9.5.10d** All turbines are located west of Sandwater Hill and associated ridgeline in the centre of the island.

9.4 Assessment Methodology and Significance Criteria

Consultation

9.4.1 An EIA Scoping Opinion was received from Shetland Amenity Trust (SAT) on behalf of Shetland Islands Council (SIC), on 22nd May 2017. AOC met with SAT on 23rd October 2018 to discuss the response and the project; initial results of the walkover and coring survey were discussed with SAT in November 2018. AOC consulted directly with Historic Environment Scotland (HES) with regard to the potential implications on nationally important heritage assets and a proposed list of visualisations was agreed with HES in October 2018. Detail regarding consultation responses and how points raised by consultees are addressed is presented in **Table 9.1** above.

Study Area

9.4.2 Three study areas were identified for this assessment:

- A core study area (the site) which includes all land within the site boundary which is subject to assessment for potential direct effects. This study area was subject to walkover survey and was used to identify cultural heritage features which may be directly affected by the Proposed Development (**Figure 9.1**).
- A 1km study area for the identification of all known heritage features and known previous archaeological interventions in order to help predict whether any similar hitherto unknown archaeological remains are likely to survive within the site and thus be impacted by the Proposed Development (**Figure 9.2**).
- A 10km study area for the assessment of potential effects on the settings of all designated heritage assets including Scheduled Monuments; Listed Buildings; Inventoried Gardens and

Designed Landscapes; Inventoried Battlefields and Conservation Areas. This study area is covered by the Zone of Theoretic Visibility (ZTV) (**Figure 9.3**).

9.4.3 Each heritage feature referred to in the text is listed in the Gazetteer in Appendix 9.1. Each has been assigned a 'Site No.' unique to this assessment, and the Gazetteer includes information regarding the type, period, grid reference, NRHE number, SMR number, statutory protective designation, and other descriptive information, as derived from the consulted sources.

Desk Study

9.4.4 The following sources were consulted for the collation of data:

- Shetland Amenity Trust Sites and Monuments Record (SMR);
- The National Record for the Historic Environment (NRHE) as held by HES;
- Spatial data and descriptive information for designated assets held on Historic Environment Scotland Data website;
- Ordnance Survey maps (principally First and Second Edition), and other published historic maps held in the Map Library of the National Library of Scotland;
- Online aerial satellite imagery, Google earth, bing, Esri aerial mapping;
- Scottish Remote Sensing Portal for LiDAR data;
- Unpublished historic maps and documents held by Shetland Museum and Archives;
- Vertical and oblique aerial photographs held by the National Collection of Aerial Photographs (NCAP, as held by HES);
- Published bibliographic sources, including historical descriptions of the area (Statistical Accounts, Parish Records);
- The Scottish Palaeoecological Database; and
- The Historic Land-use Assessment Data (HLAMap) for Scotland.

Site Visit

9.4.5 An archaeological walkover survey of the site was undertaken with the aim of identifying any previously unknown archaeological features. All known and accessible heritage features were assessed in the field to establish their survival, extent, significance and relationship to other sites. Weather and any other conditions affecting the visibility during the survey were also recorded. All heritage features encountered were recorded and photographed. The location of features noted in the field was recorded using ArcGIS Surveyor and cross-referenced with hand-held GPS and mapping to record and confirm the position of each feature and to record the route of the survey. All features were marked on plans, at a relevant scale, and keyed by means of Grid References to the Ordnance Survey mapping.

9.4.6 The walkover survey also identified areas of standing water, peat erosion and areas of former peat cuttings. Exposed peat hags and peat cuttings were briefly examined for evidence of buried land surfaces.

Assessment of Potential Effect Significance

9.4.7 This assessment distinguishes between the term 'impact' and 'effect'. An impact is defined as a physical change to a heritage feature or its setting, whereas an effect refers to the significance of this impact. The first stage of the assessment involves establishing the value and importance of the heritage feature and assessing the sensitivity of the feature to change (impact). Using the proposed design for the Proposed Development, an assessment of the impact magnitude is made and a judgement regarding the level and significance of effect is arrived at.

Direct Effect Assessment

Sensitivity/Importance/Value

9.4.8 HESPS notes that to have cultural significance an asset must have a particular "*artistic; archaeological; architectural; historic; traditional (factors listed in the 1979 Act); aesthetic; scientific; [and/or] social [significance] – for past, present or future generations*" (HES, 2016a). Heritage assets/features also have value in the sense that they "*...create a sense of place, identity and physical and social wellbeing, and benefit the economy, civic participation, tourism and lifelong learning*" (Scottish Government, 2014).

9.4.9 For clarity and to avoid confusion with the EIA term 'significant', the term 'cultural value' will be used throughout this assessment though, as outlined above, it is acknowledged that this is the same as 'cultural significance' as defined in HESPS.

9.4.10 All heritage assets/features have some value; however, some assets are judged to be more important than others. The level of that importance is, from a cultural resource management perspective, determined by establishing the asset's capacity to inform present or future generations about the past. In the case of many heritage assets their importance has already been established through the designation (i.e. scheduling, listing and inventory) processes applied by Historic Environment Scotland.

9.4.11 The criteria used to rate importance of heritage assets/archaeological features in the core study area are presented in **Table 9.2** and relate to the criteria set out in Appendices 1-6 of HESPS which outline the criteria for establishing National Importance.

Table 9.2 –Criteria for Establishing Relative Importance of Heritage Assets

Importance/Sensitivity	Criteria
International and National	World Heritage Sites; Scheduled Monuments (as protected by the Ancient Monuments and Archaeological Areas Act 1979 (the "1979 Act"); Category A Listed Buildings (as protected by the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997) (the "1997 Act"); Inventory Gardens and Designed Landscapes (as protected by the 1979 Act, as amended by the Historic Environment (Amendment) (Scotland) Act 2011); Inventory Battlefields (as protected by the 1979 Act, as amended by the 2011 Act); Non-Designated features considered to be of National Importance including, fine, little-altered examples of some particular period, style or type (as protected by SPP, 2014).
Regional	Category B Listed Buildings (as protected by the 1997 Act); Conservation Areas (as protected by the 1997 Act); Major examples of some period, style or type, which may have been altered (as protected by SPP, 2014); Assets/features of a type which would normally be considered of national importance that have been partially damaged (such that

Importance/Sensitivity	Criteria
	their ability to inform has been reduced) (as protected by SPP, 2014).
Local	Category C Listed Buildings (as protected by the 1997 Act); Lesser examples of any period, style or type, as originally constructed or altered, and simple, traditional sites, which group well with other significant remains, or are part of a planned group such as an estate or an industrial complex (as protected by SPP, 2014); Cropmarks of indeterminate origin (as protected by SPP, 2014); Assets/features of a type which would normally be considered of regional importance that have been partially damaged or asset types which would normally be considered of national importance that have been largely damaged (such that their ability to inform has been reduced) (as protected by SPP, 2014).
Negligible	Relatively numerous types of remains; Findspots of artefacts that have no definite archaeological remains known in their context; Assets/features of a type which would normally be considered of local importance that have been largely damaged (such that their ability to inform has been reduced). The above assets are protected by Paragraph 137 of SPP, 2014).

Direct Impact Magnitude

9.4.12 Potential direct impacts, that is the physical change to known heritage features, and unknown buried archaeological remains, in the case of the Proposed Development relate to the possibility of disturbing, removing or destroying in situ remains and artefacts during ground breaking works on this site. The magnitude of the direct impact upon heritage assets caused by the Proposed Development is rated using the classifications and criteria outlined in **Table 9.3**.

Table 9.3 - Criteria for Classifying Direct Impact Magnitude

Impact Magnitude	Criteria
High	Major loss of information content resulting from total or large-scale removal of deposits from a site; and/or Major alteration of a monument's baseline condition
Medium	Moderate loss of information content resulting from material alteration of the baseline conditions by removal of part of a site; and/or Moderate alteration of a monument's baseline condition

Impact Magnitude	Criteria
Low	Minor detectable impacts leading to the loss of information content; and/or Minor alterations to the baseline condition of a monument
Marginal	Very slight or barely measurable loss of information content; Loss of a small percentage of the area of a site's peripheral deposits; and/or Very slight alterations to the baseline conditions of a monument
None	No physical impact anticipated

Direct Effect Significance

9.4.13 The predicted level of direct effects on each heritage feature is determined by considering the feature's importance in conjunction with the predicted magnitude of the impact. The method of deriving the level of a direct effect and effect significance is provided in **Table 9.4**.

Table 9.4 - Level of Direct Effect based on Inter-Relationship between the Importance of the Heritage Feature and the Impact Magnitude

Impact Magnitude	Importance of Asset			
	National	Regional	Local	Negligible
High	Major	Major/Moderate	Moderate	Minor
Medium	Major/Moderate	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Negligible
Marginal	Minor	Minor	Negligible	Neutral

9.4.14 Using professional judgment and with reference to the Guidelines for Environmental Impact Assessment (as updated) (IEMA, 2016), this assessment considers moderate and greater effects to be significant, while minor-moderate and lesser effects are considered not significant

Indirect Effect Assessment

Relative Sensitivity

9.4.15 HESPS indicates that the relationship of an asset to its setting or the landscape makes up part of its contextual characteristics and thus contributes to its cultural value or importance. SPP (2014) does not differentiate between the importance of the asset itself and the importance of the asset's setting. However, it is widely recognised (see Lambrick, 2008) that the importance of an asset is not the same as its sensitivity to changes to its setting. Elements of setting may make a positive, neutral or negative contribution to the value of an asset. Thus, in determining the nature and significance of impacts upon assets and their settings by the Proposed Development, the contribution that setting makes to an asset's value and importance, and thus its sensitivity to changes to setting, need to be considered.

9.4.16 This approach recognises the importance of preserving the integrity of the setting in the context of the contribution that setting makes to the experience, understanding and appreciation of a given

asset. It recognises that setting is a key characteristic in understanding and appreciating of some, but by no means all, assets. Indeed, a nationally important asset does not necessarily have high sensitivity to changes to its setting (e.g. does not necessarily have a high relative sensitivity). An asset's relative sensitivity to alterations to its setting refers to its capacity to retain its ability to inform this and future generations in the face of changes to its setting. The ability of the setting to contribute to an understanding, appreciation and experience of the asset and its value also has a bearing on the sensitivity of that asset to changes to its setting. While all nationally important heritage assets are likely to be sensitive to direct impacts, not all will have a similar sensitivity to impacts on their setting. This would be true where setting does not appreciably contribute to their value or importance. Assets with high sensitivity to indirect settings impacts may be vulnerable to any changes that affect their settings, and even slight changes may reduce their information content or the ability of their settings to contribute to the understanding, appreciation and experience of them. Less sensitive assets will be able to accommodate greater changes to their settings without material reduction in their ability to inform, and in spite of such changes the relationship between the asset and its setting will still be legible.

9.4.17 The criteria for establishing a heritage asset's relative sensitivity is outlined in **Table 9.5**. This table has been developed based on AOC's professional judgement and experience in assessing setting impacts. It has been developed with reference to the policy and guidance noted above including SPP (Scottish Government, 2014), HESPS (HES, 2016a), Draft HEP (HES, 2018), the Xi'an Declaration (ICOMOS, 2005) and Historic Environment Scotland's guidance on the setting of heritage assets (HES, 2016b).

Table 9.5 - Criteria for Establishing Relative Sensitivity of a Heritage Asset to Changes to its Setting

Magnitude	Criteria
High	An asset whose setting contributes substantially to an observer's understanding, appreciation and experience of it should be thought of as having High Sensitivity to changes to its setting. This is particularly relevant for assets whose setting, or elements thereof, contribute directly to their significance (e.g. form part of their Key or Contextual Characteristics (HESPS 2016)). For example, an asset which retains an overtly intended relationship with its setting and the surrounding landscape. These may in particular be, but are not limited to, assets such as ritual monuments which have constructed sightlines to and/or from them or structures intended to be visually dominant within a wide landscape area e.g. castles, tower houses, prominent forts etc. Setting is the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated. Therefore, an asset, which relies heavily on its modern surroundings for its understanding, appreciation and experience, is of high sensitivity. In particular an asset whose setting is an important factor in its protection and in retention of its cultural value (as per SPP (2014) definition of setting).
Medium	An asset whose setting contributes moderately to an observer's understanding, appreciation and experience of it should be thought of as having Medium Sensitivity to changes to its setting. This could be an asset for which setting contributes to value but whereby its value is derived mainly from its other qualities (HESPS 2016 Annex 1). This could for example include assets which had an overtly intended relationship with their setting and the surrounding landscape but where that relationship (and therefore

Magnitude	Criteria
	the ability of the assets' surroundings to contribute to an understanding, appreciation and experience of them) has been moderately compromised either by previous modern intrusion in their setting or the landscape or where the asset itself is in such a state of disrepair that the relationship cannot be fully understood. An asset, the current understanding, appreciation and experience of which, relies partially on its modern aesthetic setting regardless of whether this was intended by the original constructors or users of the asset. An asset whose setting is a contributing factor to its protection and the retention of its cultural value
Low	An asset whose setting makes some contribution to an observer's understanding, appreciation and experience of it should generally be thought of as having Low Sensitivity to changes to its setting. This may be an asset whose value is mainly derived from its other characteristics and whereby changes to its setting will not materially diminish our understanding, appreciation and experience of it. This could for example include assets which had an overtly intended relationship with their setting and the surrounding landscape but where that relationship (and therefore the ability of the assets' surroundings to contribute to an understanding, appreciation and experience of them) has been significantly compromised either by previous modern intrusion to its setting or the landscape or where the asset itself is in such a state of disrepair that the relationship cannot be determined.
Marginal	An asset whose setting makes minimal contribution to an observer's understanding, appreciation and experience of it should generally be thought of as having Marginal Sensitivity to changes to its setting. This may include assets for which the original relationship with their surrounding has been lost, possibly having been compromised by previous modern intrusion, but who still retain cultural value in their intrinsic and possibly wider contextual characteristics

9.4.18 The determination of a heritage asset's sensitivity to indirect impacts upon its setting is first and foremost reliant upon the determination of its setting and the elements of setting which contribute to its cultural value and an understanding and appreciation of that cultural value. The criteria set out in **Table 9.5** are intended as a guide. Assessment of individual heritage assets is informed by knowledge of the asset itself, of the asset type if applicable and by site visits to establish the current setting. This allows for the use of professional judgement and each heritage asset is assessed on an individual basis. Individual heritage assets may fall into several of the sensitivity categories outlined above, e.g. a country house may have a high sensitivity to alterations within its own landscaped park or garden, but its level of sensitivity to changes may be less when considered within the wider landscape context.

9.4.19 In establishing the relative sensitivity of an asset to changes to its setting, the setting must first be identified. Appendix 9.2 outlines the range of factors considered when establishing the setting of an asset and therefore determining sensitivity. These have been used as a guide in assessing each asset from known records and in the field.

Indirect Impact Magnitude

9.4.20 The indirect impact magnitude upon the setting of heritage assets by the Proposed Development is an assessment of the magnitude of change to the setting of any given heritage asset, in particular those elements of the setting that inform its cultural value. Assessments of impacts upon the setting of heritage assets have been informed by site visits and GIS analysis as necessary. **Table 9.6** outlines the main factors considered when assessing magnitude of indirect impact.

Table 9.6 - Factors affecting Magnitude of Setting Impact

Site Details	Importance of Detail for Setting Impact Magnitude
Proximity to the Proposed Development (for this assessment this is measured to the nearest turbine)	Increasing distance of an asset from the Proposed Development will, in most cases, diminish the effects on its setting.
Visibility of Proposed Development	The proportion of the view from each asset which will feature the Proposed Development will also affect the magnitude of impact. The existence of features (e.g. tree belts, forestry, landscaping or built features) that could partially or wholly obscure the development from view, will also affect the magnitude of impact.
Complexity of landscape	The more visually complex a landscape is, the less prominent the new development may appear within it. This is because where a landscape is visually complex the eye can be distracted by other features and will not focus exclusively on the new development. The presence, extent, character and scale of the existing built environment and how the Proposed Development compares to and fits in with this also affects the magnitude of setting impact (HES 2016b).
Design of Development	This refers to the perceived scale of the proposed change relative to the scale of the historic asset or place and its setting. Depending on the individual asset, the design of the Proposed Development could affect the perception of dominance or foci of a particular asset and its relationship with other cultural and natural features within the landscape (SNH 2017). For example, whether the development would be seen against the skyline or against a backdrop of hills may affect the perception of the prominence of an asset and/or the Proposed Development.

9.4.21 It is acknowledged that **Table 9.6** above primarily deals with visual factors affecting setting. While the importance of visual elements of settings, e.g. views, inter-visibility, prominence etc., are clear, it is also acknowledged that there are other, non-visual factors which could potentially result in setting impacts. Such factors could be other sensory factors, e.g. noise or smell, or could be associative. Where applicable these are considered in concluding about magnitude of impact upon setting.

9.4.22 Once the above has been considered, the prediction of the level of magnitude of impact upon setting will be based upon the criteria set out in **Table 9.7** below. In applying these criteria, consideration will be given to the relationship of the Proposed Development to those elements of setting which have been defined as most important in contributing to the ability to understand, appreciate and experience the heritage asset and its cultural value.

Table 9.7 - Criteria for assessing impact magnitude upon setting

Impact Magnitude	Criteria
High	Direct and substantial visual impact on a key sightline to or from a ritual monument or prominent fort; Direct and substantial visual impact on a key 'designed-in' view or vista from a Designed Landscape or Listed Building; Direct severance of the relationship between an asset and its setting; An impact that changes the setting of an asset such that it affects the integrity of its setting (SPP 2014) and materially affects an observer's ability to understand, appreciate and experience the asset
Medium	Oblique visual impact on an axis adjacent to a key sightline to or from a ritual monument but where the key sightline of the monument is not obscured; Oblique visual impact on a key 'designed-in' view or vista from a Designed Landscape or Listed Building; Partial severance of the relationship between an asset and its setting; Notable alteration to the setting of an asset beyond those elements of the setting which directly contribute to the understanding of the cultural value of the asset; An impact that changes the setting of an asset such that an observer's ability to understand, appreciate and experience the asset and its cultural value is marginally diminished.
Low	Peripheral visual impact on a key sightline to or from a ritual monument, prominent fort, designed landscape or building; Slight alteration to the setting of an asset beyond those elements of the setting which directly contribute to the understanding of the cultural value of the asset; An impact that changes the setting of an asset, but where those changes do not materially affect an observer's ability to understand, appreciate and experience the asset.
Marginal	All other setting impacts

Indirect Effect Significance

9.4.23 The level of indirect effects on the setting of heritage assets is judged to be the interaction of the asset's relative sensitivity (**Table 9.5**) and the magnitude of the impact (**Table 9.7**) and takes into consideration the importance of the asset (**Table 9.2**). The interactions determining level of effect

on the setting of the heritage assets are shown in **Table 9.8**. A qualitative descriptive narrative is also provided for each asset to summarise and explain each of the professional value judgements that have been made.

Table 9.8 - Interactions determining level of effect on setting

Magnitude of Impact	Sensitivity or Value of Receptor			
	High	**Medium**	**Low**	**Marginal**
High	Major	Moderate	Minor/Moderate	Minor
Medium	Moderate	Minor/Moderate	Minor	Negligible
Low	Minor/Moderate	Minor	Negligible	Neutral
Marginal	Minor	Minor	Neutral	Neutral

9.4.24 Using professional judgment, and with reference to the Guidelines for Environmental Impact Assessment (IEMA, 2016), effects established as moderate and greater are defined as significant, while those determined to be minor-moderate and less, are considered not significant.

Cumulative Effect Assessment

9.4.25 It is necessary to consider whether the effects of other schemes in conjunction with the Proposed Development would result in an additional cumulative change upon the settings of heritage assets, beyond the levels predicted for the Proposed Development alone.

9.4.26 Operational cumulative effects are assessed using the same criteria as used in determining effects resulting from the Proposed Development alone as outlined in **Tables 9.5-9.8** and have been guided by Scottish National Heritage's published guidance for 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (SNH 2012).

9.4.27 In determining the degree to which a cumulative effect may occur as a result of the addition of the Proposed Development into the cumulative baseline a number of factors are taken into consideration including:

- the distance between wind farms;
- the interrelationship between their Zones of Theoretic Visibility (ZTV);
- the overall character of the asset and its sensitivity to wind farms;
- the siting, scale and design of the wind farms themselves;
- the way in which the asset is experienced;
- the placing of the cumulative wind farm(s) in relation to both the individual proposal being assessed and the heritage asset under consideration; and
- the contribution of the cumulative baseline schemes to the significance of the effect, excluding the individual proposal being assessed, upon the setting of the heritage asset under consideration.

9.4.28 This assessment is based upon a list of operational or consented developments along with developments where permission has been applied for. Cumulative developments are listed in EIA Report Chapter 3. While all have been considered, only those which contribute to, or have the possibility to contribute to, cumulative effects on specific heritage assets are discussed in detail in the text. Additionally, given the emphasis SNH place on significant effects, and the requirements of the EIA Regulations, cumulative effects have only been considered in detail for those assets where

the effects upon the setting from the Proposed Development, alone, have been judged to be an effect of minor/moderate level or greater. The setting of assets which would have an effect of less than minor/moderate level are unlikely to reach the threshold of significance as defined in **Table 9.8**.

Requirements for Mitigation

9.4.29 National and local planning policies and planning guidance outlined in Section 9.2 of this report, require a mitigation response that is designed to take cognisance of the possible impacts upon heritage assets by a proposed development and avoid, minimise or offset any such impacts as appropriate. The planning policies and guidance express a general presumption in favour of preserving heritage remains in situ wherever possible. Their 'preservation by record' (i.e. through excavation and recording, followed by analysis and publication, by qualified archaeologists) is a less desirable alternative (SPP 2014, paras 137, 150; SIC 2014 policy HE4).

9.4.30 The Proposed Development has been designed where possible to avoid direct impacts upon known heritage features through careful siting of infrastructure. Where possible, impacts upon the setting of heritage assets have been avoided or minimised during the iterative design process.

Assessment of Residual Effect Significance

9.4.31 The residual impact is what remains following the application of mitigation and management measures, and construction has been completed and is thus the final level of impact associated with the Proposed Development. The level of direct residual effect is defined using criteria outlined in **Tables 9.2, 9.3** and **9.4**. No direct mitigation is possible for indirect (setting) effects of the Proposed Development and therefore residual effects on the setting of heritage assets will be the same as predicted without mitigation.

Limitations to Assessment

9.4.32 This assessment is based upon data obtained from publicly accessible archives as described in the Data Sources in Section 9.4.3 as well as walkover and coring surveys. Sites and Monuments Record (SMR) Data was received in October 2018. NRHE data and HES Designation data was downloaded from HES in December 2018. This assessment does not include any records added or altered after this date.

9.4.33 Limited intrusive archaeological evaluation has been undertaken to inform this assessment, as such there is the potential for hitherto unknown archaeological remains to survive within the site and to be disturbed by the works associated with the Proposed Development. This limitation is taken account of in the Mitigation Section where measures to avoid or minimise any such effects on hitherto unknown remains are provided for.

Modifying Influences

9.4.34 The likely evolution of the baselines excepting the Proposed Development would largely be expected to mirror the current baseline. Any alteration to the baseline condition of the heritage features within the site would likely relate to very gradual deterioration of upstanding structures as a consequence of natural weathering, peat deterioration and, in some cases, stock grazing. Warmer, drier summers and wetter winters are widely predicted as a result of climate change so that water table draw down would become more marked in the summer and this would potentially affect preservation of any buried waterlogged remains or palaeoecological deposits. Periodic wetting and drying of buried remains could lead to their structural alteration and subsequent deterioration. Heritage features located within the east of the site, close to historic peat cuttings, would be at risk from potential disturbance either through their direct removal through peat cutting or exposure due to reduction in peat levels and moisture content of the peat.

9.4.35 The setting of the site may be altered in the future through the construction and/or operation of cumulative developments.

9.5 Baseline Conditions

Designations

9.5.1 There are no designated heritage assets within the site (**Figure 9.1**). There are 44 Scheduled Monuments, 37 Listed Buildings, and two Inventory Garden and Designed Landscapes within 10km of the site (refer to **Figure 9.3**). The nearest Scheduled Monument is Burgi Geos, (Site 1) set on a coastal promontory approximately 230 m west of the site boundary. The monument comprises a promontory fort of later prehistoric date with unique outer defences and remains of a blockhouse. The majority of Listed Buildings are clustered around coastal hamlets and within the larger settlements of Mid Yell and Uyeasound. The Inventory Garden and Designed Landscapes are located at Gardie House, Unst and Brough Lodge, Fetlar and are shown on **Figure 9.3**.

Archaeological and Historical Background

Context

9.5.2 The site is currently largely occupied by open rolling moorland with minor summits including Hill of Vigon at 100 m AOD, Hill of Markamouth at 100 m AOD and Tonga Field 80 m AOD. Several watercourses cross the area, including Burn of Glippapund, River Burn, Burn of Amframires, Burn of Rules, Burn of Rimminamartha and Burn of Riggadale. Large water bodies within the site include Gossa Water, Fugla Water and the Grud Waters. There are also numerous unnamed smaller lochans.

9.5.3 Blanket peat covers most of the hillside with deep peat occurring in depressions; peaty gleys are recorded on lower slopes and podsols on the steeper gradients. Poor soil drainage combined with infertile parent material have kept soil productivity low. The Historic Landuse Assessment (Historic Environment Scotland) indicates that the majority of the site comprises late twentieth century to present day Moorland and Rough Grazing with patches of traditional peat cutting adjacent to the proposed access track in the vicinity of Dalsetter. The Scottish Palaeoecological Database (SPAD) does not record any palaeoecological sites within the site.

Prehistoric

9.5.4 A single feature of possible prehistoric date (Site 98) is recorded within the site at the south-eastern tip of the south Grud Waters loch. The monument comprises a subcircular drystone built feature measuring 11 m by 10 m. Two orthostats at the south-west edge of the monument are associated with a tumble of stones and possibly mark an entrance. Possible kerb stones are traceable along the south-east edge (refer to Appendix 9.3; Plates 1-2). The monument resembles a prehistoric cairn and is interpreted as being of probable prehistoric date in the SMR entry. However, local accounts recall a tradition that the monument was in use as a house in later periods and was occupied by the last native Norse speakers in North Yell (Nicolson pers comm). A stone knife (Site 85) is recorded to have been found at the Loch of Brough, east of the site, and a stone adze (Site 115) was found at Gloup to the north; both are indicative of prehistoric activity in the immediate vicinity of the site. The Shetland Antiquarian Thomas J Irvine was born in Yell and also owned part of the site; he recorded a cairn and standing stone at Clody (Site 117), north of the site, in 1863. The identification of the site as a cairn and standing stone was later queried and it may be more likely representative of a prehistoric homestead.

9.5.5 Between 1900 and 1500 BC, in the Late Neolithic to Early Bronze Age, there was a rapid shift in climate to cooler and wetter conditions and an increase in blanket bog led to a shift in farming related activity within Shetland. Relatively few prehistoric settlement sites have been found in Yell, probably because of the blanket peat that covers much of the island. However, although it is likely that the site has always been relatively marginal land, discovery of wood fragments from within peat cores at depths of between 2 m and 3 m within the more sheltered parts of the site (see Appendix 9.4) suggest the presence of woodland resources within the site in the prehistoric period.

9.5.6 Burgi Geos promontory fort (Site 1; Appendix 9.3 Plates 3 and 5) is located within 230 m of the site boundary. It comprises the remains of a later prehistoric defended settlement or fort. The outer defences of the settlement consist of two distinct linear features aligned either side of the approach

to the monument. The northern features comprise a continuous line of jagged boulders, whereas the southern feature comprises a bank into which jagged boulders have been set. The southern defensive feature has been identified as an example of chevaux-de-frise and is the most northerly known example so far identified, with the nearest known examples being located on the south mainland of Scotland. The path along the promontory is flanked by a wall of dry-stone masonry, which represents the probable remains of a block house. Despite the apparent remote promontory location, surrounded by very marginal land, evidence from nearby sites indicate that it was a focus for some activity in the prehistoric period and further stone linear features in the vicinity of the promontory fort (Appendix 9.3; Plate 4) provide evidence of this. A further possible defensive feature or blockhouse is recorded north of Burgi Geo at Eegittle (Site 87) although no obvious structural remains survive; further north a possible cairn has been identified on the isolated rock stack of Aastack (Site 86) and a possible chambered cairn is recorded at Swinga Tain (Site 90).

9.5.7 Within the wider 1km study area, within Yell prehistoric remains include the remains of brochs at Burra Ness (Site 7), Windhouse (Site 27) and Burgi Geo (Site 28). These brochs are part of a group of over 130 known assets of this type in Shetland and have potential to enhance our understanding of the relationship between brochs themselves as well as their relationship with the wider Yell landscape. The remains of an Iron Age settlement constructed and occupied between 500 BC and AD 500 are located at Bayanne House (Site 31), south of the site at the head of Basta Voe. The settlement has been partially excavated and revealed to be incredibly well preserved, with a rich associated archaeological assemblage. The discovery of trough querns on the site may be indicative of Bronze Age origins and thus a longer development sequence, suggesting that traces of earlier occupation may survive beneath the existing remains (Moore and Wilson, 2014).

9.5.8 The island of Unst, east of the site contains rich multi period landscapes which contain evidence for continuous occupation from the prehistoric period onwards. Evidence for prehistoric activity in Unst includes standing stones of probable Neolithic date at Bordastubble (Site 3) and Uyea Breck (Site 38). Chambered cairns are recorded at Gallow Hill (Site 21), Watlee (Site 29) and Hill of Caldbeck (Site 42) (see Henshall 1963). Prehistoric houses are recorded at Loomi Shun (Site 22), Conisgarth (Sites 26 and 35) and also at Tur Ness (Site 32) on the island of Uyea. Brochs are recorded at Brough Holm (Site 2), Snabrough (Site 3), Hoga Ness (Site 39) and Underhoull (Site 40).

Early Historic and Early Medieval (AD43-1000)

9.5.9 The remains of a series of probable funerary monuments including two probable square cairns and a boat shaped setting are located west of Helliers Water in Unst (Site 36) and survive as rare examples of early historic period burials in Shetland (Ashmore 1980). The multi-period settlement at Underhoull (Site 40) includes the remains of extensive, well-preserved fields systems in association with an Iron Age broch and two Norse longhouses (Bond and Turner 2007). Such well-preserved field systems are rare in a Scottish or Shetland context, and have high potential to provide insights into agricultural practice and management of the landscape in the Iron Age and Norse periods, as well as the potential to provide evidence of cultural change associated with the Norse arrival in the Northern Isles.

9.5.10 Norse houses are rare across Scotland but Unst contains many of the best preserved examples, with upwards of 30 identified across the island. A group of houses of Viking or early Norse medieval date have been discovered in the east of the 10km study area in Unst and include Shadow Cottage (Site 14), Stoora Taft (Site 15), Wattlee (Site 16), Snabrough (Site 17), Belmont (Site 18), Lund (Site 19), Framgord (Site 23), Houll Tafts (Site 24), Mulas (Site 25), Tafts of Coopister (Site 37) and Gamilgrind (Site 44). Together these houses provide important evidence regarding settlement and agricultural economy on the island. No such remains are currently known in Yell although it remains unclear whether this is a reflection of a genuine absence of Viking/Norse activity in Yell or absence of archaeological investigation.

9.5.11 Small chapels of Norse date are rare in Shetland, and indeed Scotland. Middleton Chapel (Site 34) on the east coast of Unst is likely to date to around the time that Christianity was adopted by the Norse settlers in Shetland or shortly thereafter.

Medieval (AD1000-1560)

9.5.12 The remains of a small chapel, burial ground and two burial aisles are located at Reafirth (Site 33). Two tombstones suggest that the aisles were built during the 1690s and that the chapel was an earlier structure. A ruined enclosure at West-a-firth north of the site includes a possible 14th century chapel (Site 113). Reafirth and West-a-firth are two of 22 known medieval chapel sites in Yell.

9.5.13 The remains of a possible 12th century chapel and enclosure (Site 41) at Kirkaby in Unst overlie earlier prehistoric remains and the place name, Kirkaby, implies that there may have been a Christian presence here when the Norse settlers named the site (Morris and Brady 1998). It is possible that the 12th century chapel at St Olafs (Site 43) also overlies earlier remains and may be compared with a number of other early medieval chapel sites in Yell, Uyea and Unst, including the 12th-century chapel on Uyea Island. Early ecclesiastical sites such as those at Kirkaby, St Olafs and West-a-firth are thus important to our understanding of how Christianity was adopted by the Norse in Shetland.

Post-medieval (AD1560-1900)

9.5.14 Historic pre-Ordnance Survey (OS) maps of Yell tend to be schematic and lack detail and are thus of limited use in understanding past land use within the site. Yell is shown on Joan Blaeu's Atlas of Scotland of 1654, which although largely schematic, records a settlement on the western coast of Yell in the vicinity of the site, possibly indicating the location of the settlement of Vigon (Sites 90-99). Two unnamed lochs are shown within the interior of the site. The early establishment of a settlement at Vigon is of note as a dyke (Site 90), consisting of a continuous line of stones, appears to predate the post-medieval crofting settlement. Thomas's map of 1743-44 annotates a settlement at Vigon and also shows a settlement south of Gloup Voe, annotated 'Gasa Vatin,' and possibly corresponding with settlement remains identified within the site at Rulesgill (Sites 100-102) and/or Heatherdale (Site 103 and 133). Thomson's map of 1832 also shows a settlement at this location annotated as 'Gusa Valin'. Early maps of the site thus indicate early post-medieval settlement and activity within the site and its immediate vicinity.

9.5.15 Various estate maps and documents dating from the,17th, 18th and 19th centuries are held within the Shetland and National Records of Scotland. These primarily relate to the coastal settlements north of the site and provide little detail about land-use within the centre of the site, where development is proposed. As the largest area of moorland in Shetland, Yell was suited to transhumance (summer grazing on hill pastures for milking) but this practice was abandoned before 1600 (Tait 2012) and no evidence for early shieling structures is known within the site. Throughout the post-medieval period, the site was part of the scattald of Houlland. Scattalds are unenclosed hill land where crofters who paid 'scatt' or tax were entitled to specified rights, including grazing and peat cutting. A description of the scattald marches of Yell prepared by Gilbert Neven, Baillie of Yell, 1667 (GD144/157/7) describes in detail the local landmarks and topography used to demarcate the boundaries of the scattalds within Yell. Much of the description of the Houlland scattald is focused on its eastern and southern boundary where it was divided from the adjacent scattald of Brugh. However, in describing the southern boundary of the scattald, the document notes that land was divided in a "*straight line from little hill or hillock called Tonglafeyell"* (Tongafield) and from that to '*the Slack, called Marka or Merkeismoode'* (the Hill of Markamouth). The document makes several references to the renewal of land boundaries/markers by "*rearing a heap of stones upon it*" thus indicating that the small cairns of stones recorded within the site including those at Fugla Field (Site 136; Appendix 9.3 Plate 6) and Markamouth (Sites 143, 144 and 147; Appendix 9.3 Plates 7-9) and small standing stone (Site 14; Appendix 9.3: Plate 10) may relate to the demarcation of land boundaries with origins dating to at least the mid 17th century.

9.5.16 Between the 17th and 19th centuries hill dykes in Shetland often took the form of turf-built dykes, dividing settlement and infield from the scattald (common grazing land). The turf dykes tended to meander taking in earth fast stones and rock outcrops. On the east facing slope of Heatherdale a linear feature (Site 141; Appendix 9.3, Plate 11) possibly represents the remains of earlier field boundaries or enclosures partly buried beneath the peat. Indeed, a local account of land use and settlement at Heatherdale noted that numerous field dykes were constructed in order to keep the 'ferral swine' from eating and trampling crops (Nicolson pers comm).

9.5.17 An undated plan of the survey of the scattald or commoncy of Houlland (SA6/96) likely dates from the mid-19th century and annotates land ownership within the site. From north to south the landowners within the site are recorded as the Earl of Zetland, Captain William, Thomas Irvine and Mr William Pole, with a small area of the site in the vicinity of Heatherdale shown to be owned by Captain William Henderson and Thomas Mouat Cameron. This map also shows the existence of a road (Site 148) leading through the site from the Cullivoe hill road at the south-east boundary of the site along the Burn of Glipaund to Gloup Voe, where it is shown to divide into two and run either side of the voe. The western branch of this track links the settlement at Vigon and Larka Dale, on the west side of Gloup Voe, to the settlements at Rulesgill and Heatherdale, within the site boundary. From Heatherdale the road is shown to split. One road runs east to the to join the Cullivoe hill road while the other runs south towards Dalsetter and Sellafirth. The remains of the former road were recorded as a linear depression around the base of Tonga Field (Appendix 9.3; Plate 12), and along the western side of Gloup Voe during the walkover survey.

9.5.18 The remains of the structures that were part of the township of Glipapund or Heatherdale (Appendix 9.3; Plates 13- 15), recorded in the east of the site during the walkover survey, form one of a number of similar abandoned late post-medieval occupation sites in North Yell and have the potential to provide evidence for the nature of post-medieval settlement in and around the site. The Ordnance Survey Name Book of 1878 notes that the name Heatherdale applies to a shepherds house which is described as a '*one storey slated and very good repair, property of Major Cameron Lerwick'*. Tulloch's Shetland Folk Tales book makes reference to land within the site in a tale based on the promontory fort at Burgi Geos (Site 1). Tulloch references the shop at Glipapund as well as a "*dwelling deep in the hills"* belonging to an Isaac Oman, which may reference Omand's Dale within the site (Tulloch 2014). Although based on oral history and local legend rather than historical fact, reference to settlements within the site further indicates continuity of land use in the post-medieval period. The remains of two house structures at Heatherdale (Sites 103) were recorded on the OS map of 1882 (**Figure 9.4**) as unroofed and were thus evidently already out of use by the late 19th century. A well (Site 133) is also shown on this map. The nearby Site 141, also within the site, comprises an additional stone built rectangular structure and is associated with the partially buried remains of the aforementioned field banks or dykes.

9.5.19 The remains of two former rectangular stone built structures (Sites 102 and 103; Appendix 9.3; Plate 16) at the head of Gloup Voe, either side of the Burn of Rulesgill, represent the remain of a small settlement described in the OS Name Book of 1878 as a "*small farm situated south of the extreme south end of Gloup Voe and is the property of Major Cameron Lerwick"* (OS 1878). Although largely located outwith the apparent coastal concentration of settlement, it is clear from both mapping evidence and upstanding remains recorded within the site that the site was settled and used as a thoroughfare in the post-medieval period.

9.5.20 The roads that are marked on maps of the mid 19th century are not shown on later Ordnance Survey maps of the late 19th century. This likely reflects the fact that these later maps were surveyed and produced following the Gloup fishing disaster of 1881, in which 58 haaf fishermen were killed by an unexpected summer storm. Thirty six of the drowned men were from Gloup. The disaster had profound consequences for the local fishing and crofting communities and also the use of the local landscape. The 58 drowned men left behind 34 widows and 85 orphans. The disaster received national attention and money was collected for the survivors, but the response of the lairds was harsh, as they demanded payment for lines and other materials, and many families were destitute. A document held in the Shetland archives (SA3/1/92/13) records how the houses and shop at Heatherdale were hit by a decline in business following the fishing disaster and subsequently fell into disrepair, a stark contrast to the 'good repair' of the buildings recorded by the Ordnance Survey in 1878. A further document (AD22/2/25/21) records the theft of wood from the disused buildings at Heatherdale in 1890, indicating that the settlement of Heatherdale had been abandoned within less than a decade of the fishing disaster and possibly as a direct consequence. Nicolson (pers comm) notes that the route from Sellafirth though Heatherdale to Gloup was used as a trading route for the fisherman and that plans to build a road/improve the track were abandoned following the disaster.

9.5.21 Large-scale (25 inch) OS maps are not available for the site as it was located outwith the inhabited areas which were targeted for detailed survey in the 19th century. Sheepfolds are recorded on OS

mapping from 1882 (**Figure 9.4**) within the site at Omand's Dale (Site 129) and in the east of the site at Kedills Mires (Sites 130-131) as well as on the west side of the Burn of Kedillamires (Site 132). A sheepfold is also recorded within the site at the east side of the Burn of Rimminamartha (Site 134).

9.5.22 Post–medieval activity abounds throughout the 1 km study area, with unroofed structures representing the remains of farmsteads and larger settlements or townships (Sites 99, 104, 107, 108-112, 114, 115, 118, 120-123, 126). Numerous enclosures and fieldbanks (Sites 94-96 and 127) are associated with the farmstead at Vigon (Site 99) but appear to pre-date the first edition Ordnance Survey and in some cases (e.g Site 96) probably represent earlier stock enclosures beneath the 19th century farming remains. The remains of two probable post-medieval enclosures (Sites 88 and 89) are recorded south of the site boundary and on the south side of Gossa Water. Numerous mills and horizontal mills are also recorded and include Site 47 and Site 59. The Category A Listed Belmont House (Site 48) and associated Inventory Garden and Designed Landscape (GDL) (Site 45) are of 18th century origin, while the GDL at Brough Lodge in Fetlar (Site 46) dates from the mid 19th century.

9.5.23 The township of Snarrovoe (Site 20) in Unst, to the east of the site, comprises the remains of a small crofting township and associated field system. All crofts have now been abandoned but at one time there were at least five separate households within the township. The township has been Scheduled due to its remarkable survival and absence of later disturbance. Although subject to use in later years, the township at Dalsetter (Site 80), adjacent to the south of the site, also survives as an upstanding memorial to a recently vanished way of life (Appendix 9.3; Plate 17).

9.5.24 Listed Buildings of post-medieval date within the 10 km study area include numerous structures in Mid Yell; St John's Church and Churchyard and church hall (Sites 52 and 53), Lusetter (Site 54) and associated North West (Site 55) and South East (Site 56) Pavilions; Linkhouse (Site 60) Gardiestang House (Site 78) and Garths of Gardie (Site 79) as well as a cluster of buildings at Seafield (Site 71-73) on the northern side of Mid Yell Voe. Listed Buildings on the island of Unst include Greenwell's Booth, Uyeasound (Site 50), Pierfront Uyea Sount (Site 69), Uyeasound Church (Site 70) and a cluster of buildings in Baliasta (Site 51 and 62-65). The island of Uyea is now unoccupied by includes a cluster of Listed Buildings associated with the 19th century hall (Sites 66-69). The nearest Listed Building to the site is the Category C Listed Haa of Dalsetter (Site 80), set south of the site and forming a prominent landmark at the head of Basta Voe (Appendix 9.3; Plate 18). The nearby Sellafirth Church (Site 81), set on the hillside above the road around the head of Basta Voe, is also a prominent landmark (see Appendix 9.3; Plate 19).

Modern

9.5.25 Modern features within the site include the remains of modern peat cuttings adjacent to the track and numerous modern sheepfolds (Appendix 9.3, Plate 24). Linear features visible crossing the site mark the line of a water main.

9.5.26 Modern features within the 10 km study area include the Telephone Call Box (Site 76) at Gutcher which is a Category B Listed Building.

Aerial and Satellite Imagery

9.5.27 A review of vertical aerial photographs held by NCAP, dating from 1944 to 1989, as well as available oblique photographs and satellite imagery (Google earth, Esri mapping, Getmapping aerial data, and Scottish remote sensing LiDAR data) was undertaken to inform this assessment. The imagery of the site and its immediately surrounding area shows an upland landscape, with evidence for post-medieval and modern land management, primarily in the form of small-scale peat cutting and quarrying adjacent to the access tracks. Features identified during the imagery review were assessed on the ground to confirm their nature.

Walkover Survey

9.5.28 The walkover survey was undertaken from 22nd-27th October 2018. Weather conditions during the survey were highly variable with heavy rain obscuring visibility at times on the 22nd and 25th October. This necessitated walking at close transects spaced only 2 m-5 m apart. The area surveyed included all land within the site boundary where infrastructure (turbine bases, access tracks and substations)

was proposed with a 50 m buffer to either side of the infrastructure. The route of the survey was mapped and measured using ArcGIS Surveyor. Possible features identified on aerial photographs and satellite imagery were targeted to ascertain their nature. Several of these features were subsequently identified either as relating to natural peat erosion, water mains or peat cutting (see Appendix 9.3; Plates 20 and 21) and as such were not recorded as heritage features. A total of 13 previously unrecorded features were identified and recorded during the walkover survey. Each feature is described briefly below and described in detail in the Site Gazetteer in Appendix 9.1 and shown on **Figures 9.1** and **9.2**

9.5.29 The majority of new features recorded relate to land division and include a former road network (Site 148; Appendix 9.3, Plate 12) as well as numerous way marker stones and cairns (Sites 136, 137, 143-145 and 14; Appendix 9.3, Plates 6-10) and a small dam (Site 139; Appendix 9.3, Plate 22). Post-medieval features relating to settlement (Sites 140 and 141) and stock management (Site 142) were recorded at Heatherdale alongside possible earlier features of unknown date (Site 140). The enclosure at Site 140 (Appendix 9.3, Plate 14) is of stone construction and roughly oval in shape and thus may relate to post-medieval stock management, although it is partially buried by peat so its full extent and function were not discernible. Similarly, the enclosure on the banks of Easter Lee of Gloup (Site 138; Appendix 9.3, Plate 23) is partially buried beneath the peat though its characteristics indicate it may be of an early date.

9.5.30 The walkover survey has thus demonstrated that there is a potential for discovery of further archaeological remains within the site. As shown on **Figure 9.1**, archaeological features within the site are largely set on hill summits (way marker stones and boundary cairns) and within the valleys of the burn systems that cross the site.

Archaeological Coring Programme

9.5.31 A programme of archaeological coring was undertaken between 29th October and 9th November 2018 by AOC Archaeology Group and Fluidec. The survey comprised a peat probing and peat auger/coring survey conducted using a Russian Auger and undertaken to assess the archaeological and paleoenvironmental potential of peat deposits within the site. A total of 121 peat auger cores were recorded; the results are presented in Appendix 9.4.

9.5.32 No definitive archaeological features or artefacts were identified during the peat auger survey or recovered from wet-sieving of samples.

9.5.33 The average depth of the extracted auger cores was 1.67m in length. Small preserved wood fragments were recovered from cores 24, 26, 29, 40, 49, 81, 85, 109 and 112. The wood fragments were observed and sampled in the field in the majority of samples. Wood within 26, 49 and 109 was recovered from randomly wet sieved sampled and not visible in the field. All wood samples recovered were examined by AOC Archaeology's archaeobotanist. Identification of species of wood from six of these cores indicates the former presence of woodland in the site. Alder and willow are frequently found in damp wetland areas and the occurrence of these species is indicative of areas of damp open ground. Hazel was an early colonist following the last glaciation and also tolerates a wider range of soil conditions.

9.5.34 Peat typically accumulates at approximately 0.5 – 1 mm per year which means a 1 m depth of peat can take 1,000 years to form (IUCN 2014). Variations in peat growth rates occur according to changes in climate and topographic situation; although on a very general note it can be assumed, given that wood fragments were typically found at depths of 2-3 m, that woodlands existed within the site over 2000 years ago. The deepest deposits were found to be 4.6 m to 5 m deep and thus potentially represent a timespan dating back into prehistory over 4000 years. Given the known deterioration of the climate in Shetland in the late Neolithic/Early Bronze Age and later woodland clearance, it is possible that the occurrence of wood fragments at depths are associated with a period prior to woodland clearance and perhaps associated with a warmer climate more suitable to woodland growth. Woodland clearance has been documented from numerous sites across Mainland Shetland such as Catta Ness, Nannasting, where woodland was cleared by about 1400 BC, probably for rough grazing, and never recovered. Extensive clearance and virtual destruction of the woodland also occurred at Kebister, Dallican Water and Gunnister Water between 1400 and 1100 BC (Dickson and Dickson 2000, 66).

Archaeological and Cultural Heritage Importance

9.5.35 A total of 26 cultural heritage features/assets have been identified within the site. Their relative importance has been classified according to the method shown in **Table 9.2** and the results are shown in **Table 9.9** below.

Table 9.9 - Archaeological and Cultural Heritage Importance of Features within the site

Site No	Name	Description	Importance
89	Gossa Water	A sub-oval setting of stones protruding at ground level	Local
98	Grud Waters	Possible cairn or later house	Regional
100	Burn or Rulesgill	Two enclosures	Local
101	Rulesgill	Sheepfold	Local
102	Rulesgill	Enclosure	Local
103	Heatherdale	Farmstead	Local
104	Gossa Water	Building and enclosure	Local
129	Omand's Dale	Sheepfold	Local
130	Kedills Mires	Sheepfold	Local
131	Kedills Mires	Enclosure	Local
132	Muckle bratt-houll	Sheepfold	Local
133	Heatherdale	Well	Local
134	Gossa Water	Sheepfold	Local
136	Fugla Field	Cairn/boundary marker	Local
137	Know of Thistleday	Cairn/boundary marker	Local
138	Easter Lee of Gloup	Stone feature	Local
139	Grud Waters	Dam	Local
140	Heatherdale	Mounded Feature	Local
141	Heatherdale	Structure	Local
142	Heatherdale	Linear feature/enclosure	Local
143	Hill of Markamouth	Cairn	Local

Site No	Name	Description	Importance
144	Markamouth	Cairn	Local
145	Markamouth	Standing stone	Local
146	Grud Water	Wall	Local
147	Markamouth	Cairn	Local
148	Dalsetter to Gloup	Road	Local

9.5.36 The majority of identified features within the site are found on the summits of the hills or clustered around the main watercourses and lochans. The remains of a possible prehistoric cairn (Site 98), which may have been adapted for later use, have been identified on the southern shore of Grud Waters. As a possible early dwelling or ritual site in an area in which known settlement and early activity is scarce, the remains of this feature have the potential to inform about early land use in north-west Yell and as such are judged to be of regional importance. The remaining identified features largely relate to historical land division and land management practices, specifically upland grazing, and are typical of abandoned late post-medieval occupation evidence that abounds in this part of Yell. They are consequently judged to be of local importance. However, some of the features identified are subtle in nature and have an indistinct form and could thus potentially be of earlier date or natural origin. The construction of post-medieval sheep enclosures from building stone found nearby earlier monuments is well documented in Shetland (Tait 2012). It is also possible that identified later features may obscure and/or incorporate earlier features and as such the importance levels should be read as indicative.

9.6 Potential Effects

Construction

9.6.1 Construction effects on cultural heritage receptors are limited to direct impacts on heritage features and deposits. Indirect impacts upon the setting of designated heritage assets are considered under operational effects and decommissioning effects.

9.6.2 The proposed access track that would link turbines 26 to turbine 27 and turbine 22 to turbine 23 would dissect the route of a former road of local importance that ran from Heatherdale to Cullivoe (Site 148). The route of this road has been recorded from a 19th century land ownership map (SA6/96) and no visible remains of the road survive in the landscape at either location. Local sources suggest that the construction of a planned road from Heatherdale to Gloup was abandoned following the Gloup fishing disaster in 1881 (Nicolson *pers* comm). It is therefore likely that the route shown on historical mapping was an informal track rather than a metalled road and as such it is unclear if any physical remains of the road will survive. The Proposed Development would impact upon only a small section of the route of the road and would result in a loss of a very small overall percentage of any deposits associated with the road, leading to a very slight loss of information content. Accordingly, the impact magnitude would be marginal. The level of effect would be **negligible** and not significant.

9.6.3 The Proposed Development has been designed to avoid direct impacts on known heritage features where possible. There would be no direct impacts from construction activities upon any other known features within the site.

9.6.4 The 1 km study area and surrounding landscape is rich in cultural heritage remains from the prehistoric period onwards and as such there is potential for the existence of hitherto unknown remains to be present within the site. Map regression and aerial photographic analysis have shown that, except for small-scale peat cutting, the site has been undisturbed moorland since at least the 19th century and as such it is likely that any remains that survive below ground surface within the

site will be relatively undisturbed. Therefore, there is the possibility of disturbing hitherto unknown buried archaeological remains during groundworks associated with the Proposed Development. As the cultural value and spatial extent of any potential remains are unknown prior to discovery, the significance of any effect cannot be stated. A mitigation strategy will be required to safeguard and, where necessary, record any such remains (further details of the proposed mitigation strategy are set out in section 9.7).

9.6.5 The Proposed Development may also impact on palaeoenvironmental deposits. The archaeological coring survey has demonstrated the existence of deep peat deposits across the site which are, on average, over 2 m in depth and in places up to 5 m deep. The peat deposits have the potential to preserve paleoenvironmental remains, as demonstrated by waterlogged wood fragments recovered from some cores. Such deposits have the potential to provide information on vegetation change over time. Given the relatively small construction footprint of the Proposed Development, it is considered that the magnitude of impact on the palaeoenvironmental deposits will be 'low'.

Operation

9.6.6 Direct effects upon any previously unknown archaeological remains which may be present on the site would cease with the completion of the groundworks stage of construction and consequently no direct effects are predicted during the operational phase of the Proposed Development. All operational phase effects would thus be indirect.

9.6.7 Operational phase effects would be limited to impacts upon the settings of assets such as Listed Buildings, Scheduled Monuments, Conservation Areas and Inventory Gardens and Designed Landscapes. While there are no designated heritage assets within the site, this assessment has identified 44 Scheduled Monuments, 37 Listed Buildings and two GDLs within 10 km of the site.

9.6.8 All designated assets located within the ZTV have been subject to detailed setting assessment. Additionally, all designated assets within the 10 km study area were reviewed against the information known about their contextual characteristics (refer to Appendix 9.1) and against mapping information to identify any instances where views of the Proposed Development with a given asset may significantly impact on their settings. A total of 31 Scheduled Monuments, 24 Listed Buildings and two GDLs were subject to detailed setting assessment. Setting assessment site visits were undertaken in October 2018.

9.6.9 The settings assessment found that the indirect effect of the Proposed Development upon the setting of one Scheduled Monument Burgi Geo fort would be **moderate** and significant in EIA terms. The assessment found that the effect of the Proposed Development on the setting of the remaining 53 designated assets would not be significant as the effect levels would be **neutral** to **minor/moderate**. These findings are listed in **Table 9.5.1** within Technical Appendix 9.5. A summary discussion for the assets subject to detailed assessment is provided within Appendix 9.5 and has been informed by ZTV modelling, site visits, photomontages and wireframes (**Figures 9.5.1a-9.5.10d**) as appropriate.

Burgi Geos fort Site 1

9.6.10 The Scheduled Burgi Geos fort (Site 1) comprises a promontory fort of later prehistoric, perhaps Iron Age, date. The monument occupies a promontory set between steep cliffs of the North and South Burgi Geos. Approached from the east, the entrance way leading onto the narrow promontory is lined by a row of stone slabs to the north, while on the south it is flanked by a mound studded with upright stones, forming a chevaux de fries (Appendix 9.3, Plate 3). The inner defences are set to the west on the promontory beyond and comprise a rectangular blockhouse set slightly to one side, with a walled enclosure to its rear. The fort has a coastal setting defined by near vertical drops to the sea on the north, west and south sides. To the east, the setting comprises open low rolling semi-improved grazing land. The wider setting extends from south-east through east to north-east beyond the semi-improved land to the open moorland of the site, including the summits of the Hill of Markamouth and Hill of Vigon, with the post-medieval crofting settlement of Vigon set to the north-east.

9.6.11 The coring survey undertaken to inform this assessment (Appendix 9.4) recovered wood fragments of willow (*Salix*) from the lower slopes of the Hill of Vigon at a depth of 2 m and alder (*Alnus glutinosa*) from the slopes of the Hill of Markamouth at a depth of 1.8 m. The recovery of these fragments indicates the former existence of woodland in close proximity to Burgi Geos promontory fort suggesting that the apparent remote and marginal setting of the fort may be a reflection of more recent land use practices and that surrounding vegetation may have been more extensive in the past. The promontory fort at Burgi Geos has associative value derived from its depiction in sketches of Yell by Thomas Irvine (D6/292/24/p172) and also its depiction by social anthropologist and artist Alexa Fitzgibbon which features on the front cover of the Shetland Folk Tales publication (Tulloch 2014).

9.6.12 The remote and precipitous coastal setting of the fort contributes to the understanding of the asset as a defensive monument constructed in an isolated location with excellent surveillance opportunities across both sea and land. The hills of the site form part of the wider setting of the fort and their low rolling nature form a contrast to the steep cliffs of the coastal setting in other directions (**Figure 9.5.1a-f**). The setting of the fort thus contributes to an understanding of its cultural value and it is of high sensitivity to changes within its setting.

9.6.13 As shown on the appended photomontage (**Figure 9.5.1e** and **9.5.1f**) all of the Proposed Development turbines would be visible to hub height and would be seen in an arc of view from south-east through east to north-east of the monument. The nearest turbine (turbine 2) would be set at a distance of approximately 600m east of the monument and would thus appear as a prominent feature in views east, inland from the fort. The turbines would be located within an upland moorland setting, beyond the immediately adjacent land which relates to the defensive setting of the fort. The turbines would also be seen offset from the key east to west alignments of stones at the entrance to the fort. Distant views towards the fort from landward approaches to the monument are restricted by intervening landforms of the Hill of Markamouth and Hill of Vigon respectively. However, views to the monument from Vigon to the north would feature oblique views of turbines in the background and approaches on descent from the Hills of Markamouth and Vigon would also features turbines in close proximity. The Proposed Development would thus constitute a change to the setting of the monument.

9.6.14 An understanding of this monument as a fortified dwelling is gained from its precipitous coastal location (See Appendix 9.3, Plate 5). The steep drop overlooking the coast to the north, west and south is likely the principal factor in the choice of this location, owing to its suitability as a lookout point from where movement along the coast could be monitored. Key views towards the promontory fort are experienced at close distance and depictions of the fort by both Irvine and Fitzgibbon show the view looking west across the promontory and out to sea and thus do not feature land within the site. The Proposed Development would thus represent a notable alteration to the setting of the monument beyond those elements which directly contribute to an understanding and appreciation of its cultural value, i.e. the promontory setting, but would encroach upon the wider topographic landscape setting as shown in **Figures 9.5.1a-f**. The Proposed Development would not adversely affect the ability to understand the fort's critical relationship with the coast and its landscape setting. The key relationship between the monument and the promontory upon which it is set would not be altered and thus the overall integrity of the setting would not be adversely affected. The magnitude of impact would be medium. The level of effect would be **moderate** and significant.

Decommissioning

9.6.15 Detailed assessment of impacts on cultural heritage assets arising from the decommissioning phase have been scoped out of this assessment. A detailed assessment of the cultural heritage impacts of decommissioning the Proposed Development has not been undertaken as part of the EIA because: (i) the future baseline conditions (environmental and other developments) cannot be predicted accurately at this stage; (ii) the detailed proposals for decommissioning are not known at this stage, and (iii) the best practice decommissioning guidance methods will likely change during the lifetime of the Proposed Development. A detailed cultural heritage decommissioning plan will be agreed with SIC in consultation with the Shetland Island Amenity Trust and secured through an appropriately worded planning condition.

9.6.16 In general, is anticipated that direct impacts during the decommissioning phase would be limited and would only occur if new ground works are required beyond the areas disturbed during the original construction works and as such no significant direct effects are expected to arise from the decommissioning phase of the Proposed Development. All indirect operational effects upon the settings of designated assets would be reversed with the removal of the turbines following decommissioning, leading to a neutral and not significant effect.

9.7 Mitigation

9.7.1 National planning policies and planning guidance as well as the local planning policies require that account is taken of potential effects upon heritage assets/features by proposed developments and that where possible such effects are avoided. Where avoidance is not possible these policies require that any significant effects on remains be minimised or offset.

9.7.2 It is acknowledged that despite the walkover and coring surveys undertaken to inform this assessment, there may be further previously unrecorded subtle archaeological features within the site. The predominance of peat within the site means that archaeological features may also be buried by peat growth, and therefore undetectable by survey. Given the presence of known and the potential for presently unknown archaeological remains, in particular of prehistoric and post-medieval date, to survive within the site, a programme of archaeological works will be undertaken prior to the commencement of construction of the Proposed Development.

Protection of Archaeological Sites

9.7.3 All known heritage features within 50 m of the proposed working areas, including all areas to be used by construction vehicles, will be fenced off under archaeological supervision prior to construction. This fencing will be maintained throughout the construction period to ensure the preservation of these features.

9.7.4 If further groundworks are required during the decommissioning works or if plant movements are required beyond the hardstanding comprising the turbine infrastructure, then all known sites within 50 m of the proposed working areas will be fenced off with a visible buffer under archaeological supervision. This will be undertaken prior to decommissioning in order to avoid accidental damage by heavy plant movement.

Extraction and assessment of a sediment core

9.7.5 The peat coring survey undertaken to inform this assessment has revealed that the deep peat deposits across the site contain preserved palaeoenvironmental remains in the form of wood fragments, which provide evidence for former woodland environments within the site. The paleoenvironmental potential of the site will thus be further assessed through the sampling and specialist analysis of a sediment core, which could provide environmental contextual detail to any archaeological remains preserved within the site.

Archaeological Monitoring of Groundbreaking Works

9.7.6 There would be no significant direct effects upon known heritage features as a consequence of the Proposed Development.

9.7.7 This assessment has identified a **negligible** and not significant direct effect on the route of the former road from Heatherdale to Cullivoe (Site 148) which was identified from historic mapping evidence. To mitigate this effect, all ground breaking works in the vicinity of the former route of the road would be subject to archaeological monitoring in order to identify and accurately record the extent of any below ground remains associated with this feature prior to construction.

9.7.8 To mitigate the potential for previously unrecorded features to be impacted during the construction phase, an Archaeological Clerk of Works will be appointed and an archaeological watching brief will be undertaken on a representative proportion of ground breaking works. The purpose of such works will be to identify any archaeological remains threatened by the Proposed Development, to assess their significance and to mitigate any impact upon them either through avoidance or, if preservation in situ is not warranted, through preservation by record. Depending upon the results of any

watching brief works there is the potential that further works, such as excavation and post-excavation analyses, could be required. Details of mitigation will be agreed with SIC in consultation with the Shetland Island Amenity Trust through a Written Scheme of Investigation.

9.7.9 Any archaeological fieldwork commissioned in order to mitigate direct effects will result in the production and dissemination of a professional archive, which will add to our understanding of the cultural heritage value of the site.

Heritage Interpretation Plan

9.7.10 This assessment has identified a **moderate** and significant effect on the setting of the Burgi Geos, promontory fort (Site 1), located within 230 m of the site boundary and within 600 m of the nearest turbine. In the case of the Proposed Development, a programme of works (undertaken as part of a Heritage Interpretation Plan (HIP)) could partially offset potential impacts of the Proposed Development on the setting of heritage assets in its vicinity. As an impact upon setting is ultimately an impact upon the ability of the surroundings of the monument to contribute to an observer's understanding, appreciation and experience of the asset, compensatory measures which will increase the understanding, appreciation and experience of the asset and the wider archaeology of the area, are therefore an appropriate way to offset such impacts.

9.7.11 The proposed extraction and assessment of a sediment core outlined above will potentially provide further detail regarding past environments within the site and surrounding landscape and could thus provide evidence for the nature of the setting of the fort during the time of its construction and occupation. The recovery of fragments of willow from the lower slopes of the Hill of Vigon and alder fragments from the slopes of the Hill of Markamouth indicate the former existence of woodland in close proximity to the Burgi Geos fort. Analysis and, if possible, dating of evidence relating to past environments within the site will be used to improve our understanding and appreciation of the past setting of the fort and how it relates to its current setting.

9.7.12 This assessment has also identified a concentration of archaeological features at Heatherdale; as well as numerous archive documents relating to the occupation and later abandonment of the settlement and in particular the implications of the Gloup fishing disaster for trade and settlement within this part of Yell. The undertaking of a detailed archaeological survey within Heatherdale, coupled with improved access to information on the features identified and surveyed disseminated via an interpretation leaflet or schools pack and on information boards will serve to increase both our understanding of the historic landscape of the site and increase the knowledge of local communities empowering them in understanding their local heritage. The ability to enjoy, appreciate, learn from and understand Scotland's historic environment is one of the key principles outlines in HESPS (HES 2016) and the Draft HEP (HES 2018; HEP2).

9.8 Residual Effects

Construction

9.8.1 The Proposed Development has been designed, where possible, to avoid direct impacts on known heritage features. The implementation of the above outlined mitigation measures will prevent inadvertent damage to known heritage features; and investigate the potential for previously unknown features. Following the completion of construction and decommissioning works no further groundworks would be undertaken. Following the implementation of mitigation measures there may be a slight loss of overall information content and as such a marginal magnitude of impact is anticipated. The residual direct effect would be **negligible** and not significant.

Operation

9.8.2 The predicted residual impacts on the settings of designated heritage assets will be the same as assessed for the operational and cumulative effects. There would be a **moderate** and significant residual effect on the setting of Burgi Geos, promontory fort. No other significant residual operational effects are anticipated.

Decommissioning

9.8.3 All operational effects upon the settings of designated assets would be reversed with the removal of the turbines following decommissioning, leading to a neutral residual effect.

9.9 Cumulative Assessment

9.9.1 As set out above (paras 9.4.25-9.4.28), cumulative effects relating to cultural heritage are for the most part limited to indirect effects upon the settings of heritage assets.

9.9.2 With regard to the likely significant cumulative effects on cultural heritage assets, the assessment considers operational, consented and within-planning wind farm developments at distances up to 35 km from the Proposed Development. Developments at the scoping stage are not considered. Cumulative effects from the operational development at Garth Wind Farm and the approved development at Beaw Field Wind Farm are thus considered.

9.9.3 While there can, in some rare cases, be significant cumulative direct effects, the loss of unknown and known heritage assets through the construction, operational and decommission of the Proposed Development in combination with other nearby developments will result in an overall minor loss of information content. This loss has been (Garth Wind Farm) or will be (Beaw Field, Proposed Development) mitigated through a staged programme of mitigation works in each case with surveys and monitoring where required. The significance of the cumulative impact on archaeology during construction combined with other developments will thus be **negligible** and not significant. As such this assessment will focus on the likely significant cumulative effects upon the setting of heritage assets which have the potential to occur during the operational phase.

9.9.4 As indicated in the methodology section only heritage assets which were considered to have the potential for significant cumulative effects are included in the detailed assessment. A summary table of indirect cumulative effects is presented in **Table 9.10** below:

Table 9.10 - Summary of Cumulative Effects

Site No	Receptor Name	Receptor Sensitivity	Cumulative Impact Magnitude (adverse unless stated)	Level of effect
1	Burgi Geos promontory fort	High	None	None
2	Brough Holm broch	High	Marginal	Minor
4	Snabrough, broch, burnt mound and settlements	High	Low	Minor/moderate
7	Burra Ness, broch	High	Low	Minor/moderate
8	Sna Brough, broch	High	Low	Minor/moderate

Site No	Receptor Name	Receptor Sensitivity	Cumulative Impact Magnitude (adverse unless stated)	Level of effect
21	Gallow Hill, chambered cairn	High	Low	Minor/moderate
28	Burgi Geo, broch	High	Low	Minor/moderate
39	Heoga Ness, broch	High	Marginal	Minor
40	Underhoull	High	Low	Minor/moderate
41	Kirkaby, chapel and enclosure	High	Marginal	Minor
80	Haa of Dalsetter	Medium	Marginal	Negligible
81	Sellafirth Church	Medium	Marginal	Negligible

9.9.5 The setting of Burgi Geos promontory fort (Site 1) relates largely to the precipitous cliffs upon which it is located and views across the coast. Views west inland towards the site are restricted by rising ground. There would be no visibility of the operational Garth Wind Farm or of the approved Beaw Field Wind Farm and as such there would be no cumulative effect on the setting of the monument.

9.9.6 Brough Holm, broch (Site 2) is set on the small rocky island of Brough Holm. As a defensive monument with key views across strategic surrounding coastline it is of high sensitivity to changes in its setting. As shown on **Figure 9.5.6b** from the nearby Kirkaby Chapel at Westing, the intervening landform of Blue Mull blocks views towards Garth Wind Farm and only the extreme tip of one turbine is visible. There is no theoretical visibility with the approved wind farm at Beaw Field from Brough Holm. The views of a single turbine tip alongside that of the Proposed Development would result in a marginal impact magnitude. The level of cumulative effect would be **minor** and not significant.

9.9.7 Snabrough, broch, burnt mound and settlements (Site 4) are located on the north shore of the Loch of Snabrough, Unst. As a defensive monument with views to other contemporary defensive sites the broch has a high sensitivity to changes in its setting. The operational turbines at Garth Wind Farm are visible in views south-west from Snabrough and the approved turbines at Beaw Field are also theoretically visible in views south south-west, but are located over 20 km distant and as such would only be visible on clear days. The Proposed Development would be seen offset from Garth Wind Farm in views west from the monument. The Proposed Development would be seen against the skyline and would increase the proportion of view in which turbines were seen against the skyline from the broch. This increased visibility of turbines would change the wider setting of the broch but would not affect the understanding of the monument as a defensive loch-side structure. The interrelationship between the monuments within the landscape would not be affected by the wider increase in surrounding wind farm development. As such the cumulative impact magnitude is judged to be low. This would result in a **minor/moderate** cumulative effect which is not significant.

9.9.8 Burra Ness Broch (Site 7) is set on a slight rise on the north-east facing edge of Burra Ness promontory with extensive views north, up the coast and Bluemull Sound to islands of Linga and Unst. As a defensive monument sited to overlook a wide stretch of coastline and with key sightlines to contemporary monuments, Burra Ness broch is judged to be of high sensitivity to changes in its setting. There is no theoretical visibility with the approved Beaw Field Wind Farm. Views north up

the Yell coast feature the operational turbines of Garth Wind Farm. As shown on **Figures 9.5.4b - 9.5.4d**, the Proposed Development would be seen within the same view as Garth Wind Farm but would be seen off set to its north-west and would appear as a distinct separate development. Neither the Proposed Development nor Garth Wind Farm would appear in strategic coastal sightlines to the south. The increase in views of wind farm development in views north and north-west from the monument, beyond Sand Wick, would not affect the ability to understand this defensive prehistoric monument in its current setting. The cumulative impact magnitude would be low. The effect would be **minor/moderate** and not significant.

9.9.9 Sna Brough, broch (Site 8) is located on the west facing coast of Fetlar within semi-improved grassland. The monument survives as a series of earthwork ramparts and ditches and no traces of a broch mound survive. The monument has clear visual and associative links with the broch at Brough Lodge (Site 10) to the south which can be seen against the skyline on approach. The coastal setting contributes to an understanding of the strategic defensive siting of this monument and views west to Hasocosay and south to the broch mound at Brough Lodge. Sna Brough broch has high relative sensitivity to changes in its setting. Sna Brough broch has visibility of the operational turbines at Garth Wind Farm to the north north-west and theoretical visibility with approved turbines at Beaw Field located 12.25 km to the south-west. The Beaw Field Wind Farm would form distant and minor feature in the wider landscape. The Proposed Development would be seen against the skyline north-west of the broch and would be seen off set slightly from Garth Wind Farm as shown on **Figures 9.5.10c** and **9.5.10d**. The Proposed Development would thus increase the overall proportion of view occupied by turbines and would be seen in the same view as Garth Wind Farm. Views of the Proposed Development turbines, alongside those at Garth and Beaw Field, would not be located in any of the prevalent views out from the broch nor would they interrupt or distract from views between this broch and others in its vicinity, including the nearby broch at Brough Lodge (Site 10). As such the cumulative impact magnitude upon the setting of the broch is judged to be low. The cumulative effect would be **minor/moderate** and not significant.

9.9.10 Gallow Hill, chambered cairn (Site 21) comprises the remains of a Shetland type heel-shaped cairn. The cairn was clearly sited to allow for open views across a substantial coastal and landscape area and also to be seen from across Bluemull Sound and it is judged to be of high sensitivity to changes to its setting. The operational turbines of Garth Wind Farm are visible against the skyline in views west from the cairn. The Proposed Development turbines would also be seen in views west from the cairn and would be seen behind those at Garth Wind Farm, although owing to their larger size they would be legible as a separate development. The Proposed Development would increase the spread of turbines seen in views west from the monument. The approved turbines at Beaw Field Wind Farm would be visible in distant views south-east from the cairn at a distance of c.20 km. The Proposed Development would thus be seen in a view that already features wind turbines but would result in an increase in wind farm development in the overall proportion of that view. Wide open views across the land and seascape would still be possible from the cairn. Key views towards the cairn from across the landscape, particularly from the west from where the cairn is seen profiled against the skyline, would not be affected by the increase in wind farm development. As such the cumulative impact magnitude would be low. The level of cumulative effect would be **minor/moderate** which is not considered significant.

9.9.11 Burgi Geo, broch (Site 28), is set within semi-improved grazing land on a low peninsula that protrudes north above the Bay of Brough. As a defensive monument afforded extensive coastal views, Burgi Geo broch is judged to be of high sensitivity to changes in its setting. As shown on **Figure 9.5.2c** all turbines would be theoretically visible from the broch, with the operational turbines of Garth visible off set to the south. There would be no visibility with the approved Beaw Field Wind Farm. As shown on **Figures 9.5.2c** and **9.5.2d**, both Garth Wind Farm and the Proposed Development would be seen beyond distinct topographic ridges which define and separate the dispersed post-medieval and modern settlements on the western coast of Yell from the open uninhabited moorland to the south-west. The Proposed Development would thus increase the proportion of view south and south-west from the monument which features wind farm development but that development would be seen beyond those elements of the landscape that relate to an understanding and appreciation of the strategic defensive location of the broch. The cumulative impact magnitude is judged to be low. The level of cumulative effect would be **minor/moderate** and not significant.

9.9.12 Heoga Ness, broch (Site 39) is set within open pasture on the edge of a south-west facing sea cliff. As a defensive monument in a costal setting, the broch is judged to be of high sensitivity to changes in its setting. The Proposed Development would be seen beyond the intervening ridge of the Ward of Grimsetter which is occupied by the operational turbines of the Garth Wind Farm. The Proposed Development would appear behind Garth Wind Farm but owing to the greater height of turbines it would be clearly legible as a separate and larger development. Up to 10 of the approved Beaw Field Wind Farm turbines would be visible in views at a distance of over 25 km to the south south-west and offset from views of the Proposed Development. The Proposed Development would thus be seen within the context of existing wind development but would increase the proportion of the view west from this monument that is occupied by wind farm development. The turbines would be seen beyond the coastal setting, to which an understanding of the defensive nature of the broch relates. The cumulative impact magnitude is judged to be low. The level of cumulative effect would be **minor/moderate** and not significant.

9.9.13 Underhoull, broch, Iron Age and Norse farmstead (Site 40) comprises the remains of a broch of Iron Age date which is set in open pasture within an extensive field system overlooking Lunda Wick. A Norse longhouse is set 90 m to its east and a farmstead of Iron Age and Norse date is set 140 m to its south-west. As a defensive monument set within a wider multi-period landscape with key views north and south along the coast and west across Lunda Wick, the monument is considered to be of high sensitivity to changes in its setting. There would be no visibility of the approved Beaw Field Wind Farm from Underhoull. The operational Garth Wind Farm turbines are visible from the broch, from where they are seen on the distant skyline. The Proposed Development would be visible in the same view as Garth Wind Farm and would increase the spread of turbines visible in views south-west from the monument. This increased spread of turbines would be seen beyond the Bay of Lunda Wick which the monument overlooks and beyond the intervening promontory of Blue Mull which contributes to an understanding and appreciation of the strategic defensive coastal setting of the broch and farming and settlement remains. The impact magnitude would be low. The level of cumulative effect would be **minor/moderate** and not significant.

9.9.14 Kirkaby, chapel and enclosure (Site 41) is a multi-period site comprising the remains of a chapel of possible 12th-century date, overlying a prehistoric circular structure and a possible heel-shaped cairn. The site lies in improved pasture on a knoll of a small promontory at 10 m above sea level. The position of the monument overlooking both this multi-period landscape and the adjacent coastline indicates that it may have been sited to exploit these extensive views and the monument is judged to be of high sensitivity to changes in its setting. The Proposed Development would be set south-west of the monument at a distance of 6.4 km. As shown on **Figure 9.5.6b**, the intervening landform of Blue Mull blocks views towards Garth Wind Farm and only the extreme tip of one turbine is visible. There is no theoretical visibility with the approved wind farm at Beaw Field from Kirkaby. The views of a single turbine tip alongside that of the Proposed Development would result in a marginal cumulative impact magnitude. The level of cumulative effect would be **minor** and not significant.

9.9.15 The Category C Listed Dalsetter Haa (Site 80) and Sellafirth Church (Site 81) occupy prominent positions at the head of Basta Voe and they are of medium sensitivity to changes in their settings. There is no visibility of the operational Garth Wind Farm from either of these buildings owing to the intervening landforms of Tittynans Hill and the Hill of Sellafirth. Up to five turbine tips of the approved Beaw Field Wind Farms would be visible from each of these buildings. In each case the turbines they would be seen at a distance of over 15 km and beyond Basta Voe and the surrounding landforms to which the settings of these buildings relate. The cumulative impact magnitude would be marginal in each case. The level of cumulative effect would be **negligible** and not significant.

9.10 Summary

9.10.1 This chapter identifies the archaeological and cultural heritage value of the site and assesses the potential for direct and indirect effects on archaeological features and heritage assets resulting from the construction, operation and decommissioning of the Proposed Development. This chapter also identifies measures that should be taken to mitigate predicted adverse effects.

9.10.2 This assessment has identified 26 heritage features of potentially prehistoric to modern date within the site. One direct impact on a possible heritage feature is anticipated; a **negligible** and not significant effect on any surviving peripheral remains associated with the route of the former road from Heatherdale to Cullivoe (Site 148). With the exception of this negligible effect, the Proposed Development has been designed to avoid direct impacts upon known heritage features within the site.

9.10.3 The presence of extensive peat cover across the site indicates the potential for historic environmental evidence to be contained within and underlying the peat. Additionally, remains of prehistoric to post-medieval date in and around the site indicate the potential for sub-surface archaeological deposits and features to exist.

9.10.4 Planning policies and guidance require that account is taken of potential effects upon heritage features/assets by proposed developments and that where possible such effects are avoided. Where avoidance is not possible, effects on any significant remains should be minimised or offset. Given the potential for presently unknown archaeological remains, in particular of prehistoric and post-medieval date, to survive within the site, a programme of archaeological works designed to avoid inadvertent damage to known remains and to investigate and mitigate against the possibility of uncovering hitherto unknown remains will be undertaken.

9.10.5 All known heritage features within 50 m of the Proposed Development (working areas) will be fenced off with a visible buffer under archaeological supervision prior to the start of the construction phase in order to avoid accidental damage by heavy plant movement.

9.10.6 A peat coring survey, undertaken to inform this assessment, has revealed the existence of deep peat deposits across the site containing preserved palaeoenvironmental remains in the form of wood fragments which provide evidence for former woodland within the site. The palaeoenvironmental potential of the site would thus be further assessed through the sampling and analysis of a sediment core, which could provide environmental contextual detail to any archaeological remains preserved within the site.

9.10.7 The predominance of peat within the site means that archaeological features may be buried by peat growth, and therefore undetectable by survey. To mitigate against the potential for previously unrecorded features to be impacted during the construction phase an Archaeological Clerk of Works will be appointed and an archaeological watching brief will be undertaken on a representative proportion of ground-breaking works. The purpose of such works will be to identify any archaeological remains threatened by the Proposed Development, to assess their significance and to mitigate any impact upon them either through avoidance or, if preservation in situ is not warranted, through preservation by record. Details of mitigation will be agreed with SIC in consultation with the Shetland Island Amenity Trust through a Written Scheme of Investigation.

9.10.8 Potential operational effects on the settings of 37 designated heritage assets have been considered in detail as part of this assessment. A potential **moderate** significant operational effect on the setting of Burgi Geos fort (Site 1) has been identified.

9.10.9 In the case of the Proposed Development no direct mitigation is possible for operational (setting) effects. However, there is the potential that a programme of palaeoenvironmental sampling and interpretation and survey works, undertaken as part of a Heritage Interpretation Plan (HIP) could constitute compensatory mitigation to partially offset potential impacts of the Proposed Development on the setting of heritage assets in its vicinity.

9.10.10 The implementation of the above outlined mitigation measures will prevent inadvertent damage to known heritage features, investigate the potential for previously unknown features, and disseminate the results of archaeological works to the public through a Heritage Interpretation Plan. Following the implementation of mitigation measures there may be a slight loss of overall information content and as such a marginal magnitude of impact is anticipated. The residual direct effect would be **negligible** and not significant. There would be a **moderate** and significant residual effect on the setting of Burgi Geos, promontory fort. The key relationship between the monument and the promontory upon which it is set would not be altered and thus the overall integrity of the setting of the monument would not be adversely affected.

9.10.11 The possibility of cumulative effects has been considered and assessed. No significant cumulative effects were identified.

Table 9.11 – Summary of Effects

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Construction					
Potential partial damage to former road from Heatherdale to Cullivoe (Site 148)	Negligible	Adverse	Implementation of programme of archaeological works	Negligible	Adverse
Damage to hitherto unknown archaeological remains	Minor	Adverse	Implementation of programme of archaeological works	Negligible	Adverse
Operation					
Effect on setting of Burgi Geos, promontory fort (Site 1)	Moderate	Adverse	N/A	Moderate	Adverse
Effect on settings of Sites 2, 4, 7, 21, 28, 39, 40, 41, 61, 66, 67, 68, 75,8 and 81	Minor /Moderate	Adverse	N/A	Minor /Moderate	Adverse
Effect on settings of Sites 3, 5, 10, 12-15, 17, 18, 27, 29, 37, 39, 42, 45, 46, 48, 49, 52	Minor	Adverse	N/A	Minor	Adverse
Effect on settings of Sites 9, 19, 20, 31, 32, 36, 43,47,54-58, 70	Negligible	Adverse	N/A	Negligible	Adverse
Decommissioning					

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
N/A	N/A	N/A	N/A	N/A	N/A

Table 9.12 – Summary of Cumulative Effects

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/ Adverse
Buried archaeological remains	Damage to buried remains and associated deposits	Garth Wind Farm, Beaw Field Wind Farm.	Negligible	Adverse
Cumulative Effect on Sites 4, 7, 8, 21, 28, 40	Changes to setting	Garth Wind Farm, Beaw Field Wind Farm.	Minor/moderate	Adverse
Cumulative Effect on Sites 2, 39 and 41	Changes to setting	Garth Wind Farm, Beaw Field Wind Farm.	Minor	Adverse
Cumulative Effect on Sites 80 and 81	Changes to setting	Garth Wind Farm, Beaw Field Wind Farm.	Negligible	Adverse

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