

European Offshore Wind Deployment Centre Environmental Statement

Appendix 20.2: Cultural Heritage EIA Technical Report

VATTENFALL



Technip

areg
Aberdeen Renewable Energy Group



A project part-funded by the
European Union under the
European Economic Plan for
Recovery in the field of Energy

1	CULTURAL HERITAGE	2
1.1	Information for the Non-Technical Summary.....	2
1.2	Introduction.....	2
1.2.1	Methodology Consultation	2
1.2.2	Key Guidance Documents.....	4
1.2.3	Data Information and Sources	4
1.2.4	Impact Methodology	5
1.2.5	Implications of Significance	8
1.2.6	Cumulative Impact Assessment Methodology	8
1.2.7	Worst Realistic Case	8
1.3	Impact Assessment	9
1.3.1	Potential Impacts.....	9
1.3.2	Summary of Impact Assessment.....	20
1.4	Summary	22
1.5	Plates	23

1 CULTURAL HERITAGE

1.1 Information for the Non-Technical Summary

- 1 The potential impact of the EOWDC has been considered in relation to the setting of all nationally important designated cultural heritage assets within 10 km of the turbines and selected assets beyond this limit.
- 2 Potential impacts of greater than negligible significance have been identified in five cases: Hare Cairn, the Peterseat cairns, Torry Battery, Orrok House and Girdle Ness Lighthouse. The first three are Scheduled Monuments, whilst the latter two are Grade A-listed buildings.
- 3 The impacts upon Hare Cairn, the Peatarseat cairns, Torry Battery and Orrok House have been assessed as being of minor significance and those upon Girdle Ness Lighthouse as being of minor to moderate significance. No mitigation is proposed in relation to these impacts and they will persist throughout the lifetime of the EOWDC and cease upon decommissioning.

1.2 Introduction

- 4 The Cultural Heritage Setting Impact Assessment considers the potential impact of the EOWDC upon the setting of onshore cultural heritage assets. Such impacts may result from the proposed EOWDC appearing in views related to the setting of cultural heritage assets, and only those assets where this may occur have been carried through to the impact assessment.
- 5 Impacts have been assessed with reference to current guidance and are considered in terms of the asset's cultural significance.

1.2.1 Methodology Consultation

- 6 The following consultation was undertaken

- Aberdeen City Council

Aberdeen City Council was approached in order to establish whether they had specific concerns or requirements for data to be provided, in particular visualisations. Comments were also invited upon the proposed scope of the assessment.

Robert Forbes, The Planning Officer, indicated that he did have some concern regarding potential impacts upon the setting of Girdle Ness Lighthouse, and requested that visualisations from elevated points to the south and south-west of the lighthouse to be provided in order to help assess the potential impact upon views of the lighthouse.

The potential impact upon the setting of the lighthouse has been assessed using wireframes and a site visit. The wireframes are presented within this report along with photographs illustrating various views of the lighthouse. However, photomontages (visualisations) have not been prepared. The wireframes give an adequate demonstration of the scale of the turbines in relation to the lighthouse in views from the south, whilst the photomontages

for the Torry Battery and Kincorth Hill viewpoints (SLVIA Viewpoints 07 & 12 respectively) provide an indication of the EOWDC's appearance from the vicinity of the lighthouse and from high ground to its southwest. The inclusion of photomontages for Nigg Bay would not afford any substantive information that is not available from that presented here.

The Archaeology Unit indicated that all consultation was to be undertaken through the Planning Officer.

- Aberdeenshire Council Archaeology Service

Aberdeenshire Council Archaeology Service was approached in order to establish whether they had specific concerns or requirements for data to be provided, in particular visualisations. Comments were also invited upon the proposed scope of the assessment.

The Archaeology Service indicated that it had no concerns regarding potential setting impacts.

- Historic Scotland

Historic Scotland was approached in order to establish whether they had specific concerns or requirements for data to be provided, in particular visualisations. Comments were also invited upon the proposed scope of the assessment.

No specific concerns were noted. However, it was suggested that the assessment be accompanied by visualisations to illustrate the potential impact upon the setting of Straloch Garden and Designed Landscape (GDL), Hare Cairn and Forvie Church and deserted village, as well as those proposed for the Seascape, Landscape and Visual Impact Assessment (SLVIA) for south of Dunnottar Castle (A92 near Uras) and Torry Battery. It was suggested that assets in the vicinity of Straloch GDL, such as Tillygreig hut-circles (SM12450) be considered.

Visualisations have been included for Torry Battery (Viewpoint 07 of SLVIA) and from near Forvie Church (Viewpoint 09 of SLVIA). No visualisations have been presented for Straloch GDL or Dunnottar Castle, as there is no intervisibility, or Hare Cairn or Tillygreig hut-circles, as there is no potential for a significant impact upon its setting from the EOWDC.

- Scottish Natural Heritage (SNH)

SNH was approached in order to establish whether they had specific concerns or requirements for data to be provided, in particular visualisations. Comments were also invited upon the proposed scope of the assessment (e-mail dated 1st March 2011). SNH had indicated early in the project's lifespan that impacts upon the setting of cultural heritage assets should be considered by the Environmental Statement (ES).

SNH indicated that the proposed scope of the study was acceptable (e-mail dated 25th March 2011) and did not require any further visualisations..

1.2.2 Key Guidance Documents

- 7 The following guidance documents have been referred to:
- COWRIE (2007a) *Historic Environment Guidance for the Offshore Renewable Energy Sector*
 - COWRIE (2007b) *Guidance for Assessment of Cumulative Impacts on the Historic Environment from Offshore Renewable Energy*
 - Historic Scotland (2008) *Scottish Historic Environment Policy (SHEP)*
 - Historic Scotland (2009) *Assessment of Impact upon the setting of the Historic Environment Resource*
 - Historic Scotland (2010) *Managing Change in the Historic Environment: Setting*

1.2.3 Data Information and Sources

- 8 Two concentric study areas have been used to gather and present the baseline data:
- Inner study area (Environmental Statement Figure 20.1, 20.2, 20.3): This extends 10 km from the outermost proposed turbines. Within it data has been gathered for all designated nationally important assets (scheduled monuments, Category A listed buildings and Inventory Gardens and Designed Landscapes (GDL)) and conservation areas; and
 - Outer study area: this extends 40 km from the proposed turbines to take in the area for which the Zone of Theoretical Visibility (ZTV) has been prepared for the SLVIA. Within it assets specifically identified by consultees as being of concern have been considered.
- 9 There is no guidance regarding appropriate study areas for cultural heritage setting impact assessments. The study area has been defined in order to take in those assets that are most likely to be affected by the proposed development; assets further inshore are less likely to be affected as their setting is less likely to relate to the sea.
- 10 Data were gathered from the following data sources:
- Databases of designated assets held by Historic Scotland;
 - National Monuments Record of Scotland (NMRS);
 - Aberdeen City Council Sites and Monuments Record (SMR); and
 - Aberdeenshire Council Historic Environment Record (HER)
- 11 Assets are referred to by the reference number associated by their designation. Scheduled monument numbers (officially 'Ancient Monument Index Numbers') are prefixed 'SM' and numbers referring to listed buildings (officially 'Historic Building Numbers') are prefixed 'LB'. Where an asset is both scheduled and listed it is referred to by its scheduled monument number.
- 12 The results of the desk-based study were augmented by site visits undertaken on 8th and 9th March 2011.

1.2.4 Impact Methodology

1.2.4.1 Significance Criteria

- 13 During the construction, operation and decommissioning phases of developments, the setting of cultural heritage assets may be affected. There is considerable debate over definitions of setting and approaches to the assessment of setting impacts (Lambrick, 2008), with no standardised industry-wide approach. Historic Scotland has produced a guidance note on setting as part of its 'Managing Change in the Historic Environment' series of documents. This states that

Setting should be thought of as the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated.

- 14 Hence setting is not simply the visual envelope of the asset in question. Rather, it is those parts of the asset's surroundings that are relevant to the cultural significance of the asset. In general, there will be an appreciable historical relationship between the asset and its setting, either in terms of a physical relationship, such as between a castle and the natural rise that it occupies, or a more distant visual relationship, such as a designed vista or the view from, for example, one Roman signal station to another. Some assets' cultural significance will relate to an aesthetic relationship with their surroundings which may result from design or be fortuitous. In such instances the relevant landscape elements will be considered to form part of the asset's setting. The cultural significance of assets has been considered in terms of the values described in Scottish Historic Environment Policy (SHEP HS 2008, 58):

- Intrinsic - those relating to the fabric of the asset;
- Contextual – those relating to the monument's place in the landscape or in the body of existing knowledge; and
- Associative – more subjective assessments of the associations of the monument, including with current or past aesthetic preferences.

- 15 Most setting impacts will relate to contextual and associative values.
- 16 The sensitivity of a cultural heritage asset to changes in its setting can be evaluated in the first instance by reference to any relevant designation, whereby assets designated as nationally important will generally be considered the most sensitive. Consequently, the assessment has focussed on nationally important cultural heritage assets in the study areas which are considered in relation to impacts upon setting, with other assets being considered where, in the assessor's professional opinion, there is potential for significant impacts or where they have been raised by consultees. Following reference to the designation of the asset, sensitivity can be more finely assessed by reference to the importance of the asset's surroundings, to its character and value as a cultural heritage asset and the appreciation of its value. Also taken into account is the extent to which an asset is visible on the ground. Some assets may have a well-defined and appreciable setting but the asset itself is barely perceptible; such assets will generally be less sensitive than those that are readily appreciable.
- 17 Table 1 is a general guide to the attributes of cultural heritage assets of high, medium, low or negligible sensitivity to setting impacts. It should be noted

that not all the qualities listed need be present in every case and professional judgement is used in balancing the different criteria.

Table 1 Guideline Criteria for Assessment of Sensitivity of a Cultural Heritage Asset to Effects on its Setting

Sensitivity	Guideline Criteria
High	The asset has a clearly defined setting that is readily appreciable on the ground and is vital to its significance or the appreciation thereof. The asset will generally be readily appreciable on the ground.
Medium	The asset's significance and the appreciation thereof relate to some extent to its setting. The asset will generally be appreciable on the ground.
Low	The asset's surroundings have little relevance to its significance or the appreciation thereof. The asset is difficult to identify on the ground or its setting is difficult to appreciate on the ground.
Negligible	The asset is imperceptible in the landscape and its significance or the appreciation thereof does not relate to its surroundings.

- 18 The magnitude of an impact reflects the extent to which relevant elements of the setting of the cultural heritage asset are changed by the development and the effect that this has upon the significance of the asset and the appreciation thereof. Guideline criteria for assessing magnitude are described in Table 2. As with other criteria presented, this is intended as a general guide and it is not anticipated that all the criteria listed will be present in every case.
- 19 The following are guides to the assessment of magnitude of impact based on those provided by Historic Scotland (2009):
- *Obstruction of or distraction from key views.* Some assets have been sited or designed with specific views in mind, such as the view from a Roman signal station to an associated fort or a country house with designed vistas. The obstruction or cluttering of such views would reduce the extent to which the asset could be understood and appreciated by the visitor. Developments outside a key view may also distract from them and make them difficult to appreciate if they are particularly prominent. In such instances the magnitude is likely to be greatest where views have a particular focus or a strong aesthetic character.
 - *Changes in prominence.* Some assets are deliberately placed in prominent locations in order to stand out from the surrounding landscape, for example prehistoric cairns are often placed to be silhouetted against the sky and churches in some areas are deliberately placed on ridges in order to be highly visible. Developments can reduce such prominence and therefore reduce the extent to which such assets can be appreciated.
 - *Changes in landscape character.* A particular land use regime may be essential to the appreciation of an asset's function, for instance the fields surrounding an Improvement period farmstead are inextricably linked to its appreciation. Hence, changes in land use can leave the asset isolated and reduce its value. In some instances, assets will have aesthetic value or a sense of place that is tied to the surrounding landscape character.

- *Duration and reversibility of impact.* Effects that are short term or readily reversible are generally of lesser magnitude than those that are long term or permanent.
- *Effects upon a defined setting.* These will be of greater magnitude than those that affect unrelated elements of the asset's surroundings or incidental views to or from an asset that are unrelated to the appreciation of its value.

20 It should be noted that the assessment of magnitude will be based on the interplay of these factors. No single factor will be taken to over-ride other factors, for instance an adverse impact that would be of high magnitude will not generally be reduced to low magnitude, simply on the grounds that it is reversible. It should also be noted that whilst the development may be present within the visual envelope of an asset this does not automatically mean there is an impact on the setting of the asset. Where this is the case, the reasoning behind this will be given.

Table 2: Criteria for Assessment of Magnitude of an Effect on the Setting of a Cultural Heritage Asset

Magnitude	Guideline Criteria
High beneficial	The contribution of setting to the cultural heritage asset's significance is considerably enhanced as a result of the development; a lost relationship between the asset and its setting is restored, or the legibility of the relationship is greatly enhanced. Elements of the surroundings that detract from the asset's cultural heritage significance or the appreciation of that significance are removed.
Medium beneficial	The contribution of setting to the cultural heritage asset's significance is enhanced to a clearly appreciable extent as a result of the development; as a result the relationship between the asset and its setting is rendered more readily apparent. The negative impact of elements of the surroundings that detract from the asset's cultural heritage significance or the appreciation of that significance is appreciably reduced.
Low beneficial	The setting of the cultural heritage asset is slightly improved as a result of the development, slightly improving the degree to which the setting's relationship with the asset can be appreciated.
Negligible	The contribution of the asset's surroundings to its cultural significance is changed, but in such a way that the change is barely perceptible.
Low adverse	The contribution of the setting of the cultural heritage asset to its significance is slightly degraded as a result of the development, but without adversely affecting the interpretability of the asset and its setting; characteristics of historic value can still be appreciated, the changes do not strongly conflict with the character of the asset, and could be easily reversed to approximate the pre-development conditions.
Medium adverse	The contribution of the setting of the cultural heritage asset to its significance is reduced appreciably as a result of the development and cannot easily be reversed to approximate pre-development conditions. Relevant setting characteristics can still be appreciated but less readily.
High adverse	The contribution of the setting of the cultural heritage asset to its significance is effectively lost or substantially reduced as a result of the development, the relationship between the asset and its setting is no longer readily appreciable.

1.2.4.2 Significance

21 The significance of an impact on a cultural heritage asset is assessed by combining the magnitude of the impact and the sensitivity of the cultural heritage asset. The matrix in Table 3 provides a guide to decision-making but is not a substitute for professional judgement and interpretation, particularly

where the sensitivity or impact magnitude levels are not clear or are borderline between categories. Predicted impacts of major or moderate significance equate to potentially significant impacts in terms of the EIA Regulations.

Table 3: Guideline Criteria for Assessing the Significance of Effects on Cultural Heritage Assets

Magnitude	Sensitivity			
	Negligible	Low	Medium	High
High	Negligible	Moderate	Major	Major
Medium	Negligible	Minor	Moderate	Major
Low	Negligible	Negligible	Minor	Moderate
Negligible	Negligible	Negligible	Negligible	Minor

1.2.5 Implications of Significance

- 22 Where the significance is classified as moderate or major this is considered to be a potentially significant effect. It should be noted that significant effects need not be unacceptable or reversible.

1.2.6 Cumulative Impact Assessment Methodology

- 23 For the purposes of the cumulative impact assessment the potential effect of adding the Ocean Laboratory to the EOWDC has been considered. The potential cumulative impacts of the EOWDC with other wind farms (consented/operational and proposed) have also been considered. In keeping with the approach used in the SLVIA wind farms up to a distance of 60 km from the EOWDC have been considered.
- 24 Aggregate extraction, existing and planned subsea cables and pipelines and established fishing activities have not been considered as these activities will not result in any visual change that might result in an impact upon setting.
- 25 Navigation and shipping have not been considered further as these are considered to be a neutral part of the baseline conditions.
- 26 Offshore oil and gas installations have not been considered further as all such installations are over 40 km from the shore and hence have no impact upon the setting of cultural heritage assets.

1.2.7 Worst Realistic Case

- 27 The impact assessment has been undertaken with reference to the largest turbines within the Rochdale Envelope; eleven 10 MW turbines with a hub height of 120 m and blade tip height of 195 m above LAT. The variations in height that will occur as different turbines are deployed will have no substantive effect on the assessment, as the potential impacts upon setting relate to the visibility of turbines rather than their aesthetic appearance.

1.3 Impact Assessment

- 28 No differentiation has been drawn between setting impacts during the construction, operation and decommissioning phases as the magnitude of impact and hence significance will be the same for all phases. Clearly, there will be increased shipping traffic during the construction and decommissioning phases and the vessels present will be of a different type to those currently operating. However, the ships will be operating in a body of water in which a substantial number of large vessels operate and, as such, it is considered that this will not constitute an impact upon setting.
- 29 The potential for impacts to occur has been considered for all assets identified by the baseline study as having potential intervisibility with the EOWDC; fourteen such assets have been identified.

1.3.1 Potential Impacts

1.3.1.1 Forvie Church and Deserted Village (SM7644, near to Viewpoint 09 SLVIA))

- 30 Forvie Church and deserted village (SM7644) comprise the remains of a medieval church and village buried by sand dunes. The church and adjacent huts were excavated and left exposed by archaeologists in the 1950s, but most of the village remains covered by sand dunes. The exposed remains are not visible in the wider landscape. The associated buried remains have exceptional potential in terms of their value as a source of data regarding medieval society, economy and material culture as they have been unaffected by later development or farming. The asset is surrounded by the Sands of Forvie, an extensive sand dune system, and lies some 300 m from the shoreline. The surrounding dunes restrict views out from the church, though the sea can be glimpsed to the south.
- 31 The surroundings of the asset make very little contribution to the experience and understanding of the asset, as the dunes make it impossible to understand how the settlement related to its surroundings, but it is part of a heritage trail and is therefore visited by the public. The site's significance relates almost entirely to its intrinsic value as a data source, though the adjacent sand dunes are relevant to an appreciation of how the church has survived undisturbed. The setting of the church is therefore defined as the dunes surrounding it and it is considered that the church is of low to medium sensitivity to impacts upon setting.
- 32 The proposed EOWDC turbines will be visible from the vicinity of the church at a distance of approximately 10 km. The degree of visibility will vary greatly depending upon the viewer's location and in much of the area around the church the proposed turbines will be at least partially screened from view. Viewpoint 09 of the SLVIA is nearby and gives an indication of the degree of visual change.
- 33 The turbines will lie outside the church's setting and will in no way affect the extent to which it can be experienced or understood. It is considered therefore that there will be a degree of visual change, but that this will constitute an impact of at most negligible magnitude upon the setting of the church.

- 34 The church is considered to be of at most medium sensitivity to impacts upon setting and the impact is considered to be of negligible magnitude, the church's cultural significance and the potential for that significance to be appreciated will remain unchanged. The impact upon its setting is therefore considered to be of **negligible** significance. The impact will finish upon decommissioning.

1.3.1.2 Forvie Ring Cairn and Hut-circles (SM12541)

- 35 Forvie ring cairn and hut-circles (SM12541) lie among the Sands of Forvie, some 800 m from the shoreline. Only two of the 19 hut-circles recorded in 1950 are now visible, the remainder having been covered by sand-dunes. As with Forvie Church, there is potential for exceptional preservation and the site has great potential as a data source. The exposed structures cannot be seen from more than a few metres away. The surrounding dunes restrict views in most directions, with open views only being available inland.
- 36 The surrounding dunes completely mask any relationship that the asset may have had with its surroundings. Again the surrounding dunes are relevant to an understanding of the site formation processes at work and consequently the dunes are considered to form the asset's setting and it is concluded that the ring cairn and hut-circles are of low sensitivity to setting impacts.
- 37 The EOWDC will be partially visible to the south, at a distance of 9.8 km. The proposed turbines will lie outside the setting of the asset and will not affect the appreciation of the asset.
- 38 The cultural significance of the cairn and hut-circles will be undiminished by the presence of the turbines. It is concluded that there will be an impact of negligible magnitude upon their setting and with a low sensitivity that this will constitute an impact of **negligible** significance. The impact will finish upon decommissioning.

1.3.1.3 Tillygrieg hut-circles (SM12450)

- 39 Tillygrieg hut-circles (SM12450) comprise the scheduled upstanding remains of two Late Bronze Age or Iron Age date. They are located near the top of a gentle east facing slope and are surrounded by farmland. They are unusually well-preserved for this part of Aberdeenshire and have potential to yield information regarding settlement history and economy. The upstanding remains are slight and no more than 0.3 m in height; as such they are not visible in the wider landscape.
- 40 The hut-circles were built by farmers who worked the surrounding land. The broader landscape does not contribute to their cultural significance or their appreciation thereof. The adjacent farmland constitutes their setting and they are considered to be of low sensitivity to setting impacts.
- 41 The proposed EOWDC turbines will be partially visible to the south-east of the hut-circles, at a distance of 13.9 km. They will be seen beyond a line of pylons that occupies the foreground of views east from the hut-circles.
- 42 The cultural significance of the hut-circles will be undiminished by the presence of the turbines. It is concluded that there will be an impact of

negligible magnitude upon their setting and with a low sensitivity this will constitute an impact of **negligible** significance. The impact will finish upon decommissioning.

1.3.1.4 *Hare Cairn (SM3277)*

- 43 Hare Cairn (SM3277) is a Bronze Age burial cairn located on the top of a small hillock. The surrounding field is given over to pasture. It has been partially excavated, but survives as an appreciable mound with exposed kerb. Despite the disturbance it has potential to yield data regarding Bronze Age burial practices. The cairn's cultural significance resides in its value as a potential data source and in its potential to provide a tangible link to the past. The latter is considered further below.
- 44 The cairn's elevated location makes it a prominent feature in the surrounding landscape. Similarly, extensive views are available from the cairn over the surrounding farmland. It is evident that the cairn has been placed in order to be prominent in the farming landscape. The setting of the cairn is therefore defined as the knoll upon which it is located and the surrounding farmland. The views to and from the cairn are important to an understanding of the cairn's function and its designed relationship with its surroundings and it is considered to be of high sensitivity to impacts upon setting.
- 45 The proposed turbines will be fully visible to the south-east of the cairn, at a distance of 4.8 km. The cairn lies over 2 km from the coast and the proposed turbines will be seen beyond the coastal fringe in which the town of Balmedie is visible, as is the A90.
- 46 The presence of the proposed turbines in views eastwards from the cairn will not affect the contribution of the cairn's surroundings to its experience, appreciation or understanding. The cairn's prominence will not be changed – the proposed turbines will not be visible in combination with the cairn from land to the west – nor will they affect the degree to which the cairn's relationship with the farmland to its west can be appreciated. It is concluded that the proposed turbines will lie outside the setting of the cairn.
- 47 The cultural significance of the cairn will be undiminished by the presence of the turbines. It is concluded that there will be an impact of negligible magnitude upon its setting and with a high sensitivity that this will constitute an impact of **minor** significance. The impact will finish upon decommissioning..

Mitigation

- 48 No mitigation is proposed in relation to the impact upon the setting of the Hare Cairn.

Residual Impacts

- 49 No mitigation is proposed in relation to impacts upon the setting of Hare Cairn and the predicted impacts will remain adverse and of minor significance. The impact will finish upon decommissioning.

Cumulative Impacts

- 50 The potential for cumulative impacts to result from the EOWDC and the potential Ocean Laboratory has been considered. The Ocean Laboratory could comprise a 120 m mast with a platform 20 m above LAT. It could be

located to the south of the proposed EOWDC turbines. It has been concluded that there will be no cumulative impact. The predicted impact relates to the proposed turbines appearing as large structures in views from the cairn. The Ocean Laboratory would be seen amongst the turbines and would not alter the effect.

- 51 The potential for cumulative impacts to arise from the EOWDC and onshore wind farms has been considered. The cumulative ZTV (SLVIA Figure 15) indicates that up to two other consented wind farms will theoretically be visible from the cairns. The closest will be approximately 7.5 km to the north. The indicative ZTV for proposed wind farms (SLVIA Figure 16) indicates that up to two proposed wind farms will be visible from the cairns, the closest of which will lie some 15 km away. Given the distance and that both the EOWDC and the other wind farms lie outside the setting of the cairn, it is concluded that there is no potential for cumulative impacts.

1.3.1.5 The Temple Stones (SM3275)

- 52 The Temple Stones (SM3275) comprise the remains of a recumbent stone circle. It is located on the shoulder of a hill, overlooking the Milden Burn to the south. Many of the stones have been removed and only the recumbent stone remains *in situ*, the pillar stones are present but have fallen over. Of the rest of the stone circle only one stone remains. The recumbent stone lies at the southwest of the monument. Stones cleared from the surrounding field have been dumped behind the recumbent stone. Despite its fragmentary survival there is potential for subsurface features to yield information regarding the construction and history of use of the stone circle and, by extension, contemporary ritual practices and its cultural significance resides in this potential.
- 53 Located on top of a ridge, the Temple Stones command wide views over the rolling agricultural land to the north and west, over the golf course to the east to the coastal lowlands and the North Sea. As with the current example, recumbent stone circles are generally orientated towards the south or south-west in order that the recumbent stone and pillars would frame the “moon and in some cases they may also have faced the winter sun” (Bradley 2005, p111). In some instances topographic features are also framed. The setting of the stones is defined as the ridge upon which they are located. There is no clear relationship with land beyond this, though it must be assumed that the view to the south-west was important. Because of its mutilated condition, it is difficult to understand the relationship of this asset with the wider landscape but its relationship with the ridge is still clear and the key alignment is still apparent. It is concluded that it is of medium sensitivity to setting impacts
- 54 The EOWDC will be visible to the east at a distance of 4.3 km. The proposed turbines will not affect the contribution of the surroundings to the Temple Stones cultural significance. They lie outside its setting and well away from the key south-westerly alignment of the stones.
- 55 The cultural significance of the stones will be undiminished by the presence of the turbines. It is concluded that there will be an impact of negligible magnitude upon its setting and with a medium sensitivity this will constitute an impact of **negligible** significance. The impact will finish upon decommissioning.

1.3.1.6 Dubford Stone (SM3283)

- 56 Dubford Stone (SM3283) is a single standing stone, which is thought to be the final remnant of a recumbent stone circle. The stone is located in an improved pasture field on a natural terrace. Despite its fragmentary survival there is potential for subsurface features to yield information regarding the construction and history of use of the stone circle and, by extension, contemporary ritual practices and its cultural significance resides primarily in this potential. The stone's location commands extensive views over the surrounding farmland to the south and the sea is visible to the east. A number of modern features are prominent in the surrounding landscape, in particular the city of Aberdeen is visible to the south.
- 57 The stone's surroundings make little contribution to its cultural significance and there are no clear relationships with land beyond the terrace upon which it is located. If the identification of the site as a recumbent stone circle is correct, it may be assumed that the key alignment was to the south or south-west. However, this is no longer appreciable on the ground. The setting of the stone is therefore defined as the field in which it is located. The stone's relationship with the terrace upon which it is located is clear, but there are no demonstrable relationships with land beyond the terrace; the very incomplete survival of the asset making it impossible to discern key alignments. Consequently, it is concluded that the stone is of low sensitivity to impacts upon setting.
- 58 The proposed EOWDC will be fully visible to the east at a distance of 5.5 km. The turbines will lie outside the setting of the stone and well away from the probable southward alignment of the asset in its original form.
- 59 The visibility of the proposed turbines from the standing stone will not affect the extent to which it can be understood or appreciated or the contribution of its surroundings to its cultural significance. It is concluded that there will be an impact of negligible magnitude upon its setting and with a low sensitivity this will constitute an impact of **negligible** significance. The impact will finish upon decommissioning..

1.3.1.7 Peterseat Cairns (SM4055, SM4060, SM4125, SM4126 & SM12342)

- 60 The cairns to the south of Aberdeen around Peterseat are considered as a group, as the setting and sensitivity of the individual cairns and the magnitude of impact is essentially the same in all cases.
- 61 Tullis cairn (SM4055), Crab's cairn (SM4060) and Baron's cairn (SM4126) lie at the northern end of a gorse-covered ridge, which overlooks Aberdeen and Aberdeen Bay to the north. Cat Cairn and Loirston cairn (SM4126 and SM12342 respectively) lie further along the ridge to the southwest. The southern part of the ridge is occupied by light industrial units. The cairns survive as substantial mounds and are located on natural eminences upon the ridge. They command extensive views across Aberdeen to the north. It must be assumed that the cairns were placed in order to be prominent in views from the wider landscape, most probably settlement and farmed land in the area of the River Dee; an area that is now covered by housing. In such views they were probably sky-lined, though this is no longer the case, owing to the cairns' degraded state and the gorse.

- 62 The cairns' cultural significance relates primarily to their potential as sources of data regarding contemporary burial practice and their potential as a tangible link to the past, as the visitor will appreciate to some degree the relationship of the cairns to the landscape that they overlook and the inter-relationship between the various cairns. The latter will help the visitor appreciate the long history of human activity in the Aberdeen area. The setting of the cairns is therefore defined as the ridge that they occupy and to a lesser degree the lower land to the north, which they were intended to overlook. Views of the cairns in the wider landscape are not possible but views from the cairns are relevant to their appreciation as they allow the visitor to understand how the cairns might have fitted into the wider prehistoric landscape. The cairns are considered to be of high sensitivity to impacts upon setting as the intended visual relationship with the land that they overlook is appreciable to a substantial degree and the spatial relationship between the cairns suggests that they form a relict Bronze Age funerary landscape, resulting in additional group value.
- 63 The proposed turbines will be fully visible to the north of the cairns with the nearest at a distance of at least 9.6 km. They will be seen beyond the coastal fringe, which is largely occupied by modern housing and other buildings, including blocks of flats and other large structures.
- 64 The proposed turbines will lie outside the setting of the cairns and will not affect the appreciation of their relationship with their surroundings or their contribution to its cultural significance. It is considered that there will be an impact of negligible magnitude upon their setting and with a high sensitivity this will constitute an impact of **minor** significance. The impact will finish upon decommissioning.

Mitigation

- 65 No mitigation is proposed in relation to the impact upon the setting of the Peterseat cairns.

Residual Impacts

- 66 No mitigation is proposed in relation to impacts upon the setting of the Peterseat cairns and the predicted impacts will remain adverse and of minor significance. The impact will finish upon decommissioning.

Cumulative Impacts

- 67 The potential for cumulative impacts to result from the EOWDC and the potential Ocean Laboratory has been considered. The Ocean Laboratory could comprise a 120 m mast with a platform 20 m above LAT. It could be located to the south of the proposed EOWDC turbines. It has been concluded that there will be no cumulative impact. The predicted impact relates to the proposed turbines appearing as large structures in views from the cairns. The Ocean Laboratory would be seen amongst the turbines and would not alter the effect.
- 68 The potential for cumulative impacts to arise from the EOWDC and onshore wind farms has been considered. The cumulative ZTV (SLVIA Figure 15) indicates that up to two other consented wind farms will theoretically be visible from the cairns. The closest will be over 20 km away. The indicative ZTV for proposed wind farms (SLVIA Figure 16) indicates that up to two proposed wind farms will be visible from the cairns, the closest of which will lie some 15 km away. Given the distance and that both the EOWDC and the

other wind farms lie outside the setting of the cairns, it is concluded that there is no potential for cumulative impacts.

1.3.1.8 Torry Battery (SM9215, Viewpoint 07 SLVIA)

- 69 Torry Battery (SM9215) comprises the remains of a coastal battery built in the mid-19th century to protect the entrance to Aberdeen harbour and Aberdeen Bay. It was manned during both World Wars and also saw use as temporary housing for civilians in the 1930s, who had become homeless as a result of the economic crisis. It is located on the headland of Girdle Ness and overlooks the entrance to the harbour, which lies immediately to the north (Plate 1). To the northwest, Aberdeen can be seen stretching up the coast, while to the east Girdle Ness Lighthouse is prominent. Most of the view northwards is occupied by the sea.
- 70 The Battery's cultural significance resides in its importance as a tangible link to the past, providing visible evidence of Britain's response to external threat, Aberdeen's importance as a port and, given its long history of use, of the development of military tactics and technology. Its role as civilian housing adds further to this, as the battery provides a link to the results of the economic crisis of the 1930s.
- 71 Much of this significance is intrinsic to the fabric of the Battery but contextual values are also very important and the relationship between the battery and its surroundings contributes to these values. Its position overlooking the entrance to Aberdeen's Harbour and the bay beyond is significant in the understanding of its operation and function. The Battery also has associative value and its rather isolated and exposed location adds to an appreciation of the plight of families housed here during the 1930s. The setting of the battery is therefore defined as the headland upon which it is located, the entrance to Aberdeen Harbour, which it has been placed to overlook and defend, and Aberdeen Bay, which its guns covered.
- 72 The EOWDC will be fully visible to the north-east of the Battery at a distance of 7.9 km (see photomontage SLVIA Viewpoint 07). The proposed turbines will be seen in a body of water that sees substantial numbers of shipping movements, with the sea providing a backdrop. SLVIA Viewpoint 07 is located at the gate to the carpark adjacent to the Battery. This location is slightly lower than the Battery itself. The photomontage shows that the wind turbines will be seen as a well-balanced arrangement with proposed turbines occurring in five groupings.
- 73 The Battery is of high sensitivity to setting impacts as it is a readily appreciable asset that has a clear relationship with its surroundings that adds greatly to the visitor's understanding and appreciation of the asset's history and function. This contributes to the Battery's contextual value. The location also adds to its associative value as it contributes to the visitor's appreciation of life for the Battery's inhabitants, in particular during its time as temporary housing.
- 74 The presence of the EOWDC will introduce large modern structures into the setting of the Battery. While this will constitute a visual impact that is of High to Moderate magnitude (see SLVIA of the EOWDC), the magnitude of impact upon setting will be substantially less. The proposed turbines will not be seen in a context entirely free of other large modern features, rather they will be

seen with a substantial number of other modern features – rig support vessels, flats in Aberdeen, the harbour infrastructure and large retail units to the north of Footdee. The nearest proposed turbine will be 7.9 km from the Battery and will not affect the Battery's dominance of the harbour entrance. The proposed turbines will break up the view across the bay, but given that they will occupy some 12 degrees of the 200 degree view, their distance from the Battery and that the horizon will be clearly visible between the five groupings, the relationship between the Battery and the bay will remain readily appreciable; it will still be possible to experience the views across the bay and hence understand that the Battery's guns covered the whole bay. The EOWDC will not affect views of the Battery from the wider landscape, nor will it affect the relationship between the Battery and the headland element of its setting or the entrance to the harbour. It is therefore considered that the impact upon the setting of Torry Battery will be of negligible magnitude and adverse.

- 75 It is concluded that the impact of the EOWDC on the setting of the Torry Battery which is of high sensitivity and of negligible magnitude, will be potentially adverse and of **minor** significance as the setting will be altered by the development but this will not reduce the extent to which it contributes to the cultural significance of the Torry Battery. The impact will finish upon decommissioning.

Mitigation

- 76 No mitigation is proposed in relation to the impact upon the setting of Torry Battery.

Residual Impacts

- 77 No mitigation is proposed in relation to impacts upon the setting of Torry battery and the predicted impacts will remain adverse and of minor significance. The impact will finish upon decommissioning.

Cumulative Impacts

- 78 The potential for cumulative impacts to result from the EOWDC and the potential Ocean Laboratory has been considered. The Ocean Laboratory could comprise a 120 m mast with a platform 20 m above LAT. It could be located to the south of the proposed EOWDC turbines. It has been concluded that there will be no cumulative impact. The predicted impact relates to the proposed turbines appearing as large structures in views from the Torry Battery. The Ocean Laboratory would be seen amongst the turbines and would not alter the effect.
- 79 The potential for cumulative impacts to arise from the EOWDC and onshore wind farms has been considered. The cumulative ZTV (SLVIA Figure 15) indicates that up to two other consented wind farms will theoretically be visible from Torry Battery. The closest will be over 20 km away. Given the distance and that the other wind farms lie outside the setting of the Battery, it is concluded that there is no potential for cumulative impacts. The indicative ZTV for proposed wind farms (SLVIA Figure 16) indicates that no proposed wind farms will be visible.

1.3.1.9 Orrok House (LB2778)

- 80 Orrok House (LB2778) is a country house built between 1770 and 1782. The house is surrounded by its wooded policies, which have been laid out in order

to retain an open aspect to the south, and is approached by way of a short driveway from the north. The house is located on a gentle south-facing slope and its policies are surrounded by arable fields (Plate 2).

- 81 The house's cultural significance relates to its architectural quality and its completeness as a late 18th century house with policies. It therefore combines intrinsic, contextual and associative values. The house's surrounding contribute to all of these values. The policies contribute to the intrinsic and value, as the house presents a good example of a late 18th century country house complete with original planting. The surrounding rich agricultural land and farm-buildings are relevant to an appreciation of the wealth of the area. The house and policies is prominent in views from land to the south and the house is clearly intended to look out over these. The setting of the house is therefore defined at the small hill upon which it stands and the fields that it overlooks to the south. Views relevant to the appreciation of the relationship with its setting are those to the south from the house and those of the house from the south. There are no natural or artificial focal points in the views from the house.
- 82 The proposed turbines will be fully visible from the south of the house at a distance of 5.6 km. They will be located to the south-east of the house. They will be seen as a group. The foreground of the views will be composed of rolling farmland with the wooded hills to the north of Balmedie visible in the middle distance. The proposed turbines will appear in the background of these views.
- 83 The house is a readily appreciable asset and its relationship with its surroundings is likewise readily appreciable. It is considered to be of high sensitivity to impacts upon setting.
- 84 The proposed EOWDC will introduce large modern features into the view from the house; the proposed turbines will lie outside the setting of the house but within a view that is relevant to it. The view is currently dominated by agricultural land. However, they will appear in the background beyond the agricultural land and there is no evidence that the view has in anyway been composed in terms of framing or focal points etc. Rather the house appears to have been placed in order to command panoramic views. The turbines will therefore not disrupt these views, but will simply add another element to them.
- 85 It is concluded that the impact of the EOWDC upon the setting of Orrok House, which is of high sensitivity and will be of negligible magnitude, will be of **minor** significance and will cease upon decommissioning. The impact will finish upon decommissioning.

Mitigation

- 86 No mitigation is proposed in relation to the impact upon the setting of Orrok House.

Residual Impacts

- 87 No mitigation is proposed in relation to impacts upon the setting of Orrok House and the predicted impacts will remain adverse and of minor significance. The impact will finish upon decommissioning.

Cumulative Impacts

- 88 The potential for cumulative impacts to result from the EOWDC and the potential Ocean Laboratory has been considered. The Ocean Laboratory could comprise a 120 m mast with a platform 20 m above LAT. It could be located to the south of the proposed EOWDC turbines and therefore will be at the rear of the array when viewed from Orrok House. It has been concluded that there will be no cumulative impact. The predicted impact relates to the proposed turbines appearing as large structures in views from Orrok House. The presence of the Ocean Laboratory would be seen amongst the turbines and would not alter the effect.
- 89 The potential for cumulative impacts to arise from the EOWDC and onshore wind farms has been considered. The cumulative ZTVs for consented and proposed wind farms (SLVIA Figures 15 & 16 respectively) indicate that no other wind farms will be visible from Orrok House. It is concluded that there is no potential for cumulative impacts upon the setting of Orrok House.

1.3.1.10 Girdle Ness Lighthouse (LB20078)

- 90 Girdle Ness Lighthouse (LB20078) was designed by Robert Stevenson and built in 1833. It was fitted with a new double light system and in 1860 was described by the Astronomer Royal as 'the best lighthouse that I have seen'. The lighthouse stands at the eastern end of Girdle Ness, between Greyhope Bay and Nigg Bay. Aberdeen Bay and the North Sea occupy views to the north and east (Plates 3 & 4). Immediately adjacent are lattice work towers (Plate 5) In views to the west the foreground is occupied by the bleak headland, beyond which Aberdeen is visible. The lighthouse is a prominent landmark being highly visible from the south, across Nigg Bay, and from points to the west, including Torry Battery. In these views the pristine white vertical form of the lighthouse is seen in contrast to the low rugged form of the headland, with the sky providing a backdrop (Plate 6).
- 91 The lighthouse's cultural significance comprises intrinsic, contextual and associative elements. Its intrinsic value relates to its technological importance, while its contextual and associative values relate to its direct relationship with the Stevenson family and, hence, the development of Scottish lighthouses, its relationship with the entrance to the harbour and its prominence in the surrounding landscape and importance as a landmark. Consequently, the setting of the lighthouse comprises:
- The headland upon which it is located, as this is relevant to both the contextual and associative values as its flat form contributes to the prominence of the lighthouse and hence its functional and aesthetic characteristics;
 - The harbour entrance which is visible to the west as this relates the lighthouse to the other elements of Aberdeen's maritime heritage;
 - The sea to the north, east and south as the lighthouse is clearly inextricably linked to the sea.
- 92 The proposed turbines will be fully visible to the northeast of the lighthouse at a distance of 7.9 km. Their appearance will vary depending on the location of the viewer, but from the lighthouse and land to its south, the locations that are of greatest relevance to the impact assessment, the proposed turbines will be

seen as five groupings. From some locations to the south the proposed turbines will lie directly behind the lighthouse, but from most of the coastal road they will be seen to the left. The wireframes demonstrate that the lighthouse will appear substantially larger than the turbines in views from its south. From the lighthouse itself and from elevated locations to its south the the proposed turbines will be seen with the many large ships that currently operate from Aberdeen Harbour and frequently anchor in the area to the east of the mouth of the River Don, Aberdeen Harbour Board figures indicate that it handles almost 9000 vessels use the harbour annually. The photomontage presented for the viewpoint at Torry Battery (Viewpoint 07 SLVIA) shows how this may appear.

- 93 The lighthouse is of high sensitivity to impacts upon setting. It is a prominent feature and its surroundings contribute to many aspects of its significance.
- 94 The proposed turbines will be located in Aberdeen Bay and hence within the setting of the lighthouse. Although this will affect views from the lighthouse, this will not constitute an impact upon setting as the relationship of the lighthouse with its surroundings or the degree to which this relationship can be understood and appreciated will be unchanged. However, views of the lighthouse from the south will be affected in ways that will constitute an impact upon setting. The proposed turbines will be seen in combination with the lighthouse in these views. From a very limited area they will be seen directly behind the lighthouse. This will only occur in a small part of Greg Ness. The appearance of the turbines in combination with the lighthouse will reduce to some extent the dominance of the lighthouse as the proposed turbines will also be white vertical features. However, the turbines will be located 7.9 km from the lighthouse, hence in views across Nigg Bay they will be over 9 km from the viewer, while the lighthouse will be 1.2 km or more away. The lighthouse will appear taller than the turbines in such views. The lighthouse's relationship with its surroundings will remain readily appreciable, however, its dominance of certain views will be reduced by the presence of the turbines and hence the aesthetic element of its associative value may be considered to be reduced, though this will depend on the preferences of the viewer. Given the turbines' distance from the lighthouse, the lighthouse will remain the dominant feature on the headland and in views from the south and the vertical form of the turbines will match that of the lighthouse.
- 95 The potential impact of the EOWDC upon the setting of the lighthouse, which is of high sensitivity, has been assessed as of low magnitude. Following the application of professional judgement, it is concluded that the impact will be of **minor** to potentially **moderate** significance. This conclusion has been reached because the impact relates to the aesthetics of views of the lighthouse from a limited area to the south and that for the majority of views there will be little or negligible impact. However, it is also recognised that the magnitude of the aesthetic impact will depend largely on the viewer's predisposition towards wind turbines, rather than, for example, the creation of visual discordance or a reduction in the lighthouse's contribution to a valued view. The extent to which the lighthouse's functional relationship with its surroundings will remain unchanged. The impact will finish upon decommissioning.

Mitigation

- 96 No mitigation is proposed in relation to the impact upon the setting of Girdle Ness lighthouse.

Residual Impacts

- 97 No mitigation is proposed in relation to impacts upon the setting of Girdle Ness lighthouse and the predicted impacts will be of minor to moderate significance. The potential impact will finish upon decommissioning.

Cumulative Impacts

- 98 The potential for cumulative impacts to result from the EOWDC and the potential Ocean Laboratory has been considered. The Ocean Laboratory could comprise a 120 m mast with a platform 20 m above LAT. It could be located to the south of the proposed EOWDC turbines. It has been concluded that there will be no cumulative impact. The predicted impact relates to the proposed turbines appearing as large structures in views of the lighthouse. The Ocean Laboratory would be seen amongst the turbines and would not alter the effect.
- 99 The potential for cumulative impacts to arise from the EOWDC and onshore wind farms has been considered. The cumulative ZTV (SLVIA Figure 15) indicates that up to two other consented wind farms will theoretically be visible from the area of the lighthouse. The closest will be over 20 km away. Given the distance, it is concluded that there is no potential for cumulative impacts. The indicative ZTV for proposed wind farms (SLVIA Figure 16) indicates that no proposed wind farms will be visible.

Monitoring

- 100 No monitoring is proposed.

1.3.2 Summary of Impact Assessment

- 58 The results of the impact assessment are summarised in Table 4.

TABLE 4 Impact Assessment							
Potential Impact / Activity	Sensitivity of Receptor	Magnitude of Effect	Significance	Mitigation	Significance after Mitigation	Monitoring	Cumulative / In-combination
Impact upon setting of Torry Battery	High	Negligible	Minor	None proposed	Minor	None proposed	None
Impact upon setting of Orrok House	High	Negligible	Minor	None proposed	Minor	None proposed	None
Impact upon setting of Girdle Ness Lighthouse	High	Low	Minor to moderate	None proposed	Minor to moderate	None proposed	None
Impact upon setting of Peterseat cairns	High	Negligible	Minor	None proposed	Minor	None proposed	None
Impact upon setting of Hare Cairn	High	Negligible	Minor	None proposed	Minor	None proposed	None
Impact upon setting of other assets	Low - Medium	Negligible	Negligible	None Proposed	Negligible	None proposed	None

1.4 Summary

- 101 The potential impact of the EOWDC has been considered in relation to all nationally important designated cultural heritage assets within 10 km of the proposed turbines and selected assets beyond this.
- 102 Potential impacts of greater than negligible significance have been identified in five cases: Hare Cairn, the Peterseat cairns, Torry Battery, Orrok House and Girdle Ness Lighthouse. The first three are Scheduled Monuments, whilst the latter two are Grade A-listed buildings.
- 103 The impacts upon Hare Cairn, the Peaterseat cairns, Torry Battery and Orrok House have been assessed as being of minor significance and those upon Girdle Ness Lighthouse as being of minor to moderate significance. No mitigation is proposed in relation to these impacts and they will persist throughout the lifetime of the EOWDC and cease upon decommissioning.

1.5 Plates



104

105 **Plate 1: View north from Torry Battery (SM9215)**



106

107 **Plate 2: View to south-east from near Orrok House (LB2778)**



108

109 **Plate 3: Girdle Ness Lighthouse (LB20078) from the south-west**

110

111 **Plate 4: View to north from Girdle Ness Lighthouse (LB20078)**

112



113

114 Plate 5: View north to Girdle Ness Lighthouse (LB20078) from the coastal road



115 Plate 6: View north to Girdle Ness Lighthouse (LB20078) across Nigg Bay