

Volume 5: Appendix 10.12 – Stone Circles

Mitigation Response

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LIST OF ABBREVIATIONS

EIAR: Environmental Impact Assessment Report

ACAS: Aberdeenshire Council Archaeology Service

BESS: Battery Energy Storage System

HES: Historic Environment Scotland

OHL: Overhead Line

SM: Scheduled Monument

1. INTRODUCTION

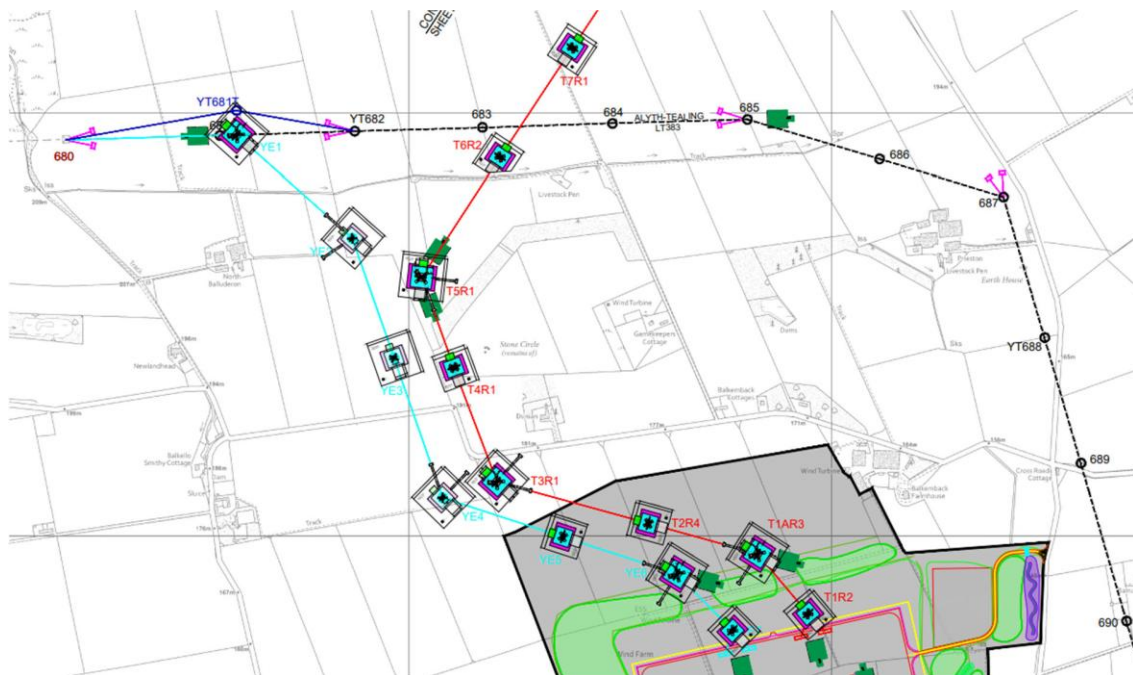
1.1 Introduction

- 1.1.1 This appendix should be read in conjunction with **Volume 1, Chapter 3: Project Description** of the Environmental Impact Assessment Report (EIAR) for full details of the Proposed Development and with **Volume 2, Chapter 10: Cultural Heritage**.
- 1.1.2 This appendix provides more detailed information following consultation with Historic Environment Scotland (HES) and Aberdeenshire Council Archaeology Service (ACAS) in November 2024 specifically relating to the three following Scheduled Monuments (SM): Balkemback Cottages Stone Circle (SM 2686); New Wester Echt Stone Circle (SM 6074); and South Leylodge Steading Stone Circle (SM 12350). HES and ACAS both raised concerns about the potential impact of the Proposed Development on the setting of these Scheduled Monuments, including potential cumulative effects with existing transmission overhead line (OHL) infrastructure. This document presents the technical constraints in proximity to these Scheduled Monuments as presented to HES and ACAS during an online meeting held with HES, ACAS, SSEN Transmission and Land Use Consultants (LUC) on 27 November 2024.

1.2 Balkemback Cottages Stone Circle (SM 2868)

- 1.2.1 The Proposed Development would be seen passing the Scheduled Monument on its western side, running in an arc from the south to the northeast. The existing Alyth to Tealing 275 kV OHL is being upgraded to 400 kV and will be realigned to the west of the Scheduled Monument.
- 1.2.2 Both the Proposed Development and the proposed Alyth to Tealing 400 kV OHL Upgrade, run in parallel from north to south through a narrow corridor between the Balkemback Stone Circle Scheduled Monument and properties at North Balluderon as they progress south to the proposed Emmock substation as shown on **Plate 10.12.1: Engineering schematic showing the Proposed Development (red line) and the Alyth to Tealing 400 kV upgrade (blue line) connecting into the proposed Emmock 400 kV substation** below. Following the diversion of the proposed Alyth to Tealing 400 kV OHL Upgrade, the redundant section of this OHL would be dismantled (shown as the dotted black line in **Plate 10.12.1** below).

Plate 10.12.1: Engineering schematic showing the Proposed Development (red line) and the Alyth to Tealing 400 kV Upgrade blue line) connecting into the proposed Emmock 400 kV substation



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- 1.2.3 Both the OHLs shown on **Plate 10.12.1** will operate at 400 kV and are not considered suitable for undergrounding due to the constraints associated with the economic and operability effects. Please refer to **Volume 1, Chapter 4: Alternatives and the Routeing Process** on the challenges of undergrounding at 400 kV.
- 1.2.4 SSEN Transmission has concluded that it is not possible to realign either OHL due to the existing constraints located to the east and west of the proposed OHLs and so are limited to the corridor in which they are currently proposed. These constraints include properties immediately to the west, including at Balluderon and listed buildings at Balkello. Moving even further west would increase the length of the OHL significantly and bring it closer to further properties. To the immediate east, these constraints include the Balkemback Stone Circle and scattered properties around Balkemback and Prieston. Moving even further to the east would introduce further properties around Balnuith and Balcalk. Therefore, the proposed Alignment is considered to represent the best solution in light of these identified constraints.
- 1.2.5 The potential to remove Tower S202 was considered, which is located to the west of the Scheduled Monument (shown on **Plate 10.12.2: Showing Balkemback Stone Circle (brown circle) and the Proposed Development**). However, removing Tower S202 would result in an increase in tower height of the adjacent Towers S203 and S201 by 9 m and 6 m respectively. Both these towers would also have to be moved and located closer together to achieve a suitable span. Taller towers would potentially result in a greater visual impact and result in other towers being located in more elevated locations, whereas the proposed Alignment currently allows for a consistent profile and follows the natural contours of the local area and maintains greater distance from properties. Moving Towers S203 and S201 closer together would also bring them closer to properties at Dunian and the Balkemback Stone Circle respectively. Tower S203 would also have to be located closer to the road which would introduce additional construction and maintenance challenges. With the reduced working area to the north on the road side, and to the west where there is an existing field boundary, additional land take would likely be required for the handling of tower construction materials. Moving Tower S203 may also remove the ability to accommodate scaffolding for this section of the road and potentially require a temporary road closure.

Plate 10.12.2: Showing Balkemback Stone Circle (brown circle) and the Proposed Development



- 1.2.6 The movement of Tower S201 further south from its current proposed location would also result in the potential for woodland removal and the relocation of adjacent Towers S200 – S197 to accommodate the new alignment and spans, which is considered to marginally reduce their distance from nearby residential properties.
- 1.2.7 Upon review, it was determined by SSEN Transmission, that this option should not be progressed due to the technical solutions required for realigning towers and concerns with the increased tower height and tower structure sizes for S203 and S201. Furthermore, if Tower S202 was removed, the Alyth to Tealing OHL would still remain immediately west with the conductor spans in view from the Scheduled Monument. Similar proposed tower changes on the Alyth to Tealing OHL would bring the OHL in closer proximity to properties near North Balluderon and may result in clearance infringements between the two OHLs. This would prevent the OHLs from being safely maintained and therefore render this not viable from a technical and safety perspective. Of all the potential mitigation options considered, and in light of the constraints previously documented, none of the mitigation options were considered to provide a significant reduction in the potential effect to the Scheduled Monument and would introduce other environmental constraints. SSEN Transmission therefore considers the Proposed Alignment to represent the best overall solution in this area.

1.3 New Wester Echt, Stone Circle (SM 6074)

- 1.3.1 The Proposed Development would be seen passing the Scheduled Monument on its eastern side, running in an arc from the south to the northeast.
- 1.3.2 In this location, the Proposed Development traverses over relatively steep terrain on side slopes and navigates numerous properties, and so there is limited opportunity to microsite towers here (as shown on **Plate 10.12.3: Showing New Wester Echt Stone Circle (brown circle) and the Proposed Development**).

Plate 10.12.3: Showing New Wester Echt Stone Circle (brown circle) and the Proposed Development



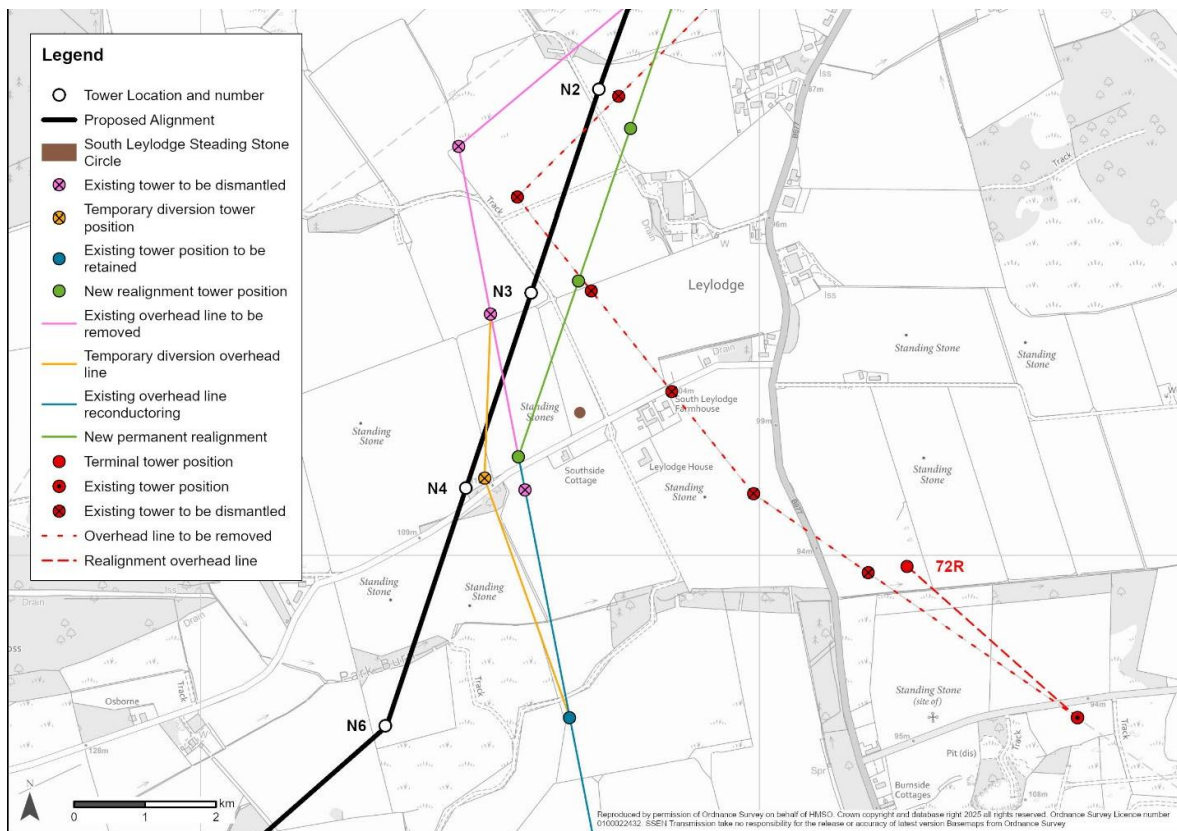
- 1.3.3 Dunecht House Garden and Designed Landscape (GDL) is also located to the east of the Proposed Development (shown on **Plate 10.12.3** as hatched area) with elevated terrain and Barmekin Hillfort Scheduled Monument (SM 57) to the southwest, further restricting opportunity for realignment in this area. Moving towers further down the hill in this

location would also bring them closer to residential properties and potentially increase their visual impact. SSEN Transmission therefore considers the Proposed Alignment to be the least impactful solution in this area. Any tower movements to the east are not considered to significantly reduce the potential effect on the Scheduled Monument and would introduce other environmental constraints regarding residential properties and the GDL.

1.4 South Leylodge Steading Stone Circle (SM 12350)

- 1.4.1 The Proposed Development would be seen passing the monument on its western side running from the southwest to the northeast. Existing OHL infrastructure is already present in this area including the Kintore to Tealing 275 kV OHL passing around 110 m to the west of the Scheduled Monument, and the existing Kintore to Craigiebuckler 132 kV OHL passing around 160 m to the east of the Scheduled Monument (as shown on **Plate 10.12.4: Showing the existing OHL arrangements and the Proposed Development (black line) in proximity to the South Leylodge Steading Stone Circle (brown circle).**)

Plate 10.12.4: Showing the existing OHL arrangements and the Proposed Development (black line) in proximity to the South Leylodge Steading Stone Circle (brown circle).



- 1.4.2 To accommodate the Proposed Development, the existing Kintore to Tealing 275 kV OHL is to be realigned and will be diverted to the east of its current alignment. Part of the Kintore to Craigiebuckler 132 kV OHL will be undergrounded (to the east of the B977 road). The Proposed Development will run in parallel immediately adjacent to the realigned Kintore to Tealing 275 kV OHL. Options to align both the Proposed Development and the Kintore to Tealing 275 kV OHL in this area are further constrained by the proposed Kintore Hydrogen Production Facility (Aberdeenshire Council planning reference: APP/2024/1604) and to a lesser extent, the South Leylodge Farm Battery Energy Storage System (BESS) development (Aberdeenshire Council planning reference: APP/2022/2022) which are presented on **Volume 3, Figure 5.1.5: Cumulative Developments.**
- 1.4.3 The Proposed Development will operate at 400 kV and is not considered suitable for undergrounding due to the constraints associated with the economic and operability effects. Please refer to **Volume 1, Chapter 4: Alternatives and the Routeing Process** on the challenges of undergrounding at 400 kV. There is the potential for the undergrounding of the existing Tealing to Kintore 275 kV OHL. The cost and technical challenges of undergrounding

the 275 kV would be similar to that outlined for 400 kV in **Volume 1, Chapter 4: Alternatives and the Routeing Process** but to a lesser extent due to the lower voltage and capacity. However, this would incur significant cost and as the Proposed Development cannot be realigned, it would still be in relative proximity to the Scheduled Monument. Undergrounding of the existing 275 kV OHL would incur significant cost and technical complexity and is unlikely to significantly reduce the impact on the Scheduled Monument.

- 1.4.4 SSEN Transmission considers that there is no opportunity to realign either the Proposed Development or the Kintore to Tealing 275 kV OHL further away from the Scheduled Monument due to the existing constraints of properties, third party developments and the proximity to Kintore Substation where the OHLs must connect into.