Volume 4: Appendix 8.4 – Balkemback Cottages Stone Circle Technical Constraints

Scottish & Southern Electricity Networks

TRANSMISSION

Emmock and Tealing Overhead Line Tie-ins

Environmental Impact Assessment (EIA)

Volume 4 | Appendix 8.4

Balkemback Cottages Stone Circle

Technical Constraints

September 2025

Scottish & Southern Electricity Networks

TRANSMISSION

CONTENTS

LIST OF ABBREVIATIONS

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 2, Chapter 3: Project Description** of the EIAR for full details of the Proposed Development and with **Volume 2, Chapter 8: Cultural Heritage**.

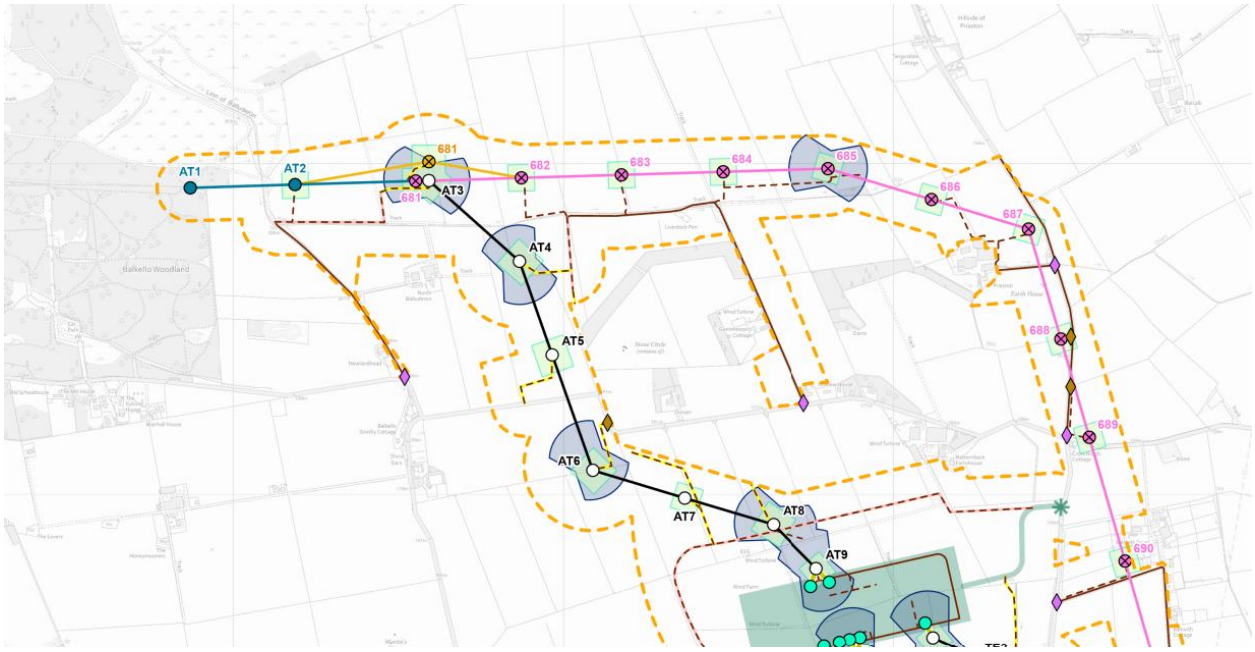
1.1.2 This appendix provides more detailed information relating to the Scheduled Monument (SM) Balkemback Cottages Stone Circle (SM 2686). In their Scoping Opinion on the Proposed Development, Historic Environment Scotland (HES) noted that it would be located <250 m from SM2686, and therefore there is the potential for impacts upon its setting, including potential cumulative effects with existing and other future proposed transmission overhead line (OHL) infrastructure. This document presents the technical constraints in proximity to these Scheduled Monuments.

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 northwest to the southwest, and then past the south of the SM.

1.2.2 This Proposed Development, the Kintore to Tealing 400 kV OHL and the proposed Alyth to Tealing 400 kV OHL Upgrade, run in close proximity to this SM as they progress south to the proposed Emmock substation as shown on **Plate 8.4.1: Proposed Development.** 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 pink line in **Plate 8.4.1** below).

Plate 8.4.1: Proposed Development



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1.2.3 The OHLs shown on **Plate 8.4.1** 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 2, Chapter 4: Consideration of Alternatives** on the challenges of undergrounding at 400 kV and 275 kV.

1.2.4 SSEN Transmission has concluded that it is not possible to realign the OHLs due to the existing constraints located to their proximities 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 Cottages Stone Circle as well as scattered properties around Balkemback and Prieston. Moving even further to the east would introduce further properties around Balnuith and Balcalk.

Therefore, the proposed OHL alignment is considered to represent the best solution in light of these identified constraints.

1.3 Alternatives

1.3.1 Alternatives to the Proposed Development being an OHL were considered, and ruled out, for the following reasons;

- A Do Nothing Scenario was ruled out. The Proposed Development is of national importance, contributing significantly towards the delivery of the UK Government's Net Zero Targets, and reducing the UK's dependence on imported oil and gas. In a Do Nothing scenario, when considered holistically with surrounding developments, the UK Government's targets of 50 GW of offshore wind generation and Net Zero by 2030 could not be met. A Do Nothing scenario specific to this Proposed Development would involve the Emmock & Tealing substations remaining disconnected, and the required re-routing of existing OHLs would not take place, and with the Kintore to Tealing 400kV OHL intersecting with the existing Alyth to Tealing OHL.
- Underground Cabling (UGC) was considered. A benefit of UGC is that it can reduce landscape and visual impacts by removing the need for OHL infrastructure (although it can give rise to different environmental impacts). However, in order to deliver the necessary capacity for the Proposed Development, which requires a three phase 400 kV double circuit, up to 30 parallel cables would be required underground. For electrical and thermal reasons, these cables need to be suitably separated apart. To achieve this, a group of trenches at a combined width of over 40 m would need to be excavated at a depth of up to 3 m. A working corridor of over 70 m width would be needed to accommodate this which would not only cause other environmental impacts, but could also mean works are within 100 m of SM2868 (see plate 8.4.2), impacting upon its setting during

construction.

Plate 8.4.2: Showing Balkemback Stone Circle (brown circle) and the Proposed Development

1.4 Mitigation

1.4.1 In order to minimise adverse impacts on SM2868, it will be fenced off if necessary, to mark its presence to construction workers. Archaeological monitoring will also take place during construction to increase scrutiny on potential heritage impacts.

1.4.2 Once appointed, the Principal Contractor will create, and follow, a Cultural Heritage Management Plan (CHMP), a Visual Impact Management Plan (VIMP), and a Site Restoration Plan (SRP) which will detail mitigation measures designed to minimise the impacts on SM2868, as well as other heritage assets, local residential properties, and any assets with a setting value that may be impacted by construction. These documents will be attached to the Construction Environmental Management Plan (CEMP) and enforced by planning condition.