Scottish & Southern Electricity Networks

TRANSMISSION

Emmock 400kV Substation
Environmental Impact Assessment (EIA)
Volume 4 | Appendix 7.2

Residential Visual Amenity Assessment

November 2024

Scottish & Southern Electricity Networks
TRANSMISSION

CONTENTS

1. INTRODUCTION

The Proposals

1.1.1 This appendix presents a Residential Visual Amenity Assessment (RVAA) which describes the change in views likely to be experienced by residents within 500 m of the proposed Emmock 400 kV substation (hereafter referred to as the 'Proposed Development').

1.1.2 The RVAA should be read in conjunction with **Chapter 7: LVIA** and **Chapter 2: Development of the Proposed Development (Volume 2)** of the EIA Report for full details of the Proposed Development.

1.1.3 This appendix is supported by **Figure 7.2.1** (**EIA Report Volume 3**).

Requirement for the Report

1.1.4 The RVAA was undertaken in accordance with the principles contained within the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3)[1] and Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19 (LI TGN 2/19)[2]. GLVIA3 notes the need for a 'residential amenity assessment' to consider the effects of development on views from private properties (GLVIA3, Page 107, Para. 6.17). This is noted to include an assessment of visual effects, although is separate from LVIA.

1.1.5 LI TGN 2/19 explains that "*the purpose of RVAA is to provide an informed, well-reasoned answer to the question: 'is the effect of the development on Residential Visual Amenity of such nature and / or magnitude that it potentially affects 'living conditions' or 'Residential Amenity'?*'" (LI TGN 2/19, Page 5, Para. 2.1).

1.1.6 The RVAA does not consider other components of residential amenity, or 'living conditions', such as noise, dust or shadow flicker, which are considered in the appropriate chapters of the EIA Report.[3]

1.1.7 Findings of significant effects on views or visual amenity from a property do not automatically imply the need for further assessment. However, for properties likely to experience a medium or high magnitude of visual change and which are in proximity to a development, undertaking an RVAA may be appropriate, and the findings of the assessment will be a material consideration in the decision making process.

1.1.8 The methodology for the RVAA is set out below along with the scope of the assessment. The findings of the assessment are presented in tabular format and the assessment concludes with a summary of the findings.

Terminology and Study Area

1.1.9 The following terminology is used throughout this report:

- Proposed Development – the Emmock 400 kV air insulated substation located on a level platform, associated earthworks, access, drainage, landscaping, security and temporary construction compounds. and its associated elements including access tracks and landscape mitigation.
- Proposed Substation – the 400 kV air insulated substation only.
- The Site – the area encompassed by the red line boundary, containing the Proposed Development; and
- RVAA Study Area: a 500 m buffer from the Proposed Substation as shown in **Figure 7.2.1.**

[1] Landscape Institute and the Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3).

[2] Landscape Institute (2019). Technical Guidance Note 02/19, Residential Visual Amenity Assessment.(RVAA). [Online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/03/tgn-02-2019-rvaa.pdf.

[3] LI TGN 2/19 notes that "*Residential Amenity comprises a range of visual, aural, olfactory and other sensory components. Development can cause effects on one or more components of Residential Amenity, for example effects of noise, dust, access to daylight, vibration, shadow flicker, outlook and visual amenity. Sometimes this is referred to as 'living conditions*" (paragraph 1.4).

2. METHODOLOGY

2.1.1 The methodology can be summarised as follows:

- Identification of properties to be considered (defining the study area and scope);
- Collation of baseline information from maps and aerial photographs and preparation of wireframe visualisations, to inform field survey;
- Field survey to collate information in relation to baseline views and visual amenity from each property by taking notes and photographs;
- Assessment of the magnitude of change in visual amenity likely to be experienced at the property;
- For properties experiencing a medium or high magnitude of change, a judgement of whether the predicted change in views and visual amenity reaches the 'Residential Visual Amenity Threshold' described in LI TGN 2/19; that is, whether it would adversely affect residential amenity or 'living conditions'; and
- A cumulative RVAA assessment.

2.1.2 The following section sets out the methodology and the factors considered in more detail.

Study Area and Scope

2.1.3 The assessment focuses on consideration of the changes in views and visual amenity from all residential properties within approximately 500 m of the Proposed Substation, as defined by the Proposed Substation fence line (refer to Figure 7.2.1). For completeness, a number of properties slightly beyond 500 m of the Proposed Substation have been included within the scope of this RVAA. The scope was informed by experience, observations made on-site and an understanding of the Proposed Development. Although there is the potential for significant visual effects to occur for other properties beyond 500 m, such effects are not considered likely to breach the residential visual amenity threshold and therefore have not been considered in this assessment.

2.1.4 Residential properties were identified using Ordnance Survey (OS) AddressBase Plus data and verified in the field. Properties, including their curtilage and access drives, with no theoretical visibility (as indicated by the ZTV in **Figure 7.2.1**) were not considered in the RVAA. Residential properties are included regardless of whether or not they are permanently occupied as dwellings, and whether or not they are financially involved with the Proposed Development, as their current use and ownership may change in the future. Properties that are included in the RVAA are listed in Error! Reference source not found.**: Properties Considered in Assessment** and shown in **Figure 7.2.1**. Properties are considered either as individual properties or as a group where properties have similar geographic locations and deemed likely to experience similar views.

Desktop Studies

2.1.5 For the purposes of this RVAA, the baseline visual amenity experienced at a property is made up of a combination of the type, nature, extent and quality of views that may be available from the property and its domestic curtilage (e.g., gardens and access drives).

2.1.6 OS maps, aerial imagery and Google Streetview were used for desktop research to assist with recording information such as the location of the residential elements of each property, the orientation of the property, and the extent of its curtilage.

2.1.7 In considering baseline visual amenity, the following was examined:

- The nature and extent of the available existing views (including main/principal views) from the property and its garden, including the proximity and relationship of the property to surrounding landform, landcover and visual foci; and
- Views experienced when approaching or departing from the property via its driveway and/or access roads, if applicable.

Field Surveys

2.1.8 Field surveys were undertaken from publicly accessible locations between November 2023 and September 2024. Locations visited were selected to be as representative as feasible of the view from the properties, and views from the wider area were also considered to inform the setting and likely outlook of properties. The following baseline information was recorded, to the extent that this could be observed without entering private property:

- The orientation and likely views from each property (including principal/primary aspects and presence of windows);

- Layout and orientation of the gardens and property curtilage;
- Access location and orientation, and likely views from private or shared driveways or access tracks;
- The nature of existing views from the properties and their gardens, including the proximity and relationship of the properties to surrounding landform, landcover and visual foci and the scenic quality of views; and
- Potential screening provided by local variations in topography, the built environment and vegetation/tree cover within the surrounding landscape.

2.1.9 Fieldwork was undertaken during both summer and winter months. This enabled the 'maximum case' scenario to be assessed, on the basis that any available screening offered by deciduous vegetation was at a minimum during winter months.

Preparation of Accompanying Visualisations

2.1.10 On the basis of guidance included in LI TGN 2/19, indicative wireline visualisations based on a bare ground digital terrain model were generated from all individual properties considered in this assessment using Blender software.

2.1.11 The 3D development proposal model of the substation was provided in Revit and DXF formats (provided by Balfour Beatty and Omexom August 2024). The models contained the Proposed Substation and connecting OHLs, including proposed pylon locations, ancillary infrastructure and landscape cut and fill.

2.1.12 Cut and fill was provided as part of the 3D model. The perimeter edges of the new landscape model were aligned with the existing LiDAR 2m DTM model, the existing terrain was cut out and replaced with the new landform.

2.1.13 Due to the cumulative OHL model of the pylons being based upon the information available at the time, placeholder towers were used in some locations to represent those still under design. The chosen placeholder tower is AS4_AD_E12+(4x6m LE) and was chosen based on a preliminary design which is subject to change.

2.1.14 The software package Blender version 4.1.0.0 was used to view the Proposed Development from the selected viewpoints. The GIS add-on was used to manage, convert and render terrain models. The models are presented as coloured wirelines for both the Proposed Substation and the cumulative OHL. The terrain is rendered with a grid and basic hill-shading to better understand the landform.

2.1.15 Environment Agency Composite 2 m LiDAR Digital Terrain Model (DTM) was used to obtain accurate z value heights for all viewpoint locations. This data has a vertical accuracy of +/-15cm. This data provided a detailed and reliable representation of the topography for the model views.

2.1.16 Adobe InDesign© software was used to present the figures. The dimensions for each image (printed height and field of view) are in accordance with the NatureScot 2017 guidance requirements. Viewpoint information and viewing instructions are provided on each page.

2.1.17 Each Viewpoint is presented as a 53.5˚ wireline to illustrate the wider landscape and visual context. These are shown in planar projection and are presented on an A1 width page.

Assessment of Potential Change to Views and Visual Amenity

Sensitivity of Residential Receptors

2.1.18 GLVIA3 advocates an approach which considers the overall sensitivity of visual receptors (people) in terms of "*both their susceptibility to change in views and visual amenity and also the value attached to particular views*" (GLVIA3, Page 113, Para. 6.31). GLVIA3 also states that the visual receptors most susceptible to change are likely to include "*residents at home*" (GLVIA3, Page 113, Para. 6.33).

2.1.19 Taking account of the purposes of this RVAA, and taking a precautionary approach, all people at their place of private residence, despite the use, frequency of use and ownership of these residences, are considered to be of high sensitivity to changes in their views and visual amenity. As a consequence, no individual assessment of sensitivity is outlined in the assessment which follows.

Magnitude of Change to Views and Visual Amenity

2.1.20 The likely changes in views and visual amenity as a result of the Proposed Development are considered with reference to the individual wireframes from each property/ property group (see Wirelines P1-G1). A judgement on the magnitude of visual change

which would be experienced is made, and the change in views summarised, with reference, as appropriate, to the following factors which are set out in GLVIA3 (Page 115, Para. 6.39-6.40):

- "*Scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the Proposed Development;*
- *degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture;*
- *angle of view in relation to the main activity of the receptor;*
- *distance of the viewpoint from the Proposed Development; and*
- *extent of the area over which the changes would be visible*."

2.1.21 The following additional factors are specific to the type of development proposed:

- Type and nature of the available view (e.g. panoramic, framed);
- Relative size and proximity of the Proposed Substation;
- Position of substation in views from the property e.g., whether in the principal/primary outlook from the property;
- Proportion of the view occupied by the Proposed Substation; and
- Direction (including the aspect) of the view affected.

2.1.22 For each property, the evaluation consists of:

- A description of the property and of its location and context;
- A description of the likely existing available views and visual amenity from the property and its domestic curtilage, including gardens and private or shared access drives; and
- A description of the likely effect on views and visual amenity resulting from the Proposed Development.

2.1.23 Informed by the preparatory desk work and supported by maps and wireframes, an assessment was undertaken during field surveys of the magnitude of the likely change in visual amenity that may result from the introduction of the Proposed Development into the view(s) from each property.

2.1.24 Magnitude of visual change is expressed on a relative scale, as set out in **Table 2.1: Magnitude of Change in Views and Visual Amenity**, which highlights the differences between the types of change experienced in views from residential properties examined as part of this RVAA. The existing view from each property is described, and the likely relative magnitude of change (high, medium, low, barely perceptible) arising from the Proposed Development in the same view is determined. The nature of existing and predicted views (open, enclosed, panoramic, focused, framed etc.) affects the relative magnitude of change and is taken on board in reaching that judgement. The RVAA looks at the range of views likely to be available from the house and its curtilage and considers potential effects on all of these and whether the Residential Visual Amenity Threshold would be breached for the property as a whole.

Table 2.1: Magnitude of Change in Views and Visual Amenity

Magnitude of Change in Visual Amenity	Description
High	The Proposed Development would be a key/defining element in the view.
Medium	The Proposed Development would be clearly visible but would not be a key/defining element of the view.
Low	The Proposed Development would be visible and would form a minor element of the view.
Barely Perceptible	The Proposed Development may go unnoticed as a minor element of the view or is not visible.

The Residential Visual Amenity Threshold

2.1.25 The RVAA concludes, for properties predicted to experience a medium or high magnitude of change, with a judgement as to the potential effect on 'living conditions', or residential visual amenity. Such an effect would correspond to a breach of the 'Residential Visual Amenity Threshold' as described in LI TGN 2/19. It is intended that this judgement may assist the decision

maker in coming to the wider planning judgement on overall residential amenity, when considered alongside potential effects on other components.

2.1.26 While there is no detailed guidance on how to determine the Residential Visual Amenity Threshold, LI TGN 2/19 recommends terminology and descriptors that have previously been used. Planning decisions quoted in LI TGN 2/19 use terms such as 'overwhelming', 'oppressive', 'overbearing' and 'unavoidable'. Professional judgement is used to determine whether the Proposed Development would give rise to such effects in each case. Unlike Landscape and Visual Impact Assessment (LVIA), a judgement on the 'significance' of effects is not determined for RVAA and instead a judgement is made on whether the Residential Visual Amenity Threshold is likely to be breached.

2.1.27 For properties experiencing a magnitude of change of low or barely perceptible, it is considered that there is no potential for 'living conditions' to be affected, and this final stage is therefore not undertaken.

3. PROPERTIES CONSIDERED IN THE ASSESSMENT

3.1.1 Fifteen residential properties were identified within or slightly beyond 500 m of the Proposed Substation, using mapping, address data and field visits. Seven of these 15 are considered individually while the rest are considered as two groups. A ZTV analysis confirmed theoretical visibility from all 15 locations. **Table 3.1: Properties Considered in Assessment** lists all the properties/ property groups which were examined as part of this study and these are also shown on **Figure 7.2.1**. For each property/ property group, **Table 3.1: Properties Considered in Assessment** contains a reference number, the property name (as informed by OS AddressBase Plus data) and details of location. Computer modelling was used to provide details of distance, viewing direction and potential visibility of the Proposed Substation. This potential visibility is illustrated in the illustrative **Wirelines P1-P7** and **G1-G2** appended at the end of this appendix.

3.1.2 Following site survey and analysis of illustrative wirelines, notes were prepared for each of the properties/ property groups and the potential magnitude of change which would be experienced. Where the magnitude of change is judged to be below medium, i.e. low or barely perceptible, commentary on these findings is provided in **Table 3.1: Properties Considered in Assessment**, and these receptors are not carried forward into the detailed RVAA in **Section 4: Assessment of Effects on Residential Visual Amenity**.

Table 3.1: Properties Considered in Assessment

Reference	Name	Easting	Northing	Approximate Distance to Proposed Substation from Property	Magnitude of Change and Commentary
Individual Properties/ Property Groups					
P1	Balkemback Farmhouse	339175	738095	250 m	**High – considered further in assessment.**
P2	1 Balkemback Farm Cottages	339007	738209	395 m	**High – considered further in assessment.**
P3	Cross Roads Cottage	339536	738153	470 m	Low – intervening undulating landform and hedgerow along boundary of adjacent field to the west would largely filter views of the Proposed Development. Not considered further.
P4	2-3 Balkemback Farm Cottages	338934	738311	510 m	Low – an evergreen hedgerow along the southern boundary of the curtilage would largely screen views of the Proposed Development. Not considered further.
P5	4 Balkemback Farm Cottages	338836	738314	530 m	Low – a mixed hedgerow and trees surrounding the property curtilage would largely screen views of the Proposed Development. Not considered further.
P6	Dunian	338323	738277	615 m	**Medium – considered further in assessment.**
P7	Wynton Works	338277	737020	540 m	**Medium – considered further in assessment.**
G1	Hillview House and 5 and 6 Balkemback Farm Cottages (three properties)	338773	738301	540 m	**Medium – considered further in assessment.**

Reference	Name	Easting	Northing	Approximate Distance to Proposed Substation from Property	Magnitude of Change and Commentary
G2	Balnuith (five properties)	339819	737776	605 m	Low – small pockets of deciduous woodland and trees, and mixed vegetation surrounding most of these properties would largely screen views of the Proposed Development. Where properties do have visibility, the Proposed Development would occupy a relatively small horizontal extent of the view and at a distance where it is unlikely that the residential visual amenity threshold would be breached. Not considered further.

4. ASSESSMENT OF EFFECTS ON RESIDENTIAL VISUAL AMENITY

4.1.1 This section sets out the detailed assessment of effects on views and visual amenity for each individual property/ property group taken forward for detailed assessment as per **Table 3.1: Properties Considered in Assessment**. The tables below present the detailed assessments. The assessment should be read in conjunction with the accompanying illustrative wirelines (refer to **Wirelines P1-P7** and **G1-G2**).

Table 4.1: P1: Balkemback Farmhouse

P1: Balkemback Farmhouse	
Property Name	Balkemback Farmhouse Refer to **P1 Wireline**
Grid Reference	339175, 738095
Direction to the Proposed Development	Southwest
Approximate Distance From the Property (data point) to the Proposed Substation	170 m
Description of Property, Location and Context	
▪ A two-storey early 20th century Category C listed farmhouse to the east of the Site. ▪ Orientated to the north and south. ▪ Situated within Balkemback Farm, with separate large barns and agricultural buildings to the northwest and west. ▪ Gardens to the east and south comprising lawns and formally tree and shrub planting. ▪ Deciduous and evergreen trees surround the property to the north, east and west. ▪ Accessed via a private driveway that connects to the minor road to the north.	Aerial Map 
 Principal elevation of property orientated to the south	
Description of Existing Views and Visual Amenity	

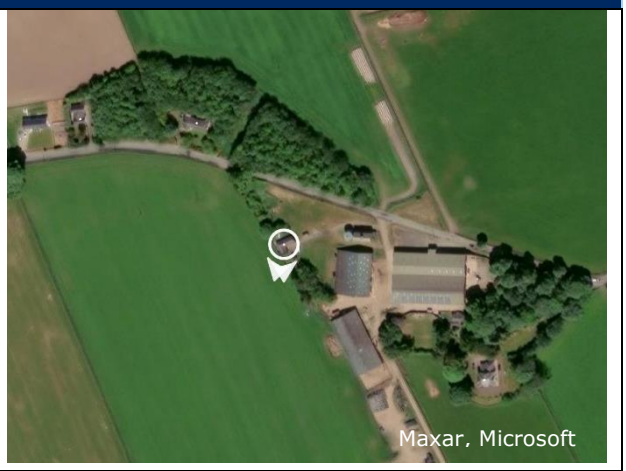
P1: Balkemback Farmhouse
The primary elevation of the property appears to be south. Views from this elevation are relatively open and overlook the gently descending landform in the foreground and middle distance, backed by rising fields with scattered deciduous trees in the middle-far distance which form most of the southern skyline. Beyond this landform, there are some glimpsed views of more distant hills to the south. In oblique views southwest towards the Site from the southern elevation and from parts of the southern and eastern curtilage, the property overlooks the surrounding descending agricultural fields and two domestic scale wind turbines in the middle distance. These views are likely to be partially obscured by intervening deciduous trees to the west of the property. Additionally, steel lattice towers associated with an existing high voltage overhead line (OHL) are visible in the middle distance to the south as they extend across the view in an east-west orientation. Farm buildings and polytunnels associated with other farms to the south are visible across some fields in middle and longer distance views. To the southeast, Tealing Substation and Seagreen Substation are visible from the principal elevation in the middle distance. Views north, east and west are enclosed by mixed trees and vegetation along the northern, eastern and western property boundaries.
Description of Likely Effects on Views and Visual Amenity as a Result of the Proposed Development
The Proposed Development would be visible in oblique views to the southwest from the principal (southern) elevation of this property as well as from some southern and eastern parts of the property curtilage. In these views, the Proposed Substation would be seen at distances of approximately 170m beyond a foreground of fields and extending above earth bunds that form part of the landscape mitigation. At this distance, the Proposed Substation would form a prominent feature in principal views from this property and would occupy a wide horizontal extent of the view (approximately 60 degrees) in the years before proposed mixed and deciduous woodland planting on the bunds has fully established. Intervening landform together with the earth bunds would partially screen the lower parts of the Proposed Substation. Deciduous trees along the western curtilage boundary are likely to filter views of the western extent of the Proposed Substation. Given its position in lower lying landform compared to the property, and the relatively low height of the substation components, the Proposed Substation would occupy a small extent of the view vertically and would not be seen to break the southern skyline. Over time, visibility of the Proposed Substation would reduce further once the proposed woodland planting on the bunds establishes and provides further screening, helping to better integrate the Proposed Development into the surrounding agricultural context. This would also help to reduce the overall prominence of the Proposed Development. Views to the north, east, southeast and west would remain unchanged.
RVAA Findings
The magnitude of change would be **high**. The Proposed Development would be visible in close proximity views and would form a prominent feature in views to the southwest from the principal elevation of this property and from parts of the gardens. The bunding, and proposed woodland planting once established, would partially screen the Proposed Substation. Despite the prominence of the Proposed Development in principal views, it is not judged to appear overwhelming or oppressive given that visibility of the Proposed Substation would be reduced by bunding, and eventually woodland planting, and would sit relatively low in the landscape, back-clothed by distant landform. Therefore, the Proposed Development **would not breach the residential visual amenity threshold.**

Table 4.2: P2: 1 Balkemback Farm Cottages

P2: 1 Balkemback Farm Cottages	
Property Name	1 Balkemback Farm Cottages Refer to **P2 Wireline**
Grid Reference	339007, 738209
Direction to the Proposed Development	South and southwest
Approximate Distance From the Property (data point) to the Proposed Substation	300 m
Description of Property, Location and Context	
▪ An L-shaped single-storey property along the northeastern boundary of the Site. ▪ Orientated to the northwest and southeast. ▪ Three small sheds to the north, east and south of the property.	Aerial Map

P2: 1 Balkemback Farm Cottages

- Curtilage comprises areas of open grassland to the north and east, with the western curtilage boundary defined by a low stone wall.
- Small pockets of deciduous and evergreen trees are located to the north and south of the property.
- A domestic scale wind turbine is located to the south of the southern pocket of woodland.
- Several large barns and agricultural buildings to the east at Balkemback Farm.
- Accessed via a private driveway to the northeast that connects to a minor road to the north.



View looking west towards the eastern elevations of the property

Description of Existing Views and Visual Amenity

The primary elevation of the property is unknown. Views to the south, in the direction of the Site, overlook the southern parts of the curtilage and shed to the south which form the foreground view. Beyond this, views to the south are largely contained by the pocket of mixed woodland to the south of the property. To the west and southwest, views from the western elevation and parts of the northern and southern curtilage are more open and overlook adjacent agricultural fields in the foreground and middle distance, backed by rising fields with scattered deciduous trees that form the distant skyline. In these directions, a number of man-made vertical elements are visible including a wood pole line that extends from the foreground to the distance in the west, two domestic scale wind turbines in the middle distance to the southwest, and an existing high voltage OHL that crosses the middle distance in an east-west orientation. Views to the north are generally contained by the woodland immediately north of the property as well as a dense pocket of deciduous woodland that lines the northern side of the minor road to the north. To the east, views overlook the open grassland that forms the eastern part of the curtilage. Longer distance views are obscured by the adjacent agricultural buildings to the east. To the north east, from both the property and driveway, steel lattice towers associated with an existing OHL to the north of the property can be seen in the middle distance, in a gap between intervening woodland and the adjacent farm buildings.

Description of Likely Effects on Views and Visual Amenity as a Result of the Proposed Development

The Proposed Development would be visible in oblique views to the west and southwest from the western elevation of the property and parts of the northern and southern curtilage. In these views, the Proposed Substation would be seen at distances of approximately 300m beyond a foreground of fields and extending above earth bunds that form part of the landscape mitigation. The Proposed Substation would be seen as a prominent feature in views from this property and would occupy a wide horizontal extent of the view (approximately 45 degrees) in the years before proposed mixed and deciduous woodland planting on the bunds has fully established. Intervening landform together with the earth bunds would partially

P2: 1 Balkemback Farm Cottages
screen lower parts of the Proposed Substation. The pocket of mixed woodland to the south of the property would largely screen views of the Proposed Development in views directly south from this property. Given its position in lower lying landform compared to the property, and the relatively low height of the substation components, the Proposed Substation would occupy a small extent of the view vertically and would not be seen to break the southern skyline. Over time, visibility of the Proposed Substation would reduce further once the proposed woodland planting on the bunds establishes and provides further screening, helping to better integrate the Proposed Development into the surrounding agricultural context. This would also help to reduce the overall prominence of the Proposed Development. Views to the north and east would remain unchanged.
RVAA Findings
The magnitude of change would be **high**. The Proposed Development would be visible in close proximity views and would form a prominent feature in oblique views to the west and southwest from the western elevation of this property and from parts of the curtilage. The bunding, and proposed woodland planting once established, would partially screen the Proposed Substation. Despite the prominence of the Proposed Development in views from the property, it is not judged to appear overwhelming or oppressive given that visibility of the Proposed Substation would be reduced by bunding, and eventually woodland planting, and would sit relatively low in the landscape, back-clothed by distant landform. Therefore, the Proposed Development **would not breach the residential visual amenity threshold.**

Table 4.3: P6: Dunian

P6: Dunian	
Property Name	Dunian Refer to **P6 Wireline**
Grid Reference	338323, 738277
Direction to the Proposed Development	Southeast
Approximate Distance From the Property (data point) to the Proposed Substation	530 m
Description of Property, Location and Context	
▪ 1.5 storey property on the northern side of the minor road to the north of the Site. ▪ Orientated to the north and south. ▪ Small shed to the north and gardens to the south (front), north (rear) and west with driveway to the east, accessed from the minor road to the south. ▪ A block of coniferous forestry surrounds the property to the north, east and west.	Aerial Map 

P6: Dunian
 Principal elevation of property orientated to the south
Description of Existing Views and Visual Amenity
The principal elevation of this property appears to be to the south, towards the Site. Views from this elevation and from the front garden and driveway are generally open and offer views across the pastoral field and minor road in the foreground to the south. South of the minor road, the gently descending landform of arable fields forms the middle distance. In these views, existing vertical infrastructure is visible including wood pole OHLs in the foreground, and larger scale high voltage OHLs with steel lattice towers and two domestic scale wind turbines in the middle distance. In longer-distance views to the south, rising fields with scattered deciduous trees and shelterbelts form most of the southern skyline, with glimpsed views of more distant hills beyond. To the southeast, Tealing Substation and Seagreen Substation as well as some chicken sheds and polytunnels are partially visible in the middle distance. Views to the north, east and west from the property and most of the curtilage are screened by the coniferous forestry that surrounds the property in these directions.
Description of Likely Effects on Views and Visual Amenity as a Result of the Proposed Development
The Proposed Development would be visible on the lower lying land to the south from the principal (southern) elevation this property, and from the front garden and driveway to the south and east. In these views, parts of the Proposed Substation would be seen at a distance of approximately 530 m extending above earth bunds that form part of the landscape mitigation that partially screen the Proposed Substation. From the lower storey of the property, and parts of the curtilage, visibility of the Proposed Development is likely to be reduced due to garden vegetation and hedgerows along the boundary. Open views from the upper storey of the property are likely. In the early years of operation, before proposed mixed and deciduous woodland planting on the bunds fully establishes, the Proposed Substation would occupy a relatively wide horizontal extent of the view (approximately 40 degrees) and would form a prominent feature in the view. Given its position in lower lying landform compared to the property, and the relatively low height of the substation components, the Proposed Substation would occupy a small extent of the view vertically and would not be seen to break the southern skyline. Over time, visibility of the Proposed Substation would reduce further once proposed woodland planting on the bunds establishes and provides further screening. The lower position of the Proposed Development in the landscape, together with the grass covered earth bunds, would help integrate the Proposed Development into the surrounding agricultural landscape and as such would help to reduce the prominence of the Proposed Development in views from this property. Views to the north, east and west would remain unchanged.
RVAA Findings
The magnitude of change would be **medium**. The Proposed Development would be visible from the southern elevations of the properties and from front gardens and driveways. The bunding, and proposed woodland planting once established, would partially screen the Proposed Substation. The screening provided by the bunding and the position of the Proposed Development on lower lying landform would reduce the prominence of the Proposed Development, and as such, it is not judged to appear overwhelming or oppressive. Therefore, the Proposed Development **would not breach the residential visual amenity threshold.**

Table 4.4: P7: Wynton Works

P7: Wynton Works	
Property Name	Wynton Works Refer to **P7 Wireline**
Grid Reference	338277, 737020
Direction to the Proposed Development	Northeast
Approximate Distance From the Property (data point) to the Proposed Substation	530 m
Description of Property, Location and Context	
▪ Single or 1.5 storey property located to the southwest of the Site and to the east of Wynton Wood. ▪ Orientated to the north and south. ▪ Gardens to the north, south, east and west with limited vegetation screening. ▪ Accessed via a private track that connects to the minor road to the west.	Aerial Map 
 Principal elevation of property orientated to the north	 View looking east towards the western elevation of the property
Description of Existing Views and Visual Amenity	
The principal elevation of this property appears to be to the north. Views from this elevation and from the surrounding gardens/curtilage are open and overlook a foreground of adjacent arable and pastoral fields. In the middle distance a high voltage OHL is visible crossing from east to west over fields to the north. In longer distance views to the north, ascending arable and pastoral fields can be seen as they rise to meet the Sidlaw Hills, which contain any further views northwards. A number of masts on the summit of Craigowl Hill are visible. To the east, views overlook a patchwork of fields with a number of further high voltage OHLs visible in the middle-longer distance. Views of polytunnels in the middle distance and glimpsed views of Tealing Substation and Seagreen Substation beyond are also likely in this direction. To the west views overlook adjacent pastoral fields with Wynton Wood occupying some of the middle distance, with further visibility of the OHL to the north. To the south the view is largely occupied by the adjacent pastoral fields, with scattered deciduous trees and shelterbelts across visible across rising landform. This more distant and elevated landform forms most of the southern skyline, with glimpsed views of more distant hills beyond.	
Description of Likely Effects on Views and Visual Amenity as a Result of the Proposed Development	

P7: Wynton Works
The Proposed Development would be visible in open views to the northeast from the principal (northern) elevation of the property and in oblique views from any windows on the eastern elevation of the property. In these views, the Proposed Substation would be visible at a distance of approximately 530m extending above the intervening earth bunds that form part of the landscape mitigation and screen some of the lower level parts of the Proposed Substation. In the early years of operation, before proposed mixed and deciduous woodland planting on the bunds fully establishes, the Proposed Substation would be seen to occupy a relatively wide horizontal extent of the view (approximately 35 degrees), and together with the earth bunds, would form a notable feature in the view. Given that the maximum height of components of the Proposed Substation are approximately 15 m, the Proposed Substation would not be seen to break the northern skyline in views from this property as they would be backclothed by the Sidlaw Hills. Similar views of the Proposed Development would be experienced from most the property curtilage and access track when travelling towards the property. Over time, when mixed and deciduous woodland planting on the bunds fully establishes, the visibility of the Proposed Substation would be reduced as a larger extent of it will be screened or filtered by the woodland. The prominence of the Proposed Development will also reduce over time as the vegetated nature of the bunding would allow the Proposed Substation to be somewhat integrated into the surrounding agricultural fields. Views to the west and south would remain unchanged.
RVAA Findings
The magnitude of change would be **medium**. The Proposed Development would be visible in close proximity in views to the northeast from the northern and eastern elevations of the property and most of its curtilage. The Proposed Substation would occupy a relatively wide horizontal extent of the view however the bunding and proposed woodland planting once established, would partially screen the Proposed Substation. Although the Proposed Development would be a notable feature in views from this property, it will occupy one view direction and its overall prominence will reduce over time once proposed woodland has established. As such, the Proposed Development is not judged to appear overwhelming or oppressive and **would not breach the residential visual amenity threshold.**

Table 4.5: G1: Hillview House and 5 and 6 Balkemback Farm Cottages

G1: Hillview House and 5 and 6 Balkemback Farm Cottages	
Property Name	Hillview House and 5 and 6 Balkemback Farm Cottages Refer to **G1 Wireline**
Grid Reference	338773, 738301
Direction to the Proposed Development	South
Approximate Distance From the Property (data point) to the Proposed Substation	455 m
Description of Property, Location and Context	
▪ Three properties located along the northern side of the minor road to the north of the Site at Balkemback. ▪ Hillview is a 1.5 storey house with a driveway to the south and gardens to north, south, east and west. ▪ 5 and 6 Balkemback Farm Cottages are both single storey properties with gardens to the south (front) bounded by evergreen hedgerows, and outbuildings to the north (rear). ▪ 5 Balkemback Farm Cottages has a number of deciduous trees within the eastern and southeastern part of the curtilage, as well as a further garden to the north (rear). ▪ All three properties are orientated to the north and south with open views to the south across adjacent arable fields. Open views in other directions are also available.	Aerial Map 

G1: Hillview House and 5 and 6 Balkemback Farm Cottages	
 Principal elevation of Hillview House orientated to the south	 Principal elevation of 5 Balkemback Farm Cottages orientated to the south with evergreen hedgerows and stone wall along southern curtilage boundary
Description of Existing Views and Visual Amenity	
The principal elevation of these properties appears to be to the south, towards the Site. Views from these elevations are generally open and overlook front gardens in the foreground and the gently descending landform of arable fields beyond in the middle distance, in some cases seen above intervening garden hedges. In these views, from both windows and the front gardens, existing vertical infrastructure is visible including wood pole OHLs in the foreground, and larger scale high voltage OHLs with steel lattice towers and two domestic scale wind turbines in the middle distance. A small group of deciduous trees on the southern side of the minor road to the south of these properties is also visible in foreground views. In longer-distance views to the south, rising fields with scattered deciduous trees and shelterbelts are visible, which form most of the southern skyline, with glimpsed views of more distant hills beyond. To the southeast, polytunnels are visible in the middle distance, as well as Tealing Substation, Seagreen Substation and chicken sheds which are visible in more glimpsed views. To the north, views from the northern elevations and northern parts of curtilages/ gardens appear to be relatively open and overlook the gently ascending arable and pastoral fields that rise to meet Craigowl Hill, which contains distant views to the north. In these views, an existing high voltage OHL is visible crossing the fields in an east-west orientation, as well as a number of masts on the summit of Craigowl Hill. To the east, views are largely screened by a block of mixed woodland to the east of Hillview House. To the west, views overlook an adjacent pastoral field, backed by a block of mixed woodland. In these views, and in views from northern parts of curtilages/ gardens, Balkello Hill is visible to the northwest behind Craigowl Hill, with these two hills together forming a prominent skyline to the north, northwest and west.	
Description of Likely Effects on Views and Visual Amenity as a Result of the Proposed Development	
The Proposed Development would be visible to varying extents from each of the three properties in this group on the lower lying land to the south. In some views from principal (southern) elevations and from front gardens and driveways, particularly Hillview House which has open views to the south, parts of the Proposed Substation would be seen at a distance of approximately 455 m extending above earth bunds that form part of the landscape mitigation that partially screen the Proposed Substation. From 5 and 6 Balkemback Farm Cottages views of the Proposed Development may be reduced by evergreen hedgerows along the southern boundary of these properties which would likely provide a degree of screening. In the early years of operation, before proposed mixed and deciduous woodland planting on the bunds fully establishes, the Proposed Substation would occupy a wide horizontal extent of the view (approximately 45 degrees) and would form a prominent feature in the view. Given its position in lower lying landform compared to the properties, and the relatively low height of the substation components, the Proposed Substation would occupy a small extent of the view vertically and would not be seen to break the southern skyline. Over time, visibility of the Proposed Substation would reduce further once proposed planting on the bunds establishes and provides further screening. The lower position of the Proposed Development in the landscape, together with the grass covered earth bunds, would help integrate the Proposed Development into the surrounding agricultural landscape and as such would help to reduce the prominence of the Proposed Development in views from this group of properties. Views to the north, east and west would remain unchanged.	
RVAA Findings	
The magnitude of change would be **medium**. The Proposed Development would be visible in close views to the south from the southern elevations of the properties and from front gardens and driveways. The bunding, and proposed woodland planting once established, would partially screen the Proposed Substation. Although the Proposed Development would be notable in the view, the screening provided by the bunding and the position of the Proposed Development on lower lying	

G1: Hillview House and 5 and 6 Balkemback Farm Cottages
landform would reduce the prominence of it. Therefore, the Proposed Development is not judged to appear overwhelming or oppressive and **would not breach the residential visual amenity threshold.**

Cumulative Effects on Residential Visual Amenity

4.1.2 Any potential future cumulative effects that are likely to impact residential visual amenity would largely be the result of proposed developments listed below that form the Associated SSEN Developments (see **Chapter 5: EIA Process and Methodology** in **Volume 2** of the EIAR):

- Kintore to Tealing 400 kV OHL;
- Alyth to Tealing Tie-in;
- Tealing to Westfield Tie-in; and
- Emmock to Tealing Tie-ins.

4.1.3 The introduction of each of these developments is likely to increase and intensify the presence of overhead lines and man-made development in the landscape and views. Any potential effects on residential visual amenity will be assessed in the respective landscape and visual impact assessments for each project. It is likely however that the combination of all Associated SSEN Developments together would result in significant cumulative effects for each of the properties/ property groups assessed in **Table 4.1-Table** 4.5.

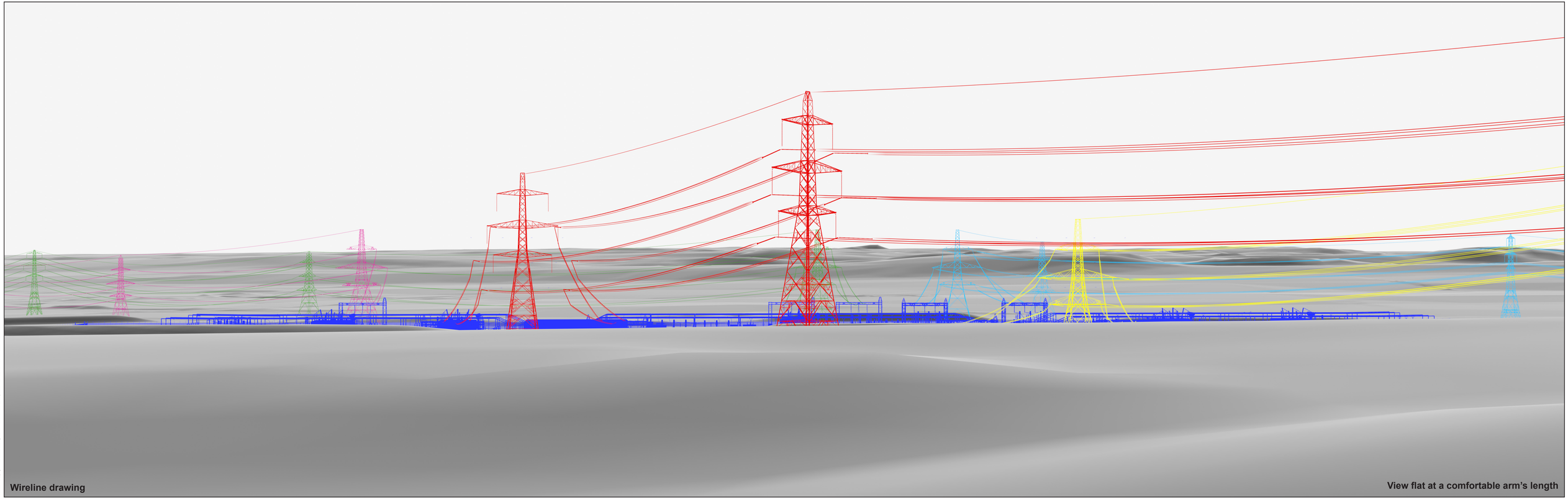
4.1.4 Given the lower position and height of the Proposed Development in comparison to these Associated SSEN Developments listed above in Paragraph 4.1.2, and the partial screening provided by the Proposed Developments' earth bunding and planting, it is considered that the introduction of the Proposed Development in addition to these Associated SSEN Developments would not exacerbate any significant effects on residential visual amenity that may be a result of these cumulative projects or the Proposed Development alone. As such, the presence of the Proposed Development in addition to the other Associated SSEN Developments would not result in the residential visual amenity threshold for any of the properties assessed in this RVAA to be breached.

4.1.5 Other cumulative developments within the RVAA study area including the proposed Fithie Energy Park, immediately east of the Proposed Development, and the proposed Balnuith BESS, approximately 0.5 km to the southeast, may result in some significant cumulative effects on residential visual amenity in combination with the Proposed Development during operation. Typical of battery storage developments, these developments would be low lying, and the Proposed Development would be partially screened by its associated bunding and mitigation planting. As such, the combined effects of these developments are not expected to breach the residential visual amenity threshold for any of the properties assessed in this RVAA. There is however a level of uncertainty attached to this due to the lack of information about the proposed Fithie Energy Park.

5. CONCLUSIONS

5.1.1 Residents at four individual properties and one group of three properties, out of a total of 15 considered in this assessment, would experience a medium or high magnitude of change in the view from parts of their property and/or from their gardens, curtilage and access track. When combined with the high sensitivity of the residential receptor, there is the potential for these residential receptors to experience a significant effect on visual amenity as per the LVIA methodology set out in **Appendix 7.1**.

5.1.2 From each of the five locations assessed, the Proposed Development will form a prominent feature in views, given the proximity or extent of view that it occupies. Due to the position of the Proposed Development in relatively low-lying landscape, and the partial screening afforded by the proposed earth bunding and mixed and deciduous woodland planting on the bunds, none of the residential receptors at these properties would be subject to effects on visual amenity which are judged to be so overwhelming or oppressive that they would breach the Residential Visual Amenity Threshold described in LI TGN 2/19. This RVAA therefore concludes that there are no locations where the Proposed Development would affect the 'living conditions' or residential amenity experienced by the residents, either in isolation or cumulatively.



LUC

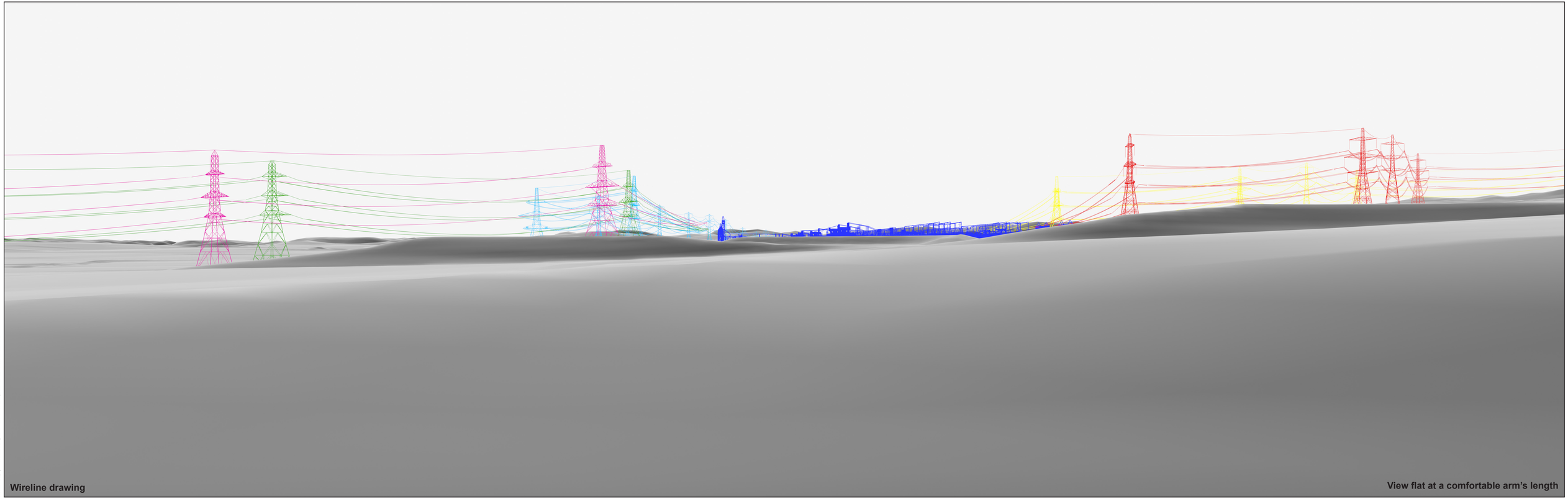
OS reference:	338773E 738301N	Horizontal field of view:	53.5° (planar projection)
AOD:	175.5 m	Principal distance:	812.5 mm
Direction of view:	170°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.53 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property Group 1: Hillview House, 5 and 6 Balkemback Farm Cottages



LUC

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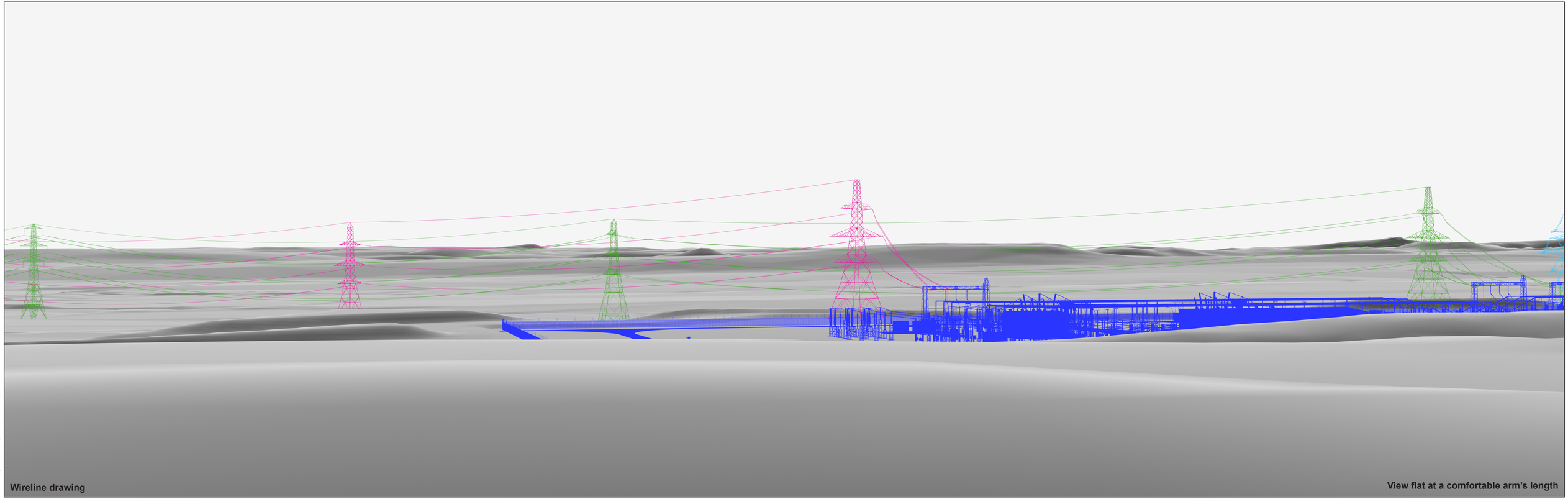
AOD:	136.7 m	Principal distance:	812.5 mm
Direction of view:	260°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.60 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property Group 2: Balnuith



LUC

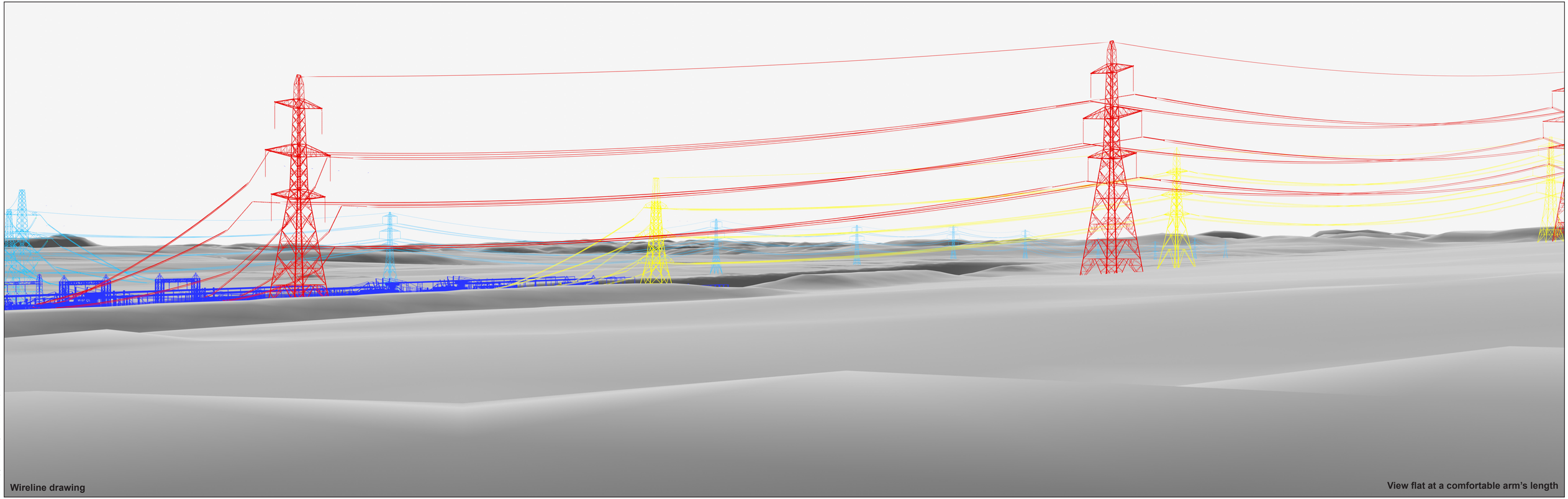
OS reference:	339175E 738095N	Horizontal field of view:	53.5° (planar projection)
AOD:	161.7 m	Principal distance:	812.5 mm
Direction of view:	183.25°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.25 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 1: Balkemback Farmhouse



LUC

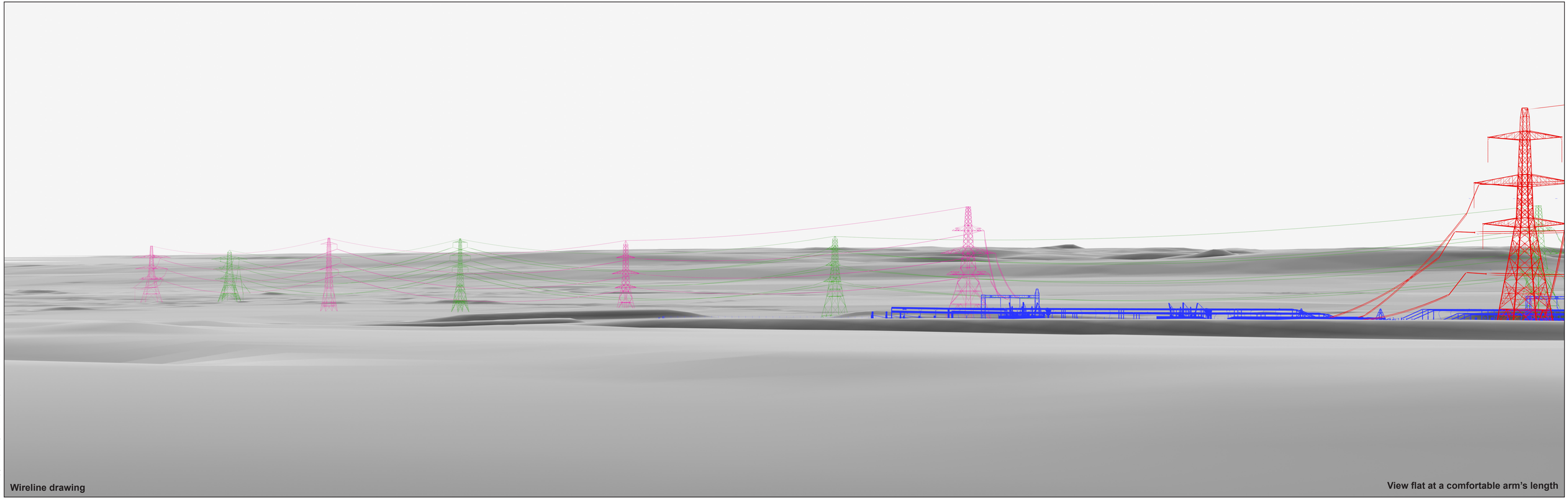
OS reference:	339175E 738095N	Horizontal field of view:	53.5° (planar projection)
AOD:	161.7 m	Principal distance:	812.5 mm
Direction of view:	236.75°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.25 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 1: Balkemback Farmhouse



LUC

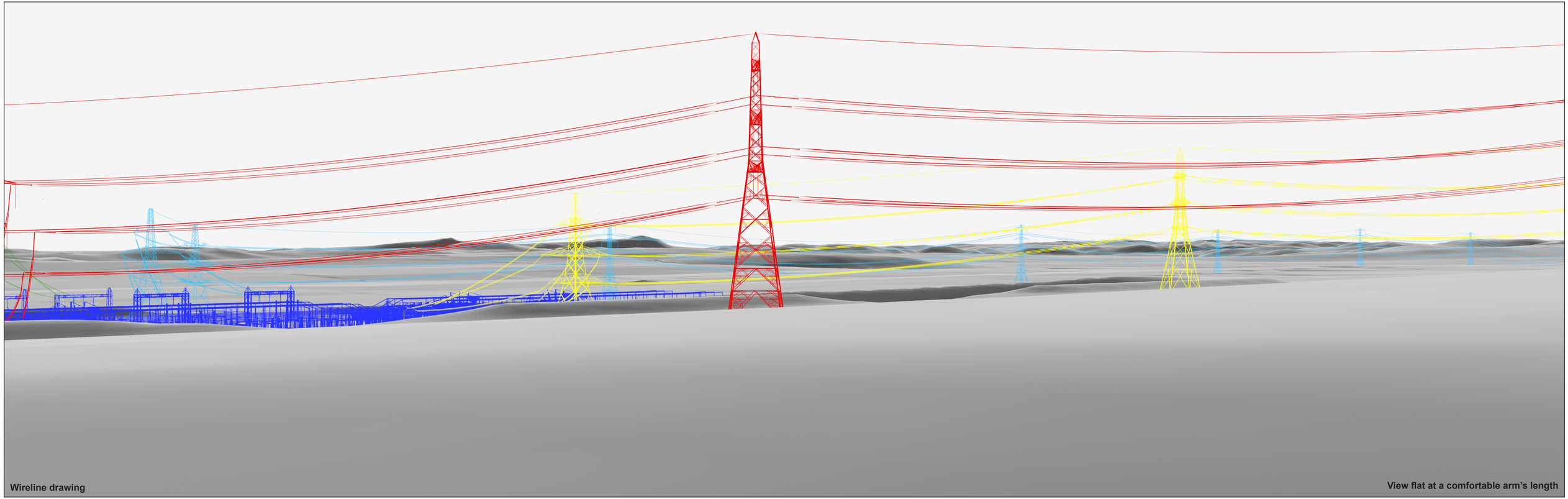
OS reference:	339007E 738209N	Horizontal field of view:	53.5° (planar projection)
AOD:	167.7 m	Principal distance:	812.5 mm
Direction of view:	163.25°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.39 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 2: 1 Balkemback Farm Cottages



LUC

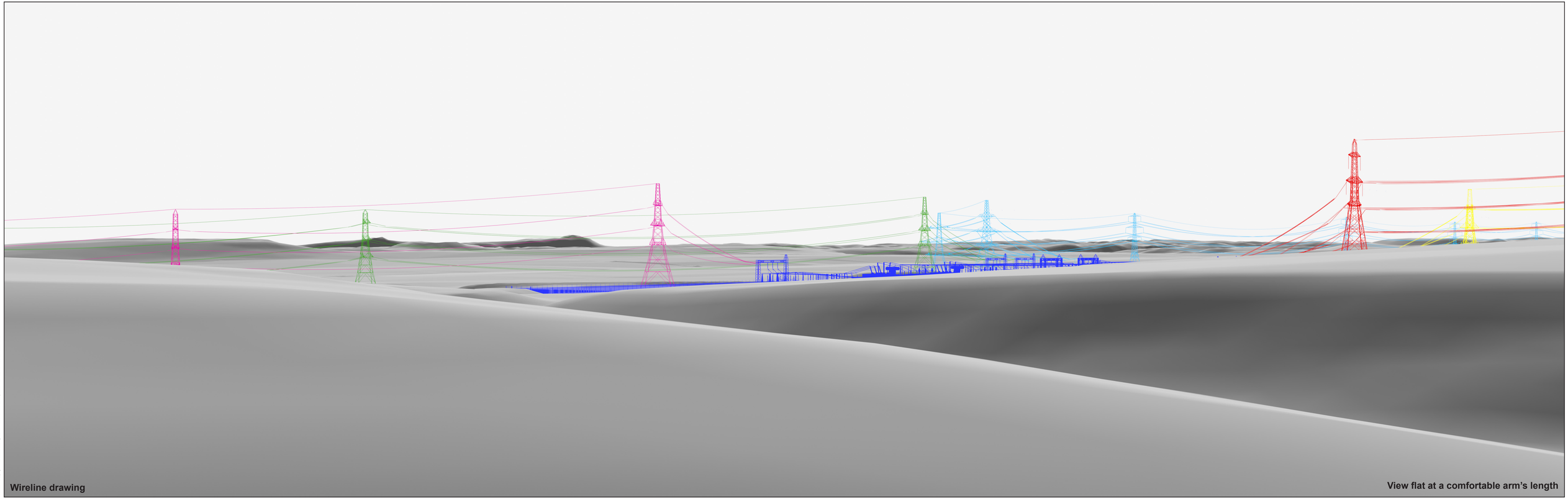
OS reference:	339007E 738209N	Horizontal field of view:	53.5° (planar projection)
AOD:	167.7 m	Principal distance:	812.5 mm
Direction of view:	216.75°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.39 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 2: 1 Balkemback Farm Cottages



LUC

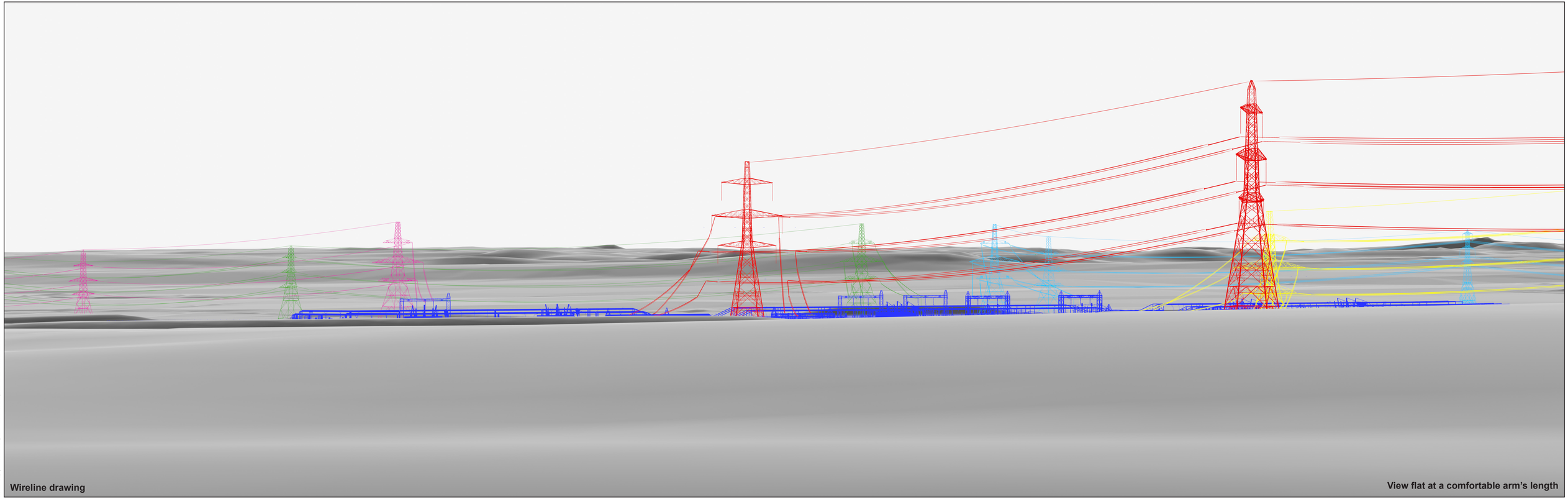
OS reference:	339536E 738153N	Horizontal field of view:	53.5° (planar projection)
AOD:	155.1 m	Principal distance:	812.5 mm
Direction of view:	220°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.47 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 3: Cross Roads Cottage



LUC

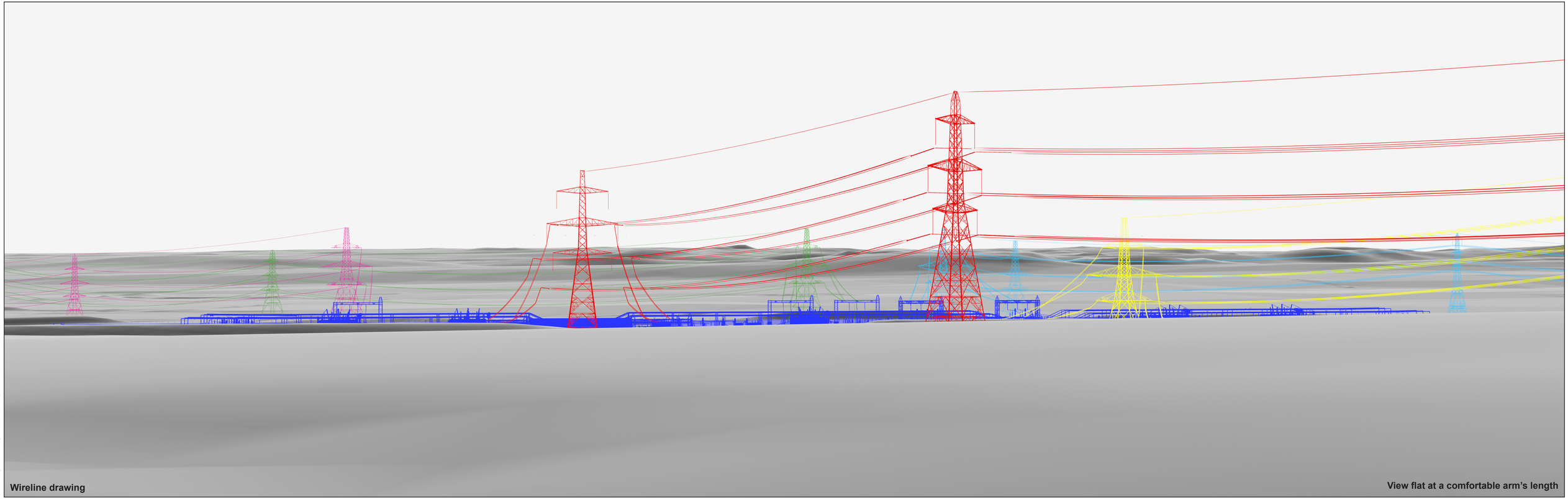
OS reference:	338934E 738311N	Horizontal field of view:	53.5° (planar projection)
AOD:	172.4 m	Principal distance:	812.5 mm
Direction of view:	180°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.50 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 4: 2-3 Balkemback Farm Cottages



LUC

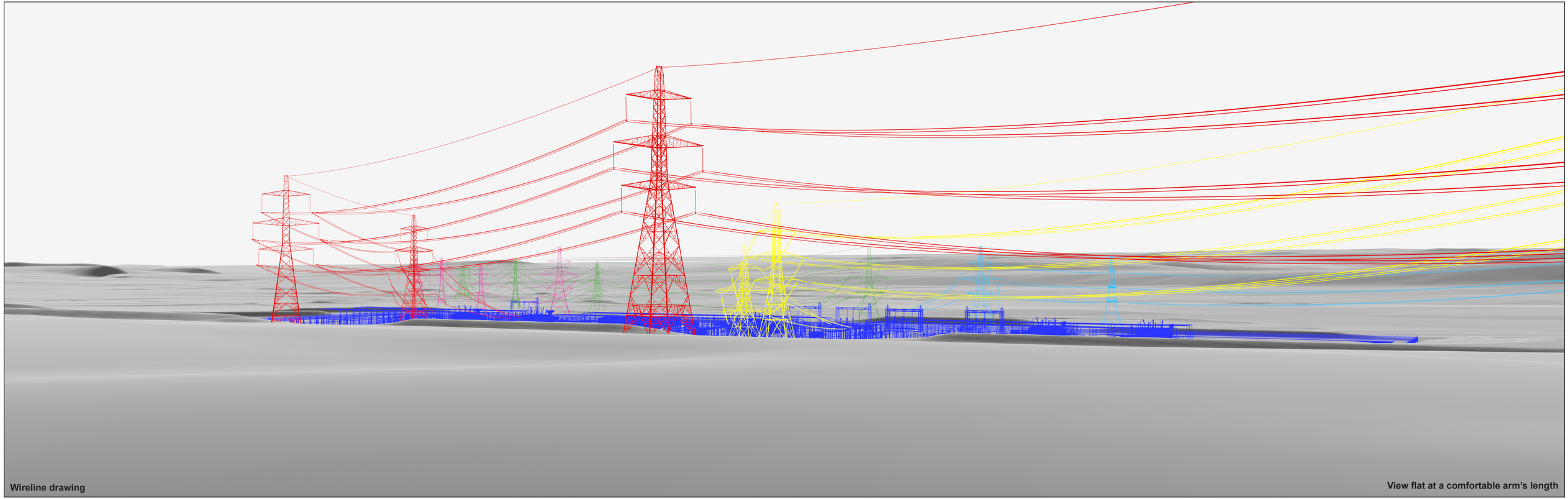
OS reference:	338836E 738314N	Horizontal field of view:	53.5° (planar projection)
AOD:	174.8 m	Principal distance:	812.5 mm
Direction of view:	175°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.53 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 5: 4 Balkemback Farm Cottages



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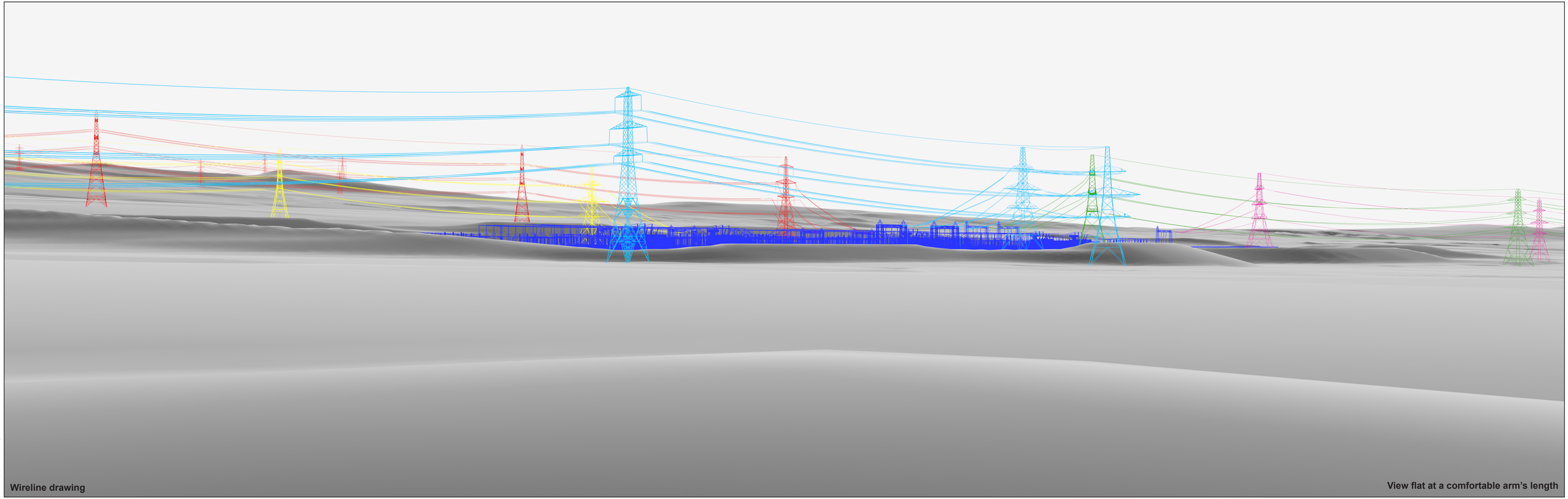
OS reference:	338323E 738277N	Horizontal field of view:	53.5° (planar projection)
AOD:	183.7 m	Principal distance:	812.5 mm
Direction of view:	140°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.61 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 6: Dunian



LUC

OS reference:	338277E 737020N	Horizontal field of view:	53.5° (planar projection)
AOD:	138.2 m	Principal distance:	812.5 mm
Direction of view:	40°	Paper size:	841 x 297 mm (half A1)
Distance to development:	0.55 km	Correct printed image size:	820 x 260 mm

Data Sources:
Topography to inform AOD heights: 50cm National DTM (2020), Environment Agency.
3D model informed by Site option layouts and development height parameters provided by Omexon in Revit (.rvt) format on 20/05/24.

- Diverted Alyth to Tealing OHL
- Diverted Westfield to Tealing OHL
- Proposed new 400KV to Hurlie / Kintore
- Emmock to Tealing tie-back West
- Emmock to Tealing tie-back East

Emmock Substation

Property 7: Wynton Works