



GLENBURNIE WIND FARM

AEI FIGURE 6.13

ZONE OF THEORETICAL VISIBILITY (ZTV) STUDY - THEORETICAL LIGHTING INTENSITY - INCLUDING WOODLANDS AND SETTLEMENTS

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- Proposed Turbines with Nacelle Lighting 135m
- Proposed Turbines without Lighting
- Site Boundary
- Distance from Proposed Turbines (5, 10, 15km)

Zone of Theoretical Visibility (ZTV) - Nacelle Lights Intensity of Turbine Light Shown in Candelas (cd)

Vertical	Turbine Lighting Intensity	
	2000cd light	200cd light
0° to 3°	2000cd	200cd
0° to -1°	2000cd to 750cd	200cd to 75cd
-1° to -2°	750cd to 80cd	75cd to 8cd
-2° to -3°	80cd to 40cd	8cd to 4cd
-3° to -4°	40cd to 10cd	4cd to 1cd
Below -4°	Below 10cd	Below 1cd

- Viewpoints

VP1: Lylestone Hill, Core Path 16
VP2: Station Road, Oxtou
VP3: A68 North of Lauder
VP4: Lammer Law
VP5: A68 South of Dun Law Wind Farm
VP6: Southern Upland Way, Twin Law Cairns
VP7: Thirlestane Castle GDL, Southern Upland Way
VP8: B368 North-East Soutra Aisle
VP9: Minor Road to Longformacus
VP10: A6105 East of Gordon

VP12: Minor Road South of Gorebridge
VP13: B7007 & NCN1 near Broad Law

VP19: Southern Upland Way, Edgahope Wood
VP20: Corepaths west of Oxtou
VP21: Redstone Rig
VP22: Lauder Common
VP23: A68 near The Roan
VP24: Southern Upland Way, Chester Hill
VP25: B6456 near A697 Junction
VP26: B6456 near Camp Moor
VP27: Fa'Side Hill Viewpoint
VP28: B6369 north of Gifford

VP36: Samuelston Loanhead

(Nb: viewpoints 11, 14-18 and 29-35 are located beyond the map extents. Refer to Figures 6.5 and 6.6 for locations.)



0 1 2 3 4 5 km

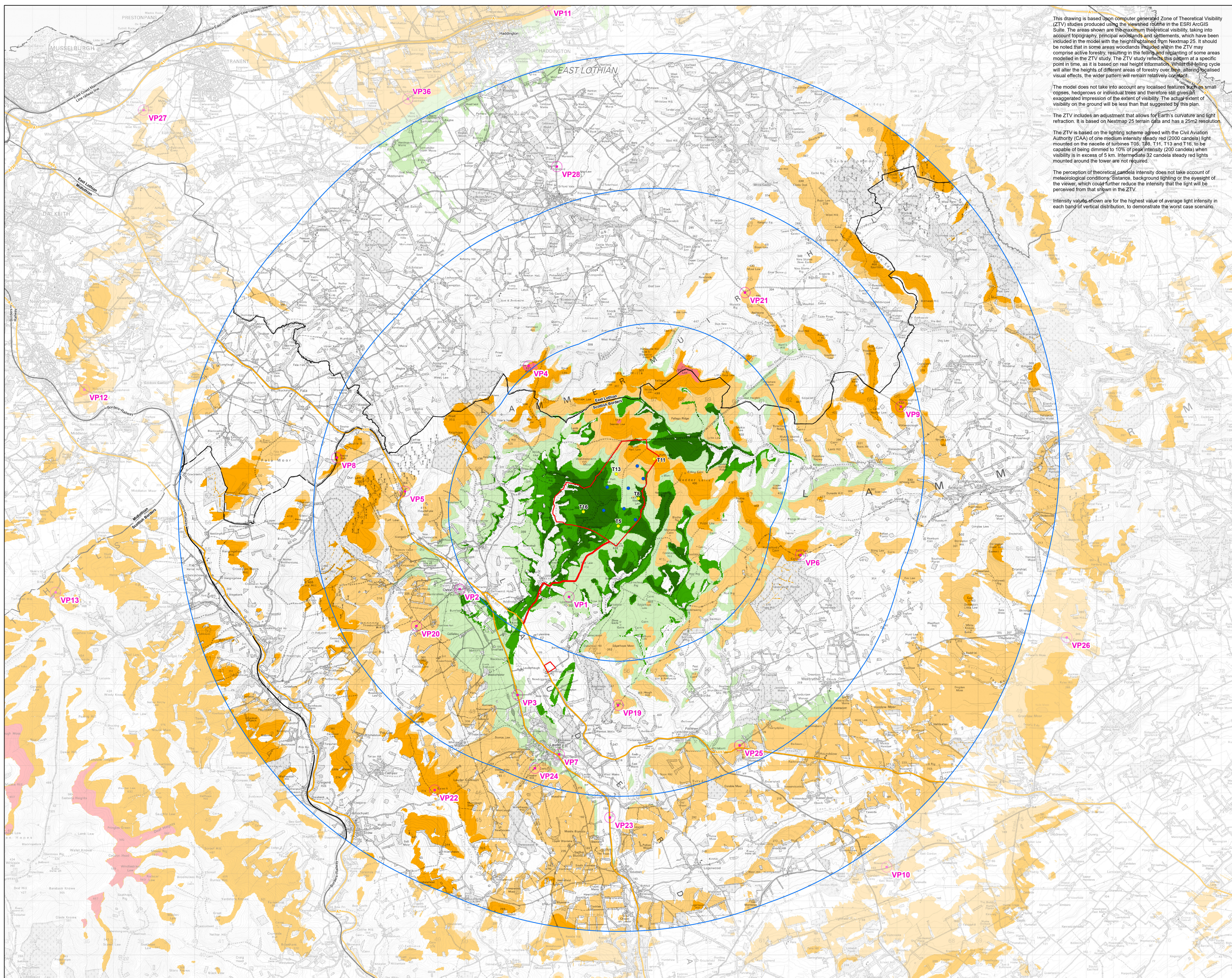
LAYOUT DWG: 04728-RES-LAY-DR-PE-003 T-LAYOUT NO: PSCOLCF024

DRAWING NUMBER: 8866_Figure_6.13

SCALE - 1:65,000 @ A1

ADDITIONAL ENVIRONMENTAL
INFORMATION 2025

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This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on Nextmap 25 terrain data and has a 25m2 resolution.

The ZTV is based on the lighting scheme agreed with the Civil Aviation Authority (CAA) of one medium intensity steady red (2000 candela) light mounted on the nacelle of turbines T05, T06, T11, T13 and T16, to be capable of being dimmed to 10% of peak intensity (200 candela) when visibility is in excess of 5 km. Intermediate 32 candela steady red lights mounted around the tower are not required.

The perception of theoretical candela intensity does not take account of meteorological conditions, distance, background lighting or the eyesight of the viewer, which could further reduce the intensity that the light will be perceived from that shown in the ZTV.

Intensity values shown are for the highest value of average light intensity in each band of vertical distribution, to demonstrate the worst case scenario.