BLAIR HILL WIND FARM

FIGURE 6.14

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

Proposed Turbines with Nacelle Lighting (165m for T1, T4, T5, T10 and T11, and 125m for T14)

Proposed Turbines without Lighting

Site Boundary

Distance from Proposed Turbines (5, 10, 15, 20km)

Galloway Dark Skies - Core Area

Galloway Dark Skies - Park Boundary

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: Drumwhirn Cairn, Moor of Barclye
VP2: Corsbie Road, Newton Stewart
VP3: NCR73/A714 at Nether Barr
VP4: Glenvernoch Fell / Hill of Ochiltree
VP5: NCR7 on Minor Road North of Glentrool Village
VP6: Cairnsmore of Fleet
VP7: Merrick
VP8: A75 near Creetown
VP9: Kirkcowan
VP10: NCR73 on Minor Road North of Wigtown
VP11: Benniguinea Lookout
VP12: Mochrum Lochs LLA, Moor of Drumwall

VP20: Monigaff Parish Church
VP21: Lamachan Hill
VP22: Millfore
VP23: Meikle Millyea
VP24: Innerwell Fishery approach
VP25: Penninghame Estate pond, Castle Stewart
VP26: Challoch Church

(NB. Viewpoints 13-19 are located outside the 20km study area. Refer to Figures 5.5 and 5.6 for locations.)

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 reduced lighting scheme agreed with the Civil Aviation Authority (CAA) of one medium intensity steady red (2000 candela) light mounted on the nacelle of turbines T01, T05, T06, T11, T12 and T15, automatically 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.

SCALE - 1:85,000 @ A1

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