Intensity of Turbine Light shown in Candelas (cd)		
VERTICAL ANGLE	TURBINE LIGHTING INTENSITY	
	2000CD LIGHT	200CD LIGHT
0º TO 2º	2000/2500CD	200/250CD
0º TO -1º	2200 TO 980C	220 TO 98CD
-1º TO -2º	980 TO 420CD	98 TO 42CD
-2º TO -3º	420 TO 220C	42 TO 22CD
-3º TO -4º	220 TO 170CD	22 TO 17CD
BELOW -4º	BELOW 170CD	BELOW 17CD

Hub height:	105m	Observer height:	2m
DTM:	OS T5/T50 DTM	Surface features:	Excluded
DTM resolution:	10m	Earth curvature:	Included

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open optimised environments PART OF SLR

ERM

- Proposed Turbine Location
- Site Boundary
- 10km Radii
- 45km Study Area
- Local Authority Boundary

Notes

1. Reduced intensity turbine lighting (200cd) based on 'Air Navigation Order 2016 (CAP393) Article 223 (8)' which allows the 2000cd turbine light to be 'reduced to not less than 10% of the minimum peak intensity specified' i.e. 200cd 'if visibility in all directions from every wind turbine generator in a group is more than 5km'.

2. The lighting intensity for each of the vertical angles shown is based on information provided by an aviation warning light bulb manufacturer.

3. Perception of theoretical candela intensity does not take account of distance.

4. ZTV calculations do not take into account surface features such as forestry or buildings.

5. ZTV calculations for turbine lighting intensity based on visible aviation lighting mounted on the turbine hub.

6. The ZTV calculates the degree of vertical angle from the study area shown to each of the proposed Development turbines.

7. ZTV calculations represent a worst case situation where predicted lighting intensity may be as a result of only one turbine in the layout.

8. No landform within the study area is above 2 degrees from the height of the turbine lighting.

9. In accordance with ICAO requirements, no light emission is required above the vertical angle of 2°. Accordingly the ZTV shading cuts off at +2°. It is possible that some areas of landform may project above this angle and theoretically may experience some light emissions. The degree to which light emissions above 2° are constrained will depend on individual light fitting design. This diagram assumes that light intensity will drop away quickly from 2000 cd above 2° from the horizontal.

1:170,000 Scale @ A1

0 9.5 km

NORTH

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ZTV of Turbine Hub Lighting
Figure 6.15

Cloud Hill Wind Farm
LVIA Report