ScottishPower Renewables

Hare Hill Windfarm Repowering and Extension

Volume 3

Appendix 11.4: Fear and Intimidation Assessment

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Index

Abbreviations

Abbreviation	Description
ADF	Average Daily Flow (of traffic)
AADT	Annual Average Daily Traffic
DfT	Department for Transport
HGV	Heavy Goods Vehicle
mph	Miles Per Hour

1. Introduction

1. This assessment should be read in conjunction with **Chapter 11: Access, Traffic and Transport.**

2. In the preparation of this technical appendix, Table 3.1, Table 3.2, and Table 3.3 of the IEMA Guidelines have been used to assess the fear and intimidation degree of hazard. These tables are presented below and should be referred to throughout the following sections.

Table 1.1: IEMA Guidance Table 3.1 Fear and Intimidation degree of hazard

Average Traffic Flow Over 18-hour day – all vehicles/hour 2 way (a)	Total 18-Hour heavy vehicle flow (b)	Average Vehicle Speed (mph) (c)	Degree of Hazard Score
+1,800	+3,000	> 40	30
1,200-1,800	2,000-3,000	30-40	20
600-1,200	1,000-2,000	20-30	10
<600	<1,000	<20	0

Table 1.2: IEMA Guidance Table 3.2 Levels of Fear and Intimidation

Level of Fear and Intimidation	Total Hazard Score (a)+(b)+(c)
Extreme	71+
Great	41-70
Moderate	21-40
Small	0-20

3. Table 3.1 of the IEMA Guidance is used to assess the baseline and future baseline conditions of local traffic. Table 3.2 is a summation of the scores to provide an overview of the hazard score.

Table 1.3: IEMA Guidance Table 3.3 Fear and intimidation magnitude of impact

Magnitude of Impact	Change in step/traffic flows (AADT) from baseline conditions
High	Two step changes in level
Medium	One step change in level but with

	• >400 vehicles increase in average 18hr AV two-way all vehicle flow; and/or • >500 HV increase in total 18hr HV flow.
Low	One step change in level but with • <400 vehicles increase in average 18hr AV two-way all vehicle flow; and/or • <500 HV increase in total 18hr HV flow.
Negligible	No change in step changes

4. Table 3.3 is used to assess the impact of the Hare Hill Repowering and Extension Windfarm (the 'proposed Development') traffic on the local traffic levels.

2. Baseline Fear and Intimidation

5. The following subsections should be read in conjunction with **Section 11.6** of the Environmental Impact Assessment (EIA) Report.

18-Hour ADF

6. For the fear and intimidation assessment 18-hour average daily flows (ADF) are needed, including an average hourly flow at each count location over an 18-hour period for total traffic and for Heavy Goods Vehicle (HGV) traffic.

7. 18-hour flow data was not available from the Department for Transport (DfT) traffic counts and therefore annual average daily traffic (AADT) has been assumed to be equivalent to 18-hour data. This is a conservative assumption as it raises the ADF value. Additionally, where 18-hour per hour flow data is required the 24 hour AADT has been divided by 18. This is also a conservative assumption, raising the baseline figures.

8. **Table 2.1** below presents the flow data used for this assessment.

Table 2.1: 18-Hr ADF Baseline for Both HHR1 and HHR2

Ref.	18-Hr ADF	18-Hr ADF/Hr	HGV 18-Hr ADF	HGV 18-Hr ADF/Hr
1	11,674	649	689	39
2	10,743	597	681	38
3	11,659	648	618	35
4	10,875	605	553	31
5	8,532	474	399	23
6	6,178	344	397	23
7	5,881	327	875	49

Ref.	18-Hr ADF	18-Hr ADF/Hr	HGV 18-Hr ADF	HGV 18-Hr ADF/Hr
8	3,723	207	691	39
9	3,978	221	689	39

9. The future baseline 18-hour ADFs were calculated using the traffic growth factors established in **Section 11.5.7** of the EIA Report. The traffic low growth factor was applied to give future baseline scenario as an 18-hour ADF for each phase. This is shown in **Table 2.2** below.

Table 2.2: 18-Hr ADF Future Baseline

Ref.	18-Hr ADF	18-Hr ADF/Hr	HGV 18-Hr ADF	HGV 18-Hr ADF/Hr
HHR1				
1	11,467	638	677	38
2	10,553	587	669	38
3	11,453	637	607	34
4	10,683	594	543	31
5	8,381	466	392	22
6	6,069	338	390	22
7	5,777	321	860	48
8	3,657	204	679	38
9	3,908	218	677	38
HHR2				
1	11,038	614	651	37
2	10,158	565	644	36
3	11,024	613	584	33
4	10,282	572	523	30
5	8,067	449	377	21
6	5,841	325	375	21
7	5,560	309	827	46
8	3,520	196	653	37
9	3,761	209	651	37

Baseline Assessment of Fear and Intimidation Degree of Hazard Level

10. The degree of hazard level in the baseline situation on each link was determined using the procedure detailed in the IEMA Guidance, Tables 3.1 and 3.2. These tables are presented in **Table 1.1** and **Table 1.2** above.

11. Vehicle speed data was not available from the baseline traffic data. For the purposes of this assessment, it has been assumed that the average vehicle speed is equal to the speed limit for each link. This approach is generally conservative.

Table 2.3: Vehicle Degree of Hazard Score

Link	Assumed Average Vehicle Speed (mph)	Degree of Hazard Score
1	60	30
2	60	30
3	30	20
4	60	30
5	60	30
6	60	30
7	30	20
8	30	20
9	30	20

12. The degree of hazard score was then calculated for total traffic and HGV traffic using the future baseline traffic flows as shown in **Table 2.4**.

Table 2.4: Total Traffic and HGV Degree of Hazard Score

Link	18-Hr ADF/Hr	Degree of Hazard Score	18-Hr HGV Total	Degree of Hazard Score
HHR1				
1	638	10	689	0
2	587	0	681	0
3	637	10	618	0
4	594	0	553	0
5	466	0	399	0
6	338	0	397	0
7	321	0	875	0
8	204	0	691	0
9	218	0	689	0

Link	18-Hr ADF/Hr	Degree of Hazard Score	18-Hr HGV Total	Degree of Hazard Score
HHR2				
1	614	10	651	0
2	565	0	644	0
3	613	10	584	0
4	572	0	523	0
5	449	0	377	0
6	325	0	375	0
7	309	0	827	0
8	196	0	653	0
9	209	0	651	0

13. The total hazard score presented in **Table 2.5** is a summation of the above hazard scores for each link. The total hazard score then determines the level of fear and intimidation, in accordance with Table 3.2 of the IEMA Guidance.

Table 2.5: Baseline Level of Fear and Intimidation

Link	Total Hazard Score	Level of Fear and Intimidation
1	40	Moderate
2	30	Moderate
3	30	Moderate
4	30	Moderate
5	30	Moderate
6	30	Moderate
7	20	Small
8	20	Small
9	20	Small

3. Fear and Intimidation Assessment

14. The following sub-sections should be read in conjunction with **Section 11.8: Assessment of Potential Effects** in the EIA Report.

Further Assessment – Worst-Case Scenario - Fear and Intimidation Assessment

15. Average vehicle speeds are not predicted to increase as a result of the proposed Development. Therefore, the vehicle speed degree of hazard score remains as presented in the future baseline scenario.

16. The future baseline plus proposed Development 18-hour ADF for links 3 to 8 was calculated for the peak month to determine the relevant degree of hazard scores, using Table 3.1 of the IEMA Guidance. It has been assumed that 100% of the traffic associated with the proposed Development will travel during the 18-hour period (06:00 – 00:00). **Table 3.1** below presents the degree of hazard scores.

Table 3.1: Total Traffic and HGV Degree of Hazard Score – Peak Month Worst-Case Scenario

Link	18-Hr ADF	18-Hr ADF/Hr	Degree of Hazard Score	18-Hr HGV ADF	Degree of Hazard Score
HHR1					
3	11,681	649	10	781	0
4	10,911	606	10	717	0
5	8,609	478	0	566	0
6	6,297	350	0	564	0
7	6,005	334	0	1,034	10
8	3,885	216	0	853	0

17. The total hazard score is a summation of the above hazard scores (vehicle speed, 18-Hr ADF/Hr, 18-Hr HGV ADF) for each link. The total hazard score then determines the level of fear and intimidation, in accordance with Table 3.2 of the IEMA Guidance. **Table 3.2** below presents the outcomes of this.

Table 3.2: Worst-Case Scenario Level of Fear and Intimidation

Link	Total Hazard Score – Peak Month	Baseline Level of Fear and Intimidation	Peak Month Level of Fear and Intimidation
3	30	Moderate	Moderate
4	40	Moderate	Moderate
5	30	Moderate	Moderate
6	30	Moderate	Moderate

Link	Total Hazard Score – Peak Month	Baseline Level of Fear and Intimidation	Peak Month Level of Fear and Intimidation
7	30	Small	Moderate
8	20	Small	Small

18. The fear and intimidation level has changed between the future baseline scenario and the worst-case scenario for link 7. Neither of the qualifying thresholds given in **Table 1.3** have been breached, therefore the magnitude of change in effect is low.