13 Aviation and Radar

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13.1 Executive Summary

13.1.1 This chapter examines the difference between the impact of the 2021 Layout on aviation and radar compared with the 2020 Layout as reported in the 2020 Supplementary Environmental Information (SEI) chapter, and provides an update on aviation consultation since the publication of the 2020 SEI. In summary, since the 2020 SEI was written, the site has further reduced in size with the removal of 5 turbines, making the total number of turbines now 18. It is also the case that all of the turbines have a tip height of 180 metres. However, the changes to the site design do not result in any significant change to the overall impact on aviation and radar. It remains the case that the only primary surveillance radar (PSR) affected is the Ministry of Defence (MOD) Lockheed Martin TPS-77 radar located at Remote Radar Head (RRH) Saxa Vord. There is a further reduction in the impact on the performance of the radar as a result of the reduced number and size of turbines.

13.1.2 When considering the aviation impact of the 2021 Layout on the small civil airport at Scatsta, there is no longer any effect to consider as the airport has now permanently closed.

13.2 Introduction

13.2.1 This chapter does not repeat the information set out in Chapter 13 of the 2019 EIA Report and 2020 SEI where that information remains valid in the context of the reduced number and size of turbines now proposed for the 2021 Layout. As such, this SEI should be read in conjunction with Chapter 13 of the 2019 EIA Report and Chapter 13 of the 2020 SEI. This chapter also provides an update on consultation with key aviation stakeholders.

13.3 Response to Consultation Responses

Ministry of Defence (Defence Infrastructure Organisation (DIO))

13.3.1 The MOD wrote to the Energy Consents Unit (ECU) in response to the 2020 SEI on 02/11/2020 under reference DIO10045626 in which they confirmed that the mitigation scheme proposed would be acceptable subject to a suitably worded planning condition. The MOD stated: "*Just to update you, the applicant has submitted a proposal to mitigate the unacceptable effects of the wind farm on the Air Defence Radar. This has been reviewed by the MOD and today I wrote to the applicant's aviation consultant with the draft wording of a suspensive planning condition. Should a suitable planning condition be agreed with the applicant then we will write to the Energy Consents Unit to update our safeguarding position to the development. We will also write to you to advise if we are unable to agree a condition and we need to maintain the objection."* The applicant responded to the MOD on 18/11/20 confirming they were happy to accept the wording of the draft planning condition and the MOD undertook to advise the ECU, which they did on 19/11/2020, in which they stated: "*The applicant has submitted a technical mitigation proposal to address the unacceptable impacts the proposed wind farm will have upon the operation of the AD radar at RRH Saxa Vord. The proposal has been accepted by the MOD, and a planning condition has been agreed with the applicant. A draft is included at Annex A for the Scottish Governments consideration".* Accordingly, MOD has removed their objection to the Proposed Development.

13.3.2 The MOD responded to the revised 2021 Layout of 18 turbines on 07/09/2021 confirming that the planning condition previously agreed for Radar Mitigation Scheme for RAF Saxa Vord remains suitable and is acceptable.

Civil Aviation Authority (CAA)

13.3.3 The CAA responded to the proposed lighting design on 13/08/2021 stating that the proposed lighting layout is approved as described in Section 13.4 below. The approval letter is provided at Appendix 13.2.

Other Stakeholders

13.3.4 NATS Safeguarding, Highlands and Islands Airport Ltd (HIAL) and Airtask Group responded to the 2020 SEI to confirm they did not object to the proposal. No other responses to the 2020 SEI were received from aviation stakeholders.

13.4 Aviation Lighting

13.4.1 The 2019 EIA Report described the regulatory requirement for aviation lighting that was then in force. The 2020 Layout reduced the number of turbines and the 2021 Layout has further reduced the number of turbines, to a total of 18. Therefore the overall number of lights will also be reduced compared to the number initially assessed. The reduction of the height of all of the turbines from 200 m to 180 m will not in itself create any reduction in lighting as the regulation captures the lighting requirement for all turbines in excess of 150 m. It is the case that since the 2019 EIA Report was written there has been a shift in the regulatory position regarding which turbines require aviation lighting and what type of lights should be fitted. An updated aviation lighting report has been completed by specialist consultants taking into account the latest regulatory position and feedback from the CAA and it is included as Appendix 13.1 to SEI 2 (the 2021 Aviation Lighting Report).

13.4.2 The 2021 Aviation Lighting Report (Appendix 13.1) has identified that there are two separate requirements: for the CAA requirement, 11 turbines will require 2000/200cd lights fitted at the hubs, and 5 turbines will require 32cd lights at the mid point between the hub and ground level. The MOD requirement for infra-red lighting will result in 12 turbines also having MOD compliant IR lights as shown in Table 13.1 below. Further detail is provided in Appendix 13.1. As noted in Section 13.3 above, the MOD and CAA have been provided with the 2021 Aviation Lighting Report in order for them to approve both lighting layouts.

Table 13.1 Lighting Layout

Energy Isles (Shetland) May 21 Lighting Amendment			
Turbine	**CAA – ANO Hub Mounted**	**MOD IR Hub Mounted**	**Mid-mast Lighting**
11	2000/200cd	600mW/sr	
12	2000/200cd	600mW/sr	32cd
13			
14	2000/200cd	600mW/sr	
15		600mW/sr	
16	2000/200cd	600mW/sr	32cd
17			
18			
19	2000/200cd	600mW/sr	
20	2000/200cd	600mW/sr	32cd
21	2000/200cd	600mW/sr	
22			
23			
24	2000/200cd	600mW/sr	
25	2000/200cd	600mW/sr	
26	2000/200cd	600mW/sr	32cd
27			
28	2000/200cd	600mW/sr	32cd
Hub Mounted Lights are as per published guidance. 32cd Lights as per recent CAA acceptance			

13.5 Comparison of Effects

13.5.1 In summary, the change from the 2020 Layout to the 2021 Layout makes no significant difference to the aviation assessment conclusions reported in Chapter 13 of the 2019 EIA Report and Chapter 13 of the 2020 SEI in respect of significant effects. The reduction in turbine numbers will create a reduced technical impact on the MOD TPS-77 radar at RRH Saxa Vord, but will not materially alter the overall impact of the Proposed Development. In relation to civilian aviation operations, there is no difference between the 2020 Layout and 2021 Layout. With the closure of Scatsta there are no affected civilian aviation facilities at all and no objections have been received.

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