



## **Able Marine Energy Park**

### *Material Change 2*

### **Applicant's responses to**

### **Questions 9.0.1 and 9.0.5**

## **DCO EXAMINATION Q9.0.1: NOTE ON THE EFFECTS OF THE AMEP LIGHTING ON BIRDS RELATING TO THE PROPOSED MATERIAL CHANGE 2**

**Question 9.0.1:** *“Re: ExQ1: 9.0.5, Lighting – Night-time, second bullet, please submit the relevant information dealing with night-time impacts on avian receptors to the examination in a separate document.”*

The only change in lighting relating to the proposed material change is due to the relocation of 50m lighting columns pursuant to the removal of the specialist berth and the creation of the barge berth, and proposed increase in crane height from 150m to 200m. Whilst the relocation of the lighting columns would have no material effect on lighting levels, the aviation safety lighting on the taller crane would be at a greater height than that specified in the original application. This would have no change in any lighting effects on birds.

Whilst the AMEP site would be lit to allow safe operation of the facility at night, which will increase illumination of the surrounding area, this would not have any significant adverse effects on birds. Furthermore, the main areas that would be affected by this light are those from which it has been assumed in the ornithological assessment, that birds will be displaced either by direct loss of intertidal habitat or indirectly through disturbance (and therefore for which compensation measures are being implemented).

The increase in local lighting levels from the AMEP scheme would have the potential to affect bird behaviour, though this effect would not be any different for the material change in comparison with the consented DCO scheme. The main effect of such light pollution on the key species' behaviour, however, is likely to be a beneficial one, enabling the waterbirds to spend longer time feeding and to potentially feed at an increased intake rate (as reported in the original ES at Chapter 11 paragraph 11.6.56). Nocturnal foraging in many waterbirds has been well documented (McNeill et al 1992), with many species feeding more on brighter moonlit nights, and it is considered that artificial light gives a similar effect. Artificial lighting has been shown to extend feeding time and foraging rates in waders. Santos et al (2010) showed that artificial illumination has a positive effect on the nocturnal foraging of waders. Visual feeders fed for longer and increased their foraging effort in illuminated areas and hence their daily food intake by 83%. Mixed-strategy foragers changed to more efficient visual foraging strategies under illumination. Whilst giving a clear benefit for individual food intake, Santos et al did also note that birds could be drawn to degraded areas close to urban centres, and that this increased night-feeding could potentially raise the birds' exposure to predators. The proposed material change would not increase the level of risk related to increased avian exposure to predators.

A similar positive effect of artificial light has been observed for foraging redshank on the Firth of Forth (Dwyer et al 2013). This study showed that light emitted from an industrial complex improved nocturnal visibility for foraging redshank. This allowed sight-based foraging in place of tactile foraging, and enhanced night-time foraging opportunities.

With regard to nocturnal lighting and bird flight disruption/collision risk, birds can collide with tall structures and this collision risk can be increased through lighting where it attracts birds to the structures. The role of nocturnal illumination and bird collisions with human-built structures was first noted as a concern in relation to the collision risk posed by high towers to flying birds. Cochran and Graber (1958) found that lights on such tall towers attracted migratory birds, which in some cases resulted in large numbers of bird collisions. Subsequent studies similarly found strong positive link between type and strength of lighting at night and bird collision rate (Evans and Manville 2000), usually where birds became disoriented by bright light source on an otherwise dark migration route (the 'lighthouse effect'). Birds migrating at night can be attracted to sources of artificial light, particularly during periods of inclement weather (Weir 1976, Verheijen 1958, 1985). At AMEP the proposed lighting for the MC2 will not materially alter the existing/consented conditions and would not result in any increase in bird collision risk to that in the consented scheme.

High numbers of bird collisions have also been reported with buildings where the main problem appears to result from birds behaving as if clear and reflective windows are invisible to them (Klem 2006, 2009, 2010; Klem and Saenger 2013). This will not be the situation at AMEP, which is located in an industrial area that is already well lit at night.

In conclusion, with regard to the potential lighting effects of the material change on birds, the artificial lighting that will form part of the development is materially unchanged from the consented original DCO scheme. The lighting effects will likely provide increased feeding opportunity (and thereby increased food intake rates) for waterbirds at night, and any effect on flight routes would be expected to be negligible. The impacts of the lighting strategy considered in the original DCO application would be unchanged by the proposed material change.

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## DCO EXAMINATION Q9.0.5: RAIL CRANE AND SETTINGS OF HERITAGE ASSETS

**Question 9.0.5:** *“Re: ExQ1: 9.0.8, whilst an exercise has been carried out to indicate the effects of the taller structures with reference to the LVIA prepared for the original ES, there does not appear to be an equivalent exercise for the heritage setting effects. Does the Applicant intend to submit one?”*

1. The original ES was prepared in 2011 for the original DCO application. Since then, there have been several updates to Historic England’s guidance relating to the assessment of significance and setting of heritage assets (commonly referred to as GPA2 and GPA3). The Applicant has considered these updates and can confirm that they do not involve any fundamental change to the assessment parameters affecting potential impacts for the heritage setting effects. As such, the Applicant does not intend to submit an update to the potential impacts of the heritage settings effects.
2. Within the material change application, the rail crane, which will reach a maximum height of 200m above the quay levels, is considered to be the key material change affecting heritage setting. In the original DCO application, the previously assumed maximum structure height was 165m, this related to the presence of several complete wind turbines on the quay which remain in the amended scheme. Due to the increase in the maximum structure height the Applicant considered it useful, as part of assessing the worst-case scenario, to carry out the exercise of reviewing the effects of the taller structure with reference to the landscape and visual impacts assessment prepared for the original application.
3. The Applicant has also given consideration to the updated zone of theoretical visibility in bare earth produced in December 2021, and the associated photomontages. This was submitted into examination as Appendix A to the Applicant’s response to ExQ1 9.0.8 (REP1-015).
4. The Applicant has undertaken an exercise to identify any heritage assets that have been designated within 10km of the rail crane site, since the initial DCO application. This is considered to be the zone within which any significant effects on setting or significance might arise from the proposed rail crane. The Applicant reviewed the National Heritage List for England in January 2022, the authoritative source of designations and also reviewed the setting assessment provided in 2011 (ES Annex 18.4) in relation to the introduction of the rail crane.
5. The conclusion of this exercise is that there are no additional designated heritage assets within the 10km radius study area which are considered to have settings that could be adversely affected by the introduction of the rail crane. The majority of new designations since 2011 relate to war memorials, WWII and Cold War installations. Heritage assets of these types have quite intimate settings and do not possess designed views that could be impacted by the presence of the proposed rail crane.
6. Those heritage assets assessed in the original ES, Annex 18.4 have been reconsidered and there are not considered to be any significant changes to their settings arising from the crane’s installation. Of note is the setting of Thornton Abbey, at Thornton Curtis (Scheduled Monument No. 13377; plus associated Listed Buildings Grade I & II). This was identified as being affected in 2011 and the taller crane will add marginally to an adverse effect on setting, but within the same overall level of significance of effect as previously stated.
7. The Applicant, having taken a conservative view, considers there is no need for additional mitigation to be proposed to reduce any adverse effects for the heritage setting effects.

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