Supplementary Report
ABP- 314431-22

To: The Board
(Board member Mick Long)

From: Dr Maeve Flynn MCIEEM Inspectorate Ecologist

Re: Implications for Kilcolman Bog SPA [004095] Special Conservation Interest Whooper Swan

Background

Reference ABP-314431-22 refers to the construction of a 110kV single bay tail fed Substation, 4.4km 110kV underground grid connection and all associated works at Ballyhea, Charleville, Co. Cork. The proposed development is to facilitate the connection of the consented but not built solar farm at Ballyroe (Cork County Council Ref: 20/04041) to the ESB Charleville 110kV Substation.

In considering this case, the Board sought a supplementary report from the Inspectorate Ecologist in relation to the Appropriate Assessment (AA) with specific focus on (a) whether or not the proposed development alone or in combination with other plans and projects could adversely affect the site integrity of Kilcolman Bog SPA in view of the conservation objectives for Whooper Swan and (b) the content and relevance of a submission made by the Department of Housing, Local Government and Heritage to Cork County Council (dated 15th June 2023) on a separate but related project - amendments to the previously granted Ballyroe solar farm (Ref 22/6901), and concerns raised regarding impacts on Whooper Swan.

This report aims to address the issues raised by the Board and has been prepared with reference to the Ballyroe Substation and Grid Connection Further Information Response document and revised Natura Impact Statement (NIS, dated 21st April 2023) prepared by consultants VEON Forest, Ecology and Environment. These documents included results of a Whooper Swan survey (2022/23) and were prepared in response to a detailed request by the Board which incorporated observations made by the National Parks and Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage (09/11/2022).

Item (A) Appropriate Assessment: Integrity test

The integrity test is based on the precautionary principle and requires the *exclusion* of adverse effects on site integrity before granting authorisation for any project. Therefore, in this instance the Board needs to establish with certainty that there would be no adverse effects to the site integrity of Kilcolman Bog SPA in view of the conservation objectives for the Special Conservation Interest of Whooper Swan before planning consent can be granted. Such certainty exists where no reasonable scientific doubt remains as to the absence of such effects.

Implications of the proposed substation development for the conservation objectives of Whooper Swan, a special conservation interest for Kilcolman Bog SPA [004095].

The proposed substation site area is to be located within an agricultural field located directly north of and behind an existing farmyard which the Applicant states has been selected to be a sufficient distance from the River Blackwater SAC to the south (Awbeg River). The substation site is screened to the south by the farmyard, hedgerows and trees. The underground cable route emerges from the western side of the proposed substation crossing through Ballyroe Farm and follows local roads to Charleville Substation.

The scientific information presented in the original planning application documents and in the updated Natura Impact Statement (April 2023) and further information received, show that lands located south and south-west of the proposed substation are regularly used by varied numbers of Whooper Swans (total flock size 100-140) during winter months with regular foraging areas within the Awbeg floodplain and a

regular roost site at Ballyroe quarry pond (within 350m of the proposed development) and connecting flight lines identified (See NIS Figure 5.1).

Kilcolman Bog SPA is the closest SPA designated for this Annex I species (Birds Directive) and at a distance of 7.5 km is considered within a zone of influence of the proposed development and therefore screened in for the need for AA and a detailed assessment is presented in the Natura Impact Statement (NIS). Survey work undertaken on behalf of the Applicant and separately by the National Parks and Wildlife Service (see Item B) indicate strongly that ex-situ connectivity exists between the Awbeg floodplain area and Kilcolman Bog SPA with movements of Whooper Swans between the two areas over the winter period. The proposed development poses no possible risks to other SCI species or to the wetland habitat of the SPA due to distance and habitat requirements of those species.

Kilcolman Bog is situated on the southern foothills of the Ballyhoura Mountains in Co. Cork. It is a privately owned Nature Reserve and Wildfowl Sanctuary and is an important site for wintering waterfowl, with nationally important populations of Whooper Swan, Teal, and Shoveler recorded. The general conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests (SCI) for this SPA[1]. Whooper Swan is considered to be at favourable conservation status nationally with results of the most recent Swan Census showing increase in the species in Ireland[2]. Count data from Kilcolman Bog presented in the NPWS Submission (Ref 22/6901 15th June 2023) indicate that numbers at Kilcolman may have declined since the baseline population (95) was estimated with an average count at Kilcolman of c40 birds (IWeBS 2015-2019). However, on any given day numbers can be higher with peak numbers of 74 birds recorded foraging and up to 109 birds roosting at the site during the NPWS survey 2022/2023. Site specific Conservation objectives have not been set for the SPA, however, based on other sites where Whooper Swan is an SCI, the following

[1] NPWS (2022) Conservation objectives for Kilcolman Bog SPA [004095]. First Order Site specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage
[2] Burke *et al* (2021) Population Size, breeding success and habitat use of Whooper Swan *Cygnus cygnus* and Bewicks Swan *Cygnus columbianus Bewickii* in Ireland: Results of the 2020 International Swan Census. *Irish Birds* 43: 57-70 (2021)

targets and attributes are of relevance in maintaining or restoring the favourable conservation status of the species with emphasis in **bold** on the attribute of relevance to ex-situ areas in particular:

- Population trend: Long term population trend stable or increasing
- Distribution: there should be **no significant decrease in the numbers or range of areas used** by waterbird species, other than that occurring from natural patterns of variation

As outlined, the proposed substation site, emerging underground electricity cable and associated works areas including construction compound is located within 350m of a regularly used Whooper Swan roost site (Ballyroe Quarry pond) and areas regularly used by Whooper Swan for foraging are located further to the southwest. There is no evidence of Whooper Swans utilising lands any closer to the proposed substation location or within the boundary of the proposed substation.

I am satisfied that from the evidence presented, the proposed location of the substation to the rear of an already existing farmyard will not remove any suitable foraging or roosting habitat for this species and this impact mechanism of direct habitat loss can be excluded from further consideration for the project alone and in combination with other plans and projects.

Similarly, the route of the underground electricity cable will not directly impact on habitat used by Whooper Swan and I am satisfied that the proposed substation will not create a barrier to movements or pose a significant collision risk to Whooper Swans in the area.

As identified by the applicant in the NIS and in the response to further information request document, the main risk posed by the proposed development (alone) is disturbance where construction activity takes place during the winter period when Whooper Swans are present in the area and where such disturbance such as noise or human activity occurs at a level that would illicit a response from the birds, causing displacement from foraging or roost sites. Such an effect could undermine the conservation objectives of Kilcolman Bog SPA for Whooper Swan if it

significantly decreased the range of areas used by the species, for example causing abandonment of the roost site.

The Applicant wishes to retain the ability to undertake works at all times of the year thereby removing the obvious mitigation measure of avoidance of any possible disturbance from the project by confining works to the spring/summer months.
In assessing risks posed to the conservation objectives, the Applicant considers that the proposed construction works would generate low levels of noise, comparable to agricultural activities and only during permitted working hours. Works will take place during the daylight only with the loudest activities commencing at least 1 hour after sunrise and 1 hour before sunset thereby preventing significant disturbance or displacement of Whooper Swan from use of the night roost at Ballyroe Quarry pond.

NIS section 6.3.4 and the further information document references control of noise and adherence to the British Standard BS5228 limits (includes noise level of 65dBA). I direct the Board to the Environmental Noise assessment report submitted with the planning application (dated July 2022) which presents a greater level of detail on predicted noise levels. A construction noise assessment was undertaken based upon typical construction activities that may take place during the project. Calculations show that noise levels would not exceed good practice target criteria suggested by BS5228 for the nearest sensitive human receivers (55L_{Aeq} dB at 480m distance) during construction of the Substation due to the separation distance.

The NIS does not reference noise or disturbance thresholds for Whooper Swan or other wintering waterbirds. Generic and precautionary guidance to avoid bird disturbance recommend an approach distance (i.e. buffer area from disturbance /noise source) of 300m and a low noise threshold of 55dB. However, noise disturbance levels of up to 70dB have been shown as unlikely to generate behaviour responses in waterbirds[3]. Whooper Swan are considered to be of medium sensitivity

[3] N Cutts K Hemingway & J Spencer Version 3.2, March 2013 *Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects* University of Hull

to human disturbance and Nature Scott[4] suggest a 200-600m buffer to protect foraging and roosting birds during the non-breeding season from pedestrian disturbance (note that pedestrian disturbance is more impactful than vehicular). Given the distance between the proposed substation works area and nearest recorded areas for Whooper Swan and the visual screening provided by intervening hedgerows, the evidence points to a minimal or imperceptible effect if construction works are to be undertaken during the winter period inline with all measures proposed. There would be no impact at all if works are undertaken outside of the October-April timeframe.

I direct the Board to a point raised in the Departments submission on the Ballyroe Solar farm (Planning Ref 22/6901) where in relation to timing of construction works, it states that "in order to avoid impacts of direct disturbance and displacement to Whooper Swan that all construction works, and activity should be avoided in the period October to mid-April within the area *south* of the public road L5528"/ Ballyroe Farm track.
The Board will note that all works associated with the proposed substation are north of the L5528.

Can adverse effects on site integrity be excluded from the proposed development alone?
I am satisfied that given the extent and nature of the proposed construction phase, the predicted low noise levels, screening and distance from the nearest sensitive Whooper Swan receptor area, that no stage of the proposed development would result in disturbance events that would lead to a significant decrease in the numbers or range of areas used by Whooper Swan. Therefore, adverse effects on site integrity of Kilcolman Bog SPA can be excluded from the project alone as important ex-situ areas for foraging and roosting or connections between those areas will not be significantly affected.

[4] Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022) *Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species*. NatureScot Research Report 1283.

Can adverse effects on site integrity from the proposed development acting in-combination with other plans and projects be excluded?

In-combination assessment in AA should consider any residual effects (non-significant) that may remain after the application of mitigation measures and determine if together with other similar mechanisms for impact, these could combine together to illicit a significant adverse effect. The Board will note that in NIS section 8.3 the Applicant states that if the construction of the proposed project were to occur in parallel with any or all of the projects in the zone of influence of the proposed development that have connectivity with the same European sites, there is the potential for cumulative effects to occur. This would be the case where another project in the same place and at the same time adds to the intensity of the *non-significant* disturbance and /or increases the area affected.

The in-combination assessment undertaken by the applicant lists plans and projects, including proposed associated solar farms and interconnection projects and provides general statement based on conclusions of NIR/ NIS assessment and reaches a conclusion of no adverse effects as the proposed substation project could not contribute any significant additive effects as effects from the project alone are non-significant and assumes that no adverse effects will arise from permitted projects.

The scientific evidence from the NIS and supported by the literature, narrows the zone of influence of any effects of construction phase of the proposed substation to an area within c300m of the main construction area, outside of which no significant disturbance effects will occur. Only projects with construction work or human disturbance that could interact with this localised zone of influence during the winter season could act in combination to exacerbate or extend any temporary minor impact.

Ballyroe Solar farm as permitted, appears to have some infrastructure proposed within this area (within 300m of the Substation) raising the possibility of in-combination effects should the construction works occur at the same time and during the winter period. However, given the extent of the permitted solar farm i.e. beyond the c300m zone of influence (construction) of the proposed substation, it goes beyond a project type that could act in-combination to generate a significant effect for the proposed substation as it has significant effects on its own. In addition, I am

confident that the noise control measures proposed, and ecological supervision reduce the likelihood of possible significant additive effects arising from the proposed substation development.

Based on the Departments submission on the permission sought for amendments to the Ballyroe solar farm, I would share concerns that there will be a loss of regularly used Whooper Swan foraging areas and significant levels of disturbance generated by that project and that any temporary minor residual noise disturbance that could be generated by the proposed substation during construction would be insignificant.

However, that is not the test required for the in-combination assessment for the proposed substation and the Board may wish to consider the application of a condition regarding the timing of works to completely remove the possibility of any in-combination effects thus removing all reasonable doubt as to the absence of effects on Whooper Swan in view of the conservation objectives of Kilcolman Bog SPA.

As the proposed substation and associated grid connection do not impact directly on any habitats regularly used by Whooper Swan for foraging or roosing, this impact mechanism is removed from possible in-combination effects with other approved and proposed solar projects in the local area.

Item (B): the content and relevance of a submission made by the Department of Housing, Local Government and Heritage to Cork County Council (dated 15th June 2023) on a separate but related project- an amendment to the previously granted Ballyroe solar farm, and concerns raised regarding impacts on Whooper Swan.

Notwithstanding that the submission by the Department is in relation to another project, consent for which Cork County Council has since refused (Planning Ref 22/6901), the content of the submission is of some relevance regarding the 'best scientific information available' on the importance of the Awbeg floodplain area for Whooper Swan over the winter period (October to April) and evidence of ex-situ connections with Kilcolman SPA.

The submission includes information from a Whooper Swan survey undertaken by NPWS staff of the Awbeg floodplain area and at Kilcolman Bog SPA over the winter period October 2022 to April 2023. This coincided with the additional surveys undertaken on behalf of the applicant. In general, the numbers and movements of birds recorded are consistent between the two surveys and the Board should note that the survey work undertaken by ornithologist Barry O'Mahoney on behalf of the Applicant informed both the Substation project and the proposed amendments to Ballyroe solar farm. Both surveys recorded peak number of Whooper Swan (177) in March 2023. However as pointed out in the Departments submission on the solar farm the Applicant only refer to low numbers of birds (42) in the October/ November period in their report. The NIS submitted as part of further information on the substation project similarly does not reference peak numbers or report on the significance of the number of birds recorded at the Ballyroe Quarry night roost within 350m of the proposed development.

An important aspect of the submission is that the NPWS survey data further demonstrates ex-situ links between the Awbeg floodplains to Kilcolman Bog SPA. The Whooper Swan counts undertaken at Kilcolman strongly indicate that i) Whooper swans outside of the SPA resident population roost at Kilcolman at night and ii) the Kilcolman population joined the Awbeg floodplain flock later in the winter season. NPWS survey data showed that the Kilcolman SPA population of Whooper Swans departed the SPA on dates between 20th and 27th February 2023. The

Whooper Swan counts in the Awbeg floodplain increased between those dates with the seasonal peak of 177 birds recorded during this period.

The Departments submission is critical of the information presented in the NIS and of the assessment of the proposed (amendments to) Ballyroe solar farm and considers that it cannot be concluded beyond reasonable scientific doubt that there will be no adverse effects from the proposed development in combination with other solar developments in the area due to direct loss of Whooper Swan foraging habitat, uncertainty regarding displacement/ disturbance from foraging areas due to construction and infrastructure development, collision risk with Solar farm fencing.

In relation to timing of construction works, the submission makes the point that in order to avoid impacts of direct disturbance and displacement to Whooper Swan that all construction works, and activity should be avoided in the period October to mid-April within the area south of the public road L5528/ which corresponds to the Ballyroe Farm track.

The submission does not refer to the proposed substation development in the consideration of in-combination effects.

Conclusion

Based on the information and assessment presented in the NIS including the bird survey data and further information, I am satisfied that with the application of mitigation measures including noise control, the proposed development of the Substation and grid connection at Ballyroe, Ballyhea (alone) will not result in any significant level of disturbance or displacement of Whooper Swan from regularly used foraging or roosting sites in the area encompassing the Awbeg floodplain including a regularly used night roost at Ballyroe Quarry and therefore would not significantly decrease the numbers or range of ex-situ areas available to Whooper Swan, an SCI species for Kilcolman Bog SPA .

The proposed substation development does not impact on any regularly (or irregularly) foraging or roosting areas for Whooper Swan and thus could not act in combination with other proposed Solar farms in the area to decrease the number or range of ex-situ areas used by this SCI species associated with Kilcolman Bog SPA.

Any possible in-combination effects would be confined to the construction phase of the proposed development where non-significant levels of construction activity during the winter period could be exacerbated by other works occurring in the same immediate area at the same time. However, noise control measures and ecological supervision reduce the likelihood of possible significant additive effects. The Board may wish to consider the application of a condition regarding the timing of works to completely remove the possibility of any in-combination effects.

Other solar energy projects proposed or under appeal for the area will need to demonstrate the absence of adverse effects on site integrity of European Sites alone and in combination with other plans and projects, but I consider that no reasonable doubt remains that the proposed substation will not contribute to any adverse effects that could arise from these developments.

Signed:

25/01/2024

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Inspectorate Ecologist