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Mr Gareth Leigh
Head of Energy Infrastructure Planning
Department of Business, Energy & Industrial Strategy
1 Victoria Street
London
SW1 0ET

Our Ref: 01592-012460

28 March 2018

Dear Mr Leigh,

Re: Electricity Act 1989 Re-Determination by the Secretary of State for Business, Energy and Industrial Strategy of the Llanbrynmair Wind Farm Planning Application

Thank you for your letter dated 16 February 2018 in which you request information to inform the Habitats Regulations Assessment in respect of RES' proposed Llanbrynmair Wind Farm.

I have asked our ecological consultants, BSG Ecology, to consider your questions and they have provided the answers in the enclosed response dated 28 March 2018.

I trust that the enclosed response satisfactorily answers your questions, but please do not hesitate to let me know if you require any further details.

Yours sincerely,

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Our ref: P18-205 Llanbrynmair Additional Information to Support HRA _gl(2)

Your ref:

28 March 2018

RES Ltd

by email only

Dear (

Re: REQUEST FOR INFORMATION TO INFORM THE HABITATS REGULATIONS ASSESSMENT

Renewable Energy Systems Ltd (RES) have been asked by the Department for Business, Energy & Industrial Strategy (BEIS) to provide further information to enable completion of a Habitats Regulations Assessment (HRA)¹.

BEIS have specifically raised two questions regarding the Llanbrynmair application. These are:

- 1. The environmental documentation provided in support of RES's application concludes that there is no likely significant effect upon the Berwyn SPA due to its distance from the Llanbrynmair project site (5.3 km). However, foraging ranges greater than this distance are recorded in the literature for merlin, red kite, peregrine and hen harrier. Can RES provide further information on why this project is beyond the potential range of the Berwyn SPA qualifying features?*
- 2. The Montgomery Canal SAC was considered during the mid-Wales public inquiry (Paragraph 527 of the Inspector's Report refers). However, in reviewing the information publically available, the Secretary of State considers that there is limited evidence. RES and Innogy are requested to provide any further information that they hold on the likely effects, or why it should be excluded from consideration, for the Carnedd Wen and Llanbrynmair projects, in combination with other plans or projects, on the Montgomery Canal SAC.*

This letter aims to address these questions and provide BEIS with the required information to complete the HRA.

¹ In a letter dated 16 February 2018

Question 1. Ranging behaviour of SPA species

The Berwyn SPA covers an area of 24187.53 ha and is approximately 5.3 km north of the Llanbrynmair site. The SPA is classified for its breeding populations of ^{2,3}

- Hen harrier (14 pairs representing at least 2.8% of the breeding population in Great Britain (5 year mean, 1991-1995))
- Merlin (14 pairs representing at least 1.1% of the breeding population in Great Britain (5 year mean, 1991-1995)), and
- Peregrine (8 pairs representing at least 1.5% of the breeding population in Great Britain (5 year mean, 1991-1995)).

The 2008 Llanbrynmair Environmental Statement (ES) (RES, 2008) concluded that potential impacts on red kite, hen harrier, peregrine and merlin were of negligible magnitude and not significant (based on collision risk modelling and an assessment of disturbance / displacement effects). The ES went on to conclude that *"Given the distances of the proposed wind farm site from the statutory designated areas and their designated/notified interest features, no effects on any of their ornithological interest features are likely to occur."*

A report to inform a HRA of likely effects on the Berwyn SPA was included in Appendix 6.2 of the 2013 Supplementary Environmental Information (SEI) (RES, 2013). The report concluded that *"Though some very minor (negligible magnitude) effects may occur on these SPA populations, none of these effects would have an adverse effect on the ecological integrity of the SPAs. There would also be considerable benefits to these species resulting from the habitat enhancement plans that will be implemented at both Llanbrynmair and Carnedd Wen, which will mean that both schemes would deliver a net benefit to these species, both alone and in combination."*

Survey Guidance

Scottish Natural Heritage guidance on bird survey methods for onshore wind farms (SNH, 2014) recommends that surveys for hen harrier, merlin and peregrine should extend to 2 km beyond the proposed development footprint. This recommendation to survey a perimeter area of 2 km is drawn from published literature on the typical ranging behaviour of these species when breeding. In addition, SNH (2016) guidance on assessing connectivity with SPAs suggest that the *"core range [of each species] should be used when determining whether there is connectivity between the proposal and the qualifying interests"*. The core ranges (as stated in SNH 2016) for hen harrier and peregrine are 2 km, and for merlin is "within 5 km". Both guidance documents draw ranging distances from a literature review consolidated in a report commissioned by SNH (Pendlebury *et al*, 2011). Details of the core ranges of each species are provided below.

Red kite

Red kite is no longer a qualifying species of the Berwyn SPA, and is not therefore an HRA consideration.

The Natura 2000 species data sheet for red kite notes that *"[Berwyn] was considered under Stage 1.1, but not selected after consideration of Stage 2 judgements since, as a site at the periphery of the species' core Welsh range, it is not the best example of a breeding site for Red Kite"*.

² The Natura 2000 data form for the SPA was reviewed on 08 March 2018.

³ Red kite are not listed as a species for which the Berwyn SPA qualifies under Article 4.1 of the Directive (79/409/EEC).

Hen harrier

Pendlebury *et al.* (2011) cite a number of hen harrier radio tracking studies that indicate a typical ranging distance of around 2 km. This is consistent with the "core range" as defined by SNH (2016). Male birds have been recorded foraging up to 10 km from nest sites in areas of bog and coastal habitat in Scotland (Pendlebury *et al.* 2011, Arroyo *et al.* 2005). However, this appears to be exceptional, and is likely to relate to limited availability of prey locally. Females do not range as widely as males during the breeding season, tending to remain within 300-500 m of the nest (Arroyo *et al.* 2005).

The habitats present within the SPA (cited as comprising "*blanket mire and heather-dominated heath, with some acidic grassland and Bracken dominated areas*") are considered to provide excellent foraging and nesting habitat for hen harrier (with reference to breeding habitats described in Cramp *et al.*, 1980).

The Llanbrynmair site is separated from the Berwyn SPA by the forestry at Carnedd Wen. The forestry presents a low-value habitat for hen harrier and a potential barrier (i.e. an extensive non-productive foraging area they would need to commute over) to foraging birds.

The Llanbrynmair site include areas suitable habitat to support breeding and foraging hen harrier. However, breeding season VP work completed in 2005 (RES, 2008) and 2016 (BSG, 2018) did not record hen harrier using the Llanbrynmair site with regularity⁴.

Survey work was undertaken in 2006 and 2007 (RWE, 2008) to determine whether any of the SPA qualifying species of the Berwyn SPA were using the Carnedd Wen site for foraging. These were completed from two VP locations in the breeding seasons of 2006 and 2007. Surveyors used radios to communicate sightings and track birds effectively. Surveys also included the detailed monitoring of flights from the closest hen harrier nest within the SPA. This was situated just over 2 km from the Carnedd Wen site.

There was no evidence to suggest that breeding hen harrier moved between the SPA and the site as a result of the survey work. Occasional early season flights were recorded by males, but these were before birds were likely to have set up territory. Flights around the hen harrier nest did not go as far as the site.

Peregrine and merlin were not recorded during the work.

Given this absence of observed movements between the SPA and Carnedd Wen, the low encounter rate of hen harrier at Llanbrynmair, and the distance from the Berwyn SPA (falling beyond the "core range" for the species (as defined in SNH, 2016)), it is unlikely that birds breeding within the SPA range onto the Llanbrynmair site.

Peregrine

Pendlebury *et al.* (2011) state that "*it is believed that peregrines take 70% of their prey from within 2km of the nest ... suggesting that the core foraging range will be approximately 2km*". Hardey (2007) also indicates that most prey is captured within 2 km of the nest. The Pendlebury review indicates that foraging distances in Britain have been recorded up to 18 km, although Pendlebury does not clarify whether this relates to breeding season ranging behaviour. It is apparent, however, that ranging distances are likely to vary in relation to prey availability, with data obtained from the USA suggesting larger ranging distances than observed in lowland Britain.

⁴ Hen harrier flights were recorded during 9 of the total 192 VP watches undertaken in the 2016 breeding season.

Targeted survey of breeding peregrine undertaken at Carnedd Wen (immediately north-west of the Llanbrynmair site) in 2006 and 2007 (RWE, 2008) and in 2016 and 2017 (BSG Ecology, 2018) identified four peregrine eyries (one within the Carnedd Wen site, and three within 2.5 km of the Carnedd Wen site boundary). One of these eyries is within the Berwyn SPA; however, no evidence of use of this eyrie was observed during survey work in 2016 and 2017.

The nearest recorded nest to the Llanbrynmair site is in excess of 2.5 km distant, and therefore beyond the "core range" of peregrine (as defined in SNH, 2016). The 2006 and 2007 survey work completed to determine whether SPA birds range onto the Carnedd Wen Site (RWE, 2008) resulted in no peregrine flights being recorded. In addition, very low levels of use of the airspace above the Llanbrynmair site was recorded during survey work in 2005 (RES, 2008) and 2016 (BSG, 2018)⁵. These results suggest that the Llanbrynmair site is of low value to the local breeding population of peregrine, and that SPA birds are unlikely to range onto the site.

Merlin

SNH (2014) recommend survey to 2 km for merlin (suggesting that this represents the core range of the species) but the foraging range during the breeding season is stated as being "within 5 km" in SNH (2016). Pendlebury *et al* (2011) (from which SNH, 2016 draws information) indicates that studies of merlin in Wales (carried out by Rebecca *et al*, 1990) identified maximum foraging ranges from the nest to be between 3.4 km and 4 km. However, Pendlebury also notes that foraging trips of up to 5 km have been recorded on the Scottish islands.

On the reasonable assumption that the "core range" of merlin reflects the findings by Rebecca *et al* (1990) (i.e. 3.4 km to 4 km as recorded for Welsh populations), then the distance of the Llanbrynmair site from the Berwyn SPA would suggest that the SPA population would not be significantly affected by the proposed development.

In addition, the Carnedd Wen forestry present between the SPA and Llanbrynmair site is low value habitat and a potential barrier for foraging birds ranging from the higher quality habitats present within the SPA (as described for hen harrier, above). The absence of merlin flights recorded during the work to determine movements between the SPA and Carnedd Wen site in 2006 and 2007 (RWE, 2008), and absence of flights during the 2016 breeding season work⁶ also indicates that SPA birds are unlikely to range onto the Llanbrynmair site.

Conclusion

The 2008 ES and 2013 SEI documents conclude no significant effects on the features of the Berwyn SPA.

SNH (2016) guidance on assessing connectivity with SPAs suggest that the "core range" of each species should be used when determining whether there is connectivity between the proposal and the qualifying interests. The document defines the "core ranges" for hen harrier and peregrine as 2 km, and for merlin as "within 5 km".

The distance of the Llanbrynmair site from the Berwyn SPA (5.3 km) exceeds the core ranges for all qualifying species. Although published maximum ranges for each species are greater than the separation distance of these sites, the results of survey work to support the Llanbrynmair application in

⁵ A total of 8 flights were recorded for peregrine over the Llanbrynmair and Carnedd Wen sites during the 2016 breeding season VP work. This equates to an encounter rate of 0.01 flights per hour (576 hours of observation was completed between 16 VP locations).

⁶ Merlin were not recorded in 576 hours of observation during the 2016 breeding season VP work at the Llanbrynmair and Carnedd Wen sites.

2005, to support the Carnedd Wen application in 2006 and 2007, and post-application survey at both sites in 2016 do not indicate that the Llanbrynmair site is within regular foraging range of any SPA species.

Question 2. Impacts on the Montgomery Canal

The Montgomery Canal SAC is designated for its 'significant semi-natural population of floating water-plantain *Luronium natans*'. The canal is a substitute for the species' former slow-moving, mesotrophic river niche, which has been largely destroyed in lowland Britain.⁷

The conservation objectives, as set out in the core management plan of the SAC (Countryside Council for Wales 2008 v.1), are to ensure that the extent and distribution of floating water-plantain is maintained. The threats to this objective include "pollution to surface waters (limnic & terrestrial, marine & brackish)" (as listed on the Natura 2000 data sheet for the SAC).

The SAC is approximately 22.5 km east of the Llanbrynmair site (in a straight line to its nearest point at Penarth Weir, Newtown). A few minor watercourses rise within the Llanbrynmair site that appear to discharge to the Afon Banwy which joins the River Vyrnwy at Dyffryn Meifod and the River Severn at Molverley. The northern section of the Montgomery Canal (in Wales) is fed by the River Tanat (approximately 1.7 km upstream of the confluence of the River Tanat and River Vyrnwy), and the southern section is supplied by the River Severn at Penarth Weir, Newtown (approximately 45 km upstream of the confluence of the River Severn and the River Vyrnwy) (Montgomery Canal Partnership, 2005).

The catchment of the Montgomery Canal is artificial, and the feeds from the River Tanat and River Severn occur at points upstream of flows from the Llanbrynmair site. Therefore, it is unlikely that hydrological transfer between the Llanbrynmair site and Canal would occur, and potential pollution occurrences (for example mobilisation of sediment during construction) would have no effect on the condition of the SAC.

In addition, pollution prevention controls will be committed to during the construction process in order to minimise the risk of polluting of watercourses. This would typically be set out in a Construction Environmental Management Plan (CEMP), and would include:

- Pollution control measures (including measures to prevent the occurrence of spills or discharge of sewage);
- Silt mitigation (including installation of settlement ponds, check dams and silt fencing);
- Use of Sustainable Drainage Systems (SuDS) (for managing track and hardstand run-off);
- Implementation of a water quality monitoring plan.

An Ecological Clerk of Works (ECoW) will ensure compliance of ecological considerations outlined in the CEMP.

As no effects are considered likely to occur from the Llanbrynmair Wind Farm proposal on the Montgomery Canal SAC, an assessment of effects in combination is not required.

Yours Sincerely

For and on behalf of BSG Ecology

⁷ The Natura 2000 data form for the SPA. Reviewed on 08 March 2018.

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