

FILE NOTE

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Our reference: 2483989 – Galawhistle Wind Farm Extension of Life

Dear Robert,

WIND FARM DEVELOPMENT AT GALAWHISTLE – PROPOSED APPLICATION FOR A SECTION 36 VARIATION

Galawhistle Wind Farm Limited ('the Applicant'), a wholly owned subsidiary of Ventient Energy Ltd (Ventient), are currently considering applying for a section 36 variation to condition 1 (Part 2) of the existing planning permission (ref: EC00003123) for Galawhistle Wind Farm (Galawhistle), located c.7 km east of Muirkirk in East Ayrshire and 5 km west of Douglas in South Lanarkshire.

Galawhistle comprises 22 wind turbines, each with a capacity of 3 MW providing an overall installed capacity of 66 MW. The wind farm has been operational since March 2017 and the current Section 36 planning consent expires in March 2042. A section 36 variation application would allow the continuation of its use by an additional 10 years rather than the planned decommissioning after the consented 25 years. No changes to existing turbines or infrastructure are proposed.

RSK Biocensus has undertaken a baseline review of the existing ecological and ornithological information for the site to inform this s36 variation application. This includes the previous environmental chapters as well as relevant monitoring reports for the wind farm, where available.

Baseline Review

The following documents have been used in the baseline review:

- RPS (March 2010) Galawhistle Wind Farm Environmental Statement (ES) Volume 1
- RPS (March 2010) Galawhistle Wind Farm ES Volume 2
- Consultation response letter from Scottish Natural Heritage (now Nature Scot) dated 18 February 2021.
- Galawhistle Decision Notice

The results of the review are summarised in this file note.

Ornithology

Galawhistle ES

The key issues concerning ornithological receptors with regards to the Galawhistle Wind Farm included the close proximity of the site to the Muirkirk and North Lowther Uplands Special Protection Area (SPA) and Muirkirk Uplands Site of Special Scientific Interest (SSSI), both of which are cited for their ornithological interests. North Lowther Uplands SSSI and Glenbuck Loch, Woodland and Floodplain provisional Wildlife Site also lie within close proximity to the wind farm. The SPA and both SSSIs are designated, at least in part, for their upland breeding bird assemblage. The SPA is further designated for its non-breeding upland bird assemblage. The ES concluded that there would be no significant effects on any of these designated sites or their qualifying species.

Detailed desk-based studies were undertaken to inform the ornithological chapter of the ES, in combination with specific surveys for target species. Surveys included the following: upland breeding bird, black grouse (*Lyrurus tetrix*), breeding raptors, winter walkover and flight activity (vantage point surveys). On completion of these, collision risk modelling was undertaken for each target species.

The ES concluded that the only residual effects on bird species would be:

- Hen harrier (*Circus cyaneus*): minor, not significant effect in regard to disturbance/displacement from foraging sites following appropriate habitat enhancement.
- Merlin (*Falco columbarius*): minor, not significant effect in regard to disturbance/displacement from foraging sites following appropriate habitat enhancement.
- Peregrine (*Falco peregrinus*): minor, not significant effect in regard to disturbance/displacement from foraging sites and minor, not significant in regard to collision risk following appropriate habitat enhancement.
- Golden plover (*Pluvialis apricaria*): minor, not significant effect in regard to disturbance/displacement from foraging sites.
- Curlew (*Numenius arquata*): minor, not significant effect in regard to disturbance/displacement from foraging sites and collision risk, following appropriate habitat enhancement.
- Skylark (*Alauda arvensis*): minor, not significant effect in regard to disturbance/displacement from breeding/foraging sites, following appropriate habitat enhancement.
- Grasshopper warbler (*Locustella naevia*): minor, not significant effect in regard to habitat loss, following appropriate habitat enhancement.

It was therefore concluded that there would be no moderate or major impacts on any of the valued ornithological receptors, provided that best practice was followed to avoid disturbance to breeding birds.

Ecology

Galawhistle Wind Farm ES

Ecological surveys of Galawhistle Wind Farm were undertaken over 2008 and 2009 to inform the ES. These were supplemented by a desk-based study which included reviewing information from the ESs for

Spireslack, Nutberry and Hagshaw Hill Wind Farms, as well as the draft Cumberhead Long term Forest Plan and various open cast coal sites as these involved surveys of the proposed wind farm site area or the areas adjacent.

The surveys undertaken on the site comprised a phase 1 habitat survey and national vegetation classification (NVC) survey as well as surveys for bats (scoping, roosting activity and foraging activity), badger (*Meles meles*), otter (*Lutra lutra*) and water vole (*Arvicola amphibius*). Surveys for Atlantic salmon (*Salmo salar*) and trout (*Salmo trutta*) were also undertaken.

The habitats recorded on the site included wet modified bog, wet heath, dry heath, flushes, acid dry land and running water. Wet modified bog, wet heath and dry heath were considered to be of regional importance with the remainder of local importance. These six habitat types were the only ones taken through the assessment within the ES. A minor or moderate significant effect on each of these habitats was predicted during construction prior to mitigation. No significant effect was predicted during operation for any habitats with the exception of running water, where a minor significant effect was predicted without mitigation.

The bat activity surveys identified at least four species using the site for foraging, these were: brown long-eared bat (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's bat (*Myotis daubentonii*), and soprano pipistrelle (*Pipistrellus pygmaeus*). An unidentified *Myotis* species was also identified. In addition, a common pipistrelle roost (possibly two individuals) was identified within a derelict building at Monkshead Farm. The bat population was considered to be of local importance and a negligible effect was concluded during construction, with no specific mitigation proposed in relation to bats. The effect on bats during operation of the turbines was considered to be of minor significance only given that there would be a degree of separation between woodland edges and turbine blades.

Badger activity was limited on the site and concentrated in the south. Badger was therefore classed as being of local importance only with a minor significance effect predicted. No significant effect during operation was concluded.

Otter activity was found only along Monks Water, the Galawhistle Burn and an unnamed burn by the site entrance. The evidence included three spraints and one non-breeding holt adjacent to Monks Water. The ES stated that the evidence collected during the most recent surveys, coupled with previous surveys in the area, suggested that the site and surrounding area are of low importance to otter. Otter was considered to be of local importance and a minor significant effect prior to mitigation was concluded for both construction and operation of the wind farm.

Water vole signs were found during surveys of watercourses for the Galawhistle Wind Farm, however these comprised old burrows along Monks Water with no evidence to show they were in use. These burrows were found to be active in 2004 during surveys to inform the Scottish Coal Wind Farm, when burrows and droppings around Galawhistle Burn were also found. The decline in water voles in the area was attributed to the increase in the European mink (*Mustela lutreola*) population, a species which is known to decimate local water vole populations. Water vole were not further assessed in the ES.

Fish surveys recorded four species on the site. These were brown trout (*Salmo trutta*), minnow (*Cyprinidae* family), stone loach (*Barbatula barbatula*) and three-spined stickleback (*Gasterosteus aculeatus*). Brook lamprey (*Lampetra planeri*) was recorded off site, c.950 m downstream on the Douglas Water. Of these species, brown trout are a UK BAP species and brook lamprey are on Annex 2 of the Habitats Directive. It

was considered that the fish communities present were typical of the River Clyde catchment. Brown trout only was taken through in the ES assessment and this species was considered to be of regional importance and a moderate significant effect was predicted in the absence of mitigation during construction. During operation, a minor significant effect was predicted without mitigation measures.

The ES concluded that, following appropriate mitigation during construction, the only residual effects on habitats would be minor significant effects on wet modified bog, wet heath, dry heath, acid grassland and acid flush. A minor significant effect was also predicted for freshwater interests within the watercourses on site including brown trout and otter and their habitat. During operation, a minor positive effect after enhancement (as a result of a habitat management plan) was predicted for habitats including freshwater with a minor negative effect predicted for bats and otter before enhancement, increasing to minor positive after enhancement for otter. For decommissioning, similar effects were predicted as for construction.

In conclusion, the residual effects of the wind farm were considered to be minor and not significant following the implementation of specific mitigation and a 25 year habitat management plan.

Consultation

The following consultation responses were received in relation to the proposed wind farm:

Scottish Natural Heritage (SNH) (now Nature Scot) initially objected to the proposal as there was insufficient information to assess the potential impact on the qualifying interests of:

- The Muirkirk and North Lowther Uplands SPA;
- The Muirkirk Uplands SSSI, and;
- The North Lowther Uplands SSSI.

Following the submission of additional information, SNH were content that the proposal would not adversely affect the integrity of the designated sites, subject to a planning condition, and an appropriate assessment being undertaken for the Muirkirk and North Lowther Uplands SPA. The appropriate assessment concluded that, subject to a condition on a habitat management plan being implemented, the impacts of the proposal would not adversely affect the integrity of the Site.

The Royal Society for the Protection of Birds (RSPB) Scotland stated that they did not object to the application, as the proposal would not have a significant impact on bird populations of conservation importance within the site or have an adverse effect on the integrity of the Muirkirk and North Lowther Uplands SPA. They recommended planning conditions to mitigate against habitat impacts and minor impacts on priority bird species.

Marine Scotland Science-Freshwater Laboratory's (MSS-FL) did not object to the proposal but included some recommendations with regard to the monitoring methodology.

The Association of Salmon Fishery Boards (ASFB) advised that the Company should consult with the Ayr District Salmon Fishery Board, Ayrshire Rivers Trust and Clyde River Foundation. Ayrshire Rivers Trust stated that that any impact from the proposal would be peripheral.

Planning Conditions

The following conditions referring to ecology and ornithology were included within part 2 (deemed planning conditions) of the planning consent dated 8 August 2012¹:

Condition 4: No work shall commence on the Development until the Habitat Management Plan (HMP) has been submitted to and approved in writing by both Planning Authorities, in consultation with SNH, Scottish Wildlife Trust and RSPB. The HMP shall be submitted to both Planning Authorities a minimum of three months prior to the Commencement of the Development. The HMP will set out the habitat enhancement measures to be carried out on site, the aims, objectives and targets of these measures, monitoring requirements, responsibility for implementing habitat works and on reporting and reviewing HMP activities over the 25 year lifetime of the development. Once approved the HMP shall be fully implemented.

Reason: To safeguard the designated sites, species and habitats and to maintain effective planning control.

Condition 5. No works shall commence on the Development until an Environmental Management Plan (as defined in Section 8.173 of the Environmental Statement), has been submitted to and approved in writing by both Planning Authorities, in consultation with SNH, Scottish Wildlife Trust and RSPB,. This plan is to be submitted to both Planning Authorities a minimum of three months prior to the Commencement of the Development. This Plan is to be implemented as approved.

Reason: To safeguard the designated sites, species and habitats and to maintain effective planning control.

6. Bird diverters shall be attached to the outer guy wires of the anemometer mast, at 2.5m intervals, prior to raising the mast, and maintained for the life of the mast.

Reason: To minimise environmental impact on natural heritage.

Condition 7. Subject to the maintenance of a 50 metre buffer existing water courses, turbines and tracks may be microsituated within 50 metres of the positions shown on the Site Layout Plan as contained in Figure 1.2 of the Environmental Statement.

Reason: To take account of local ground conditions, and to protect the existing water environment.

Condition 8. No works shall commence on the Development until, an Ecological Clerk of Works (ECoW) has been put in place. The ECoW shall be appointed by the Company and approved by both Planning Authorities, for the period from Commencement of the Development to Final Commissioning of the Development. The scope of work of the ECoW shall include:

- monitoring compliance with the ecological and other environmental mitigation works that have been approved in this consent, including the Environmental Management Plan (as defined in Section 8.173 of the Environmental Statement), the Habitat Management Plan, and the three best practice measures for breeding birds (as defined in Section 7.443 of the Environmental Statement);*
- advising the Company on adequate protection of nature conservation interests on the Site;*

¹ It is noted that a 2015 variation consent was also issued in 2015. This condition remained unchanged.

- *directing the micrositing and placement of the turbines and tracks, and monitoring compliance with the Construction Method Statement.*

Reason: To minimise environmental impact during the construction phase.

Condition 9. No works shall commence on the Development until an otter species protection plan has been produced for the Development and submitted to and approved in writing by both Planning Authorities, in consultation with SNH. The otter species protection plan must include full details of the mitigation measures outlined in the Environmental Statement. The plan shall be implemented as approved.

Reason: To minimise impact on otters at the Site.

Condition 10. The three best practice measures for breeding birds as defined in Section 7.443 of the Environmental Statement shall be implemented during the construction phase of the development, timing, and pre-construction surveys.

Reason: To ensure compliance with the protection given to breeding birds under the Wildlife and Countryside Act 1981. as amended.

Condition 11. The Company shall not amend the site layout without ensuring that the development still conforms to the guidance produced by Natural England on 'Bats and Onshore Wind Turbines' (i.e. turbines should be located at least 50m away from roosts, hedgerows, tree-lines or woodlands).

Reason: to minimise potential impacts on bats.

Condition 12. No woodland planting should be undertaken within 50m of turbines on the Site.

Reason: to avoid encouraging bat activity in the vicinity of wind turbines and the associated risk of injury or mortality.

Condition 13. No works shall commence on the Development until a Peat Management Statement (which shall be implemented as approved) has been submitted in writing to and agreed by both Planning Authorities. The Peat Management Statement shall include:

- (a) Provisions for the storage of excavated material from wind turbine foundations or for road construction;*
- (b) Detailed means of construction of tracks on the Site;*
- (c) Arrangements for the management of water flows in connection with construction works;*
- (d) Provisions for the supervision of construction staff at all times;*
- (e) Arrangements (prior to the Commencement of the Development) for investigations (including specialist movement dissection equipment); and*
- (f) Arrangements for drainage during the Construction Period.*

Reason: to minimise any adverse impacts from excavating peat.

Monitoring and mitigation

Whilst the data within the EIA provides a robust initial data set for the review below, the focus of the review below relates primarily to the data collated following the consenting of the wind farm as opposed to the original EIA and associated surveys. Such data offers two main advantages, those being that it represents

the most up to date information in relation to the avian species observed on site and also provides an analysis of any ongoing effects of the wind farm on those species.

Ornithology

The following documents have been used in this review in regard to monitoring:

- RPS (February 2017) Galawhistle Wind Farm Post Construction Bird Monitoring Plan
- RPS (February 2017) Galawhistle Wind Farm Post Bird Monitoring Report
- RPS (2018) Galawhistle Wind Farm Post Construction Bird Monitoring Plan
- Gavia Environmental (2019) Galawhistle Wind Farm Bird Monitoring Report
- Gavia Environmental (2020) Galawhistle Wind Farm Bird Monitoring Report

The ES chapter contained various commitments relating to ornithological receptors at the site. These included:

- A monitoring programme for peregrine which is to be carried out over the development's lifetime. The program was to be designed to contribute to the understanding of peregrine interactions with wind farms. The monitoring would be carried out in association with the South Strathclyde Raptor Study Group (SSRSG) and would be subject to the approval of SNH (now NatureScot) and RSPB Scotland.
- Provision of nest boxes for barn owl and kestrel, if deemed beneficial by consultees and appropriate sites can be identified.

Further mitigation proposals were later included in response to consultation responses in regard to the SPA and SSSIs (as detailed above). These were:

- Post construction vantage point monitoring of peregrine flight activity over three years to compare flight activity of this species pre and post construction of the wind farm.
- A breeding raptor monitoring programme targeting qualifying species of the Muirkirk and North Lowther Uplands SPA and Muirkirk Uplands and North Lowther SSSIs, namely hen harrier, merlin and short-eared owl. The aim of these surveys was to test the hypothesis that where flight activity was already low, the levels of foraging by raptors would be further reduced by the presence of wind turbines.
- A programme to determine the abundance of potential raptor prey species and the contribution that prey availability influences raptor presence on and around the wind farm site. This would be achieved by a series of vole and breeding moorland bird surveys.

A bird monitoring plan was produced by RPS in February 2017 and updated in September 2018 to outline the agreed post-construction bird monitoring surveys for the wind farm, as detailed above. The plan stated that confirmation that the barn owl and kestrel nest boxes have been installed will be provided in writing to SNH, South Lanarkshire Council and East Ayrshire Council once completed. The plan also stated that a summary report will be produced on completion of the first two years of post-construction surveys being undertaken in 2017 and 2018. A detailed report would then be produced following the third year of surveys in 2019.

In order to have comparison data, a series of breeding raptor, breeding moorland bird and vole abundance surveys were undertaken in 2015 and 2016 in the first year of the wind farm's construction. These surveys were undertaken during the construction phase by an ecological clerk of works (ECoW) ahead of ground-breaking as well as monitoring of a peregrine nest. No formal reporting was completed outwith the monthly ECoW reports. RPS then undertook post-construction surveys between April and July 2017, during the first year of operation of the wind farm. The surveys comprised flight activity surveys, breeding raptor surveys, peregrine nest monitoring, moorland breeding surveys and raptor prey abundance surveys (voles).

Peregrine monitoring, flight activity vantage point monitoring and breeding raptor monitoring surveys were then undertaken in 2018 by Gavia Environmental Ltd. The kestrel and barn owl boxes were also erected in 2018. The report produced following the 2018 surveys concluded that flights of target species was low with most flights recorded being locally breeding curlew and oystercatcher (*Haematopus ostralegus*). The surveys recorded five Schedule 1 species flying through the site, namely osprey (*Pandion haliaetus*), greenshank (*Tringa nebularia*), red kite (*Milvus milvus*), hen harrier and peregrine. None of these species were thought to be breeding on the site or wider survey area in 2018 with flights being mostly transitional flights passing through the wind farm or within the site buffer zone. None of the former known peregrine breeding sites within quarries near the wind farm were found to be in use in 2018 however this was stated to have been perhaps due to late snowfall that year and birds not having the chance to get in to breeding condition. The site was found to still have suitable habitat for barn owl although no evidence of breeding was recorded.

In addition to the above, it was considered that the site still supported a typical upland breeding bird assemblage with low numbers of common waders such as curlew, snipe (*Gallinago gallinago*), lapwing (*Vanellus vanellus*) and oystercatcher as well as passerines such as skylark (*Alauda arvensis*), stonechat (*Saxicola rubicola*), wheatear (*Oenanthe oenanthe*) and meadow pipit (*Anthus pratensis*).

The 2019 report (produced in 2020) discussed the findings of ornithological surveys undertaken between April and July 2019, inclusive. These surveys included vantage point surveys undertaken from the same locations as in subsequent years, as well as surveys for breeding raptors, upland breeding birds and peregrine falcon. Vole abundance surveys were also undertaken (these were not undertaken in 2018). In addition, nest boxes for barn owl and kestrel were also erected at two locations within the wind farm site and buffer zone.

The 2019 results showed that the number of target species recorded in 2019 was fewer than in 2018. It was reported that this may be due to the warmer than average temperatures in 2018 with 2019 being much wetter. Two of the twelve target species recorded during the vantage point surveys were Schedule 1.1 and Annex 1 species (osprey and merlin) and one was a Schedule 1.2 species (greylag goose). Of these, osprey and greylag goose were recorded as flying at collision risk height with the majority of flights transitional across the site or along the edges of the wind farm boundary. Lapwing, curlew, oystercatcher, snipe, pink-footed goose and herring gull were also recorded flying at collision risk height. Secondary species recorded were raven, other raptors and gull species with 80 % of raven and buzzard flights and 60 % of gull species flights at collision risk height. No collisions of the target species with turbines were observed. Hen harrier (a Schedule 1.1, 1A and Annex 1 species) was recorded during the raptor surveys as well as an individual sparrowhawk, kestrel and buzzard. The monthly monitoring of breeding raptors between April and July revealed that peregrine bred successfully in 2019, unlike in 2018. The owl and

kestrel nest boxes were installed prior to the breeding season in March 2019 and monitored again in August 2019 at the end of the breeding season. No evidence of occupancy was recorded.

Following the 2019 surveys, it was concluded that "the wind farm site and wider buffer area continue to support a breeding bird assemblage, typical of the upland species expected to be present within the habitats across the wind farm. There was a slight increase in the number of breeding bird species recorded and the vole numbers recorded reflect the sites continued presence to support foraging for species such as barn owl, hen harrier, merlin and kestrel".

Ecology

Reference material

The following documents have been used in this review:

- Clyde River Foundation (2017) Ecological Surveys For The Galawhistle Wind Farm Development 2017
- Gavia Environmental (2018) Galawhistle Wind Farm Habitat Management Plan Monitoring Report
- Gavia Environmental (2018) Galawhistle Wind Farm Post Construction Otter Surveys 2018
- Gavia Environmental (2019) Galawhistle Wind Farm Habitat Management Plan Monitoring Report
- Gavia Environmental (2020) Galawhistle Wind Farm Post Construction Otter Surveys 2019
- Gavia Environmental (2021) Galawhistle Wind Farm Post Construction Otter Surveys 2021
- Gavia Environmental (2021) Galawhistle Wind Farm Fish and Macroinvertebrate Monitoring 2019
- Gavia Environmental (2022) Galawhistle Wind Farm Habitat Management Plan Monitoring Report 2021
- Gavia Environmental (2022) Galawhistle Wind Farm Fish and Macroinvertebrate Monitoring 2021
- RPS (March 2017) Galawhistle Wind Farm Habitat Management Plan Monitoring Report
- RPS (March 2017) Galawhistle Wind Farm Otter Survey Report 2017

Habitats

A HMP for the wind farm site was a requirement under Condition 4 of the planning conditions. The HMP was approved by South Lanarkshire and East Ayrshire Councils in 2016 and included the requirement to undertake various post-construction monitoring surveys at the site. These included the following elements in relation to habitats:

- The identification of areas of degraded blanket bog within potential for restoration (12 ha) and hydrological monitoring and vegetation surveys of these areas.
- Wider vegetation surveys of Annex 1 habitats present across the wind farm site to ascertain their current condition status.
- Vegetation recolonisation surveys in areas of disturbance associated with wind farm construction.
- Repeat landscape scale fixed point photography of locations previously captured in 2015 to assess the wider effects of the development post-construction.

Monitoring surveys in relation to the above were undertaken in 2017 by RPS. These included:

- Water table monitoring with selected peat restoration areas (PRAs).
- Vegetation monitoring to assess vegetation composition and structure within the three specific PRAs, and across wider Annex 1 Habitats present on the wind farm site including: wet and dry heaths; tussock grassland; and areas of blanket bog.
- Herbivore impact assessment surveys over blanket bog and Annex 1 habitat survey areas.
- Vegetation recolonisation surveys in ten locations within disturbed ground adjacent to the wind farm infrastructure.
- Fixed point photography at 10 locations across the site.

The results of the 2017 monitoring showed that habitats across the site were being affected by grazing pressures and it was recommended that management should be put in place to improve the conditions of the habitats being affected. This was to include measures such as managing stocking levels, specifically sheep, as well as seeding of areas of bare ground, fencing of specific areas to exclude livestock and ongoing monitoring of water table levels in PRAs.

Further monitoring was then undertaken by Gavia Environmental in 2018 to build on the baseline monitoring information collected by RPS in 2017. These survey results suggested that the PRAs were largely structurally intact however three of the plots surveyed in one of the RPAs (number 2) were noted to be wet modified bog with many bog species absent due to either loss of hydrological connectivity or grazing/trampling pressure. The surveys also suggested that blanket bog habitats were being preferentially grazed which could lead to heath habitats degrading into acid grassland, however further monitoring was said to be required to assess this properly. Bare peat areas which were created as part of the construction of the wind farm were found to be slow to recover which was attributed to herbivore grazing pressure. Further monitoring was therefore recommended along with seeding of bare peat areas and exclusion of livestock, as recommended by RPS in 2017.

Continued monitoring in 2019 by Gavia Environmental suggested that the PRAs were generally in the same condition as the 2018 surveys with some evidence that certain areas had dried out slightly due to a change in vegetation from wet to dry heath. The surveys also showed that acid grassland habitats were preferentially grazed, and areas of bare peat were still present but were beginning to re-establish. Again, seeding of these areas was recommended and/or additional livestock exclusion fencing erected.

There were no surveys undertaken in 2020 due to the Covid pandemic. The 2021 monitoring was also undertaken by Gavia Environmental, and the surveys showed that the PRAs were largely in the same condition since the 2018 surveys, with some areas appearing to have become wetter with a transition from wet heath to bog. The surveys also noted that seeding of wet grassland, wet heath and bog species had taken place which had resulted in increased cover with no evidence of peat cracking. The surveys again showed that acid grasslands were being preferentially grazed by the sheep. Areas of bare peat were still present but were all slowly re-establishing.

Otter

Otter surveys were undertaken by RPS in 2017 in order to fulfil the HMP as well as the Otter Protection Plan which was produced by RPS in 2014 to discharge Condition 9. These surveys built on the survey

information collected during pre-construction surveys undertaken in 2015 and surveys undertaken during construction in 2016 (all by RPS) which identified a number of shelters including two holts located on the northern bank of Douglas Water, a potential shelter to the east of the A70 at the southern edge of the survey area and a potential couch on both the western and eastern tributaries of the Monks Water towards the north of the site.

The 2017 surveys showed continued presence of otter along watercourses within the site and suggested that there was actually an increase in otter activity when compared to the evidence found in 2016. This was especially apparent on the main stretch of Monks Water where little evidence was found in 2016. However, the survey highlighted the lack of evidence of otter along the eastern tributary of Monks Water during the construction and post construction phase surveys compared with the high level of activity recorded there during pre-construction surveys in 2015. The 2017 report therefore suggested that the lack of otter activity in this area is likely to be attributed to the activities associated with the wind farm development, especially given that the construction compound and substation were located directly to the north of this watercourse and, as such, there is a lot of activity in the area which would not have been there prior to the wind farm development. As a consequence, otters appear to have been displaced to other areas of the watercourse. The two holts identified in 2016 to the south of the site were recorded as still being active in 2017 although one was reclassified as a couch. Two further couches were also identified in this area.

The otter shelter found at the western end of the Galawhistle Burn in 2016 was not identified in the 2017 surveys, although otters were still found to be active there. Similarly, the shelter recorded next to the Podowrin Burn in 2016 was not reidentified and no evidence of otter was recorded along this watercourse. The 2017 report concluded that overall, the distribution of otter had increased throughout the site and surrounding buffer following completion of construction works although it was evident that the construction of the development had influenced the distribution of otter species in the local area, resulting in temporary displacement to wider territories.

Further surveys in 2018, undertaken by Gavia Environmental showed that the site remained suitable for otter foraging and commuting with recent evidence recorded, however the holt recorded in 2017 had no evidence of recent use. The survey results at that time suggested that otter activity as a whole had reduced throughout the site compared to in 2017, with levels of activity more in line with that recorded in 2016. It was noted however, that the 2018 summer was very dry and hot which may have altered commuting and foraging habits of otters.

Two active holts were identified during further monitoring surveys in 2019. These were recorded in different locations to those identified previously. In addition, three disused holts were located within the survey area, and several spraints were recorded in the north western part of the site along Galawhistle Burn suggesting a greater level of activity in this area. The increase in otter activity throughout the site could have been attributed to the fact that summer 2019 was a lot wetter than in 2018 as watercourses were less prone to dry out and would have had more prey species available to otter.

No surveys were undertaken in 2020 however, they resumed in 2021 and the level of otter activity was found to be similar to that recorded in 2017. No active holts were identified although one disused one was, which was also the case in 2018. Two couches and a disused shelter were recorded along Monks Water with spraints found along the southern part of the site, also on Monks Water. The number of spraints found however was significantly lower than in previous survey years which could indicate a reduction in the level

of otter activity on the site. The 2021 report referred to the fact that the start of that year had harsh cold weather and it was suggested that this may have had a negative impact on foraging and commuting otters in terms of opportunities. The gap in survey data from 2020 meant that activity trends could not be analysed fully.

Fish and Macroinvertebrates

Fish monitoring surveys were undertaken by Clyde River Foundation in 2017 and a comparison of the fish communities present within the wind farm site in 2009 and between 2015-2017 showed that there was minimal change over that period. Brown trout densities were found to be low in 2016 when construction was being undertaken compared to the other years however this increased again in 2017., although it was also noted that trout densities at control sites was also lower that year. The benthic macroinvertebrate samples collected in 2017 broadly showed a 'High' or 'Good' status in Spring and Autumn, however there was a reduction in the status of three sites from Spring to Autumn in 2016 and four sites in 2017.

Further monitoring surveys were undertaken by Gavia Environmental in 2019, as part of the requirements set out in the Fish and Macroinvertebrate Monitoring Plan (FMMP) for the wind farm. These surveys found that the post construction densities of fish populations were generally lower than recorded during the pre-construction surveys with the exception of two locations where trout parr numbers were actually higher. The post construction scores for macroinvertebrates were found to be largely similar to those recorded previously and there was a slight improvement of water quality at one location while at another location, there was a slight decrease in water quality. As in 2017, all were rated as 'Good' or 'High' suggesting that water quality should not be a limiting factor to fish populations.

Gavia Environmental undertook more monitoring surveys in 2021 which found that densities of young brown trout were generally higher than in 2019 across all monitoring locations, being similar to the levels recorded between 2015 and 2017 but lower than those recorded during the 2009 pre-construction surveys. Older fish were found to have reduced greatly since the original surveys in 2009 across all monitoring locations. The 2021 report recommended further monitoring of fish populations to identify trends and to identify if the higher number of young fish recorded in 2021 will lead to a recovery of older fish densities. Again, macroinvertebrate assessments in 2021 showed that water quality was good. The report also noted that otter activity on the site may have contributed to the difference between the young and older fish densities. The report concluded that fish populations were not yet back to the levels recorded pre-construction.

Section 36 Variation Application

Based on the information provided above, it is clear that a substantial amount of data regarding ornithological interests both pre-construction and post-construction has been collected. Monitoring surveys on the wind farm have provided substantial additional data to that collected during the planning process and no further concerns in regard to bird species have been raised by these monitoring visits. In addition, the results of the bird monitoring surveys would support the conclusions reached within the ES and appropriate assessment in regard to the Muirkirk and North Lowther Uplands SPA in that, subject to a condition on a habitat management plan being implemented (which was discharged), the impacts of the proposal would not adversely affect the integrity of the designated site.

In regard to non-ornithological receptors, it is again clear that a substantial amount of data regarding ecological receptors is available both pre and post construction. As the turbines and related infrastructure

will not be altered, it is not considered necessary to undertake any additional ecology surveys to inform the application for a section 36 variation for an extension of life of the wind farm as no additional habitat will be lost or affected and it is considered highly likely that any species present on or near the site have habituated to the presence of infrastructure and turbines over the 5 years it has already been in operation. In regard to bats, the planning conditions have been adhered to and bat monitoring is not considered a requirement as the habitat will continue to be managed to ensure adherence to the conditions.

Yours sincerely,



Ruth Morton, principal ecological consultant
On behalf of RSK Biocensus

Reviewed by:



Nick Henson, associate director