CLEVE HILL SOLAR PARK

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CLEVE HILL
SOLAR PARK

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Dear Mike

Discretionary Advice Service (Charged Advice)
DAS/11342/198096
Development proposal and location: Cleve Hill Solar Photovoltaic Array, near Faversham, Kent

Thank you for your consultation on the above dated 06 October 2016, which was received on the same date.

This advice is being provided as part of Natural England's Discretionary Advice Service. Arcus Consultancy Services has asked Natural England to provide advice upon:

- The scope and results of the baseline ecological and ornithological surveys completed
- Implications of the above for the proposal, particularly in relation to The Swale Special Protection Area (SPA).
- At the meeting on 14 December 2016, a number of detailed questions were posed, which are considered in an annex to this letter.

This advice is provided in accordance with the Quotation and Agreement dated 17 November 2016.

The following advice is based upon the information within the following documents:

1. Cleve Hill Solar PV Array Ornithology Consultation Report (Arcus, Dec 16)
2. Cleve Hill Solar PV Array Non-avian Ecology Summary Report (Arcus, Dec 16)
3. Note of meeting held on 14 Dec 16 (Arcus, sent 23 Dec 16)

As the proposal is in the early stages of development a detailed layout is not yet available. Therefore the Potential Development Area (PDA) shown in figure 1 of the Ornithology Report, encompasses the entire area in which development could occur. It is recognised that the proposal may be refined to take account of constraints, including ecological and landscape considerations, during the course of the Environmental Impact Assessment.

Designated Nature Conservation Sites

The Swale Special Protection Area (SPA) and Ramsar site
The location of the proposal, outside, but adjacent to, The Swale SPA/Ramsar site, means that it has the potential to impact the features[1] for which the sites are designated, for example:

[1] See Annex 2 for advice on the species which make up the wintering and breeding bird assemblages, and Ramsar features.

- Disturbance to birds using adjacent habitats during construction, any maintenance activities during operation, and during decommissioning;
- Loss of functionally linked habitat (ie. land outside the designated site but which is necessary for the ecological or behavioural functioning, in the relevant season, of a qualifying feature for which the site has been designated);
- Potential for the solar panels to act as an ecological sink to any Ramsar invertebrates that lay they eggs on water.

Scope of surveys

Assessment of the scale and importance of the potential impacts identified above on the features of the designated sites depends on robust baseline survey data. The methodology for each of the surveys undertaken are set out in the Ornithology Report, and were discussed at the meeting on 14 December 2016.

I am satisfied that as the wintering bird surveys cover three winters (recognising that although the first winter only included Jan – Mar 14, this would have covered the time when, from our experience, the larger numbers of birds are found in the Swale), this is sufficient survey effort to gain a picture of bird use on the PDA and surrounds. At the meeting, Arcus clarified that, although there was a change in methodology for the surveys carried out between Sept 15 and Oct 16, the results allow comparison across the different wintering periods. The inclusion of flight activity surveys undertaken between Nov 15 and Oct 16, and nocturnal surveys in the winter 15-16 are welcomed. These additional surveys are helpful in understanding how key bird species use the area.

I am also satisfied that as the breeding bird surveys covered three seasons, this is sufficient. The inclusion of breeding raptor and owl surveys, are welcomed, which aid understanding of the significance of the site for these species groups.

My view is, therefore, that the coverage of surveys completed is sufficient to enable a thorough assessment of the potential impacts on SPA/Ramsar birds, and other important bird species.

Survey Results

It is recognised that the results presented in the Ornithology Report are in summary form and that further information and analysis will be presented in the Habitats Regulations Assessment and Environmental Statement. Therefore, the following are initial comments, and I will comment in detail at later stages in the process.

Taking each of the potential impacts identified above in turn:

Potential disturbance to birds

The Ornithology Report shows that the intertidal area of the Swale and Faversham Creek, adjacent to the PDA, is used by a wide range of wintering SPA/Ramsar birds at both high and low tide. Therefore, there are potentially significant numbers of birds that may be impacted by visual and noise disturbance during construction. Depending on the predicted maintenance needs for the array, there may also be potential for disturbance to occur during operation.

I recommend considering whether disturbance during construction can be avoided by timing works outside the wintering period. Alternatively, the use of less disturbing methods of construction, eg avoiding impact piling, should be explored.

Loss of functionally linked land for wintering birds

It is now well-established that where European site qualifying features might rely on nearby but undesignated functionally linked land, then this is within the scope of Habitats Regulations Assessments (HRAs) of new plans or projects.

The Ornithology Report shows that dark-bellied brent geese were recorded within the PDA in all three winters, and our site visit demonstrated that they were present in this winter. Therefore, it can be concluded from the summary data that brent geese regularly use the PDA, and hence my view is that it is functionally linked to the SPA.

The Ornithology Report also shows that the PDA is used by wintering waders including dunlin, golden plover, lapwing and curlew. These are species that qualify in their own right (dunlin) or as part of the wintering assemblage (see Annex 1), therefore, should be included in the assessment of the loss of functionally linked land.

At the meeting on 14 December Arcus outlined the intention to use 'bird days' to quantify the importance of the site to different species. My view is that this seems a sensible way to assess how important the PDA is to the functioning of the SPA.

Loss of functionally linked land for breeding birds

As outlined in Annex 1, The Swale SPA is designated for its assemblage of breeding birds of grazing marsh, which is made up of species named on the citation and species 'characteristic' of the habitat. The Ornithology Report indicates that a number of these species have been recorded breeding within the PDA, eg: marsh harrier, cuckoo, yellow wagtail, reed bunting and lapwing (from tables 5 and 9).

In assessing whether the PDA is functionally linked to the SPA for any of the assemblage breeding birds, you should consider whether the PDA is necessary for the ecological or behavioural functioning of the species, as opposed to supporting species that are typical of grazing marsh habitat but also widespread and common. Based on the summary information presented, my initial view is that the PDA may be functionally linked to the SPA for marsh harrier, as part of the breeding bird assemblage. This is because, although a breeding marsh harrier territory was confirmed only in 2014, the flight activity surveys show that the PDA is regularly used for foraging. Therefore, the PDA could be important for the ecological functioning of the marsh harrier component of the breeding bird assemblage, by providing important foraging habitat. However, the SPA populations of other typical grazing marsh species present within the PDA, for example reed bunting, are probably not dependant on the PDA for their ecological functioning, and therefore, are not functionally linked.

Potential for solar panels to act as an ecological sink to Ramsar invertebrates

There has been some research[2] that has demonstrated that insects that lay their eggs in water mistake solar panels for water bodies and try and lay their eggs on them. This can then impact their reproductive biology. The paper goes on to suggest that using white strips to break up the panel can reduce their attractiveness to insects.

The Swale Ramsar site was designated for its wetland plant and invertebrate communities. The citation mentions one species that lays its eggs in water and is attracted to horizontally polarised light: the dolichopodid fly *Campsicnemus majus*.

The Non-Avian Ecology Report states that a relatively low number of invertebrates were recorded for the size of site. Therefore, the risk to polarotactic insects may be low. However, my view is that the potential risk to the wetland invertebrate community should be considered in the HRA.

Protected landscape

The PDA is within 5km of the Kent Downs AONB. Therefore, if there are any sight lines from the AONB to the PDA, I would expect these viewpoints to be included in a Landscape and Visual Impact Assessment. However, unless any impacts on the AONB were assessed as significant, Natural England would not give bespoke landscape advice at the examination stage.

[2] Horvath et al. 2010. Reducing the maladaptive attractiveness of solar panels to polarotactic insects. Conservation Biology 24 (6) pp. 1644 - 1653

At the meeting on 14 December, Arcus asked for guidance to inform the landscape assessment. The following is Natural England's general advice on the scope of EIAs:

Landscape and visual impacts
Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site as well as any relevant management plans or strategies pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography.

The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies[3]. We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.

Natural England supports the publication *Guidelines for Landscape and Visual Impact Assessment*, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment.

In order to foster high quality development that respects, maintains, or enhances, local landscape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local characteristics. The EIA process should detail any layout alternatives together with justification of the selected option in terms of landscape impact and benefit.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.

The assessment should refer to the relevant National Character Areas[4] which can be found on our website. Links for Landscape Character Assessment at a local level are also available on the same page.

Protected Species

This proposal, as presented, has the potential to affect species protected under European or UK legislation. The Non-avian Ecology Report confirms the presence of a small population of great crested newts, foraging and commuting bats, reptiles and water voles. Natural England has produced Standing Advice which is available on its website. Whilst this advice is primarily designed to assist local planning authorities better understand the information required when assessing the impact of developments upon protected species, it also contains a wealth of information to help applicants ensure that their applications comply with good practice guidelines and contribute to sustainable development. Please refer to this Standing Advice for further information on what information the authority may require in terms of survey and mitigation proposals.

Further information can also be obtained from The Institute of Ecology and Environmental

[3] https://www.gov.uk/guidance/landscape-and-seascape-character-assessments
[4] http://www.naturalengland.org.uk/publications/nca/default.aspx

Management, The Bat Conservation Trust and Biodiversity Planning Toolkit.

Biodiversity enhancements

Guidance on enhancements has been produced by the BRE Solar Centre[5]. In particular, solar arrays offer opportunities for enhancements through the management of the grassland between the panels. As discussed at our meeting on 14 December, the sowing of a seed mix to benefit invertebrates, including bumblebees, would be valuable in this location. In addition, the presence of ditches within the PDA offers the opportunity to enhance the water vole population of the site.

This letter concludes Natural England's Initial Advice within the Quotation and Agreement dated 17 November 2016.

As the Discretionary Advice Service is a new service, we would appreciate your feedback to help shape this service. We have attached a feedback form to this letter and would welcome any comments you might have about our service.

☒ The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role as statutory consultee to the competent authority after an application has been submitted. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours sincerely

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[5] https://www.bre.co.uk/filelibrary/pdf/Brochures/NSC-Biodiversity-Guidance.pdf

Annex 1
European Protected Species

A licence is required in order to carry out any works that involve certain activities such as capturing the animals, disturbance, or damaging or destroying their resting or breeding places. Note that damage or destruction of a breeding site or resting place is an absolute offence and unless the offences can be avoided (e.g. by timing the works appropriately), it should be licensed. In the first instance it is for the developer to decide whether a species licence will be needed. The developer may need to engage specialist advice in making this decision. A licence may be needed to carry out mitigation work as well as for impacts directly connected with a development. Further information can be found in Natural England's 'How to get a licence' publication.

If the application requires planning permission, it is for the local planning authority to consider whether the permission would offend against Article 12(1) of the Habitats Directive, and if so, whether the application would be likely to receive a licence. This should be based on the advice Natural England provides at formal consultation on the likely impacts on favourable conservation status and Natural England's guidance on how the three tests (no alternative solutions, imperative reasons of overriding public interest and maintenance of favourable conservation status) are applied when considering licence applications.

Natural England's pre-submission Screening Service can screen application drafts prior to formal submission, whether or not the relevant planning permission is already in place. Screening will help applicants by making an assessment of whether the draft application is likely to meet licensing requirements, and, if necessary, provide specific guidance on how to address any shortfalls. The advice should help developers and ecological consultants to better manage the risks or costs they may face in having to wait until the formal submission stage after planning permission is secured, or in responding to requests for further information following an initial formal application.

The service will be available for new applications, resubmissions or modifications – depending on customer requirements. More information can be found on Natural England's website.

Annex 2

The Swale SPA

The HRA of the Cleve Hill Solar Farm should consider the potential impacts of the project against the published Conservation Objectives[6] for The Swale. Supplementary advice on the Conservation Objectives is also available[7], and should be used in conjunction with the advice in this letter.

Information on The Swale is also found on the standard data form[8] on JNCC's website. Where there is a discrepancy between the features listed on the standard data form and the citation, the latter is the document to assess the project against. This approach has been tested through the NSIP examination of the Richborough Connection Project.

At the meeting on 14 December, Arcus requested advice on the HRA requirements with reference to the SPA citation, particularly in regard to the breeding and wintering assemblages.

Non-breeding assemblage

The Swale citation and Conservation Objectives list one of the qualifying features as the 'waterbird assemblage'. All 'waterbirds' (as defined by the Ramsar convention) form part of the assemblage. It is the assemblage as a whole that is the feature to be assessed within the HRA, with reference to the Conservation Objectives.

The integrity of the assemblage (for both breeding and non-breeding) is generally recognised as a product of both abundance and diversity. However, as it is impractical to list all the waterbird species and assess each one individually, it is generally recognised that some constituent species contribute more towards the integrity of the overall assemblage than others, and the assessment should therefore, focus on these.

Recognising this, and as a tool to assist with assessing the ecological impacts of any plan/project on the waterbird assemblage feature, it is useful to identify the 'main component species'. These are:

(i) Those present in nationally important numbers and
(ii) Migratory species present in internationally important numbers (which may also be qualifying features on their own right – although this is not always the case) and
(iii) Those that occur in the assemblage in numbers >2000 individuals and
(iv) Named component species otherwise listed on SPA citation

For (ii) where qualifying features are assessed individually, there is no requirement to repeat for the assemblage assessment. However, the possibility that any effects could have a cumulative effect with any effects for other component species, that might then accumulate to be significant for the assemblage as a whole, should be explored in the HRA.

The Swale citation states that it qualifies under Article 4.2 of the Birds Directive as it regularly supports over 20,000 waterfowl, with an average peak count of 57,600 birds recorded in the five winter period 1986/7 to 1990/1. It states that this total includes 17 species in internationally or nationally important numbers, but does not name them.

In this situation, and as a matter of best practice, the most recent data from BTO's Wetland Bird Survey (WeBS) should be considered to augment the information provided in the citation. Looking at the most recent (five year peak mean 2010/11 – 2014/15) WeBS counts for the Swale estuary[9], the following 20 species currently occur in internationally (*) or nationally important numbers (criteria i and ii, above):

European white-fronted goose	Dark-bellied brent goose
Shelduck	Wigeon
Teal	Pintail
Shoveler	Little egret
Oystercatcher	Avocet
Golden plover	Grey plover
Lapwing	Sanderling
Dunlin	Ruff
Black-tailed godwit*	Bar-tailed godwit
Green sandpiper	Greenshank

In addition, knot is found in numbers greater than 2000 (criterion iii).

The current five year peak mean for curlew on the Swale estuary is 1137 (2010/11- 2014/15), which is below the threshold for national importance. However, the previous five year peak mean was 1413 (2009/10 – 2013/14) which was above the threshold for national importance. Taking into account the poor conservation status of this species and the likelihood that curlew will use functionally linked land for feeding purposes, I advise treating curlew as a 'main component species' within the assemblage.

This produces a total of 22 main component species.

Breeding bird assemblage

The identification of main component species for the breeding assemblage is slightly different to that for wintering. The main component species are:

(i) those bird species 'characteristic' of the particular SPA bird habitat; and
(ii) 'named components' listed on the SPA citation.

The Swale citation names certain species in the 'typical assemblage of breeding species' for grazing marsh, some of which are widespread and common (criterion ii). These are:

Shelduck	Mallard	Moorhen
Coot	Lapwing	Redshank
Reed warbler	Reed bunting	

In terms of the species characteristic of the particular habitat (criterion i), in this case, grazing marsh, the starting point should be the scoring species for the lowland damp grassland SSSI bird assemblage features[10]. This includes breeding ducks, waders, yellow wagtail, marsh harrier and others.

As noted above for the non-breeding assemblage, the integrity of an assemblage is taken to be a product of both abundance and diversity. In turn, the diversity of the assemblage depends on the species richness, abundance and the relative 'importance' (an assessment of the conservation status of each assemblage component). Each component makes a different contribution to the diversity of the assemblage, and changes to some components may be considered to affect diversity more than others. Negative changes to small numbers of relatively important assemblage

[6] http://publications.naturalengland.org.uk/publication/5745862701481984?category=6528471664689152
[7] https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9012011&SiteName=swale&countyCode=&responsiblePerson=
[8] http://jncc.defra.gov.uk/pdf/SPA/UK9012011.pdf
[9] Frost, T.M., *et. al.* 2016. *Waterbirds in the UK 2014/15: The Wetland Bird Survey*. BTO/RSPB/JNCC. Thetford. http://www.bto.org/volunteer-surveys/webs/publications/webs-annual-report

[10] Drewitt, A.L., Whitehead, S. and Cohen, S. 2015. *Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 17 Birds.* Joint Nature Conservation Committee, Peterborough. http://jncc.defra.gov.uk/pdf/SSSI_Chptr17_Birds2015June.pdf

components may have a similar overall effect to negative changes in larger numbers of less important components.

The Swale Ramsar site

JNCC have published Information Sheets on Ramsar wetlands on their website[11]. The Swale qualifies under Ramsar criterion 2 its vulnerable, endangered, or threatened plant and invertebrate communities; under criterion 5 for its assemblage of over 20,000 waterbirds, and under criterion 6 as it supports 1% of the population of a number of named waterbird species.

Natural England has not produced Conservation Advice packages, including Conservation Objectives, for Ramsar sites. This is because it is considered that the Conservation Advice packages for the overlapping European Marine Site will be, in most cases, sufficient to support the management of Ramsar interests.

The Ramsar Information Sheet for The Swale lists the qualifying species/populations under Ramsar criterion 6 (in section 14). Impacts on these species should form part of the HRA.

The Ramsar Information Sheet also lists noteworthy fauna (in section 20), which make up part of the assemblage of waterbirds. However, as Natural England considers that the Conservation Objectives for SPAs cover the management of Ramsar interests, and the SPA and Ramsar site were designated at the same time under the same criterion, I recommend only carrying out one assemblage assessment, on the species named under the SPA advice above.

In terms of the wetland plant and invertebrate communities, potential impacts on the habitats which support them are covered in the supplementary advice on conservation objectives[12] for The Swale SPA. Examples of the species which make up the plant and invertebrate communities are found in the noteworthy flora and fauna sections of the Ramsar Information Sheet.

[11] http://jncc.defra.gov.uk/pdf/RIS/UK11071.pdf

[12] https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9012011&SiteNameDisplay=The+Swale+SPA