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Our ref: 321560 / 12766

Your ref: EN010092



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Dear Andrew Troup

DAS Advice: EN010092 Thurrock Flexible Power Generation Plant

Further to our conference call on 25th September 2020 with you and consultants from RPS Group I am writing to provide further written advice on the topics discussed and additional topics where we feel that comments are helpful to progress any outstanding items. We acknowledge receipt of the draft SOCG and will be reviewing and responding separately for those purposes.

Natural England has been working closely with you and your team via the Discretionary Advice Service, and we look forward to progressing these discussions over the coming months.

This letter develops some of the topics highlighted in our Relevant Representations letter of 18 August 2020 and provides greater detail.

1. Causeway Impacts

Construction activities disturbance effect on birds and the marine environment - we have previously suggested that you assess the impacts that might occur in the different seasons to identify a sequential approach to impact assessment and mitigation, by identifying preferred and worst-case timings and the most appropriate measures to take in each scenario. We need to get a clear feel for the duration of the construction works, the period in which it will take place and what the construction methods and approaches will be.

We would appreciate a programme indicating what is involved (e.g. particularly when noisy activities are scheduled; in-river activities; pollution containment details etc.). Please note that Ringed Plovers and Avocets can be numerous within the August/September/October passage period (but possibly as early as July) and high impact during this period can reduce usage for a period of weeks/months afterwards particularly if other operational activity is occurring in the vicinity. Similarly, operational phase disturbance should be minimised by avoiding the winter months.

In our opinion, there is unlikely to be an entirely effective mitigation package that can be used against the varying degrees of impacts through the winter months, so avoidance is by far the best solution if at all possible. Within any sensitive period however, we would expect to see more details regarding the mitigation measures that will be deployed such as – using low disturbance approaches through the use of daylight working (i.e. no artificial lighting), and minimal noise levels from large plant and adherence to freezing weather restrictions during the core winter months (please refer to [BASC / JNCC guidance](#) on this). In this context, the sensitive period should be regarded as spanning August / September – March (to cover the autumn passage (but possibly as early as July) and over-wintering season). (Details may be checked [here](#)). See below for further details. For this reason, it is important that bird monitoring is included throughout the construction phase.

‘Permanent’ nature of the causeway - whilst the length of time the causeway is anticipated to be in situ is generally described as temporary in the submission document, in our opinion that the extended timescales (up to 50 years) should be regarded as effectively permanent for the purpose of the assessment. In our view, and with local precedent (Lower Thames Crossing use of the Goshem’s Farm jetty) temporary effects should be considered not longer than 5 years.

Overall Natural England is concerned that the causeway structure as presented in the submission reports introduces a level of activity within the foreshore that can be expected to cause prolonged disturbance and establish the principle of river-side access for the foreseeable future. We have consistently advised major development projects in this area that this is undesirable from an SPA perspective, noting that the area of foreshore broadly between Tilbury and Coalhouse Forts is functionally linked land to the nearby SPA. Proposals that introduce access and associated disturbance activities are likely to compromise this function to some degree without necessary controls. We have a number of concerns in this regard, which we set out below:-

- The uncertainties regarding future use of the causeway after the initial delivery of project components (AILs) – i.e. engine repair or replacement linked to future emissions targets etc.
- The anticipated difficulties of restricting / controlling access to non-project users, and disturbance caused. We would welcome further clarifications and a proposal that seeks to robustly control and restrict use, to prevent a level of unauthorised use becoming established.
- The precedent this structure may set for approved usage by other development projects in the area, thus prolonging the disturbance effects linked to its use.
- The direct loss of habitats (see below) whilst relatively modest in scale, will reduce the overall resource available for SPA birds (especially either side of high tide), and may have displacement effects that extend beyond the structure itself (even if undisturbed).
- The uncertainties associated with changes to the sedimentation regime in the area, which may cause changes which interrupt the suitability of this area for feeding waders.

There are a number of factors that may lead us to conclude that a temporary causeway, permitted for a short length of time would be more appropriate. With this in mind, we would like to propose that a revised proposal for a temporary causeway of 5 years duration would be more likely to receive a favourable response from Natural England. We suggest that any future use beyond this period could be achieved via a re-application to extend the life of the structure when more detailed information is available regarding its future use for the project’s purposes. These points were raised in our recent meetings on 25th September and 5th October.

From our recent discussions, it is not clear to Natural England what may be the triggers which would require future use of the causeway after initial construction. You have mentioned the possibility of engine upgrades and / or repair, which may be linked to (as yet unknown) climate change targets requiring conversion or replacement with 100% hydrogen engines (and whether or not upgrades could be achieved in-situ). In our view, there is not yet sufficient certainty to justify the retention of the causeway for longer than a temporary (i.e. 5-year) period. In addition, changes (or other upgrades) to the road network within the short-medium term (notably construction of the Lower Thames Crossing) may render future use of the causeway and its associated effects unnecessary. We suggest that it will be appropriate for the DCO to build in formal ‘Requirements’ with agreed trigger points which are linked to the de-commissioning of the

causeway and / or its retention if this can be appropriately justified and evidenced within the initial 5-year period. We would like to explore this option with you before raising more formally through the examination process. Thank you for considering this matter further in our recent meeting (5th October).

Furthermore, whilst the causeway construction may lead to saltmarsh creation (although see our Relevant Representation for uncertainties in this regard), the birds are more likely to be deriving value from the mudflat than the saltmarsh (assuming the marsh is ungrazed) and therefore the mudflat is the prime consideration. Thus the 'trade-off' between mudflat and saltmarsh is not equitable from an ecological point of view in this context.

In addition with sea level rise the surface is likely to become inundated by sediment in due course and with the shipping channel on the seaward side of the causeway and more saltmarsh adjacent to the land on the inner side of the causeway, the mudflat is likely to become steeper in gradient and reduced in surface area resulting in reduced value to species, like avocet, that wade and feed in the shallows.

Similarly, working on the proposed assumption that the causeway may be present for no longer than 5 years, we would like to see the likely effects of de-commission phase more thoroughly understood as the general assumption has been that this phase would be re-assessed in the future, post end of life of the plant. The end of life and dismantling/disassembly of the engines requires further consideration as there may be other options available to transport the whole Abnormal Indivisible Loads (AILs) away using the same methods they arrived (i.e. via improved road network).

The creation of intertidal habitat is developed further in 'Outline Saltmarsh Enhancement & Maintenance Plan'. However we note mud may be removed through dredging and expect that this is very likely to be contaminated. Therefore suitable assessment and adequate pollution containment will be required, both of which have implications for the methodologies chosen for the works and the subsequent use of the materials dredged.

In addition, the removal of mud will have likely effects on local hydrodynamics/sediment regime and adjoining intertidal habitats and supported features need to be understood. As mentioned above we wish to see hydrodynamic modelling and sediment regime information that set out what the changes will mean for the habitats and the birds etc. We note that some of this information has been submitted, and we are giving further consideration to this assessment.

Accessibly of the causeway under Coastal Access – Once the Tilbury to Southend on Sea stretch of the England Coast Path is opened, Coastal Access rights will apply to all land (that is not within excepted land categories) and the causeway will become accessible. Our strong steer is that the causeway should not become accessible to the public and therefore suitable 'informal' management (fencing etc.) or other 'formal' (legal Direction), as described in Coastal Access Approved Scheme, to exclude public access on the causeway at all times and to ensure that it does not develop a secondary purpose (such as leisure or recreation). Therefore management methods should be guaranteed for the lifetime of the causeway. Please note that proposals for exclusion of non-project users will need to be submitted as part of the DCO so that they can be secure in an appropriately enforceable way.

Further information on the management and restriction of Coastal Access Rights can be found in chapter 6 of the Coastal Access Approved Scheme.

<http://publications.naturalengland.org.uk/publication/5327964912746496>

2. Impact of the development on Over Wintering Birds

As highlighted in our Relevant Representation Natural England believes that the proposed causeway is situated on foreshore habitats that should be regarded as functionally linked land to the Thames Estuary and Marshes SPA. We have provided a more detailed analysis of the data submitted and its significance to the SPA below.

Bird survey methodology –

We have undertaken a more detailed assessment based upon the bird survey data collected by your team. Please note that we have not assessed ES vol. 6 Appendix 9.1 Ecological Desk Study & Surveys, but will follow up with further comments in due course. There are limitations to the survey methodology, notably only one non-breeding period (Sep 2019 – March 2020) was surveyed, which limits the capacity to make judgments about the survey count data. We advise that a consideration of the Peak over a 5 year period

and the Mean of Peak counts for individual species would enable an appropriate consideration of the peaks and natural fluctuations in species populations. For example, the value of inner Thames Estuary areas is the more sheltered intertidal habitats it provides to non-breeding birds during severe weather winters and the survey period of September 2019 – March 2020 was an exceptionally mild winter. Ensuring that an adequate extent and quality of suitable conditions exists during the harshest periods is an important role for the SPA to achieve and maintain favourable conservation status, so understanding the actual 'value' of localities supporting this habitat is very important within EIA/HRA to enable robust sustainable development solutions to be achieved. The limited submitted bird survey data therefore requires a suitably precautionary approach when assessing and drawing conclusions, and it is within this context that we advise from the survey data submitted (Table 3.1).

Avocet – peak count (Sep – March) is 44 (49 if Area 2 added) – SPA feature 100% favourable conservation status threshold is 283 and 50% SSSI favourable condition threshold is 142, so the peak survey count in Area 1 alone accounts for over 15% of the entire (Essex & Kent) SPA 100% favourable conservation status threshold and over 30% of the 50% SSSI favourable condition threshold. This is highly significant from a SPA perspective.

Ringed Plover – peak count (Sep – March) is 23 (48 if Area 2 added) – SPA feature (Essex side) 100% favourable conservation status threshold is 133 and 50% SSSI favourable condition threshold is 67, so the peak survey count in Area 1 alone accounts for over 17.3% of the SPA 100% favourable conservation status threshold and nearly 35% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is highly significant from a SPA perspective. If one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 1,324 so the peak survey count for Area 1 alone is 1.74% of this figure and for Area 1 & 2 is 3.6%, which is also significant from an entire (Essex & Kent) SPA perspective. This is significant from a SPA perspective so the effect on this local aggregation should be considered and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.

Dunlin – peak count (Sep – March) is 124 (165 if Area 2 added) – SPA feature (Essex side) 100% threshold is 6,333 and 50% threshold is 3,167, so the peak survey count in Area 1 & 2 accounts for 2.6% of the 100% SPA favourable condition threshold and over 5% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is significant from a SPA perspective however, if one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 29,646 so the peak survey count for Area 1 & 2 is less than 0.6% of this figure, which is not significant from an entire (Essex & Kent) SPA perspective. In this situation, the effect on this local Essex aggregation should be considered in an SPA context, and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.

Redshank – peak count (Sep – March) is 3 (7 if Area 2 added) - SPA feature (Essex side) 100% threshold is 273 and 50% threshold is 137, so the peak survey count in Area 1 & 2 accounts for over 2.5% of the 100% SPA favourable condition threshold and over 5% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is significant from a SPA perspective however, if one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 3,251 so the peak survey count for Area 1 & 2 is 0.2% of this figure, which is not significant from an entire (Essex & Kent) SPA perspective. In this situation, the effect on the local Essex aggregation should be considered in an SPA context, and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.

The Bird report does not clarify what the birds are using the site for (e.g. low tide feeding, high tide roosting etc.) or the relationship of that activity to the tidal state. The peak counts suggest that the site is being used in both high tide (e.g. 26 Nov & 12 Dec) and low tides (3 Dec & 16 Mar). Given that some counts come and go it could be a key site at particular points of tidal cycle or just a transient site in the wider landscape (see previous points about four key species, above).

We advise that you consider the tidal nature of the site and the limitations that would provide during the months when birds are using the functionally linked land.

We note that some further analysis has been presented at our recent meeting (25th September), and we are waiting on some further commentary from you about the 'bird days' method and will comment on this in due course.

We note that some additional earlier bird survey data is referenced within the Environmental Statement, linked to the Tilbury2 NSIP. Natural England expressed concerns about the environmental context of those surveys, and whether the data was representative of baseline conditions (i.e. the surveys may have under-represented bird use of the area for various reasons).

Impact pathways - The degree of concern linked to noise and lighting impact pathways requires further consideration for the scenarios that were scoped out when the original intention was to avoid construction in the winter months (i.e. that construction may take place in the winter months overlapping with the presence of overwintering birds, including avocet).

The intention to avoid construction during the winter months led to a number of impacts being scoped out but since the construction period may now take place during those months appropriate consideration should be made of those impacts arising from the construction activities. The HRA should therefore be revised to include this assessment.

We acknowledge that a 500m impact zone has been examined recently for noise impacts and add that lighting at night may also be an issue (this may be helpfully secured as a Requirement of the DCO). Instantaneous sound levels above 70db are an issue, while above 50db (instantaneous) will elicit responses and any increase over 3db (average over time) warrants investigation (3db is the minimum change in background noise that we can reliably detect, and we advise this is used as the threshold for likely significant effects). The attached report may be of use.



**A Review of the
Effects of NoL**

The best possible screening methods should be employed however, as mentioned above, there may not be an entirely effective mitigation package that can be against the varying degrees of impacts through winter months. We therefore advise that avoidance would be the best solution – using in low disturbance approaches through the use of daylight working, minimal noise levels from large plant avoiding the winter months. The effects of the impacts in the early winter months – September and November should be considered in addition to the latter months when avocets have been recorded to ensure impacts on all species have been thoroughly investigated.

Our preference is to and use the avoidance principle and avoid construction during the sensitive period.

In combination Issues The applicant has reviewed the following for in-combination effects

- Lower Thames Crossing NSIP
- Tilbury2 NSIP
- Goshem's Farm jetty (current use)
- Short Term Operation Reserve (STOR) electricity generating station
- Demolition of Tilbury B power station and remaining structures associated with Tilbury A

The following should also be included in this assessment, as there may be additional disturbance effects to functionally linked land in the area of the Tilbury Fort.

- London Resort (Essex side) NSIP

There are a number of plans/projects in this locality which may act in combination to impact on the SPA bird features. The likely significance of effects at HRA screening and the scale of impacts for an appropriate assessment needs to consider this in adequate detail.

Monitoring

Consistent with the approach taken by other development in the area, we advise that bird monitoring is built into the construction phase of the project. This should ideally align with the approach taken by other projects, and should seek to identify when significant aggregations of birds are present during especially severe weather conditions, so as to provide trigger points for works to pause temporarily. It should also seek to monitor the effects of the project on target species throughout the construction period, to better understand the displacement effects of the construction of the causeway. We will be happy to discuss this further with you in due course.

3. Marine Environment

Deemed Marine Licence – This will be progressed as part of the DCO and Natural England will respond via the MMO consultation.

Dredging - It is not clear how long the maintenance dredging will continue in the marine ES. It says '4.1.18 *The rates of accumulation indicate that maintenance dredging of the vessel grounding pocket is likely to be 2,000 – 6,000 m³/yr.*' however it also says 'The habitat loss/disturbance related to dredging activities and impact on marine ecology receptors is temporary and reversible, being limited to the construction phase only, with sediments expected to infill the vessel grounding pocket within months to a few years following the construction phase (see paragraph 4.1.18).' If the maintenance dredging is continuing beyond the construction period, then we would not agree that it is temporary habitat loss as maintenance dredging would stop any natural processes that would result in the area being infilled.

Natural England prefers dredging to be carried out using Water Injection Dredging (WID) in order to keep the sediment within the system and would not consider this a worst case scenario unless the sediment is too contaminated. We recommend that WID is carried out only on an ebb tide.

Zone of Influence from Sediment Plume - Natural England would like to see the Zone of Influence (ZOI) for the sediment plume created by the proposed works mapped for a full range of tidal conditions before we can consider the ES to be complete. We would like to see evidence that the plume will not settle in the MCZ and effect potential sites for Tentacled Lagoon Worm outside the MCZ.

Swanscombe MCZ – Further assessment of the anticipated impact the works are likely to have on Swanscombe MCZ are needed. Although there may be no impact it should be appropriately screened out if that is the case in the Marine ES.

Tentacled Lagoon Worm (TLW) - Tentacled lagoon worm is a schedule 5 species. Therefore the proposal will need to show that taken all reasonable precautions have been taken to avoid harming the species. If it was found during the dredge and the documents do not show that surveys have found that they are not in the area then this may constitute an offence. Further details of the species protected through this legislation can be found here: <https://www.gov.uk/government/publications/protected-marine-species>

There is no mention of TLW within Chapter 6.6 - Appendix 17.1 - Phase 1 Intertidal Survey Report and Benthic Ecology Desktop Review. Wide ranging ecological surveys do not usually pick up their presence and so species specific survey data will be needed to show that the applicant has taken all reasonable precaution. The suitability of the environment i.e. salinity and substrate testing as well as historic recording could be used to show the absence of the species within the works area.

Due to the lack of Conservation Advice package for Swanscombe MCZ, the Medway Conservation Advice package that also has TLW as a feature can be used to assess the impacts of dredging on the species.

A review of the sediment data for the Swanscombe MCZ shows that the worm can live on this coarser habitat and it is likely that the worm (being only several millimetres in length) can exist in pockets of mud within or on top of a coarser sediment which traditional sediment cores or grab samples will not pick up in analysis. Therefore, the assessment that the sediment is suboptimal could be questioned. However, when considering the invertebrate data gathered from across the Thames Estuary, TLW have not been found downriver of Gravesend. This is the most compelling evidence to support the assessment that TLW will not be present at the project site and that they will not be found within the main channel below Gravesend unless there are localised conditions where there is reduced salinity water entering via a creek or channel that could provide refuge for this species. This would likely be within a creek or saline pond environment, neither of which habitat type is at risk from the dredge.

Visual Disturbance to Seals - Underwater noise disturbance from dredging works have been assessed for mobile marine receptors however we would like to see an assessment of visual disturbance to seals, especially at haul out sites from the construction works in general.

The ZSL Thames marine mammal survey website would suggest that there are seals found in this area.

4. Common Land

S16 Commons deregistration and exchange and DCO relationship

We have raised a query with the Planning Inspectorate as whether to the S16 Commons deregistration and exchange should proceed separately from, or be incorporated into the DCO. Whilst we have not had an answer yet, Andrew Troup explained that he has already made enquiries and due to the complex steps relating to land ownerships, freeholds and leases it makes better sense for the two to progress separately. Please note that Natural England will shortly issue its formal s16 response letter, which we will be happy to discuss further with you in due course.

5. Water Voles

Letter Of No Impediment – further information is required to provide certainty that there will be a net gain for Water Voles, through the provision of suitable reception sites, and relocation of any water voles if required, prior to works commencement to ensure that not water vole are taken into captivity, before a LONI would be issued.

Ditches - we understand that the intention is for the ditches that may support water voles to be filled in, but since ditches cannot be dug on the new common land (since there is at least a year before the examination starts) other options may be needed such as creating new ditches on other sites as a temporary measure. There may be some value in exploring the approaches used for the ditches created for the Tilbury 2 site.

If further advice is required Sonya Gray, protected species specialist maybe able to provide further advice if needed.

6. Invertebrates

As you will be aware, the Tilbury area is a node for nationally important invertebrate assemblages and Natural England has commenced an exercise to review this interest across the Thames Gateway. Whilst we note that the development site is not thought to hold significant terrestrial invertebrate interest, it presents an opportunity to contribute additional high quality habitats and we welcome the comments presented on this in the submission.

In particular we note the 'F' zones – in particular what looks to be F4 – is in a strategically important location, and habitat creation here is to be welcomed in particular (although the current focus is on reptiles). Natural England would like to engage further in its design, management and monitoring. In particular, we would like to understand how DCO Requirements could help secure further steps in the design and implementation of these habitat creation area.

7. Statement of Common Ground (SoCG)

Thank you for providing a first draft Statement of Common Ground. Natural England will be pleased to work with you on this document in due course.

Yours sincerely

Jonathan Bustard
Casework Manager