

SIZEWELL C DEVELOPMENT APPLICATION

NNB Generation Co (SZC) Ltd: EN010012

Written Deadline 7 Submission

Due to absence on 27th August.

Issue Specific Hearing 10

Biodiversity and Ecology

2. Terrestrial ecology

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Local resident and nature conservation consultant.

03 September 2021

Headlines.

- The problems of ISH 7 in relation to information supply and clarify have been compounded.
- The process of environmental considerations on terrestrial ecology remains frustrated.

Dear SZC Case Team,

I could not attend ISH10 due to a longstanding commitment. I have however watched some of the recordings of the meeting and noted the Deadline 5 & 6 responses from the applicant. Matters that are raised again are due to the absence or insufficiency of the responses given by the applicant.

Using the headings provided in the agenda, I comment as follows:

2. Ecology – general and policy

a. To understand and explore compliance (or otherwise) with EN-1 (applied by para 3.9.5 of EN-6), in particular:

(i) para 5.3.5 (and Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System (ODPM 06/2005, Defra 01/2005));

It is my view that the Circular, as updated, is currently fully in force and applicable. I agree with Mr Meyer at ESC who said halting biodiversity decline has not been fully demonstrated and would go further to say it is not demonstrated in an accountable way. I also agree that the continued absence of an Estate-wide management plan, together with the very substantial financial commitment to manage land and water habitats has been a major impediment to proper scrutiny. The Circulars including para 5.3.5 help define the requirement and any development control appraisal and are not set apart from the policy as Mr Philpott might infer. i.e., ignore them at your peril in any development control test.

(ii) para 5.3.13 and County Wildlife Sites;

Agreement that para 5.3.13 does include County Wildlife Sites.

4. Terrestrial ecology

a. Fen meadow proposals, including Pakenham – to understand in particular Natural England’s position on need, quantum and the likelihood of success

Frankly, the ‘new’ applicant’s documentation document describing the Pakenham fen meadow aspirations (9.64) is little more than a slightly rehashed version of document 9.34, with some minor additional information and changes. This is not what was expected or anticipated I think, from the undertakings made during ISH 7 to provide a comprehensive details of how the earthworks and water management might operate in the future. Not at all. It barely scopes the issues let alone address feasibility.

We are blinded to facts on several key issues by a lack of proper information, with the hydrological surveys at Pakenham only beginning in March/April 2021. A year’s study at least, is required, and evaluation of historic trends, including those on catchment water

abstraction. These should have been the core content of a scoping study with further years to consider feasibility from the outset.

The report simply re-confirms the uncertainty and difficulty in controlling ground water levels, making design requirements uncertain. The table for each mitigation site that is labelled “results for key water quality parameters” only lists dissolved phosphate and nitrate figures are given, as opposed to Total Nitrogen or Phosphorus to give a fuller picture. The putative Pakenham mitigation site has the worst water quality overall. Pakenham and Benhall are not suitable for M22 based upon the data. There is a low likelihood of success, and it is not as described by the applicant. A contingency for failure is no substitute for correct approaches based upon reasonable expectation. I agree with and support with the findings of the hydrological experts working for Suffolk Coastal Friends of the Earth. Water quality is the key and this should have been the method by which any theoretical considerations are made.

You will see the response below to my email to Natural England since the last hearing in respect of the potential interplay between the existing SSSI at Pakenham and the proposed excavated area. You can see that the existing SSSI is already compromised by the conditions in this area and including water supply and quality. It appears that the invertebrate fauna and flora of the existing fen is not known and the applicant has not surveyed it, as they must. NE have not yet responded on the point about biodiversity damage from mixing animals and plants from the two sites. I have highlighted some key points in these recent emails in yellow highlighter.

From: Haynes, Jack [REDACTED]@naturalengland.org.uk>
Sent: 23 August 2021 16:47
To: Tom Langton [REDACTED]
Subject: RE: SZC/Pakenham Fen

Hi Tom,

My colleague has now got back to me on this and has unfortunately drawn a blank on the report mentioned on our Designated Sites View website, as referenced in your first question. It might be something that was planned to be commissioned via the agri-environment scheme which was live at that time in 2012 (since expired) – we’ve been unable to locate any reference to that so think it’s unlikely that it was ever followed through on.

Re your second question, we are also not aware of any recent vegetation/invertebrate survey reports for the SSSI, so consider that this should be assessed by the applicant as a part of their submission on their compensation proposals. In case it’s useful, I’ve attached a habitat distribution

map for the SSSI and included below the site account for the wider Pakenham Fen area, which includes the 'Meadows' from the Wetland Framework site accounts in case you haven't come across those in your search for information:

1.1 Pakenham Meadows

SUFFOLK: TL933682

Status: SSSI

WETMECs: WETMEC 8: Groundwater-Fed Bottoms with Aquitard

Description: Pakenham Fen^[1] *sensu lato* is a once quite large area of fen near to the head-waters of a small feeder stream of The Black Bourn, which is itself a tributary of the R. Little Ouse. The flow of the Black Bourne is supplemented near the source by the outfall from the Thurston Sewage Works. The area has been extensively ditched and much is now improved grassland or wood, but there are some residual pockets of unimproved wet grassland, most notably four unimproved meadows towards the southeast corner of the Fen and a group of meadows near the northeast corner of the site. These latter have been designated as Pakenham Meadows SSSI. They are located between the Pakenham Stream and the upland margin and are subdivided by a series of deep drains.

Vegetation: Much of the vegetation of the Meadows is impoverished, coarse, damp grassland (with much *Arrhenatherum elatius*) with patches of species-poor *Carex acutiformis* and *Glyceria maxima* fen, but there are also small areas of fen meadow with *Juncus subnodulosus* (M22) and a range of associates, which include *Anagallis tenella*. Both Henslow & Skepper (1860) and Hind (1889) give records for *Schoenus nigricans* from 'Pakenham', together with some species typical of M13 vegetation and it seems likely that this type of vegetation once occurred in the general area of the fen, though it is not known if it was located in the vicinity of the current SSSI.

Substratum: The meadows are situated on a quite deep (1.5–2 m) peat. Over much of the site, this is rather dry, crumbly and amorphous but in the NW (best) patch of M22 vegetation it is relatively wet and fresh below the surface oxidised layers, with patches of marl^[2]. Along the eastern edge of this stand there are localised, subsurface calcite deposits (some concreted), which may mark the location of former strong chalk springs (interestingly there is little evidence of comparable material in the drier, amorphous peat *between* the M22 stand and the fen margin). It seems very likely that these may once have been associated with species-rich calcareous fen vegetation (M9 or M13).

Water Supply: The Pakenham Stream occupies a buried valley in the Chalk, filled with sands and gravels and capped with alluvium. The Chalk rises to either side of the valley and is capped by drift (Lowestoft Till). The site is probably fed by gravitational seepage of chalk water, but aquifer levels are not known (to us). Seepage inputs appear to be substantially intercepted by the deep drainage ditches that cross the site. **These are piped beneath the Pakenham stream and discharge into ditches on the western side of the valley, which flow down into the Pakenham Stream downstream. Deepening of the ditches some 20 years ago may have led to increased surface drying, but drainage damage to this site is of long standing.**

The water level in the Pakenham Stream is controlled by a water mill downstream and is reported to be 'very stable throughout the year and close to ground level' (Water Level Management Plan (WLMP, 1997)) (when visited in July 1999, the water level in the stream appeared to be higher than the surface of the fen). The WLMP presumes that there is 'significant seepage of river water into the site, which maintains the water levels in low level meadows in the valley bottom', but there appears to be no direct evidence for this – indeed the rather dry character of the peat

[1] Judging from the density of drains, there were formerly two particularly wet areas of fen at this site, one of almost 1 km length along the SE margin of the valley, the other corresponding to the current SSSI. The 1st edition 6" OS map (1882) marks the southern part of the fen as Pakenham Fen.

[2] A rather curious feature of the peat across much of the meadows is a layer of small stones about 20–30 cm subsurface

between the river and main area of fen suggests that there is probably rather little lateral seepage from the river. Thus the conclusion that 'it is important that the river level be maintained at its present height in order to supply the low lying fen meadow' may be questioned.

Conclusion: A much degraded and drained, remnant wetland site, of limited biological interest. Probably formerly with a high water table maintained by chalk water springs and seepage, the remnant 'wet' areas may still be associated with localised upwelling which maintains a summer water table well below ground level.

I hope that is helpful.

Kind regards, Jack

Jack Haynes

Senior Adviser

Natural England - Norfolk & Suffolk Area Team

From: Tom Langton

Sent: 26 July 2021 10:34

To: [REDACTED]@naturalengland.org.uk

Cc: Sally Watts [REDACTED]

Subject: SZC/Pakenham Fen

Dear Dr Haynes,

I'm working in association with three interested parties on The Sizewell C case including the landowners representative at the proposed fen meadow creation site..

I left a couple of VM's last week and am keen to catch up with you after our introductory talk a few weeks ago.

Might have a brief talk with you again about concerns regarding potential interactions of the proposed work with the Pakenham Meadows SSSI as a result of the SZC mitigation/compensation proposals for coastal fenland.

- The citation for Pakenham Meadows SSSI; notification includes some areas of M22 vegetation, within wet grassland and species such as Bog Pimpernel. This indicates some good quality in the past including water quality. The most recent condition assessment on the NE website is Sept. 2012, classing the SSSI as of 'unfavourable recovering' status. It says that 'management prognosis unknown at present as awaiting consultant report'. Did this report ever arrive and if so is it available?
- It would be useful to check what plant and invertebrate species currently survive at Pakenham Meadows SSSI. Are any of you aware of any recent vegetation/invert survey reports for this SSSI? This is an important point as introduction (translocation) of material nearby from outside could cause by positive or negative effects and to the downstream catchment that should be assessed as a part of any considerations of suitability.
- Further, the upstream Thurston Sewage Treatment works discharges into the Pakenham Stream just west of Mill Lane. This is around 2.0 km upstream of the proposed fen meadow creation area. EA Sewage Treatment works monitoring sites often don't include nutrient sampling as they concentrate on other chemicals. However, there is some Orthophosphate and total organic nitrogen data up to 2008 (3.1-5.1 mg/l and TON 15-16 mg/l). TON also regularly exceeded 25 mg/l in 2006 and 2007. These levels are very high ,

as expected from treated sewage effluent and so likely to influence riverside land in high water/winter flood events.

These matters are material to the application and I would be grateful for your guidance as soon as possible.

Many thanks, Tom Langton
Consulting ecologist.

b. Wet woodland

My previous comments apply. Wet woodland is a part of the matrix providing for the SSSI invertebrates and its contribution is unknown, due not least to the refusal of the applicant to allow my third party surveys. This is a major omission from their presentation and plans, which relies on comparative studies and not those that address salvage planning to transfer material elsewhere. Last minute addition of it to the Pakenham plans is thwarted by water quality limitations (see Fen Meadow, as above). Dr Manning said at a public meeting in Leiston several years ago that Wet Woodland was too expensive for EDFE to create which seemed a strange statement.

c. Designated sites including County Wildlife Sites, Foxburrow Wood and veteran trees

I refer to, and support the comments made by Suffolk Coastal Friends of the Earth in respect of the damage and destruction to the two CWS.

Shingle Beaches CWS:

I have grave concerns over the significant losses in biodiversity in destruction of shingle dunes and shingle beaches from the creation of the SZC Hard Coastal Defence. Restored habitats reach only ~6% of that prior to intervention levels of the existing habitat. As mentioned in my previous submissions the steepness of the beach is a major impediment. This is a shocking loss of a significant natural area and the visual intrusion and obstruction too in this scenic area will be considerable.

f. SSSI crossing (including landscape and visual aspects)

Previous comments apply, the severance issues relating to the road and of which the SSSI crossing is a part have not been joined up and remain largely neglected including provisions for NERC Act 2006 species.

g. Biodiversity net gain – the effect of the new metric and assessment of SSSIs

The applicant claims that the Project will deliver 19% ‘net gain’ in biodiversity but have not shown it in any credible manner. There really does need to be an establishment of order in the SZC application. Under the circumstances, the bald net gain claims, that cannot be checked via maps as is suggested, should be out in the open and have been settled upon much earlier in this process.

Given any uncertainties the calculations could have been provided ‘both ways’; i.e. via Metric 2 and Metric 3 and compared and contrasted with the uncertainties and rules of allowing or restricting, for all to understand. Not necessarily as an absolute but to give proper context and comparison to any claims or counter claims, leading to agreement on the facts. They could even have been laid out in a simple table.

Why the reluctance? Perhaps because the result and conclusions would be completely different. I agree with the extensive and well-made points made by Mr Collins (particularly in relation to accuracy and pay back periods) and Mr Woodfield and others regarding the cryptic nature, inconsistencies and vagueness of the approach taken by the applicant to-date. Mr Lewis seems confused with his own figures at times.

Habitats in the baseline state have been assessed to be in no better than 'moderate' condition. This is nonsense and is clearly an oversight. The approach can be manipulated to look good by ‘bumping up’ or bad if done ‘in the dark’. It all needs to be out in the open as in a normal planning application.

There needs to be a level playing field on decisions that define and enable biodiversity protection. Grassland sown over 7 years to my observation are very largely poor quality and struggling to develop as pointed out by several IP’s, including at Aldhurst Farm where ragwort has been allowed to proliferate and is just being flailed. My view is that habitat and species (notably reptile) provisions to-date, as stated previously and consistently by me have been crude and ill-informed. Lack of attention to nutrient levels is a theme that runs through many of the examination issues regarding biodiversity mitigation and compensation.

This BNG ‘problem’ still threatens the proper comprehension of the application. It is not enough to say loss of the SSSI means there can be no net gain or that some compensation cannot be counted because the applicant has chosen this yardstick for us to use. It is the big picture that is needed via view of the components, because net gain is what has been claimed very publicly for some time and what is in front of the examination. It needs examining.