Dr. Stephen R. Mounce,

25/4/2025

Re: **Dogger Bank South Project – Written representation (deadline 25/4/25)**

Dear Planning Inspectorate,

I am responding to the above consultation as an Interested Party (20050002) and providing some further input based on my interest in Burton Bushes and the Westwood (see background in Appendix 1).

At the last oral hearing on the 9th April (01:58:46), the following query was raised: "*And finally, then for the Burton Bush's answer, you briefly mentioned that earlier. Given the location of the Burton buses, triple C is within 250m of the proposed development.* ***Should the potential for geological effects be assessed and reported on***."

Caroline Martin for the applicant. "*Um, it's not it. It's not anticipated the triple S will be impacted due to the construction or operation of the project. So we've not slept. We've not set it in chapter 19. Um. It doesn't it doesn't overlap with the, um, project corridor. Um, there's no no potential contamination pollutant linkages. Um, therefore it's not there isn't a potential viable there's not a viable way that it would be impacted by the construction or operation of the project*." I would contend the response for the Applicant is insufficient and the lack of assessment not satisfactory.

While undergrounding power lines is often done to reduce visual impact and can have fewer landscape effects than overhead lines, it is not impact-free – especially not in an area rich in ecological and cultural significance. Each of the potential impacts identified (soil, water, woodland, archaeology) needs to be acknowledged and mitigated with evidence-backed measures. Only with such comprehensive planning can one confidently say the project will have "no significant impacts" on the surrounding SSSI, ancient woodland, or archaeological resources.

The proposed overland corridor is now given around a 100 to 125m gap whilst circling around Burton Bushes and the Westwood (approximate, no ruler on the online map at https://interactivemap.doggerbanksouth.co.uk/). So we know that the cable trenching and construction (of temporary construction compounds) will potentially occur within 150 meters of three sensitive receptors: a Site of Special Scientific Interest (SSSI), an area of ancient woodland, and known archaeological remains (Burton Bushes). The applicant has asserted that geological effects need not be assessed and claims there will be no significant construction or operational impacts. However, given the proximity to these sensitive sites, a careful review of potential risks is warranted. Some of these issues are briefly touched upon below:

SSSIs

SSSIs are nationally important conservation sites designated under UK law for their exceptional wildlife or geology. They represent some of the most sensitive habitats or geological features in the country. Any damage to an SSSI can undermine the very features it was designated to protect. Development even outside an SSSI can

adversely affect it – national planning policy states that development on land outside a SSSI likely to have an adverse effect on it "should not normally be permitted". SSSIs are highly protected. An environment near an SSSI demands stringent controls to ensure no adverse effect on the designated features. Opportunities to enhance or buffer the SSSI (for instance, by avoiding any activity in a defined buffer zone or by implementing habitat buffers) should be considered in line with policy. The Wildlife and Countryside Act 1981 gives legal protection to SSSIs, making it an offense to intentionally or recklessly damage an SSSI's features – a reminder of the duty of care required this close to a designated site.

- Habitat and Species Disturbance. Many SSSIs harbour rare species or fragile ecosystems that are sensitive to noise, vibration, or human disturbance. Construction activity (e.g. heavy machinery noise or human presence) could disturb wildlife, especially during critical periods like breeding seasons. For example, an SSSI designated for ground-nesting birds could be impacted by noise or activity within a few hundred meters, potentially causing birds to avoid the area or abandon nests. Burton Bushes is home to some rare species as regards birds (over 63 varieties including greater spotted woodpecker, tawny owl, chiffchaffs and blackcaps).
- Dust, Pollution and Run-off. Trenching work produces soil dust and could release sediments or pollutants. Dust settling on adjacent vegetation can alter the nutrient balance or pH of soils and leaves, affecting plant health. Run-off of silt or any construction contaminants (fuel, oil, cement) could enter the SSSI, especially if there are hydrological connections (ditches, streams) leading from the work area. Note that the Westwood is often waterlogged with a waterway opening up to the bottom of Burton Bushes and running East to West including to the farmland to the West. Many SSSIs are extremely vulnerable to water quality changes; even small siltation events can smother sensitive plants or invertebrates. Natural England considers activities altering water flow or quality as potential risks to SSSIs, and such operations would typically be scrutinized closely.
- Hydrological Changes. If the SSSI includes wetland habitat or relies on specific groundwater levels, nearby excavation can inadvertently drain or redirect water. Lowering of the water table or changes in surface water patterns can degrade wet habitats or dry out soils beyond the SSSI boundary. For instance, a fen or bog SSSI could be harmed if trench de-watering or altered drainage causes it to receive less water. Even when works are outside the SSSI, if they intercept the same groundwater or catchment, there is a risk of impact. This is recognized in guidance that notes cable trenches can disrupt shallow groundwater systems and modify drainage pathways.
- Geological Features. Some SSSIs are designated for geological formations (exposed strata, fossil beds, landforms). While the project proponents claim geological effects need not be assessed, this should be verified. If the nearby SSSI is a geological SSSI, vibrations from construction or changes in stability could potentially affect rock exposures. Whilst trenching 250m away (but not 125-150m) is unlikely to physically disturb a geological outcrop within the SSSI, caution is needed if, for example, the trench could intercept the stratum that the SSSI exposes. In any case, maintaining the integrity of a geological SSSI (e.g. avoiding any dumping of spoil or alteration of natural erosion processes) is important.

Ancient Woodland

Ancient woodlands (wooded areas continuously present for centuries, usually defined as since at least 1600 AD in England) are an irreplaceable natural resource. They "support more threatened species than any other habitat in the UK" and are functionally irreplaceable in terms of biodiversity and cultural heritage. Only around 12% of the UK is wooded, and ancient semi-natural woodland comprises a small fraction of this; many ancient woods are very small (under 5 ha) and thus extremely vulnerable to edge effects from nearby land use. Because of their unique value, national planning policy affords ancient woodland strong protection: any development resulting in the loss or deterioration of ancient woodland should be refused unless there are wholly exceptional reasons, and even then compensation is required. "Deterioration" includes indirect impacts, not just clear-cutting trees. Current policy explicitly aims to safeguard ancient woods from both direct and indirect effects of development.

Key sensitivities of ancient woodlands and their adjacent areas include:

- Root Zone and Soil Disturbance, The root systems of woodland trees often extend well beyond the woodland boundary. Construction within close proximity can sever or damage roots, destabilize trees, or alter soil conditions essential for tree health. Natural England and the Forestry Commission's standing advice recommends a buffer zone of at least 15 meters from the edge of an ancient woodland for any development, specifically to "avoid root damage" to trees (this 15 m approximates the typical root protection area, though roots can extend further) If there are mature or veteran trees near the cable route (even outside the mapped woodland), their individual root protection areas should also be respected. In practice, this means no trenching, heavy machinery, or storage of materials within those buffer areas. Soil compaction from construction traffic near trees can be as harmful as direct root cutting, since compacted soil reduces oxygen and water availability to roots.

- Changes in Hydrology. Ancient woodland ecosystems often depend on stable soil moisture and local hydrological regimes. Altering drainage patterns upslope or upstream of a wood can lead to a woodland either drying out or becoming waterlogged. For instance, digging a trench can act as a drain that intercepts groundwater flow – possibly lowering the water table on the woodland side. Research on large underground cable projects has found that excavations can disrupt shallow groundwater and *lower* groundwater levels in the vicinity. If the ancient wood has wet flushes, springlines, or ponds, a nearby trench might divert or drain some of that water. Conversely, changes in run-off could cause more water to flow into the wood in an uncontrolled way, potentially eroding soils. Either scenario could stress or kill sensitive ancient trees and alter the plant community. Indeed, a review of development impacts on ancient woods notes that altered hydrological functioning or soil structure can lead to tree death and shifts in woodland vegetation. Thus, maintaining the

status quo of water flow is crucial – any EIA should assess whether the cable route intersects key groundwater paths and propose mitigation if so.

- Edge Effects – Light, Noise, and Pollution Ancient woodlands are negatively affected by the "edge effects" of adjacent development. Even though the cable works are temporary, there are still edge disturbances to consider. Increased light penetration can change understorey conditions and invite weeds. Noise and human activity can disrupt woodland wildlife – for example, construction noise might displace birds or mammals from the woodland edge, reduce breeding success, or increase stress on species that use the woodland core as refuge. Dust from excavation, as mentioned earlier, can settle on woodland flora. Chemical pollutants (vehicle exhaust, fuel spills, concrete washwater) can also harm delicate woodland ground flora or soil fungi if they drift or leach into the wood. Nitrogen deposition from construction equipment exhaust or dust deposition can favor competitive grasses over ancient woodland indicator plants, subtly degrading the habitat. Additionally, disturbed ground at the wood's edge is an entry point for invasive non-native species or aggressive weeds that can outcompete ancient woodland plants. Mitigation measures (like physical barriers, dust suppression, careful timing of works) are thus important to minimize these edge effects.

- Fragmentation and Connectivity. While the cable itself will be underground, the associated temporary works could fragment habitat. For example, if construction haul roads or site compounds are placed between the woodland and other nearby habitats, it might hinder the movement of species. Bats from the woodland could be affected by lighting at night, or woodland birds may avoid crossing open areas. Ancient woodlands often rely on nearby hedgerows or copses as "stepping stones" for wildlife; these should be preserved. It's important that during construction any unnecessary clearing of vegetation is avoided and that the working width is kept to the minimum needed.

It is notable that the Forestry Commission is a non-statutory consultee for developments within 500m of ancient woodland. The 500m distance indicates that indirect effects can extend far beyond the 15m root zone buffer – for example, research has documented that some impacts (like changes in light, noise, and invasive plants) can penetrate woodland hundreds of meters from a development edge. In this case, at as little as 100-125m away, the project is well within the zone where consultation and careful consideration is expected. In summary, ancient woodlands are exceptionally sensitive: the project should strive to completely avoid any direct interaction (no encroachment into the woodland) and rigorously mitigate indirect impacts (dust, noise, water, lighting). Any deterioration of the woodland, even without direct tree loss, would be viewed as a significant adverse impact under planning policy.

Archaeological Sites

The presence of known archaeological remains within 250m of the cable route is a major cultural heritage consideration. Archaeological sites (whether scheduled monuments or unscheduled but recorded sites) are a finite, non-renewable resource (see the Burton Bushes English Heritage Survey from 2004). Once disturbed or removed, the information they contain is lost forever unless properly excavated and

recorded. Even when development is not directly on top of a known site, nearby ground works can still pose risks to archaeological heritage:

- Direct Physical Damage. Any ground disturbance – *"including levelling; digging trenches for foundations, pipes or cables; landscaping"* – can damage or destroy buried archaeological features. In practice, if the cable trench or associated works (e.g. access tracks, laydown areas) intersect any part of an archaeological site, those remains would likely be removed by the excavation. Even at 125-250m away, it's possible that unrecorded archaeological materials extend into the project area. The UK is dense with archaeology; for example, during National Grid's recent Hinkley Point C connection project in Somerset, cable trenching uncovered the remains of a Roman roadside settlement along the route. Such finds are not uncommon – utility trenching projects often discover archaeological artifacts or features. This underscores that a comprehensive archaeological survey of the cable corridor (not just known sites 250 m away) is needed. It should not be assumed that "no impact" will occur without evidence; rather, a precautionary approach is to identify and avoid or excavate any archaeological deposits along the route.

- Vibration and Structural Impacts. For underground, purely buried remains, vibration is less of an issue compared to direct disturbance but still need consideration.

- Changes to the Burial Environment. An often overlooked impact is how construction can alter the burial environment that preserves archaeological materials. Many archaeological remains – especially organic materials like wood, leather, textiles, or even bone – are preserved because of specific soil conditions (for example, waterlogged, anaerobic soils, or stable geochemistry). If a trench is excavated and dewatered, the local water table may drop in the surrounding soils. Dewatering of deposits can introduce oxygen and dry conditions, accelerating the biological and chemical decay of nearby archaeological artifacts. Even small changes in soil moisture can start to degrade organic remains that have survived for centuries under anoxic conditions. There is documented evidence that even archaeological trial pits can locally disturb hydrology and increase decay rates in sensitive sites. Therefore, if the known archaeological site is of a type that relies on waterlogged conditions (say, an ancient well, a peat deposit with artifacts, or a preserved timber structure in wet ground), then the cable works could indirectly harm it by altering the subsurface water flow. An environmental assessment should explicitly consider this possibility and perhaps include hydrological modeling to ensure the water regime at the archaeological site remains stable. Mitigation might involve limiting dewatering, using clay plugs in trenches, or monitoring groundwater during and after construction.

The usual approach is to preserve archaeological remains in situ wherever feasible, and if disturbance is unavoidable, to excavate and record them beforehand. In line with this, a project of this nature should have an Archaeological Mitigation Strategy. This typically includes: a detailed desk-based assessment, field evaluations (if not already done at design stage), micro-siting the trench to avoid the most sensitive areas if possible, and an archaeological watching brief during trenching (with professional archaeologists on site to observe the excavated soil for any finds or features).

Historic England and the local county archaeologist would expect the developer to have identified all known heritage assets in proximity and assessed the likelihood of unknown archaeology on the route. The applicant's claim that there will be "no construction or operational impacts" on archaeology should be treated with caution unless backed by a thorough investigation. As National Grid's archaeologists noted during the Hinkley project, archaeological treasures *"can be damaged or removed all too easily, without either recording what they were or preserving them"*, and thus proactive measures are essential. In summary, the archaeological sensitivity is high: the project should assume that ground disturbance has the potential to encounter or affect historic remains and plan accordingly to avoid, protect, or excavate those resources in a responsible manner.

Some additional areas that should be assessed in a more comprehensive investigation and associated environmental impact assessment (EIA) include:

- The main soil impacts from the underground cabling will be during construction: compaction, loss of structure, and potential erosion. If not mitigated, these can lead to long-term degradation of soil health along the cable route. It will be essential for the project to implement a Soil Management Plan: e.g. restricting vehicle movements to defined tracks, avoiding working in very wet conditions to prevent rutting, deep-ripping or decompacting subsoil after backfilling, and careful topsoil reinstatement. With proper restoration, surface soil conditions can gradually recover, but monitoring might be needed to ensure, for instance, that plant communities re-establish and that no persistent compaction remains. If there are areas of peat or soft organic soil, the geological/hydrogeological assessment should consider how to handle those without causing extensive compression or oxidation of peat

- The primary hydrological concerns are: maintaining the water supply to sensitive habitats (SSSI woodland soils), preventing construction-phase water pollution or siltation, and ensuring post-construction drainage patterns are as close to original as possible. Mitigation likely needs to include a robust drainage management plan (using silt fences, ponds, etc.), timing works in drier months if feasible, and possibly using trench plugs to partition the cable trench and prevent it from becoming a conduit for water. Monitoring groundwater levels or surface water flows during and after construction could be considered if the SSSI's features are water-dependent.

- Protecting the ancient woodland means not just avoiding cutting its trees, but also preventing any deterioration of its condition. An Arboricultural Impact Assessment or a statement could be provided from a suitably qualified ecologist/arborist confirming that the ancient woodland will be fully protected, with appropriate buffers and mitigation.

The scientific and grey literature consistently indicate that underground installations can have significant environmental footprints if not carefully managed. The impacts on soil structure and hydrology are among the best documented, while the indirect impacts on nearby habitats require piecing together ecological studies of other types of development. All evidence suggests that the Applicant's assertion of "no impacts"

would be scientifically unsound unless extremely rigorous mitigation and a benign setting make it true. Typically, one would expect an EIA to cite such studies and justify conclusions with evidence. The absence of an impact assessment on soils, hydrology, etc., would run contrary to the known research, which is why raising these points with references is important in planning feedback. I still contend the overland cable route corridor is too close to Burton Bushes.

Best Regards,

Dr Stephen R. Mounce

Appendix 1: Previously submitted information including links

Dear Planning Inspectorate,

I am responding to the above consultation as an Interested Party (20050002) and providing some feedback on the proposed changes/ current version of the proposal. I am a local resident of Beverley who is particularly interested in the impacts of the overland cable route on ancient woodland and veteran trees, particularly Burton Bushes/ Beverley Westwood (a unique site and very popular nature amenity area for the public), both as a community area, as a unique habitat and in terms of archaeological interest.

At the last meeting (Specific Hearing 1 (ISH1)) the issue of removal of ancient woodland/ veteran trees near the substation was raised by The East Riding of Yorkshire Council. The response by RWE was unsatisfactory, they did not appear to have explored what would be considered due diligence to mitigate the effect on local woodlands, and the ERC questioning needed further research. This needs investigating further.

This new version of the proposal seems to be improved in that (provided the map at https://interactivemap.doggerbanksouth.co.uk/ is correct) the proposed overland corridor is now given around a 100m gap whilst circling around Burton Bushes and the Westwood. This is better than some earlier maps which had this corridor right next to the Westwood which was completely inappropriate. In fact this is referred to in the November newsletter (having not being addressed previously nor still in the archaeology section) "*Avoids the designated landscape at Westwood Common*;" and under ecology p5 *"Potential impact on Beverley Westwood and Burton Bushes Sites of Special Scientific Interest (SSSI)":*

- *The cable route avoids both Beverley Westwood and Burton Bushes SSSI.*
- *Temporary construction compounds have been selected that are further away from Burton Bushes SSSI to minimise impact.*
- *We have committed to Horizontal Directional Drill under woodland areas to leave them undisturbed and in situ.*

Comment: Can RWE confirm there is no drilling under Burton Bushes or the Westwood? This does not seem to be on the map and should not be allowed.

Whilst the adjustments described in the first two points are welcome, I still contend that the corridor and construction sites and buildings are too close to wildlife habitats/ archaeological SSIs to me (e.g. Burton Bushes) and general peaceful amenity areas on the Westwood. There appears to be quite a lot of construction of 'temporary construction compounds' near to or next to various parts of the Westwood. The York road will be significantly disrupted.

I spoke to Richard, a transport consultant/ contractor at the 2023 consultation event who gave me a lot of detailed information about the practicalities, timings, HGV, transport disruption, buildings, lengths per section. He explained the overland corridor is split into 15 sections overall, with each section requiring about 12 months of constructions, digging works, HGVs etc. One of these sections (16a) runs down the

back length of the Westwood (including alongside Burton Bushes) and is forecast to last for months 15 to 26 of the project (likely earliest 2027 if the plan goes ahead and of course dependent on the National Grid Creyke Beck proposal).

Therefore, likely there could be large scale construction activities, major transport disruption, noise pollution, wildlife/ ecology impacts, amenity impacts, possible knock on archaeological damage for Beverley Westwood for a period of up to 12 months as the plans stand. Incredibly, in section 3.3.3. of the PEIR in point 178 for potential impacts on tourism and users of recreational routes the "effects were assessed as negligible.. no mitigation measures are proposed". Human health aspects were similarly glossed over in points 168 and 169.

I would like to highlight the following (particularly as the PEIR ignored important information about Burton Bushes and didn't mention it or the Westwood once - very cursory and sub standard):

- Burton Bushes is a unique habitat of 25 acres of ancient woodland (pre 1500s), is designated as a Site of Special Scientific Interest including for Quercus robur - Pteridium aquilinum - Rubus fruticosus woodland (Broadleaved, mixed and Yew).

SSSI designation:
https://designatedsites.naturalengland.org.uk/SiteList.aspx?siteName=Burton%20bushes&countyCode=&responsiblePerson=&DesignationType=All

Map:
https://magic.defra.gov.uk/MagicMap.aspx?startTopic=Designations&activelayer=sssiIndex&query=HYPERLINK%3D%271002049%27

- The woodland trust has identified over 40 unique ancient trees in this wood:

https://ati.woodlandtrust.org.uk/treesearch/?v=2161204&ml=map&z=17&nwLat=53.84295110571505&nwLng=0.47212924667010103&seLat=53.838494534874606&seLng=-0.4567762822688559

- It is also a haven for birds, with over 63 varieties including greater spotted woodpecker, tawny owl, chiffchaffs and blackcaps.

- Burton Bushes is also a site of archaeological significance (Earthworks on the floor of Burton Bushes indicate probable agricultural enclosures, probably from the Romano-British period (c. AD 50-390)) - as is the Westwood in general (three Bronze Age Barrows). The neighbouring field to Burton Bushes i.e. containing the corridor could potentially contain similar areas of interest.

English heritage Survey from 2004:
https://historicengland.org.uk/research/results/reports/6453/WestwoodCommonBeverley_anArchaeologicalSurvey_SurveyReport

Whilst I understand the need for these energy infrastructure projects I therefore make representation that this plan has made a poor decision on the onshore export cable corridor route and has not sufficiently thought through and investigated impacts (particularly around ecology, archaeology and heritage) on Beverley Westwood and Burton Bushes with the present corridor. It should be moved even further away from Burton Bushes and the Westwood to protect habitats and mitigate the other issues highlighted.

Best Regards,

Dr Stephen R. Mounce