Environment Agency response to Sizewell C Development Consent Order Stage 3 Consultation

Our Reference: AE/2019/123894/01

29 March 2019

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can't do this alone. We work as part of the Defra group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

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Foreword

This document represents the Environment Agency's response to the EDF Energy proposed new nuclear power station development – known as Sizewell C. Our comments are made in response to the information contained in the stage 3 pre-Development Consent Order documentation (made under Section 42 of the Planning Act 2008).

Our comments are addressed to Mr. Jim Crawford, as Sizewell C Project Development Director.

In responding our aim is to ensure that any new nuclear power station at Sizewell, and its associated developments, would be constructed, operated and decommissioned to high environmental standards. We look forward to continuing to engage with EDF Energy to achieve this.

Executive Summary

In reviewing the stage 3 consultation documents we consider that many of the areas you need to take into account have been identified. However the assessments which underpin these areas have not yet been provided. Consequently, the impacts and proposed suitability of mitigations cannot be assessed at this time. These material considerations will need to be resolved before you submit an application for a Development Consent Order (DCO).

In summary our main concerns include the lack of:

- a finalised Flood Risk Assessment,
- proposals for groundwater mitigation measures, together with a monitoring and maintenance strategy,
- a coastal management and monitoring strategy - together with contingency - to mitigate impacts,
- a full assessment of impacts to marine and terrestrial wildlife and proposed mitigations,
- detailed drainage strategies, and
- modelling which underpins the assessments and matters listed above, and which is also required for review.

We, Natural England and the Marine Management Organisation recognise the complex nature of the Sizewell C project. To maximise the benefits, effectiveness and efficiency of our advice, your programme for development of Sizewell C proposals should take account of our requirements, expectations and needs. This will enable us to plan the use of our specialist resources.

In the latest consultation new infrastructure is proposed, particularly relating to associated development sites including;

- Theberton Bypass,
- New Sizewell Link Road, and
- Highways improvements near Wickham Market and Yoxford.

In Appendix C we set out general requirements applicable to these proposals.

The Environment Agency's regulation at new nuclear sites in England includes:

- disposals and discharges of radioactive waste,
- discharges of cooling and process water,
- operation of standby diesel generators. and
- de-watering, and discharge of surface waters and effluents during construction.

Prospective operators must apply for and obtain relevant permits from the Environment Agency before Sizewell C can be constructed, or operated.

We would expect to use the assessments we make, when determining operational and relevant construction permit applications for Sizewell C, to inform our advice to the Planning Inspectorate when examining the DCO application. We recommend that the timing of your Environmental Permit applications in relation to the DCO

application takes account of this. We would plan to state whether or not we are minded to grant a permit once we begin public consultation on our draft decision. If the DCO and permit application(s) are not appropriately coordinated, we may not yet be in that position and so will be unable to properly inform the Planning Inspectors during the examination of the DCO.

Mitigation measures necessary to control any impacts we identify will be included within the Habitats Regulations Assessment we undertake, and publish at the time of our consultation. However, noting that the Habitats Regulations Assessment takes into account in combination matters, we may struggle to recommend mitigation measures for consideration - and inclusion in relevant DCO Requirements - due to any misalignment of timescales.

We note that we have already issued operational permits for Sizewell's twin station at Hinkley Point C - and we understand that you intend to replicate the design so far as you can - however it should also be recognised that the environment at each station is different.

For all these reasons, we recommend that operational permit applications are submitted at least 6 months prior to DCO submission. Construction permits should also be submitted where they could have an impact on designated habitats. This approach is supported in Annex D of PINS advice note 11 https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/04/Advice-note-11-Annex-D-EA.pdf

This response does not represent our final view in relation to any future Development Consent Order application. It is provided without prejudice to our decisions on any applications made for Environmental Permits. Our final view will take account of information included in the application and relevant guidance available at that time.

For further discussions, please contact Neil Dinwiddie – Nuclear New Build Planning Specialist for East Anglia Area, on 0203 025 8461.

Yours sincerely

C. H. Beardall

Dr. Charles Beardall
East Anglia Deputy Director

Our role on nuclear sites

We have two primary roles with regard to our work on nuclear sites:

- We are the environmental regulator for nuclear sites in England. This means that we make decisions under the environmental permitting regulations about whether relevant environmental permits should be issued to potential and existing operators of nuclear sites and what conditions the permits should contain so as to properly protect people and the environment. We enforce the conditions of the permits to ensure that operators comply with the requirements of their permits and can take action including prosecution if they do not.

- We provide advice to other bodies making decisions about nuclear sites, such as with regard to infrastructure planning, where their decisions are related to our responsibilities, for example flood risks.

More widely we provide advice to Government and other bodies about nuclear sites and the environment. We also talk to and advise potential operators of nuclear sites so that they know and understand our requirements and expectations of them.

Our regulation on nuclear sites includes disposals and discharge of radioactive wastes, the discharge of cooling and process water, the disposal of non-radioactive wastes and the operation of standby generation plant. Together with the Office for Nuclear Regulation, we are responsible for making sure that any new nuclear power stations built in England meet high standards of safety, security, environment protection and waste management.

Habitat Regulation Assessment

The Environment Agency is required under the Habitats Regulations to undertake a Habitat Regulations Assessment (HRA) to help inform our decisions on any environmental permit applications that have the potential to impact upon European designated sites. The Secretary of State for Business, Energy and Industrial Strategy (BEIS) will undertake the HRA for the DCO.

Statutory consultee

We are a statutory consultee in the planning process which means that planning authorities have to ask us what we think about proposed developments in relation to our role in protecting people and the environment. We advise the planning authorities on the effects of development on people and the environment. Key aspects of developments that we consider include flood risk, discharges to air and water, the amount of water required to operate and construct them, the amount of waste produced by the development and how it is managed. The developer also has to show how they intend to minimise relevant environmental impacts during construction and ensure that they are acceptable.

We also advise potential operators and developers about what we think about their proposals and this document sets out our advice to EDF Energy[1] about the proposals they have set out for consultation in the documentation supporting the Stage 3 consultation.

Final decision on the Sizewell C Development Consent Order

The Planning Inspectorate will examine the application for a DCO, if made, and following an extensive determination process, submit a recommendation to the Secretary of State for BEIS who will be responsible for making a final decision on whether or not a DCO is issued. In considering the DCO, the Secretary of State for BEIS will also want to understand our draft decision on the environmental permits EDF Energy need to operate the nuclear power station.

For other planning applications, we will comment to the local planning authority who will be responsible for the final decision for those applications made to it.

Issue, Comment, Suggested solution approach

To help you, where possible, we have laid out our comments in the following format:
Issue – indicating a particular area of concern;
Comment – which discusses that issue in greater detail and the potential impact;
Suggested solution – which presents a potential solution to the issue in the form of information, or evidence that - if provided - might ensure that no adverse impact will arise, or identifies a potential mitigation measure for you to consider.

[1] NNB Generation Company (SZC) Limited

Contents

General comments applicable to main development site and associated development (AD) sites

You intend to replicate approaches used at Hinkley Point C in the proposed development at Sizewell C. If some of these same approaches are not acceptable at Sizewell C due to the different local environment - or accounting for lessons learnt at Hinkley Point C - then alternative approaches will need to be considered.

Habitat Regulation Assessment

A HRA is required to be provided to assess the potential effect on the integrity of sites designated under the Habitats Regulations.

Where mitigation is relied upon under HRA we expect the following points to be considered; and information included to answer these points where mitigation is to be used:

- What the mitigation is and how it would be expected to work over duration of project.
- How it would be implemented and by whom.
- The degree of confidence of its likely success.
- The timescale it would be implemented, maintained and managed.
- How measures would be secured, monitored and enforced, and if it failed how it would be rectified.

We are aware that a Sizewell C HRA Evidence Plan was completed in 2014 however, since then new sites and new case law means that the Evidence Plan needs to be updated. You will need to account for this new case law as part of your ongoing HRA work; updating your Evidence Plan would help.

It could be determined that no adverse effect on the integrity of European sites only if certain measures and conditions are implemented – some of these measures may be secured as requirements on the Development Consent Order or conditions in the perming process.

Water Framework Directive (WFD) assessment

A WFD compliance assessment for the main site and associated development sites will be required. The assessment will need to account for the potential worst case, including the cumulative effects of different impacts, in order to understand the WFD implications.

The stage 3 DCO consultation includes new infrastructure that was not included in the previous stage 2 public consultation (e.g. proposed Theberton bypass, new Sizewell link road and additional highway works near Wickham Market). There needs to be a review of the previous WFD 'water bodies' identified to ensure that the full range of WFD waterbodies are included in the assessment, taking account of the new proposals; this relates to potential impacts both during construction and/or operation.

Enhancement and Environmental Net Gain

Government requires developers to contribute to and enhance the natural and local environment. The 25 Year Environment Plan (published in 2018) confirms Government's move to embed an 'environmental net gain' principle for development. We will work with you to help identify how and where 'environmental net gain' can be delivered as part of your development proposals.

Modelling

Models are required to assess the various impacts associated with the development. This information underpins the risk assessments and will provide information which will feed in to the design proposals and mitigation measures. This includes the hydrodynamic model (necessary to consider the impact of the thermal and chemical plume), sediment transport model (necessary to consider impact on the sediment regime and coastal processes), the groundwater model (necessary to assess groundwater impacts, risks of contamination) and the fluvial and coastal models (hydraulic, overtopping and breach modelling) necessary to assess flood risk.

Until the Environment Agency has been provided with the modelling which underpins these assessments, we cannot advise, make decisions or have confidence in any statements made about the extent of associated impacts. We recommend continued upfront engagement in the development of these models to ensure that they are adequate for this purpose, and that we may subsequently be in a position to advise the planning inspectorate accordingly.

Flood Risk

A flood risk assessment is required on all developments which are located in a flood risk area. This should include consideration of the development's flood risk impacts (during both the construction and operational phases) for the whole development, including the main site and associated development sites. The flood risk assessment should account for all sources of flood risk and ensure that all necessary flood risk mitigation measures are proposed, along with details of how they will be implemented. Climate change allowances and predictions will need to be based on the latest UKCP18 data.

Contamination

The risk of ground contamination needs to be assessed and managed. The development on the main site, and associated development sites, will potentially result in increased risk of pollution from contaminated land. This risk needs to be addressed through a detailed risk assessment, together with a piling risk assessment where appropriate.

Groundwater investigation / remediation strategies (including a consideration of the potential risks of draw-down of radiological contamination from adjacent sites) is required to assess the potential impacts to the environment and to inform any mitigation measures that may be required. The main site surveys will need to account for ground conditions under Sizewell B and Sizewell A, where contamination from industrial operations may be present. De-watering activities also have the potential to mobilise contaminants.

Failure to survey and account for all sources of potential contamination will mean the risk to the environment will not be understood and appropriate mitigation opportunities (to protect the environment) may potentially be missed – this should include long-term groundwater monitoring of pollution linkages, maintenance and arrangements for contingency action. Drainage proposals will need to take account of contamination assessment findings and recommendations based on risk; drainage strategies must be planned appropriately.

Waste Management Strategy

A Waste Management Strategy will need to be provided for the whole development (main site and associated development sites) to assess the radiological and non-radiological waste arising from the proposed developments. A strategy based on sustainable waste management principles is required. This would provide a demonstration that the management of all wastes arising during the construction and operational phases of development are understood and that significant impacts on the environment as a result of waste production are avoided.

Current best practice for sustainable waste and resource management is where waste is viewed as a resource, especially the requirement to incorporate the circular economy (i.e. where resources are kept in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life).

CL:AIRE protocol

The CL:AIRE (Contaminated Land Applications in the Real Environment) Definition of Waste: Development Industry Code of Practice (CoP) sets out good practice by providing a framework for determining whether or not excavated material arising from site during remediation and/or land development works is waste or not. The

CoP sets out the evidence required to satisfy the criteria: suitability of use, certainty of use and quantity of use.

Code of construction practice

A strategy for managing pollution across the construction period is required; this strategy needs to cover the whole development (main site and associated development sites). Previous Development Consent Order applications have addressed this issue through a Code of Construction Practice (CoCP). This document is then used as the framework to inform the approach to environmental management, such as Construction Environment Management Plans (CEMPs). A large range of matters will need to be addressed, but considering the local sensitive receptors and habitats, must include how the potential for erosion and wind-blown material from stockpiles will be managed, surface water run-off management and pollution prevention measures.

Foul water strategy

A Foul Water Drainage Strategy for the main site and associated development sites is required. This should include the approach to foul water disposal and the measures taken to avoid adverse environmental impact to the freshwater environment, and in the case of the main development site, the marine environment.

This strategy needs to address the construction and operational phases across the whole development. For the main development site this includes the accommodation campus. If the overall population served by the treatment plant exceeds 10,000 then the plant will need to comply with the Urban Waste Water Directive.

Surface water drainage strategy

A detailed surface water drainage strategy for the main site and associated development sites is required. This is to ensure that there are no significant pollution risks to the water environment. It should include the potential water quality risk to local surface water receptors associated with run-off during construction and operational phases. Early phases of development need to be considered to ensure all key drainage infrastructure is in place and the approach is suitable to prevent any polluted discharge. Appropriate mitigation and treatment systems must be in place before any discharge. Examples of matters that will need to be robustly designed to ensure there is no risk to the water environment and the surrounding sensitive, designated habitats/sites include:

- The management of pollution prevention/ risk for the additional road and rail infrastructure;
- Maximising the distance between mixing and washing areas during construction and surface water receptors;
- Options for re-use of wash water;

- Any proposals for train refuelling or servicing and;
- Potential for a pollution remediation strategy following restoration back to land use set out for operation land masterplan.

Discharges to surface water or groundwater will need to be permitted under the Environmental Permitting Regulations 2016; this applies to both construction and operational discharges. More information can be found: https://www.gov.uk/topic/environmental-management/environmental-permits

You will need to speak to Suffolk County Council (as Lead Local Flood Authority) and local water companies about any local water capacity issues associated with the proposed surface water drainage discharges.

Biosecurity

The risks of introduction / spread of invasive non-native species will need to be managed with appropriate procedures and mitigation put in place.

Main Development Site: General Comments

The main issues for us are:

- ***Assessment of alternatives to direct cooling has not occurred*:** There has been no strategic assessment of alternatives and the main reasons for the options selected, taking into account the environmental effects. This assessment will need to include an assessment of Best Available Techniques.

- ***Coastal flooding/ ecology impacts have not been assessed*:** Assessments of the impacts on sediment regime, coastal processes from the proposed coastal defence features and associated foreshore works (beach landing facility, cooling water intake and outfall tunnels), have not been provided. Based on the assessment outputs, a strategy for managing changes to the sediment regime / coastal processes in the wider Sizewell Bay - both in terms of coastal flooding; and also ecology and habitats particularly along the Minsmere frontage - will be required.

  The coastal management strategy needs to compliment the coastal context of the area. It is important that any strategy contains appropriate monitoring and contingency proposals and is based upon robust evidence, which considers alone and in-combination effects of all coastal infrastructure on the sediment regime and coastal processes.

- ***Impacts on protected aquatic species are unknown*:** The environmental implications associated with cooling water infrastructure during construction and operation. This includes thermal and chemical plume modelling, entrainment and impingement impact assessments, and dredging (both during construction and operational phases to allow vessels to offload certain materials) on the marine environment.

- ***Mitigation for aquatic environment*:** as the environmental implications are unknown at this time – it's not possible to assess the appropriateness of mitigation measures. Should the mitigation proposals be found to be suitable then a monitoring and contingency plan will be required.

- ***Flood risk:*** The flood risk assessment for all development located in Flood Zones 2 and 3 will need to be assessed. This includes providing the flood risk modelling underpinning the assessment findings.

- ***Groundwater[2] impacts*:** Impact assessment to demonstrate changes in

[2] The Environment Agency's source protection zones (SPZ) in the East Anglia Area are currently being updated. Regard needs to be taken of the updated SPZs to ensure studies are based on the most up to date environmental information, which should be publically available in the next few months.

groundwater and surface water levels during construction and operation. Any impacts to protected species/habitats have yet to be assessed and an appropriate mitigation, monitoring and maintenance strategy established. This includes the groundwater modelling underpinning the assessment findings. The source of freshwater supply (for construction and operation) remains unknown and any impacts associated with this needs to be confirmed.

- ***Compensation for Loss of habitat:*** The proposed loss of approximately 5 hectares of Sizewell Marshes SSSI, required for the power station platform and SSSI access crossing footprint. Partial compensation for this loss is to be provided through the habitat creation scheme at Aldhurst Farm, but further compensation is required. This includes the loss of fen meadow and wet woodland. This compensation needs to be in place before development removes any protected habitat.

- ***Impacts on general ecology are unknown*****:** Ecological impact assessment across all parts of the main development site and the mitigation proposed to overcome these impacts has yet to be determined.

  Control of Major Accident Hazards (COMAH): There has been no consideration given to the Control of Major Accident Hazard (COMAH) Regulations 2015, which are also aimed at controlling accident risks. The Environment Agency and Health and Safety Executive (HSE) makes up the COMAH Competent Authority. The Planning (Hazardous Substances) Regulations require Local Authorities to regulate the storage and handling of certain dangerous chemicals. Whilst there is overlap between the two, the planning regime focuses on the siting of establishments and the risks associated with surrounding land use, whilst COMAH focuses on the measures necessary to control risk at the establishment itself.

  We will need to be consulted should your proposal include planning permission for a new or modified COMAH establishment, or new developments around COMAH establishments that might change the likelihood of major accidents or their consequences.

- ***Water supply:*** The source of freshwater supply both during construction and operation is unknown.

Associated Development (AD) Sites: General Comments

The main issues for us are:

- **Green Rail Route**
  Protected species: The impacts to protected species and habitats has not been appropriately assessed and appropriate mitigation proposed.

- **Other Rail Improvements**
  Protected species: Impacts on protected species have not been appropriate assessed includes disturbance to wetland habitat, and interruption to migratory routes, fragmentation to habitat.

  Flood Risk:
  The flood risk assessment for all development located in Flood Zones 2 and 3 will need to be assessed.

- **Sizewell Link Road and Theberton Bypass**
  Protected species: Impacts to a range of protected species, habitat fragmentation and direct loss of habitat and changes to hydromorphology as a result of proposed river crossings has not been assessed.

  Flood risk: The flood risk assessment for all development located in Flood Zones 2 and 3 will need to be assessed. The impact of river crossings to river flows and flood storage is unknown and needs to be assessed. Any re-alignment works to rivers has the potential to alter river flows and flood risk.

- **Two Village Bypass**
  Protected species: Impacts to a range of protected species, habitat fragmentation and direct loss of habitat and changes to hydromorphology as a result of proposed river crossings has not been assessed.

  Flood risk: The flood risk assessment for all development located in Flood Zones 2 and 3 will need to be assessed. The impact of river crossings to river flows and flood storage is unknown and needs to be assessed. Any re-alignment works to rivers has the potential to alter river flows and flood risk.

- **Northern & Southern Park and Ride**
  Protected species: Impacts to protected species have not been assessed.

- **Freight Management Facility**
  Protected species: Impacts to protected species have not been assessed.

- **Yoxford Roundabout**
  Protected species: Impacts to protected species have not been assessed.

- **Highway Improvements**
  Flood risk: The flood risk assessment for all development located in Flood Zones 2 and 3 will need to be assessed.

  Protected species: Impacts to protected species have not been assessed.

Appendix A: Response to Preliminary Environmental Information for the Main site and Associated Development sites

Many of our comments remain largely the same as those we raised in response to your stage 2 Development Consent Order consultation, albeit some of these have been refined or added to. In order to help you differentiate between our previous, or slightly refined comments - and our new comments - we denote our previous comments below with the symbol *.

	Volume 1: Development Proposals
2.5 Sizewell Link Road **2.6 Theberton Bypass** **2.7 Two Village Bypass**	**Issue** The impact of the proposed road infrastructure on protected species are not understood. **Comment** There is new road infrastructure proposed in the road-led option. The disturbance impacts of this needs to be understood with mitigation proposed. **Suggested Solution** Assess the ecological disturbance of construction and maintenance works including migratory species; and propose appropriate methods and mitigation. E.g. viaduct or clear span bridge.
7.4.80 Sea defence **Figure 7.21 Sea defences typical sections (operation)**	**Issue** Ecological and flood risk impacts on coastal process by the hard coastal defence feature (HCDF) have not been fully assessed. **Comment** It is unclear from the drawing sections provided where the rock toe of the HCDF will be positioned. It is considered that this would need to be much deeper than currently presented in figure 7.21. It will be important to understand whether deepening of the rock toe would lead to a further widening seawards of the HCDF structure; and whether this could lead to interaction with coastal processes earlier than indicated in sections 2.14.35 and 2.14.36 of Volume 2A. **Suggested Solution** Provide a final proposed design of the HCDF and ensure this structure is fully assessed to understand the influence of this on coastal processes/ coastal erosion forecasting and knock on impacts on ecology and flood risk.

7.6.15 Accommodation Campus	**Issue** It is unclear what range of waste recycling and energy supply infrastructure is proposed on the accommodation campus; and whether these facilities are inter-related (i.e. energy from waste facility). **Comment** There is a risk of misinterpretation over the strategy for energy supply for the accommodation campus. One of the bullet points under 7.6.15 reads 'waste recycling and facilities to supply energy to the site'. It is unclear if waste management and energy supply are separate entities or interlinked. **Suggested Solution** Provide further information and clarity on all your proposals for waste recycling and energy supply to the site.
	Volume 2A: Preliminary Environmental Information
Introduction to Preliminary Environmental Information (PEI)	
1.1.5 – 1.1.7 Approach to Preliminary Environmental Information	**Issue** There is insufficient information and evidence presented to allow us to agree with the full range of preliminary impacts you set out in statements and within the 'summary of effects' tables for each environmental topic. **Comment** We need to understand the implications of your proposals for each of these potential impacts; and for all phases of your development to enable us to take a view on the validity of your conclusions. **Solution** Provide full, detailed assessment information (and supporting model information where relevant) to back-up your preliminary conclusions.
1.5.1 Approach to limiting environmental effects	**Issue** The vision for the project does not mention opportunities for environmental enhancement. **Comment** It is important that opportunities for environmental enhancement are identified and considered in order to maximise project legacy for the environment. This is in line with the Government's expectation for development to enhance the environment. **Suggested Solution** Ensure biodiversity net gain is considered where appropriate.

Main Development Site PEI	
2.3 Terrestrial ecology and ornithology	**Issue** Potential impacts have not been assessed to a range of protected/priority species and habitats, as well as statutory and non-statutory designated conservation sites including SSSIs, SPAs, SACs and County Wildlife Sites. **Comment** Various aspects of the development have the potential for significant adverse effects on ecological receptors. It is unclear at this stage whether these impacts will be adequately mitigated for as part of the development. **Suggested Solution** Provide detailed baseline information on all the environmental receptors that may be impacted by the proposed development, as well as comprehensive measures to mitigate for any adverse impacts that are identified. Measures that result in a net biodiversity gain should also be considered and proposed.
2.3.11 Baseline environment	**Issue** It is unclear what full range of seabird species use the inshore waters adjacent to Sizewell as foraging habitat. **Comment** It is stated that the inshore waters adjacent to SZC are important foraging habitat for a range of seabird species, but only Red Throated Diver and Little Tern are mentioned. There could be other bird species where this area provides important foraging area and as such considered in Habitat Regulations terms as "functionally linked land" (FLL). **Suggested Solution** Ensure that other bird species (and all mobile species) are considered in light of Kilkenny ECJ ruling case C-461/17 *Holohan v. An Bord.*
2.3.18 Environmental design and embedded mitigation	**Issue*** Loss of fen meadow habitat within Sizewell Marshes SSSI. **Comment** Potential impact to the ecological integrity and resilience of the wider habitat mosaic as a result of the loss of fen meadow habitat in Sizewell Marshes SSSI. **Suggested Solution** Restoration of a suitable site of sufficient size (a multiple of the land area lost) would be required in order to provide adequate compensation for this loss. As well as restoration, mitigation will

	require ongoing appropriate management in order to maintain/improve the condition of the restored area of habitat.
2.3.32 Coastal vegetation **2.3.41 Preliminary assessment of residual effects**	**Issue** It is unclear if the potential changes and loss of coastal vegetation could affect the Special Area of Conservation (SAC) habitat. **Comment** The vegetative shingle ridge features of Minsmere to Walberswick Heath and Marshes SAC will need to be considered within the assessment of coastal process changes and impacts. **Suggested Solution** Assess potential changes to sand and shingle substrates as result of the development and consider changes to coastal vegetation within the context of the Habitat Regulations.
2.3.41 Preliminary assessment of residual effects	**Issue** The mitigation proposed for the loss of wet woodland and associated species from Sizewell Marshes SSSI is not appropriate. **Comment** The current information does not address the mitigation strategy for the loss of wet woodland. The proposed mitigation for this loss is suggested to be the wider plan to restore arable land to acid grassland and heathland. However, this wider plan will not address this specific habitat loss. The area of wet woodland is part of a designated conservation site and also a Priority Habitat under Section 41 of the NERC Act (2006). **Suggested Solution** Provide details of mitigation measures which provide compensation for wet woodland.
2.8.33 Air Quality (Operation)	**Issue** Insufficient information included to confirm that all the latest, relevant legislative changes are to be included at the design stage to allow for selection of appropriate technology to meet the requirements. **Comment** Failure to account for any changes in requirements due to legislation changes could mean the most appropriate technology is not designed in at an early stage leading to unacceptable air quality impacts. Changes may be required in view of the implementation of the Medium Combustion Plant Directive and BREF (Best available technique reference documents). **Suggested Solution**

	Continue to engage with the Environment Agency as part of pre-application discussions to discuss and demonstrate compliance with the appropriate legislation and BREF notes.
2.10.8 Groundwater (Water Resources)	**Issue*** Abstraction of water will have its own impacts which will need to be managed to avoid risks to the environment and harm to protected species. **Comment** The source of freshwater supply during construction and operation is unknown. Construction will require significant volumes of water (e.g. physical construction and water for accommodation workers). **Suggested Solution** Identify the source of water. Should it not be possible to obtain a supply from the public network within existing licenced supplies, an assessment of the environmental impacts of the alternatives will be required.
2.10.20 – 21 and 2.11.24 Groundwater	**Issue*** Potential risk to the water environment associated with the proposed re-use of peat-clay alluvium on site (through borrow pits) have not been assessed. **Comment** Concerns that this will increase risks to the water environment and potentially have a detrimental impact on protected habitats. This potential impact will influence the amount of stockpiling that would be acceptable on top of the borrow pits. **Solution** Assessment required to demonstrate potential contamination risks are understood and appropriate mitigation adopted to ensure the water environment will not be significantly harmed. This assessment information will also identify the limits required for stockpiling proposals on top of borrow pits.
2.10.22 and 2.11.27 Groundwater **(Sizewell Drain re-alignment)** **2.12.38 Flood Risk (Fluvial)**	**Issue*** The Sizewell Drain is to be realigned north, parallel to the base of the platform slope. The impact of this proposal (e.g. changes to flood storage, flow, surface-groundwater regime, hydromorphology and impacts to protected species) has not been assessed. **Comment** Modification to watercourses could result in changes to flood storage and flow regime increasing flood risk upstream or downstream. Also realignment works could also cause changes in surface water/ groundwater interactions, hydromorphology with potential harm to protected species.

	Suggested Solution Assess any changes to flood risk (through fluvial modelling), groundwater, protected species and hydromorphology, and demonstrate appropriate design and mitigation.
2.10.24 Groundwater (Dewatering)	**Issue*** A dewatering[3] discharge strategy has not been provided. An unsustainable dewatering approach increases risks to the environment and potential harm to protected species. **Comment** A dewatering discharge strategy will need to incorporate appropriate mitigation measures including water quality and water quantity. **Suggested Solution** Provide a dewatering discharge strategy
2.10.24, 2.10.29-31, 2.10.33-34 and 2.10.36 Groundwater **2.11.37 Surface Water**	**Issue*** The risks to groundwater levels and surrounding habitats and ecology (including the immediately adjacent Sizewell Marshes SSSI) have not been assessed and appropriate mitigation put in place. **Comment** There is connectivity between surface waters and groundwater. Any changes to groundwater/surface water levels or water chemistry could result in impacts to the sensitive ecology of the Sizewell Marshes SSSI wetland habitat. There is the potential to alter groundwater levels from the construction of a cut off wall and also following breach of the cut off wall. **Suggested Solution** A ground water risk assessment is required (including robust modelling) to identify the full range of potential impacts to groundwater levels, the water environment and ecology of the SSSI and neighbouring habitats. A robust mitigation, monitoring and maintenance strategy will need to be developed and agreed.
2.11.23 Surface Water (Construction)	**Issue*** Potential for pollution and water quality impacts during different phases of development. **Comment** Failure to adequately design and manage site drainage for all phases of the development (construction and operation) could result in water quality impacts to the water environment and local sensitive habitats.

[3] Dewatering above 20m3/d is now a licensable activity and a legal requirement under the Water Resources Act 1991, as amended by the Water Act 2003.

	Suggested Solution Provide full details of your drainage proposals to demonstrate the risk of pollution and potential impacts to water quality are acceptable and can be robustly managed and monitored.
2.11.22-23, 2.11.25, 2.11.38-39 and 2.11.44 Surface Water	**Issue** Potential changes to water discharges and infiltration rates to the surrounding water environment. **Comment** The development footprint will alter current natural infiltration and drainage rates. A full drainage strategy is required which confirms the proposed approach to site drainage during construction and operation; and the balance between infiltration and discharge. **Suggested Solution** Provide full drainage details to demonstrate the balance between on-site infiltration and discharge to ensure there will be no changes and impacts to local water levels.
2.11.26 Surface Water (Construction) **2.15.34 and 2.15.44 Marine Water and Sediment Quality**	**Issue** The interim arrangements for disposal of waste (sewage effluent, tunnelling wastes, groundwater dewatering) to be discharged prior to the completion of the construction of the Combined Drainage Outfall are unknown. **Comment** Interim arrangements for discharge of effluent to coastal waters may lead to pollution of inshore waters. It is not currently clear how this will be appropriately managed. **Solution** Suitable design of interim arrangements to allow impact of effluent to be mitigated.
2.11.27 and 2.11.40 Surface Water **(Sizewell Drain re-alignment)**	**Issue*** Proposed use of additional water control structures to help revise water level management as part of the realigned Sizewell Drain. In-stream water control structures could act as a barrier to the movement of otter, water vole, European eels, and fish and also alter sediment transportation and deposition. **Comment** Failure to consider fish passage in the design of the weir could result in a barrier and prevent fish species from passing. This may have a detrimental impact on European protected species. **Suggested Solution** Assessment is required to understand potential impact of in-stream weir structure to protected species and sediment transportation. Eels Regulations (2009) compliance also needs

	to be demonstrated; this incudes showing the structure is passable to eel migrating upstream and downstream.
2.12.14 Flood Risk **Table 2.12.2 Baseline and future**	**Issue** Flood risk has not been adequately assessed. **Comment** The coastal modelling data has not been provided. Potential flaws in the modelling may affect the accuracy of the outputs from the coastal flood risk assessment work. Thus resulting in errors in the mitigation proposed. **Suggested Solution** Include the latest data and methods within the flood risk assessment.
Table 2.12.3 Summary of flood risk at the main development site	**Issue** The Preliminary Environmental Information for flood risk refers to out of date Flood Zones and modelling. **Comment** Inaccurate baseline information will affect the accuracy and reliability of flood risk assessment outputs. The Environment Agency has updated its coastal modelling for the Essex, Norfolk and Suffolk coast. The updated Flood Zones were published on 31 January 2019. **Suggested Solution** Include our Essex, Norfolk and Suffolk coastal modelling (2018) in your flood risk assessment.
2.12.18 Fluvial Flood Risk (reference to Figure 2.12.2 in Volume 3)	**Issue** Climate change not referred to or shown in figure 2.12.2. **Comment** The design fluvial event is the 1% AEP, including an allowance for climate change. A change of 1cm in the current day event (which is quoted) may be different when climate change allowances are considered with different conclusions. We cannot agree the statements about flood risk until we see appropriate modelling outputs, which incorporates latest data and climate change allowances. **Suggested Solution** Ensure climate change is considered over the lifetime of the development for both on-site and off-site risk.
2.12.37 Flood Risk Main platform (Coastal)	**Issue** Potential temporary increase in flood risk during construction of sea defences. **Comment**

	Increase in risk, including on-site construction workers, during the temporary lowering of the embankments during sea defence construction phase. **Suggested Solution** Provide information in your flood risk assessment regarding the phases of construction of the sea defences, any changes to potential impacts from flood risk and how risks will be managed.
2.12.62 **Flood Risk**	**Issue** The flood risk to all receptors on-site and off-site (people and property; and also ecology) have not been assessed and understood. **Comment** The proposed development footprint has the potential to change flood flows, regime and characteristics. It is important that any such changes are fully understood to inform appropriate mitigation and management of risk. **Suggested Solution** A flood risk assessment is required (including modelling) to identify the potential flood risk effects both on-site and off-site from all sources of flooding. A strategy for managing and mitigating for any increased risk will need to be proposed and agreed.
2.12.47 **SSSI Crossing**	**Issue** A culvert is proposed for the SSSI crossing, thus increasing the risk to protected species and of flooding. **Comment** This has the potential to significantly impact river ecology, protected species, hydromorphology, habitat fragmentation, continuity and hinder Water Framework Assessment (WFD) compliance; also potential to increase flood risk. **Suggested Solution** The environmental implications of the embankment over a culvert needs to be fully understood to identify the impacts and inform mitigation. An assessment is needed to show that your preferred SSSI crossing option will not have a detrimental effect on: - Flood risk: the culvert dimensions need to allow conveyance of flood flows in all events up to and including the 1% AEP, including allowance for climate change over the lifetime of the development. - Habitat fragmentation and continuity. - Ecology: the embankment and culvert shall be designed with the movement and passage of water vole, fish and otter in mind ensuring the natural character of the river is maintained.

	- Local groundwater. - Hydromorphology. - WFD compliance. A full and robust justification is required setting out why your preferred option for an embankment over a culvert is both necessary and the only reasonable and practicable option.
2.12.47 SSSI Crossing **2.12.104 Fluvial Flood Risk (Floodplain Compensation)**	**Issue** Proposals increase flood risk due to the loss of flood storage from main development site footprint. **Comment** Potential to increase flood risk off-site due to removal of flood storage. Part of the main platform and the SSSI crossing is located within Flood Zone 3. **Suggested Solution** Provide a flood risk assessment informed by modelling to determine the risk of fluvial, tidal and breach modelling at the site and potential off-site impacts due to loss of flood storage. Propose suitable mitigation (e.g. compensatory storage) to ensure any change in flood risk is appropriately managed.
2.12.48 SSSI Crossing (Flood Risk)	**Issue** The flood risk associated with the construction of a temporary haul road are unknown. **Comment** The bridges and haul road will cross the Leiston Drain (main river) and could impact fluvial and tidal risk. **Suggested Solution** Provide details of the temporary haul road and bridges to enable an understanding of whether they will impact upon flood risk and the main river. Temporary works should be considered within the FRA to ensure they do not increase flood risk.
SSSI crossing **Volume 1 - 7.4.68** **Volume 2A - 2.12.76**	**Issue*** It is unclear the range of factors (i.e. environmental and economic) that have been considered and how these have been the deciding factors in the decision to have the embankment/ culvert SSSI crossing as the preferred option. **Comment** Failure to clarify all the factors being considered, when taking forward preferred development options, will undermine the justification for the option chosen. Pursuance of a final proposal, instead of others, may not be fully justified – especially where other proposals would have had a lesser environmental impact. For example, you discuss how the embankment could be adapted in the future (if required) to further protect the power station from flood risk in the event of a high climate change

	scenario. However, we need to understand all factors for the range of SSSI crossing options previously proposed and the positives and negatives associated with these. **Suggested solution** Confirm how all factors have actually been factored into your preferred option selection process.
2.12.88, 2.12.91, 2.12.93 and 2.12.103 Flood Risk **Figure 2.12.5 (Volume 3)** **2.12.120-121 Completing the assessment**	**Issue** Insufficient information to agree with any statements made on the possible flood risk impacts on and off-site. **Comment** Failure to provide and agree all modelling and assessment work for flood risk will reduce confidence in any conclusions made. **Suggested Solution** Discuss and provide information regarding ongoing model refinement work to enable agreement over the fluvial and coastal models. Provide models for review before any significant conclusions are drawn. Ensure modelling addresses a range of return periods (over the lifetime of the development) and clearly details this within the flood risk assessment.
2.14.3 Coastal geomorphology and hydrodynamics (Baseline environment)	**Issue** The full scope of assessments are not understood which could undermine the coastal baseline assessment; and therefore result in increased risks to the environment. **Comment** It is unclear if all relevant factors have been included within the baseline environment. There is no mention of prevailing wave and wind climate; for example, wave direction and significant height. **Suggested Solution** Ensure all relevant information and data is included as part of the baseline to information assessment of changes. WaveNet is a further source of data worth considering. Also, include details about where data is derived from.
2.14.4 Coastal geomorphology and hydrodynamics (Baseline environment)	**Issue** Marine designated sites are not included in the assessment. Thus impacts to these protected sites are unknown and mitigation undermined. **Comment** Only terrestrial designated sites are listed. Failure to list all relevant designated sites provides uncertainty. For example, that list should also include the Outer Thames SPA, Southern North Sea SAC and North Norfolk SAC. **Suggested Solution**

	Ensure all designated sites that could be affected by changes in coastal geomorphology and hydrodynamics are included.
2.14.7 Coastal geomorphology and hydrodynamics (Baseline environment)	**Issue** The rates of erosion and recession along the coastal frontage are not understood. This needs to be confirmed in order to understand impacts from your coastal infrastructure. **Comment** Understanding where the beach is subject to recession through erosion will help in the assessment of how receptive the beach is to potential change caused during construction and operational phases. **Suggested Solution** Provide further information and figures which clearly sets out any areas of erosion hotspots with wave data overlaid upon this. Reference where all data is sourced from and how rates have been calculated.
2.14 Coastal geomorphology and hydrodynamics **2.14.19 Coastal defence features**	**Issue*** The potential impacts to coastal processes resulting from the temporary storage of large quantities of rock armour has not been assessed. **Comment** The impacts to sediment regime, coastal habitats and protected species are not understood, undermining mitigation proposals. There is currently no reference to the need to deliver and temporarily store this rock. **Suggested Solution** Assessment needs to include potential temporary impacts to the sediment regime in the area and establish appropriate mitigation, monitoring and contingency plans.
2.14.19 Coastal defence features **2.14.35 Progressive erosion of the SCDF**	**Issue** The type of material that is to form the sacrificial sediment of the soft coastal defence feature (SCDF) has not been confirmed. Depending on the properties of the material used, this could affect coastal processes and therefore ecology and flood rusk. **Comment** Depending on the sediment properties beach morphology will vary depending on incident wave angle, steepness and energy. If the SCDF is to act as a sediment source akin to a natural sand dune system it would be beneficial to assess the nearby sand dune system to assess sediment properties. There is no information about the sediment that will be used in this sacrificial feature, if this will match the natural beach, how often this sediment will be replaced and where it will originate from.

	Suggested Solution Provide information on the sediment to be used to create the SCDF. This should match the properties of the natural system.
2.14 Coastal geomorphology and hydrodynamics **2.14.19 Coastal defence features** **2.14.36 - 42 Exposure of the HCDF** **2.14.55 Completing the assessment**	**Issue** There is no assessment information on the potential impacts of the proposed design, location and predicted future exposure of the hard coastal defence feature (HCDF). **Comment** The hard coastal defence feature (HCDF) has the potential to impact coastal processes and geomorphology. Any changes to sediment transport - both sand and shingle – need to be understood along with potential impacts to coastal habitats and protected species. **Suggested Solution** An assessment is required to understand the effects associated with the coastal defence features and its future predicted exposure, including sand transport on the lower beach. Appropriate mitigation, monitoring and contingency measures will need to be established. Explore any alternative options to increase the time it takes for the predicted future exposure of the hard coastal defence feature and potential interaction of this feature with coastal processes.
2.14.21 - 23 Temporary rock platform for beach landing facility construction	**Issue** The impacts of the temporary rock platform (proposed for the Beach Landing Facility construction) on coastal processes and resultant impacts on ecology and flood risk are unknown. **Comment** The rock platform could have potential impacts on coastal processes. **Suggested Solution** Provide details of the final design and assess the impact of the temporary rock platform on coastal processes. Appropriate mitigation, monitoring and contingency measures will need to be established; this needs to be agreed with neighbouring coast protection authorities (Environment Agency and East Suffolk Council) including setting trigger levels for actions.
2.14 Coastal geomorphology and hydrodynamics **Tables 2.14.1 and 2.14.2 Summary of effects for**	**Issue*** The coastal monitoring/ contingency strategy has not been provided potentially resulting in uncoordinated management of the coastline. **Comment** The management of the coastline becomes disjointed, potentially increasing impacts on the coastal environment, including protected species and habitats.

construction and operation phases	**Suggested Solution** Provide a coastal monitoring strategy to ensure an integrated approach is undertaken throughout the wider Sizewell Bay.
2.14.24 - 28 Navigation channel and grounding area for beach landing facility usage	**Issue*** The potential impacts from dredging during the construction and operation of the Beach Landing Facility have not been assessed. **Impact** Dredging seabed material has the potential to negatively impact coastal processes. **Suggested solution** Provide information on the timing and frequency of dredging and potential impacts associated with dredging (including cumulative assessment) both during construction and operation of the station. Establish monitoring, mitigation measures and contingency plans if necessary.
2.14.25 Navigational channel and grounding area for beach landing facility	**Issue** There is no reference of incident wave angle. **Comment** Depending on the incident wave angle the amount of energy received and shear stress properties will vary on the shoreline. **Suggested Solution** Provide information and data regarding incident wave angle within your assessment.
2.14 Coastal geomorphology and hydrodynamics **2.14.54 Completing the assessment**	**Issue** The scope of the shingle transport monitoring is unclear. **Comment** There is no mention of the frequency or duration of the shingle transport monitoring. A short monitoring duration may not be sufficient to track long term change and/or stabilisation of any natural features. **Suggested Solution** Provide details of the monitoring strategy to ensure they are sufficient in order to help inform variables such as wave conditions to inform likely changes or impacts from the coastal infrastructure proposed.
2.15.23 - 27 Marine Water and Sediment Quality (Construction: Dredging)	**Issue*** The risks associated with potential mobilisation and redistribution of marine sediment and associated radiological and non-radiological contaminants through marine construction has not been assessed. **Comment**

	Potential impact to water quality and marine species resulting from mobilisation and redistribution of marine sediment and associated radiological and non-radiological contaminants during construction. **Suggested solution** Assess all impacts associated with remobilisation and redistribution of marine sediment and associated radiological and non-radiological contaminants during construction, mitigate and monitor accordingly.
2.15.11 Navigational Dredging	**Issue*** The impacts of navigational dredging on the sediment regime has not been assessed. **Comment** Changes to the sediment regime may result in changes to coastal processes and increased risk to habitats and protected species. **Suggested Solution** An assessment (includes modelling) is required to demonstrate potential impacts on the sediment regime. Appropriate mitigation, monitoring and contingency measures will need to be established.
2.15.14 Cooling Water Infrastructure and Fish Recovery and Return	**Issue*** The final location of the cooling water intake and outfall heads is still to be finalised. **Comment** The impact of cooling water abstraction and discharge is presented in the PEI, which will have been modelled based on assumed locations. The final locations may differ to this. While the difference in terms of environmental effect may be insignificant, the uncertainty over final location should be clearly explained. **Suggested Solution** Continue work to define the final locations of the intake and outfall heads. Explain any uncertainty over the final locations. Provide full modelling evidence and supporting information.
2.15.15 Tunnel Boring Machine Chemicals	**Issue** The impact of the Tunnel Boring Machine chemicals to the marine environment resulting from the tunnelling waste water discharges has not been assessed. **Comment** Potential impacts to water quality and marine species resulting from Tunnel Boring Machine chemicals. **Suggested Solution**

	Assess all impacts of the Tunnel Boring Machine chemical discharges associated with the tunnelling waste water.
2.15.16, 2.15.33 and 2.16.42 Chlorination Strategy **2.16.78 Operational Discharges**	**Issue*** The chlorination strategy has not been agreed. **Comment** Potential impacts to water quality and marine ecology from the use and discharge of chlorination products associated with the cooling water and Fish Recovery Return systems. Until we receive and review all relevant assessment information we are unable to agree with your statements regarding effects. **Suggested Solution** An assessment is required to demonstrate all potential impacts associated with the chlorination strategy under all operation conditions; mitigate and monitor accordingly. Any potential changes to the frequency of seasonal chlorination dosing due to changes in water temperature associated with climate change need to be considered. The assessment must also consider the in-combination effects with Sizewell B.
2.15.17, 2.15.32 and 2.16.63 Hydrazine	**Issue** The hydrazine discharge level has not been agreed. **Comment** Potential impacts to water quality and marine ecology from discharge of hydrazine needs to be assessed in order to agree levels that are environmentally acceptable. **Suggested Solution** Provide a full assessment of the potential impacts associated with hydrazine discharges.
2.15.19, 2.15.30 - 32 Construction and Commissioning Discharges	**Issue** The impacts of all discharges from the combined drainage outfall (CDO) to the marine environment have not been assessed. **Comment** Potential impacts to marine water quality and ecology as a result of discharges from the CDO, including during construction and commissioning phases. At present predicted to cause localised exceedence of Environmental Quality Standards (EQS) concentrations for zinc and chromium. **Suggested Solution** Provide a full assessment of the potential impacts associated with construction phase discharges; and define what is meant by a ‘short period’.
2.15.24 - 25 Dredging	**Issue**

	There is a description of the areas (size) impacted by sedimentation but this is not related to habitats to understand impacts. **Comment** The implications of impacts cannot be fully understood without knowing all environmental receptors affected. **Suggested Solution** Present the model results and illustrate the intersections of the plumes with habitat areas.
2.15.28 Drilling	**Issue** The environmental implications of the spoil heap indicated is unclear. **Comment** There is a reasonable range to the depth of drilling spoil heap which could make a significant difference to impacts to the marine environment. **Suggested Solution** Provide an assessment of the drilling works proposed. Relate the anticipated depth of drilling spoil to the head elevation above the seabed. Discuss effects and potential for subsequent re-scour.
2.15.31 Construction discharges	**Issue** It is unclear if all the ground conditioning substances you plan to use fall within the OSPAR list of PLONOR substances. **Comment** We cannot agree with your statement until all substances proposed are confirmed. If you intend to use bentonite specifically, delete reference to 'some polymers'; otherwise confirm that you will use only PLONOR substances. **Suggested Solution** Confirm the range of ground conditioning substances proposed.
2.15.36 - 39 Operational discharges	**Issue*** The impact of the cooling water discharge to water quality in the marine environment, including thermal and chemical plume, have not been assessed and mitigation has not been identified. **Comment** Mitigation proposals cannot be suitably identified without a full understand of water quality impacts. Mitigation will be required to protect the environment including protected habitats and species. **Suggested solution**

	Provide detailed modelling and assessment of the thermal and chemical plumes, which covers all potential releases made by the power station under the various project phases and operating conditions. The modelling must also consider the in-combination effects with Sizewell B.
2.15.43 Operational discharges	**Issue** It is unclear what specific modelling of dissolved oxygen concentrations is referred to. **Comment** Potential for reduced DO levels to have negative impact on ecology. **Suggested Solution** Clarify and provide the modelling referred to.
2.15.44 - 45 Marine Water and Sediment Quality **Additional mitigation and monitoring**	**Issue** It is misleading to suggest that there will be no additional mitigation and monitoring. **Comment** The embedded mitigation has not currently been demonstrated to be sufficient; therefore we cannot agree with any decision to rule these out. The environmental impacts cannot be accepted on the basis of current information. Predicted impacts are based on modelling; models include sources of error. Without post-operation monitoring it will be difficult to review the effectiveness of mitigation if actual effects are different to those predicted through modelling. **Suggested Solution** Assess all marine quality impacts for construction and operation. Identify and apply the necessary mitigation and demonstrate how proposals have met Best Available Techniques (BAT). Propose suitable monitoring and contingency plans to monitor the system and propose systems to identify and resolve any operational issues.
Tables 2.15.1 and 2.15.2 Embedded Mitigation	**Issue** Incorrect reference to Construction Water Discharge Activity (CWDA) and Water Discharge Activity (WDA) permit as embedded mitigation. **Comment** It is misleading to suggest that the need for environmental permits can be defined as embedded mitigation. This is the environmental regulation that needs to be complied with for discharge activities during construction and operational phases of the development. **Suggested Solution**

	Provide information on the full range of embedded mitigation proposed as part of your development; and assess the suitability and effectiveness of this embedded mitigation on the environment.
Table 2.15.1 Summary of effects **2.16.53 Construction discharges**	**Issue** The approach to tertiary treatment of sewage is unknown. **Comment** The type of tertiary treatment used will influence whether there will be a reduction in nutrient load discharged. **Suggested Solution** Provide information on the form of tertiary treatment proposed in order to demonstrate this will lead to reduction in nutrient load from sewage discharges.
Table 2.15.2 ZOI Increase in temperature	**Issue** We have not seen the full assessment outputs and therefore we are unclear about all the impacts associated with increase in temperature. **Comment** There is the potential for significant impacts associated with increased temperature on ecology. **Suggested Solution** Provide assessment information on the impacts of increased temperature to ecology.
2.16.2 & 2.16.32 Harbour Porpoise and Common Seal	**Issue** Inconsistencies within the document could result in effects and assessments being missed. **Comment** First mention of Special Areas of Conservation (SACs) for Harbour Porpoise and Common Seal. **Suggested Solution** Ensure all relevant sites are included, not just restricted to those within 20km (as listed in 2.3.3).
2.16.13 Fish baseline	**Issue** It is unclear why only data from Sizewell B for the timeframe 2009-2013 has been used. **Comment** There is a risk that if not all data is used, it may only provide part of the baseline situation. Data should also take account of all seasons, such as winter sprat inundations that may have been recorded at Sizewell B. **Suggested Solution**

	Confirm why this timeframe has been used; and provide all relevant data where available.
2.16.33 Environmental design and embedded mitigation	**Issue** There is no mention of any fish deterrent system or further operational mitigation methods mentioned to reduce entrainment and impingement. **Comment** Potential for increased impacts to marine ecology. In your stage 2 consultation, reference was made to the installation of an acoustic fish deterrent as part of the mitigation. However, there is now no reference to an acoustic fish deterrent in the stage 3 consultation. The east coast is at times subject to large sprat inundations. **Suggested Solution** Assess impacts to marine species and set out clearly your full mitigation strategy. Demonstrate Best Available Techniques (BAT) for minimising pollution and compliance with environmental regulations.
2.16.42 Cooling water infrastructure and fish recovery and return	**Issue** All impacts to the marine environment associated with the location of the fish recovery and return system outfalls have not been assessed. **Comment** The full range of impacts need to be understood to inform final locations. For example, the impact of returning fish impinged from outside the Dunwich Bank to inside this feature. **Suggested Solution** Provide a full assessment of all the potential impacts to the marine environment.
2.16.46 Preliminary assessment of effects	**Issue*** The impacts on marine ecology and protected species during construction and operation has not been assessed. **Comment** Disturbance during this time may have a significant impact on marine species (including cetaceans, fish and protected birds). **Suggested solution** Assess the impacts of disturbance associated with construction and operation of marine and coastal infrastructure and establish appropriate mitigation measures. This should be included in all relevant environmental assessments.
2.16.54 Construction discharges	**Issue** The full range of chemical additives to be used during the commissioning phase remains unknown.

	Comment Unspecified 'chemical additives' may have an impact on the environment. We need to ensure that assessments address all chemical additives. **Suggested Solution** Provide information on the full range of chemical additives. Assess the impact of these chemicals both alone and in-combination with other discharges and activities.
2.16.64 Operational discharges	**Issue** It is unclear whether the cases examined for increased ammonia accounted for temperature increase due to inter relationship with cooling water discharge. **Comment** There is the potential for unionised ammonia concentrations to be higher than currently modelled. **Suggested Solution** Confirm if the approach for examining cases of increased ammonia accounted for temperature increases from cooling water. Undertake a revised assessment, if necessary.
Section 2.16 Part c) Preliminary assessment of effects	**Issue** Omission of commissioning stage for potential effects. **Comment** Failure to fully account for potential effects to the marine environment during the commissioning phase means there could be an under-estimation of the preliminary assessment of effects. **Suggested Solution** Incorporate all effects of commissioning discharges on the marine environment.
Marine Ecology and Fisheries **2.16.58, 2.16.67-68 Cooling water abstraction** **2.16.69-71 Operational discharges** **2.16.86 Water abstraction and impingement**	**Issue*** Potential impacts to all marine life (including prey species) associated with entrapment, impingement and entrainment of marine organisms, thermal and chemical discharges from the power station, disturbance impacts (during construction and operation) and the cumulative impacts have not been assessed. **Comment** The adequacy of any mitigation proposed cannot be agreed without an understanding of the impacts to marine environment and the risks to protected species. Until we receive full data and assessment information we cannot validate entrainment and impingement impacts, including impacts at the population level. Any assessment made through modelling at the population level needs to be provided. **Suggested Solution**

	Assess the impacts associated with the cooling water system (including cumulative impacts) and share all evidence, data and modelling; apply the necessary mitigation and demonstrate how proposals have met Best Available Techniques (BAT). Suitable monitoring and contingency plans will also be required to monitor the system and what will happen to resolve any operational issues.
2.16.62 Operation (operational discharges)	**Issue** No consideration has been given to the biocidal effects of contaminated biosludge on benthos communities at the cooling water outfall. **Comment** Failure to fully account for all potential effects on marine communities could lead to an under-estimation of effects both alone and in-combination with other impacts. **Suggested Solution** Provide biomass figures for entrained and impinged organisms at species level to understand impacts.
2.16.68 Cooling water abstraction (zooplankton)	**Issue** It is unclear what the zone of influence for 'population' is. **Comment** Sufficient definition of the zone of influence is required to understand the context behind assessment work and outputs. **Suggested Solution** Provide clarity on the zone of influence for population.
2.16.89 Preliminary assessment of operational effects: fish (operational discharges)	**Issue** Potential impacts to fish species of conservation importance. **Comment** We are unable to agree with your preliminary conclusion that there will be 'no significant effects to migratory behaviour'. For example, we require further information on local smelt populations. **Suggested Solution** Provide full assessment detail to substantiate this preliminary conclusions.
2.16.92 Preliminary assessment of operational effects: fish (operational discharges)	**Issue** Insufficient information on potential impacts to foraging and spawning/nursery habitat for demersal species such as plaice, sand goby and thornback rays. **Comment** The consultation information does not consider the full range of potential impacts to demersal species (for example, potential effects of chlorinated jellies).

	Suggested Solution Provide assessment information which considers the full range of possible impacts.
2.16.109-112 Completing the assessment	**Issue** The full impacts cannot be determined in the absence of species abundance and biomass due to entrapment of species during operation. **Comment** We will be unable to reach any potential agreement over entrapment impacts without all relevant information. **Suggested Solution** Include species abundance and biomass impacts from operational entrapment of species.
Table 2.16.4 Marine ecology and fisheries (summary of effects for the operational phase)	**Issue** No reference to impacts associated with entrapment or entrainment. **Comment** Entrapment and entrainment are important aspects that need to be considered and assessed to understand the overall combined effects. **Suggested Solution** Provide assessment information associated with entrainment and entrapment to inform full range of development impacts on marine ecology.
Green Rail Route PEI	
3.3 Terrestrial Ecology	**Issue** The potential to adversely impact protected species, cause habitat loss and habitat fragmentation. **Comment** The proposed rail route has the potential to adversely impact ecological habitats and species, notably great crested newts. **Suggested Solution** Provide sufficient information and evidence to establish the presence of species and include measures to minimise the impact on these. For great crested newts we would expect proposals to create new breeding ponds and to improve the quantity and quality of habitats either side of the railway line.
3.11 Surface Water	**Issue** The design of the railway line where it crosses existing ditches is unknown with the potential to impact ecology.

	Comment If the design of the railway line crossing does not account for ecology, this could interfere with hydromorphological processes and hinder the free movement of wildlife. **Suggested Solution** Culverts may be acceptable. Any culverts should be of sufficient size to be used as routes for the safe movement of wildlife across the route of the proposed railway line.
3.11.16 Surface Water (Construction)	**Issue** Insufficient information to demonstrate acceptability of the proposed approach for drainage. **Comment** The suitability of the ground for infiltration is unclear. **Suggested Solution** Provide information on the suitability of ground for infiltration and consider alternative solutions should infiltration not be feasible.
Other Rail Improvements PEI	
4.6 Terrestrial Ecology and Ornithology	**Issue** Insufficient weight has been given to the potential impact of the proposed rail improvements on certain protected species and habitats; and a lack of detailed baseline information on terrestrial ecology and ornithology is provided. **Comment** Both the Saxmundham Crossover and the Passing Loop aspects of the proposed rail improvements have the potential to impact on certain protected species, as well as priority habitats and species listed on Schedule 41 of the NERC Act. **Suggested Solution** Provide sufficient baseline studies/ information to assess the impact on protected species and habitats. Section 4.6.27 of the PEI suggests that no adverse impacts on certain protected species is anticipated. We consider there is insufficient information to support this assertion. Where Priority Habitats are affected, for example areas of floodplain grazing marsh and deciduous woodland in the case of the passing loop, full details of mitigation for any loss or damage need to be set out. We would expect consideration is given to identifying and implementing measures that result in a net biodiversity gain. Little attention has been given to the ecological impacts of other aspects of the proposed rail improvements, notably the replacement of tracks to allow the running of heavier freight trains, and the upgrade to bridges, including those that cross the rivers Fynn and Deben. These improvements have potential

	impacts, including on otters and water voles, and this needs full assessment.
4.11 Flood Risk **Tables 4.11.2 - 4.11.4**	**Issue** The potential flood risk changes from rail improvement works is unknown. **Comment** Some of the rail improvement works are highlighted to be within areas of Flood Zone 3 (high fluvial risk) however, the exact location and nature of works is unclear. **Suggested Solution** Confirm the location of rail improvement works within any areas of flood risk. Provide assessment information as part of the flood risk assessment to demonstrate any changes or impacts to flood risk. Propose mitigation where necessary.
4.10.3 Surface Water **7.10 Surface Water**	**Issue** The potential to impact hydrology and ecology as a result of the track cross-over at Saxmundham. **Comment** Springs/seepages are present adjacent to the existing railway line at the location of the proposed cross-over at Saxmundham. Any changes to these springs and seepages have the potential to impact wetland habitat of ecological interest. **Suggested Solution** Baseline surveys of the wetland interest should be undertaken, the impacts on ecology identified, and adequate mitigation included within the Environmental Statement.
Sizewell Link Road PEI **Theberton Bypass PEI**	
Section 5.3 **Sizewell link road 5.3.14 Otters** **5.3.15 Water Vole** **Theberton bypass 6.3.13 Otters 6.3.14 Water Voles**	**Issue** Loss of valuable habitat and effects to the form and functioning of main rivers (including Middleton Watercourse and Theberton Watercourse) and ordinary watercourses. **Comment** The absence of detailed baseline information means that it is currently not possible to adequately assess the impact of the development on ecology. Section 5.3.18 and 6.3.17 discounts the likelihood of the proposed road causing significant effects on otter and water vole. We consider this conclusion to be premature given that we are unaware of any baseline protected species surveys that may have been undertaken. This has the potential to detrimentally impact protected species (including water vole, otter and European eel) through direct habitat loss, habitat fragmentation and direct loss of protected

	species. A Flood Risk Permit from the Environment Agency will be needed for any proposed works in, over, under or within 8 metres of a main river. **Suggested Solution** A detailed ecological and hydro-morphological assessment needs to be prepared to identify affected species and habitats and the need for mitigation. A full consideration should be given to identifying and implementing measures that go beyond mitigation and result in Biodiversity Net Gain, in line with the aspirations of the Defra 25 Year Plan for the environment.
Sizewell link road 5.10.21-23 Groundwater **Theberton bypass 6.10.20-22 Groundwater**	**Issue** Potential impacts to groundwater resulting from construction are unknown. **Comment** The design of the road and crossings, construction methods, excavation and cuttings has the potential to impact local groundwater. **Suggested Solution** Provide design details of link road and bypass proposals, including construction approaches and methods. Assess the impacts of proposals on local groundwater and provide appropriate mitigate where necessary.
Sizewell Link Road 5.11.13-5.11.14 Surface Water **5.12.16 Flood Risk** **Theberton Bypass: 6.11.2, 6.11.13 -6.11.14**	**Issue** The design of the river crossings for all roads (i.e. Sizewell link road and Theberton bypass) is unknown. **Comment** Both culverts and clear span bridges are referred to. The Environment Agency is generally opposed to the culverting of watercourses, unless a robust justification can be provided to prove why culverting is both necessary and the only reasonable and practicable alternative. If the crossings are not appropriately designed this could potentially increase flood risk, harm protected species and impact hydromorphological functioning and hinder Water Framework Assessment (WFD) compliance. **Suggested Solution** Provide information on the proposed design of the river crossings. Rivers should be bridged in preference to being culverted, with a natural bank retained along both sides. The environmental implications of the crossing design needs to be fully understood to identify the impacts and inform mitigation. Any structures on or adjacent to watercourses should not impede passage by fish species including European eel. Crossings should be clear span bridges and provide flood capacity for at least the design 1% AEP with allowances for climate change (with supporting modelling).

Sizewell Link Road: 5.11.12 Surface Water (Operation) **Theberton Bypass: 6.11.12 Surface Water (Operation)**	**Issue** Potential to miss opportunities to deliver multiple environmental benefits. **Comment** Surface water run-off from roads will be dealt with by SuDS measures, including the construction of retention areas to allow infiltration to groundwater or discharge to rivers at greenfield run-off rates. Failure to plan early on all benefits that could be delivered through SuDS could reduce the opportunity to provide additional areas of wildlife habitat. **Suggested Solution** Design SuDS features such as detention ponds and attenuation basins to maximise benefits for wildlife by their having an irregular outline, gently shelving banks and a variety of water depths. Incorporating a small area of permanent water within these feature would also benefit wildlife. There may also be opportunities for planting wild flowers on the banks/land surrounding the SUDS features, thereby contributing to the Government's National Pollinator Strategy. These considerations should be considered when assessing the area of land required for constructing SUDS features. Any surface discharges to the Theberton Watercourse, Middleton Watercourse and other waterbodies should be set back from the river bank in order to minimise interference with natural river processes.
Sizewell Link Road: 5.11.13 – 5.11.14 And 5.12.16 Surface Water **Theberton Bypass: 6.11.13 – 6.11.14 Surface Water**	**Issue** There is contradiction on the proposed approach to road crossings over rivers. **Comment** The text infers that where the road link crosses ordinary watercourses, new culverts would be built; with the design and span of the new crossing over Main River being designed using 'Design Manual for Roads and Bridges' and reference to clear-spanning bridges. However, other sections only refer to culverts over watercourses for operation. **Suggested Solution** Confirm and discuss with us the proposed approach for road crossings.
Sizewell Link Road: 5.12 Flood Risk **5.12.19** **Theberton Bypass:**	**Issue** The road crossings over rivers and watercourses has the potential to remove flood storage. The impacts of this have yet to be assessed. **Comment** Lack of appropriate flood risk mitigation will increase flood risk to third parties.

6.12.3 Baseline environment **6.12.20 Flood storage compensation**	**Suggested Solution** Provide a flood risk assessment; which includes appropriate modelling and an assessment which demonstrates the extent of mitigation and compensatory flood storage required. This will need to take into account all features in the floodplain over the lifetime of the development, and include climate change allowances.
Sizewell Link Road: 5.11.11-12 Surface Water **Theberton Bypass: 6.11.11-12 Surface Water**	**Issue** It is unknown if the drainage retention areas and/or infiltration area proposals are located in an appropriate area. **Comment** If located in the floodplain the drainage retention areas may displace flood water, and may not operate as designed creating risks to the environment. **Suggested Solution** Demonstrate in the flood risk assessment that the drainage retention areas are in an appropriate location and can function as required.
Sizewell Link Road: Section 5.11 Surface Water **5.11.14** **Theberton Bypass: Section 6.11 Surface Water** **6.11.14**	**Issue** Proposed channel realignment of the Middleton Watercourse and Theberton Watercourse (Main Rivers) associated with both the Sizewell link road and Theberton bypass options. The impact of this proposed change (e.g. impacts to in-channel and floodplain flows, morphological processes, habitats and protected species) has not been assessed. **Comment** Modification to Main Rivers/watercourses could result in changes to flood storage and flows potentially increasing flood risk; and also result in changes to morphology and impacts to habitat and protected species. **Suggested Solution** Confirm the location of the proposed realignment and assess any changes and impacts to morphological processes, habitats and protected species and demonstrate appropriate design and mitigation. Our preference is to retain the existing alignment of these watercourses, unless it can be shown that any realignment will enhance the hydromorphology of the river channel. The road design should allow for the construction of a bridge crossing of sufficient width to span the river and a strip of undisturbed land along each bank; this will also have the benefit of minimising disruption to in-channel and floodplain flows and allow the free passage of wildlife, including otters, along the watercourse. Opportunities to restore/enhance adjacent sections of river should be investigated. There should be no net loss of wetland habitat as a consequence of the proposed roads.

Sizewell Link Road: Section 5.12.4 Flood Risk (Baseline environment) **Theberton Bypass: Section 6.12.5 Flood Risk (Baseline environment)**	**Issue** The flood risk at the locations of the indicative crossings is unknown. **Comment** The new link road and bypass will cross a number or watercourses which are not modelled. No Flood Zones, extents or levels are available at these locations. The watercourses will need to be modelled in order to understand the flood risk at the crossings and so they may be designed to ensure there is no negative impact on flood risk. The surface water model that exists may not be sufficient to illustrate fluvial flood risk. **Suggested Solution** Provide flood risk modelling to establish fluvial flood risk at crossing locations to determine any change in flood risk and to inform crossing design. The methodology used to model flood risk will need to be explained and the model submitted for our review.
Sizewell Link Road: 5.12.15 Flood Risk (construction) **Theberton Bypass: 6.12.16 Flood Risk (construction)**	**Issue** Construction of perimeter bund and detention ponds within flood plain will reduce flood storage and increase flood risk elsewhere. **Comment** It is important that flood storage capacity is not reduced and that off-site flood risk is not increased both during and after construction. **Suggested Solution** Avoid any ground raising in the floodplain. Locate the perimeter bund outside of flood plain areas to prevent loss of flood storage.
Sizewell Link Road: 5.12.20 Flood Risk **Tables 5.12.2 and 5.12.3** **Theberton Bypass: 6.12.21** **Tables 6.12.2 and 6.12.3**	**Issue** Potential flood risk impacts resulting from the link road and bypass are unknown and so we cannot draw any conclusions. **Comment** The proposed road has the potential to impact flood risk. However the summary of effects tables suggests these effects will not be significant. We cannot agree with these until further assessment information is provided. **Suggested Solution** Provide further information on the design of the crossings. Provide supporting modelling and assessment information to establish the difference between with and without the crossings in place; this will determine the extent of changes in flood flows and risk, which needs to inform mitigation.

	Volume 2B: Preliminary Environmental Information
Two Village Bypass PEI	
7.3.7 Baseline **7.3.14 Otters and Water Voles** **7.3.17** **7.3.21** **7.3.23 Additional mitigation and monitoring** **7.11.18 Operation**	**Issue*** Loss of valuable habitat and effects to the form and functioning of the River Alde (main river) and ordinary watercourses. **Comment** In the absence of detailed baseline information means that it is currently not possible to adequately assess the impact of the development on ecology. Section 7.3.17 discounts the likelihood of the proposed road causing significant effects on otter and water vole. We consider this conclusion to be premature given that we are unaware of any baseline protected species surveys that may have been undertaken. This has the potential to detrimentally impact protected species (including water vole, otter and European eel) through direct habitat loss, habitat fragmentation and direct loss of protected species. A Flood Risk Permit from the Environment Agency will be needed for any proposed works in, over, under or within 8 metres of a main river. **Suggested Solution** A detailed ecological and hydro-morphological assessment needs to be prepared to identify affected species and habitats and the need for mitigation. A full consideration should be given to identifying and implementing measures that go beyond mitigation and result in Biodiversity Net Gain, in line with the aspirations of the Defra 25 Year Plan for the environment.
7.3 Terrestrial ecology and ornithology	**Issue** Potential impacts to the River Alde valley, including areas of Coastal and Floodplain Grazing Marsh which have a high ecological value (Priority Habitat under Section 41 of the NERC Act 2006). **Comment** The road proposal will result in the loss of an area of Coastal and Floodplain Grazing Marsh. As well as direct loss of habitat beneath the footprint of the road, the proposal will bisect and fragment a large block of this Priority Habitat, which is of ecological value and likely to provide an important corridor for the movement of wildlife. The magnitude of this impact is not sufficiently recognised in the PEI. For this reason we do not agree that the assessment of effects and residual effects are not significant. **Suggested Solution** Appropriate design of the crossing will help minimise the encroachment of the road on the River Alde and floodplain; for example, by constructing the road as a viaduct supported by

	pillars. This would reduce the need for embankments, minimise habitat loss, and minimise any restrictions to the passage of wildlife along the river corridor. It would also minimise any impacts on the hydromorphology and natural functioning of the river, and limit any changes in local flood risk as a result of road construction. Also, improvements to the management of the adjacent remaining areas of Coastal and Floodplain Grazing Marsh should be considered.
Geology and land quality 7.9.10 – 7.9.11 **Groundwater 7.10.8 – 7.10.9**	**Issue** The design of the road/ crossings and construction/ excavation methods has the potential to impact local groundwater and protected species and ecology. **Comment** The potential hydraulic continuity between groundwater and the River Alde and risk to causing a change in levels resulting from construction. Any potential impacts and risk are unknown. **Suggested Solution** Provide design details of the two village bypass proposals, including construction approaches and methods. Assess the impacts of proposals on the local water table and groundwater and provide appropriate mitigate where necessary.
7.11 Surface Water (Baseline)	**Issue** Potential impact from the construction of the proposed two village bypass over the River Alde on local surface water abstractors. **Comment** There are existing surface water abstractors located downstream of the proposed river crossings. **Suggested Solution** If flows in the river are altered or affected then appropriate mitigation measures will need to be discussed.
Section 7.11 Surface Water **7.11.13 and 7.12.13**	**Issue*** The design of the River Alde bypass crossing is unknown. **Comment** A new bridge is proposed where the route crosses the River Alde (Main River). The Environment Agency is generally opposed to the culverting of watercourses and so we support the proposal for a bridge. However in the case of the River Alde, a viaduct crossing which minimises the impact of the road on the river and floodplain should be considered. If the bridge crossings are not appropriately designed this could potentially increase flood risk, harm protected species and impact hydromorphological functioning and hinder Water Framework Assessment (WFD) compliance.

	Suggested Solution Provide information on the proposed design of the River Alde crossing. The crossing design should ensure the bed and banks of the river are not physically disturbed, and that a wide strip of undisturbed habitat is retained along each bank of the river in order to allow wildlife, including otters, to move unhindered upstream and downstream. For the minor watercourses a bridge crossing should be the default option rather than a culvert. Bridge crossings should provide flood capacity for at least the design 1% AEP with allowances for climate change (with supporting modelling).
Surface Water 7.11.13 - 7.11.14 (Operation)	**Issue** Proposed channel realignment of the River Alde (Main River) associated with the two village bypass. The impact of this proposed change (e.g. impacts to in-channel and floodplain flows, morphological processes, habitats and protected species) has not been assessed. **Comment** Modification to Main Rivers/watercourses could result in changes to flood storage and flows potentially increasing flood risk; and also result in changes to morphology and impacts to habitat and protected species. **Suggested Solution** Confirm the location of the proposed realignment and assess any changes and impacts to morphological processes, habitats and protected species and demonstrate appropriate design and mitigation. Our preference is to retain the existing alignment of the watercourse, unless it can be shown that any realignment will enhance the hydromorphology of the river channel. The road design should allow for the construction of a bridge crossing of sufficient width to span the river and a strip of undisturbed land along each bank; this will also have the benefit of minimising disruption to in-channel and floodplain flows and allow the free passage of wildlife, including otters, along the watercourse. Opportunities to restore/enhance adjacent sections of river should be investigated. There should be no net loss of wetland habitat as a consequence of the proposed roads.
7.11.15 Surface Water (Operation)	**Issue** Potential to miss opportunities to deliver multiple environmental benefits. **Comment** Surface water run-off from roads will be dealt with by SuDS measures, including the construction of retention areas to allow infiltration to groundwater or discharge to rivers at greenfield run-off rates. Failure to plan early on all benefits that could be

	delivered through SuDS could reduce the opportunity to provide additional areas of wildlife habitat. **Suggested Solution** Design SuDS features such as detention ponds and attenuation basins to maximise benefits for wildlife by their having an irregular outline, gently shelving banks and a variety of water depths. Incorporating a small area of permanent water within these feature would also benefit wildlife. There may also be opportunities for planting wild flowers on the banks/land surrounding the SUDS features, thereby contributing to the Government's National Pollinator Strategy. These considerations should be considered when assessing the area of land required for constructing SUDS features. Any surface discharges to the River Alde and other waterbodies should be set back from the river bank in order to minimise interference with natural river processes.
7.12.5 Flood Risk (Baseline environment) **7.12.17 Flood compensatory storage** **Figure 7.12.1**	**Issue*** Proposals may potentially alter flows and off-site flood risk impacts associated with the two village bypass crossing the River Alde floodplain. **Comment** The River Alde has extensive functional floodplain (Flood Zone 3b). Potential to change off-site flood risk resulting from changes to flows, loss of flood storage or displaced water. Potential to impact our flow gauging station at Farnham which forms part of our flood warning telemetry system. **Suggested Solution** Provide information on the design of the bypass crossings. Prepare a flood risk assessment (including modelling[4]) which identifies any off-site flood risk impacts over the lifetime of the development, including climate change allowances and propose mitigation. The scale of the impacts will depend on the design of the crossing; a clear span structure is likely to have less impact on flood risk than an embankment. Clearly demonstrate the location and volume of any flood compensatory storage required, which must be provided on a "level for level" basis to ensure it provides appropriate mitigation in the location required. This will need to take into account all features in the floodplain. Figure 7.12.1 identifies potential areas for compensatory storage, but we cannot comment on the suitability of these locations at this time. Demonstrate there will be no adverse impact to our flow gauging station at Farnham.

[4] Please note the Environment Agency is currently updating their fluvial flood modelling for the River Alde. The modelling is expected to be completed in May 2019.

Flood Risk 7.12.11 and 7.12.12 (Construction)	**Issue** Construction of perimeter bund within flood plain will reduce flood storage and increase flood risk elsewhere. **Comment** It is important that flood storage capacity is not reduced and that off-site flood risk is not increased both during and after construction. **Suggested Solution** Avoid any ground raising in the floodplain. Locate the perimeter bund outside of flood plain areas to prevent loss of flood storage.
Flood Risk 7.12.12 **Table 7.12.2 Summary of effects for construction phase**	**Issue** Potential flood risk impacts as a result of temporary construction works needed to construct the bypass. **Comment** The full extent of temporary construction works needs to be confirmed in order to understand all potential impacts to fluvial flood risk. Table 7.12.2 does not consider the impact of construction on fluvial flood risk at all. We acknowledge that temporary compounds will be used and have been located in Flood Zone 1; however details of any other temporary works and the methods of construction have not been provided. **Suggested Solution** Provide further information on all temporary works during construction and submit supporting flood modelling (as appropriate) to inform any potential impacts to the River Alde floodplain resulting from construction works. Propose appropriate mitigation as necessary.
Tables 7.12.2 and 7.12.3 Flood Risk	**Issue** Potential flood risk impacts resulting from the two village bypass are unknown and so we cannot draw any conclusions. **Comment** The proposed bypass has the potential to impact flood risk. However the summary of effects tables suggests these effects will not be significant. We cannot agree with these until further assessment information is provided. **Suggested Solution** Provide further information on the design of the crossings. Provide supporting modelling and assessment information to establish the difference between with and without the crossings in place; this will determine the extent of changes in flood flows and risk, which needs to inform mitigation.

Yoxford Roundabout PEI	
11.3 Terrestrial ecology and ornithology **11.3.13 Baseline environment**	**Issue** Potential impacts to protected species and habitat. **Comment** Location of the Roadside Nature Reserve 197 has the potential to be significantly affected if translocation of topsoil is required. Also, otters could be impacted considering records of otter using the Minsmere River, which is 50m from the site. **Suggested Solution** Provide details of how impacts to protected species will be minimised and managed. Fragmentation of habitat and habitat corridors such as removal of hedgerows and trees should be kept to a minimum and mitigated where required to reduce risk to wildlife. Measures will be required to mitigate for any potential impacts on otters; for example, consideration of boundaries/ buffers to reduce potential for otters to enter both construction area and road network which will be closer to their river habitat.
Highway Improvements PEI **Wickham Market diversion route via Valley Road and Easton Road**	
12.3 Terrestrial ecology and ornithology	**Issue** Potential to miss opportunities to embed mitigation during operation. **Comment** There is an opportunity to consider the risk of vehicles to wildlife, especially as protected species such as otters have been identified to be present within the vicinity. Although a road network already exists, extending or expanding the roads does not reduce the risk of impact from vehicles. **Suggested Solution** Consider how roadside boundaries such as hedgerows could be integrated to protect species and habitat from risk of injury, noise, pollution and light.
12.3.12 Wickham Market highway improvements **Otter and Water Vole**	**Issue** The proposals have the potential to impact the local ecology that use the River Deben. **Comment** Any works within close proximity to riverine habitat which supports otter and water vole has the potential to detrimentally impact protected species. **Suggested Solution**

	A detailed ecological assessment needs to be prepared to identify affected species and habitats and the need for mitigation and measures to minimise any impacts.
12.11.3 and 12.11.9 Flood Risk	**Issue** Any increase in development footprint within the flood plain of the River Deben has the potential to remove flood storage. The impacts of this have yet to be assessed. **Comment** Lack of appropriate flood risk mitigation will increase flood risk to third parties. Potential for Flood Risk Activity permit. **Suggested Solution** Provide a flood risk assessment and an assessment which demonstrates any changes to flood flows and the extent of any compensatory flood storage required. This will need to take into account all features in the floodplain over the lifetime of the development, and include climate change allowances.
Project Wide Cumulative PEI	
Table 13.1 Definition of cumulative impacts and inter-relationships	**Issue** Failure to account for all impacts to a particular receptor will undermine the assessment to identify potential significant effects. **Comment** Impact of in inter-relationship effects may be under predicted. For example, for the marine species example included in the table, there would be other potential impacts including impingement, dredging activities and ship movements, from cooling water intake. **Suggested Solution** Assess all potential impacts to all receptors for the different phases of the project.
13.3.3 Defining the zone of influence	**Issue** Relevant plans or projects could potentially be missed. **Comment** It is a useful starting point to use a 20km zone of influence (ZOI), but should be refined as detailed assessment is progressed (e.g. modelling or identification of mobile species using the site from further away) to reflect any effects that may be wider than 20km. **Suggested Solution** Ensure ZOI for defining other relevant plans or projects are refined as necessary using project specific assessment tools and information.
Table 13.5 Potential for	**Issue**

significant project-wide effects	Failure to account for cumulative effects at the population level will result in insufficient assessment information. **Comment** Potential cumulative effects at the population level must be understood. For example, consider the cumulative effects for all entrapped organisms at a species level for all biota for total population zone of influence (e.g. Southern North Sea for Harbour Porpoise). **Suggested Solution** Ensure assessment includes cumulative effects at the population level.
13.6 Project-wide effects	**Issue** Potential to miss all inter-project impacts for each receptor. **Comment** Whilst there are broad principles set out it would help if the Environmental Statement and Habitat Regulations Assessment contain detailed descriptions of the potential effects from within the main development site and full consideration of potential overlap between construction and operational effects. For example, the current wording appears to rule out radiological effects and marine ecology however there is a potential cumulative effect as both could affect marine receptors. **Suggested Solution** Ensure the assessments take account of all the potential project wide effects.
Related assessments and approaches	
Chapter 14 Related assessments and approaches	**Issue*** The potential impacts to eels, associated with the Sizewell C cooling water infrastructure and strategies (e.g. intake head design, chlorination, thermal and chemical plumes) have not been assessed. **Comment** Lack of an appropriate impact assessment may undermine the mitigation required to protect eels, a European protected species[5]. **Suggested solution** Provide a full assessment of potential impacts to eels to inform mitigation proposals.
Chapter 14 Related assessments	**Issue** The consultation does not include the Marine Strategy Framework Directive (2008/56/EC).

[5] The Environment Agency is the competent authority for the Eels (England and Wales) Regulations 2009.

and approaches	**Comment** All relevant regulations need to be considered and addressed with sufficient assessment undertaken. **Suggested Solution** The Marine Strategy Framework Directive needs to be considered; please advise us on how you propose to address this.
Chapter 14 Related assessments and approaches	**Issue*** The consultation does not include the Countryside and Rights of Way (CRoW) Act 2000. **Comment** Potential impacts to Sites of Special Scientific Interest (SSSIs) may not be fully considered resulting in detrimental impact on protected species and habitats. **Suggested Solution** The CRoW Act needs to be considered as part of the Development Consent Order submission; please advise us on how you propose to address this.
14.2.5 Environmental Impact Assessment **Mitigation measures**	**Issue** Impacts cannot be ruled out due to mitigation at the same stage for Environmental Impact Assessment and Habitat Regulations Assessment (HRA). **Comment** The process for considering mitigation within the EIA process differs to that within HRA, where mitigation is considered at a different stages. **Suggested Solution** Ensure that the different processes for EIA and HRA is clearly outlined and followed.
14.3.6 Habitat Regulations Assessment Introduction	**Issue*** The current references to Habitats Regulations Assessment (HRA) does not include all the stages of the process; with no reference to Article 6(4) of the Habitats Directive. **Comment** Not considering all the stages of the HRA process may result in potential confusion and inappropriate timescales for assessment, resulting in missed opportunities to protect the environment. **Solution** Until it is established that stage 3 (Assessment of alternatives) and 4 (Assessment of Imperative Reasons of Overriding Public Interest (IROPI)) of the HRA process is not required then please include these steps in any forward look to ensure there is no

	confusion of the process and timelines are sufficient to include these steps if necessary.
14.3.11 Likely significant effects report (Habitat Regulations Assessment)	**Issue** A lack of detail on the Appropriate Assessment (AA) process. This document currently implies that only a LSE report will be submitted which could mislead the reader. **Comment** The text outlines the LSE report, but does not discuss in any detail how an AA will be carried out. **Suggested Solution** Ensure clarity regarding the AA process in future public correspondence.
14.3.11 Likely significant effects report (Habitat Regulations Assessment)	**Issue** Risk of making conclusions not in line with the latest European Court of Justice (ECJ) rulings. **Comment** Recent ECJ rulings (*People over Wind*) consider that if mitigation is required than an Appropriate Assessment (AA) is required. However paragraph 14.3.11 appears to suggest that mitigation is being factored in to decisions at the LSE stage, prior to AA (e.g. for Marsh Harrier). **Suggested Solution** Ensure that any conclusions are made in light of the recent *People over Wind* rulings.
14.4.8 Water Framework Directive **Other water bodies (last bullet point)**	**Issue** Potential to omit waterbodies from the Water Framework Directive (WFD) assessment due to changes in associated development proposals. **Comment** Failure to account for all WFD waterbodies will result in an inadequate assessment. **Suggested Solution** Review WFD work completed to date and re-scope the assessment to take full account of all WFD waterbodies potentially affected by the changes to associated developments.
14.4.8 Key considerations **Hydro-morphology**	**Issue** There is no reference to hydromorphology as a WFD element likely to be impacted in the Suffolk (coastal) waterbody. **Comment** Risk that hydromorphological impacts are excluded from WFD assessment. **Suggested Solution**

	Ensure that all potential impacts and changes to coastal hydromorphology as a result of coastal infrastructure are accounted for in the WFD assessment.
14.5.8 Estimated conventional waste arisings	**Issue** Insufficient information has been provided regarding the waste model, including how the model has been developed and where the base data has come from. **Comment** It is imperative that the baseline inputs into the model are sound and correct in order for the results to be accurate and meaningful. Waste and resources needs to be planned for. If the input data is unsound then this will cause problems with waste and resource management through the different phases of the project. An obvious source of reliable data are real time figures from the construction of HPC and Flamanville. **Suggested Solution** Discuss baseline inputs and data sources with the Environment Agency to ensure these are accurate and provide realistic volumes from the model.
14.5.14 - 17, 14.5.45 – 51 Conventional waste strategy **Construction excluding earthworks**	**Issue** The proposals do not currently demonstrate how waste will be managed on site, what waste streams are anticipated, and the volumes. **Comment** Inadequate waste management can lead to pollution, regulatory breaches and enforcement action. **Suggested Solution** Provide a Site Waste Management Plan as part of the Waste Management Implementation Strategy, together with a materials management plan. The targets included in the waste plans and strategies need to be current, as required by the Waste Framework Directive and in the binding circular economy package.
14.5.39 and Table 14.1: Available waste management facilities	**Issue** The information contained in table 14.1 is incorrect and has presented misleading data. The applicant has used the Environment Agency's Waste Data Interrogator (WDI), which is not designed for the use the applicant has applied it to therefore, the outputs presented are inaccurate. **Comment** The WDI is used for non-hazardous waste movement and tonnages. Site information found on the WDI is only in the context of specific waste movements and tonnages to those sites – if waste did not go to a site then it will not be included. In other words the WDI is not, and should not, be used to provide

	list of sites or a register of site type or information. Consequently any capacity data will also be inaccurate and should be disregarded. Commercial and industrial hazardous waste should not be included on the WDI (hazardous waste has its own interrogator). The hazardous waste sites included in table 14.1 are Household Waste Recycling Centres for household waste, not commercial and industrial. **Suggested Solution** Discuss at the earliest opportunity the development of your waste strategy with the Environment Agency. Provide a waste management strategy and all other waste related documents.

Appendix B: Permits and consents

A number of permits and consents are required for your proposals. Some of which include:

Flood risk activities: environmental permits
The Environmental Permitting (England and Wales) Regulations 2016 require a permit to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culvert (16 metres if tidal)
- on or within 16 metres of a sea defence
- in a floodplain more than 8 metres from the river bank, culvert or flood defence structure (16 metres if it's a tidal main river).

These works are regulated under environmental permits (formerly flood defence consents). Numerous parts of your proposals will require a flood risk permit. This includes your preferred option for a causeway with a culvert over the Leiston Drain (main river) as part of your SSSI crossing, your proposed works to re-align the Sizewell Ditch and connect this to the Leiston Drain (main river) at a different location and the various highways crossings over main rivers. Early engagement and discussions is recommended for any, and all, works that will require a permit.

Abstraction Licence
In order that we can manage water resources in a fair and comprehensive way, and to satisfy the requirements of the Water Framework Directive (WFD), the government made some changes to the way we regulate abstractions and impoundments which pose a potential impact to the water environment.

As a result of this, from 1 January 2018, some previously exempt water abstractions (if over 20m³/day except for temporary/emergency exemptions) were brought into regulation under the Water Resources Act 1991, as amended by the Water Act 2003. These water abstractions now require an abstraction licence. Early engagement is recommended for any, works that will require a licence, where advice and guidance is needed. Further information can be found at https://www.gov.uk/guidance/apply-for-a-new-abstraction-licence-for-a-currently-exempt-abstraction

Concrete batching plant
A concrete batching plant is proposed for construction of the nuclear site. The production of concrete for construction activities, is likely to require an Environmental Permit. The permit would need to be issued by either the Local Authority or the Environment Agency depending on the volumes produced. Further information is required regarding your proposals for the concrete batching plant, particularly the volume of concrete to be produced to help inform who the permitting authority will need to be consulted.

Appendix C: Requirements

By taking a risk based approach it is possible to suggest planning Requirement's in a number of areas. Our final views will be based on all relevant information included in your final Development Consent Order application and the latest guidance available at that time. The Environment Agency should be re-consulted before Requirements are confirmed. Please be aware that the Environment Agency will have additional Requirements as proposals are developed further.

We have included requirements on contaminated land and surface water quality. We acknowledge that further site-specific surveys are to be prepared across your development proposals – this further work will influence our position and other requirements.

The following Requirements are standard wording that we use for all developers. We recommend these to local planning authorities or the Planning Inspectorate where necessary, depending on the type of planning application.

General requirements applicable to all sites

Requirement:
(1) If in undertaking the construction of any part of the authorised project, contamination not previously identified is found to be present at the site of that part of the authorised project, then no further development shall be carried out on that site until details as to how this contamination not previously identified is to be dealt with have, after consultation with the Environment Agency, been submitted to and approved by the relevant planning authority and put into effect.

(2) Notwithstanding paragraph (1), a defined area or areas may be identified and agreed with the relevant planning authority where development can continue without approval of the details submitted in accordance with paragraph (1).

Reason:
To protect and prevent the pollution of the water environment (particularly groundwater associated with the underlying Secondary and Principal Aquifers, from potential pollutants associated with current and previous land uses) in line with National Planning Policy Framework (NPPF; paragraphs 170 and 178), EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 – A6, J1 – J7 and N7.

National Planning Policy Framework (NPPF) paragraph 170 states that policies and decisions should contribute to and enhance the natural and local environment by

preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should ensure appropriate remediating and mitigation of despoiled, degraded, derelict, contaminated and unstable land, where appropriate (NPPF Paragraph 170 (f)).

Paragraph 178 of the NPPF also states that decisions should ensure that a site is suitable for its proposed use taking account of ground conditions and any risks arising from contamination.

Associated Development site requirements

The desk-based information included in the Stage 3 Preliminary Environmental Information has identified previous land uses and potential contamination sources, pathways and receptors associated with historic uses. The risk to receptors - including the water environment - from identified contamination sources needs to be appropriately addressed as part of any works or development; this will be proportionate to the risk at each of the associated development sites. We have set out a number of requirements to ensure the development proposals are acceptable to the water environment and supported ecology.

Contaminated Land (Part 1)

Some of the potential contamination sources that could present a risk to the water environment are located within the red line boundaries for the following associated development sites.

- **Green Rail Route**
- **Sizewell Link Road**
- **Theberton Bypass**
- **Two Village Bypass**
- **Northern Park and Ride**
- **Southern Park and Ride**
- **Yoxford Roundabout**
- **Highway Improvements**

Contaminated land requirements relevant to these Associated Development sites:

Requirement:
No development shall commence until a remediation strategy to deal with the risks associated with contamination of the site in respect of the development hereby permitted, has in consultation with the Environment Agency, been submitted to and

approved in writing by, the local planning authority. This strategy will include the following components:

1. A preliminary risk assessment which has identified:
    - all previous uses
    - potential contaminants associated with those uses
    - a conceptual model of the site indicating sources, pathways and receptors
    - potentially unacceptable risks arising from contamination at the site
2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off-site.
3. The results of the site investigation and the detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.
4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require, in consultation with the Environment Agency, the written consent of the local planning authority. The scheme shall be implemented as approved.

Reason:
To protect and prevent the pollution of the water environment (particularly groundwater associated with the underlying Secondary and Principal Aquifers, from potential pollutants associated with current and previous land uses) in line with National Planning Policy Framework (NPPF; paragraphs 170 and 178), EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 – A6, J1 – J7 and N7.

National Planning Policy Framework (NPPF) paragraph 170 states that policies and decisions should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should ensure appropriate remediating and mitigation of despoiled, degraded, derelict, contaminated and unstable land, where appropriate (NPPF Paragraph 170 (f))

Paragraph 178 of the NPPF also states that decisions should ensure that a site is suitable for its proposed use taking account of ground conditions and any risks arising from contamination.

Requirement:
Prior to any part of the permitted development being brought into use, a verification report demonstrating the completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall, in consultation with the Environment Agency, be submitted to and approved in writing by the local planning

authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.

Reason:
To protect and prevent the pollution of the water environment (particularly groundwater associated with the underlying Secondary and Principal Aquifers, from potential pollutants associated with current and previous land uses) in line with National Planning Policy Framework (NPPF; paragraphs 170 and 178), EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 – A6, J1 – J7 and N7.

National Planning Policy Framework (NPPF) paragraph 170 states that policies and decisions should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should ensure appropriate remediating and mitigation of despoiled, degraded, derelict, contaminated and unstable land, where appropriate (NPPF Paragraph 170 (f)).

Requirement:
No development should take place until a long-term monitoring and maintenance plan in respect of contamination including a timetable of monitoring and submission of reports to the Local Planning Authority, shall be submitted to and approved in writing by the Local Planning Authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall, in consultation with the Environment Agency, be submitted to and approved in writing by the Local Planning Authority. Any necessary contingency measures shall be carried out in accordance with the details in the approved reports. On completion of the monitoring specified in the plan a final report demonstrating that all long-term remediation works have been carried out and confirming that remedial targets have been achieved shall be submitted to and approved in writing by the Local Planning Authority.

Reason:
To protect and prevent the pollution of the water environment (particularly groundwater associated with the underlying Secondary and Principal Aquifers, from potential pollutants associated with current and previous land uses) in line with National Planning Policy Framework (NPPF; paragraphs 170 and 178), EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 – A6, J1 – J7 and N7.

National Planning Policy Framework (NPPF) paragraph 170 states that policies and decisions should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should ensure appropriate remediating and mitigation of despoiled, degraded, derelict,

contaminated and unstable land, where appropriate (NPPF Paragraph 170 (f))

Requirement:
No drainage systems for the infiltration of surface water drainage into the ground is permitted other than with the express written consent of the Local Planning Authority, after consultation with the Environment Agency, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approved details.

Reason:
Infiltration through contaminated land has the potential to impact on groundwater quality.

Requirement:
Piling or any other foundation designs using penetrative methods shall not be permitted other than with the express written consent of the local planning authority, after consultation with the Environment Agency, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to groundwater. The development shall be carried out in accordance with the approved details.

Reason:
Piling or any other foundation designs using penetrative methods can result in risks to potable supplies from, for example, pollution / turbidity, risk of mobilising contamination, drilling through different aquifers and creating preferential pathways. Thus it should be demonstrated that any proposed piling will not result in contamination of groundwater.

The National Planning Policy Framework paragraph 170 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution.

Contaminated Land (Part 2)

One of the proposed associated development sites has only been subject to historical agricultural use, which is considered a low contamination risk to controlled waters.

- **Freight Management Facility**

Contaminated land requirements relevant to this Associated Development site:

Requirement:
No drainage systems for the infiltration of surface water drainage into the ground is permitted other than with the express written consent of the Local Planning Authority, after consultation with the Environment Agency, which may be given for those parts

of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approved details.

Reason:
Infiltration through contaminated land has the potential to impact on groundwater quality. Paragraphs 5.15.2 and 5.15.3 of the Overarching National Policy Statement for Energy (EN1) confirms that proposed new discharges and proposed changes to discharges need to be assessed for any impacts to water quality.

The National Planning Policy Framework paragraph 170 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution.

Surface Water Quality

Surface water drainage Requirement (protection of water quality) relevant to the following Associated Development sites:

- **Green Rail Route**
- **Sizewell Link Road**
- **Theberton Bypass**
- **Two Village Bypass**
- **Northern Park and Ride**
- **Southern Park and Ride**
- **Freight Management Facility**
- **Yoxford Roundabout**
- **Highway Improvements**

Requirement:
The development hereby permitted shall not be commenced until such time as a scheme to dispose of surface water has been submitted to, and approved in writing by the local planning authority, after consultation with the Environment Agency. The scheme shall be implemented as approved.

Reason:
Discharges from new developments has the potential to impact on surface water quality. It should therefore be demonstrated that development will not result in detrimental impacts to water quality. Paragraphs 5.15.2 and 5.15.3 of the Overarching National Policy Statement for Energy (EN1) confirms that proposed new discharges and proposed changes to discharges need to be assessed for any impacts to water quality.

The National Planning Policy Framework paragraph 170 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution.

Appendix D: Guidance linked to requirements

The following advice and guidance will need to be considered alongside the requirements included in Appendix C.

Sustainable Drainage Systems (SuDS) advice

1. Infiltration sustainable drainage systems (SuDS) such as soakaways, unsealed porous pavement systems or infiltration basins shall only be used where it can be demonstrated that they will not pose a risk to the water environment.

2. Infiltration SuDS have the potential to provide mobilise pollutants and must not be constructed in contaminated ground. They would only be acceptable if a site investigation showed the presence of no significant contamination.

3. Only clean water from roofs can be directly discharged to any soakaway or watercourse. Systems for the discharge of surface water from associated hard-standing, roads and impermeable vehicle parking areas shall incorporate appropriate pollution prevention measures and a suitable number of SuDS treatment train components appropriate to the environmental sensitivity of the receiving waters.

4. The maximum acceptable depth for infiltration SuDS is 2.0 m below ground level, with a minimum of 1.2 m clearance between the base of infiltration SuDS and peak seasonal groundwater levels.

5. Deep bore and other deep soakaway systems are not appropriate in areas where groundwater constitutes a significant resource (that is where aquifer yield may support or already supports abstraction).

6. SuDS should be constructed in line with good practice and guidance documents which include the SuDS Manual (CIRIA C753, 2015), Guidance on the Construction of SuDS C768 and the Susdrain website.

For further information on our requirements with regard to SuDS see our Groundwater protection position statements (2018), in particular Position Statements G1 and G9 – G13 available at: https://www.gov.uk/government/publications/groundwater-protection-position-statements

Reference and best practice guidance

We recommend that developers should:

1) Refer to our 'Groundwater Protection' website;

2) Refer to our CL:AIRE Water and Land Library (WALL) which includes the risk management framework provided in CLR11, 'Model Procedures for the Management of Land Contamination', when dealing with land affected by contamination, and also includes the Guiding Principles for Land Contamination for the type of information that we require in order to assess risks to controlled waters from the site. The Local Authority can advise on risk to other receptors, for example human health;

3) Refer to our Land Contamination Technical Guidance;

4) Refer to 'Position Statement on the Definition of Waste: Development Industry Code of Practice';

5) Refer to British Standards BS 5930:1999 A2:2010 *Code of practice for site investigations* and BS10175:2011 A1: 2013 *Investigation of potentially contaminated sites – code of practice*

6) Refer to our 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination' National Groundwater & Contaminated Land Centre Project NC/99/73. The selected method, including environmental mitigation measures, should be presented in a 'Foundation Works Risk Assessment Report', guidance on producing this can be found in Table 3 of 'Piling Into Contaminated Sites';

7) Refer to our 'Good Practice for Decommissioning Boreholes and Wells'.

8) Refer to our 'Dewatering building sites and other excavations: environmental permits' guidance when temporary dewatering is proposed

Appendix E: Documents reviewed

Our comments and position in response to the Stage 3 DCO consultation is based on our review of the following supporting documents:

- Volume 1 – Development Proposals (overview of proposals and changes made since stage 2).
- Volume 2A – Preliminary Environmental Information.
- Volume 2B – Preliminary Environmental Information.
- Volume 3 – Preliminary Environmental Information Figures.

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