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Approaches to account for current and future climate hazards

An assessment of applications for Nationally Important Infrastructure

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Summary

As part of the analysis of national infrastructure for the Adaptation Sub-Committee's (ASC) 2014 progress report, a review of applications for nationally significant infrastructure projects submitted to either the Infrastructure Planning Commission or the Planning Inspectorate since 2010 has been undertaken.

The aim of this review is to examine the extent to which the Planning Inspectorate has accounted for the approach taken by the applicant to assessing current and future weather-related hazards in their evaluation of the application as per the National Policy Statements (NPS). Only those applications that have been granted or refused, a total of 14 applications, have been reviewed.

The assessment has been carried out in two phases. Initially, a 'pilot' phase has been undertaken to design and test the approach with a review of two applications: North Blyth Biomass Power Station and Hinkley Point C New Nuclear Power Station. The second phase has drawn upon the findings of Phase 1 and completed the review for the remaining 12 applications.

This report presents the work completed which has involved reviewing the appropriate NPSs as well as the following relevant documents for the applications:

- Secretary of State decision letter and statement of reasons;
- Examining Authority report to the Secretary of State.

It is important to note that the review is based on the information provided in these documents only. It is possible that certain requirements had been considered by the Planning Inspectorate in their evaluation of the application, but this has not specifically been recorded in the documents.

The approach taken for reviewing the applications was based on the relevant paragraphs included in the NPSs. For each application, summary tables are given for climate change adaptation and flood risk as well as other relevant requirements outlined in the appropriate NPS. In these summary tables, the requirement is summarised and a colour code is given based on the extent to which the Planning Inspectorate has accounted for the approach taken by the applicant to assessing current and future weather-related hazards in their evaluation of the application.

When assessing the applications for road and rail and hazardous waste it has not been possible to follow the requirements set out in the relevant NPS as the NPS for National Networks is still at draft stage and the NPS for Hazardous Waste was at draft stage up to and by the completion of the examination of the East Northamptonshire Resource Management Facility application. The approach to reviewing these applications follows the requirements as outlined in the NPSs, but does not provide a specific assessment against relevant requirements. Where appropriate, specific paragraphs of the NPS have been noted in the text to show where the assessment broadly corresponds to the requirements.

The review showed that a wide range of climate-related hazards are captured in the NPSs. Broadly, these requirements have been well adhered to by the Examining Authority (ExA) in their evaluations of the applications. However, there are a few exceptions to this. For example, for the Hinkley Point C New Nuclear Power Station application, flood risk is noted to be a matter for others to consider and regulate. For the majority of the wind farm planning applications, the ExA has not specifically mentioned climate change adaptation.

With respect to flood risk, it is common for one or two requirements not to be mentioned in the ExA report or decision letter, or be partially covered. The requirement with respect to drainage implications in EN-1, the

Overarching Energy NPS, is only partially considered in the evaluations of North Blyth Biomass Power Station, Rookery South Resource Recovery Facility and Brechfa Forest West Wind Farm. Also for Rookery South, the Sequential Test is not specifically mentioned while the Exception Test is not specifically mentioned for the Hinkley Point evaluation. For coastal change, coastal erosion and deposition is often not mentioned. It may be that no or partial coverage of requirements would have a bigger impact for certain applications, for example Hinkley Point, than for others.

The requirements with respect to water quality and resources are well covered in the evaluations as are the requirements with respect to good design. It is also clear that the ExA draws on various documents that support the applications, including the Environmental Statements and flood risk assessments. In addition, the views of key statutory bodies are shown to be crucial to the examination process, which are noted and considered by the ExA in the evaluations.

Contents

1. Introduction

As part of the analysis of national infrastructure for the Adaptation Sub-Committee's (ASC) 2014 progress report, a review of applications for nationally significant infrastructure projects submitted to either the Infrastructure Planning Commission or the Planning Inspectorate since 2010 has been undertaken. The assessment was completed in March 2014.

1.1. Aim and background

The aim of this review is to examine the extent to which the Planning Inspectorate has accounted for the approach taken by the applicant to assessing current and future weather-related hazards in their evaluation of the application as per the National Policy Statements (NPS).There have been 40 applications since 2010. The status of these applications is summarised in Table 1.1.

Table 1.1: Status of applications since 2010

Application status	Number of applications
Granted a development consent order (DCO)	13
Refused	1 (underground gas storage)
Withdrawn after being submitted	5
At the decision stage in the application process	4
At the examination stage in the application process	11
At the pre-examination stage in the application process	6
Total	**40**

Only those applications that have been granted or refused, a total of 14 applications, have been reviewed. A list of these applications is given in Appendix A.

Primary legislation that governs the application process includes The Planning Act 2008 and Localism Act 2011, which abolished the Infrastructure Planning Commission, transferring decision making powers to the Secretary of State[1].

The work has been carried out in two phases. An initial 'pilot' phase has been undertaken to design the approach and undertake a review of two applications. The purpose of having this first phase was to ensure the most efficient way of reviewing the documents was developed and the format of the outputs was agreed with the ASC prior to the full review being completed. The second phase was based on the findings of Phase 1. It completed the review for the remaining applications.

The work reviewed the relevant NPSs as well as the following documents for the applications:

- Secretary of State decision letter and statement of reasons;
- Examining Authority report to the Secretary of State.

[1] http://infrastructure.planningportal.gov.uk/legislation-and-advice/legislation/#Primary

It is important to note that the review is based on the information provided in these documents only. It is possible that certain requirements had been considered by the Planning Inspectorate in their evaluation of the application, but this has not specifically been recorded in the documents.

2. National Policy Statements

The first part of this phase of the work reviewed the appropriate NPSs, which set out Government policy on national infrastructure development. As well as providing reasons for the policy, NPSs explain how the policy takes account of Government policy relating to the mitigation of, and adaptation to, climate change[2]. There are a total of 12 designated or proposed NPSs, for the Energy, Transport, Water, Waste Water and Waste infrastructure sectors. These, and the departments responsible for producing them, are given in Figure 2.1. The aviation and water supply NPSs have not yet been published in draft for consultation.

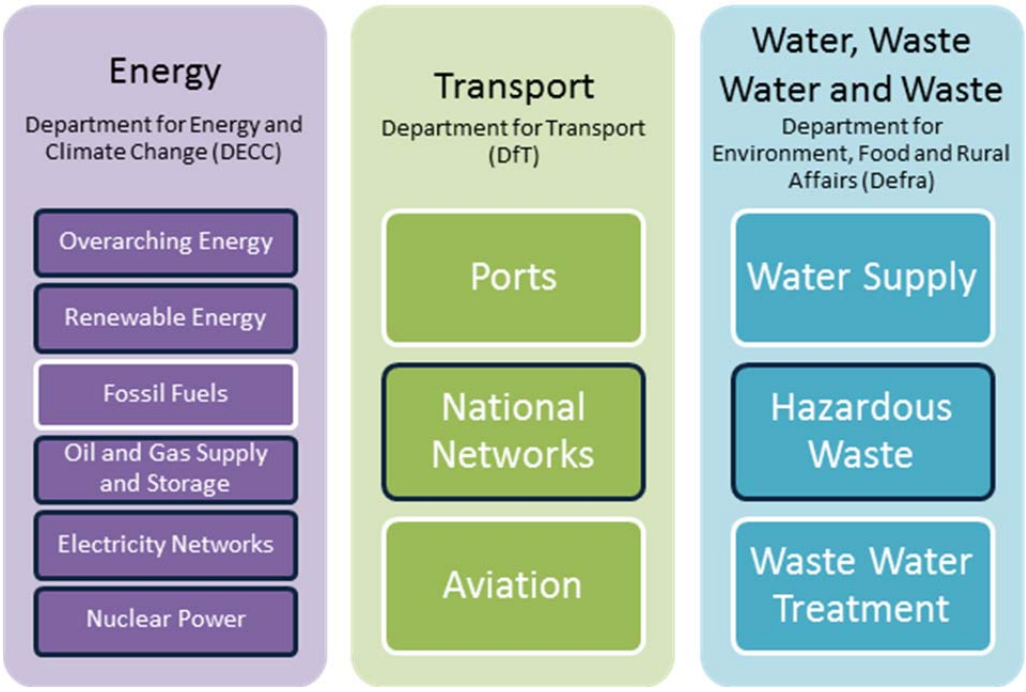

Figure 2.1: National Policy Statements by sector and the departments responsible for producing them

The applications that have been granted or refused are covered by the NPSs outlined in dark blue. These NPSs have been reviewed for this work to establish the content relevant to assessing current and future weather-related hazards. The relevant NPS for each application is summarised in Table 2.1.

[2] http://infrastructure.planningportal.gov.uk/legislation-and-advice/national-policy-statements/

Table 2.1: Applications and relevant NPS

No.	National Policy Statement	Applications
EN-3 (and EN-1)	Renewable Energy (including Overarching Energy)	Port Blyth New Biomass Plant
		Triton Knoll Offshore Wind Farm
		Brechfa Forest West Wind Farm
		Kentish Flats Extension
		Rookery South Energy from Waste Generating Station
EN-3, EN-5 (and EN-1)	Renewable Energy, Electricity Networks (including Overarching Energy)	Galloper Offshore Wind Farm
EN-4 (and EN-1)	Oil and Gas Supply and Storage (including Overarching Energy)	Preesall Saltfield Underground Gas Storage
EN-6 (and EN-1)	Nuclear Power (including Overarching Energy)	Hinkley Point C New Nuclear Power Station
Draft	National Networks	Redditch Branch Enhancement Scheme
		M1 Junction 10a Grade Separation – Luton
		Heysham to M6 Link Road
		Ipswich Rail Chord
		North Doncaster Rail Chord (near Shaftholme)
Draft	Hazardous Waste	East Northants Resource Management Facility

3. Application review

3.1. Application selection for Phase 1

The applications selected for review during Phase 1 of the study were:

1. North Blyth Biomass Power Station: application is for a new biomass power station located on the spit of land between the River Blyth Estuary and the North Sea.
2. Hinkley Point C New Nuclear Power Station: application for a new nuclear power station on the Somerset coast.

Both applications have been granted a DCO. The remaining applications were reviewed for Phase 2.

3.2. Approach

The approach to reviewing the applications was based on the relevant paragraphs included in the NPSs. These relevant paragraphs have been extracted from the NPSs and are given in full in Appendix B.

The review of the decision letters and Examining Authority reports was guided by these relevant paragraphs. For each application, summary tables are presented for the relevant requirements including climate change adaptation, flood risk, coastal change, good design and water quality and resources. With respect to other weather-related hazards, lightning is not covered by the NPSs, while strong wind/storms are included, where

relevant, in the climate change adaptation section. In the summary tables, the NPS paragraph is given (para) and the requirement is summarised. A colour code is used to represent the extent to which the Planning Inspectorate has accounted for the approach taken by the applicant to assessing current and future weather-related hazards in their evaluation of the application. A comments column provides further explanation. The different colour codes are summarised in Table 3.1.

Table 3.1: Colour codes used to assess review applications

	The requirement has been accounted for by the Planning Inspectorate
	The requirement has been partially accounted for by the Planning Inspectorate
	The requirement has not been accounted for by the Planning Inspectorate
	The requirement is not of relevance to the application

An important point to note is that, when assessing applications for road and rail and hazardous waste it has not been possible to follow the requirements set out in the relevant NPS as the NPS for National Networks is still at draft stage and the NPS for Hazardous Waste was at draft stage up to and by the completion of the examination of the East Northamptonshire Resource Management Facility application. The approach to reviewing these applications follows the requirements as outlined in the NPSs, but does not provide a specific assessment against relevant requirements. Where appropriate, specific paragraphs of the NPS have been noted in the text to show where the assessment broadly corresponds to the requirements.

The applications reviewed in Phase 1 (North Blyth Biomass Power Station and Hinkley Point C New Nuclear Power Station) are given first in the following sections. The rest of the applications are then ordered by the date that the application was submitted, beginning with the most recent.

3.3. North Blyth Biomass Power Station

The application is for a new biomass power station located on the spit of land between the River Blyth Estuary and the North Sea. The proposed development includes the generating station as well as linked items of infrastructure including cooling water intake, outfall and grid connection.

The application examination process included written evidence, hearings and a site visit. Based on their findings the Examining Authority (ExA) recommended that consent should be given (The Planning Inspectorate, 2013a).

The NPS for Overarching Energy (EN-1) and for Renewable Energy (EN-3) are of relevance to the application (DECC, 2011a and 2011b).

3.3.1. Climate change adaptation

The requirements with respect to climate change adaptation are set out in Section 4.8 of EN-1 (Table 3.2 and Table B.1). EN-3 also includes requirements specific to renewable energy infrastructure, including biomass generating stations (Table 3.3 and Table B.2).

The applicant has followed advice from the IPC (based on the Environment Agency's view) and considered climate change according to the requirements of the relevant planning policy statement, PPS25. The ExA recognises that this is covered in Chapter 14 of the applicant's Environmental Statement (ES). It is demonstrated by the applicant that values derived from PPS25 have been extended to 2070. This has been done for a range of return periods (including 1 in 200 years and 1 in 1000 years events) and applied to the

highest tide. The ExA states that the applicant has calculated when, and in what location, water could encroach upon the development.

Specifically with respect to flood risk, it is concluded in the ExA report that the applicant's assessment 'takes full account of the additional risk from climate change, and complies with the requirements of EN-1' (page 20).

Table 3.2: EN-1 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
4.8.5	Applicants must consider the impacts of climate change. The ES should set out how the proposal will take account of the projected impacts of climate change.		It is recognised that this is covered in Chapter 14 of the applicant's ES.
4.8.6	Applicants have taken into account potential impacts of climate change using the latest UK Climate Projections available.		It is demonstrated by the applicant that values derived from PPS25 have been extended to 2070.
4.8.7	Applicants should apply as a minimum, the emissions scenario that the Independent Committee on Climate Change suggests the world is currently most closely following – and the 10%, 50% and 90% estimate ranges		This is something that the CCC has not and will not prescribe on.
4.8.8	There are not features of the design of new energy infrastructure critical to its operation which may be seriously affected by more radical changes to the climate beyond that projected in the latest set of UK climate projections		1 in 200 year and 1 in 1000 year events and highest tide have been considered. Flooding to pump house considered by the Secretary of State (see Section 3.3.2).
4.8.10	If any adaptation measures give rise to consequential impacts (for example on flooding, water resources or coastal change) the IPC should consider the impact of the latter in relation to the application as a whole and the impacts guidance.		The ExA mentions that the resulting flood risk if the project goes ahead should be minimal but there is no specific mention of adaptation measures and consequential impacts.
4.8.11	Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's latest UK Climate Change Risk Assessment, when available and in consultation with the EA.		Climate Change Risk Assessment not specifically mentioned.
4.8.12	Where adaptation measures are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the project and/or surrounding environment, the IPC may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise.		This has not been specifically mentioned.

Table 3.3: EN-3 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
2.3.2	In cases where biomass generating stations are proposed for coastal or estuarine sites, applicants should, in particular, set out how the proposal would be resilient to: • effects of rising sea levels and increased risk from storm surge; • increased risk of flooding; • impact of higher temperatures; and • increased risk of drought affecting river flows.		Partially, the effects or rising sea levels and increased risk of flooding have been mentioned but higher temperatures and increased risk of drought are not mentioned.

3.3.2. Flood risk

The requirements with respect to flood risk are set out in Section 5.7 of EN-1 (Table 3.4 and Table B.1).

While the majority of the proposed site is located within Flood Zone 1 (the lowest probability band in the Environment Agency Flood Map, with less than a 0.1 per cent (1 in 1000) chance of inundation each year), a section of it does lie within Flood Zone 2 (likely to be affected by a major flood, with up to a 0.1 per cent (1 in 1000) chance of occurring each year) and Flood Zone 3[3] (likely to be flooded from the sea by a flood that has a 0.5 per cent (1 in 200) or greater chance of happening each year or from a river by a flood that has a 1 per cent (1 in 100) or greater chance of happening each year).

The ExA report mentions that as essential services for the purposes of national planning policy, electricity generating stations should be located in the lowest Flood Zone available. If this is not possible then the station should be able to operate during flood periods. Since the project site lies partially in Flood Zone 3 (high probability), the report recognises that a "Sequential Test" and an "Exception Test" will need to be completed. The Sequential Test is to establish whether no other available sites, with lower flood probability, are available, while the Exception Test will be used to show that the site would be able to operate during a flood event.

It is noted in the ExA report that the applicant's flood risk assessment is covered in Chapter 14 of the ES and associated Appendix 14.1. This flood risk assessment, including a Sequential Test, has been acknowledged by the Environment Agency.

As mentioned in Section 3.3.1, part of the proposed development does lie within Flood Zones 3 and 2 (high and medium probability respectively). The Secretary of State has considered whether the operation of the station could be affected, should this part of the site become inoperable due to flooding. Two main processes and infrastructure which could be affected have been identified as:

1. Delivery of fuel by ship: considered not to cause reduction in the operation of the station as fuel could be delivered by road.
2. Cooling water intake pump house: it is recognised that failure of the pump house would mean a lack of cooling water, leading to the closure of the station. Consideration has been given to the flood risk assessment which mentions that it would not be feasible to site the pump house in an area of low flood

[3] It should be noted that the Environment Agency's Flood Map outlines the areas that would naturally be affected by flooding if a river rises above its banks, or high tides and stormy seas cause flooding in coastal areas. It does not take into consideration the presence or performance of flood defences.

probability. However, the Secretary of State concludes that the design of the pump house (water compatible) and inclusion of a requirement in the DCO means that the operation of the station would not be compromised (DECC, 2013a).

It is concluded by the ExA that the assessment of flood risk is adequate and there would be minimal flood risk should the project go ahead. The assessment includes full consideration of the additional risk from climate change. The ExA also concludes that it is not relevant to consider whether there are other sites available with lower flood risk. Due to the limited potential for flooding, Requirement 20 is included in the draft DCO to secure the necessary flood risk mitigation. The Environment Agency is satisfied that this is sufficient.

The requirement to produce a flood evacuation plan prior to the project being brought into commercial use is recognised in the decision letter and the ExA report. It is necessary to produce this plan because the need for an emergency access route is identified in the flood risk assessment. The requirement is included in the draft DCO.

Table 3.4: EN-1 requirements for flood risk

Para	Summary of requirement	Y/N/P	Comments
5.7.4	Applications for energy projects of 1 hectare or greater in Flood Zone 1 in England or Zone A in Wales and all proposals for energy projects located in Flood Zones 2 and 3 in England or Zones B and C in Wales should be accompanied by a flood risk assessment (FRA).		The ExA recognises that a flood risk assessment has been completed.
5.7.7	Applicants for projects which may be affected by, or may add to, flood risk should arrange pre-application discussions with the EA, and, where relevant, other bodies.		Views and acknowledgement from the Environment Agency mentioned.
5.7.8	If the EA has concerns about the proposal on flood risk grounds, the applicant should discuss these concerns with the EA and take all reasonable steps to satisfy the EA's concerns.		Concerns from the Environment Agency and inclusion of requirement in draft DCO.
5.7.9	In determining an application for development consent, the IPC should be satisfied with various elements of flood risk approach.		It is concluded by the ExA that the applicant has made an adequate assessment of flood risk.
5.7.10	For construction work which has drainage implications, approval for the project's drainage system will form part of the development consent issued by the IPC. The IPC will therefore need to be satisfied that the proposed drainage system complies with any National Standards. The IPC should be satisfied that the most appropriate body is being given the responsibility for maintaining any sustainable drainage systems (SuDS).		The surface water drainage strategy discharging into the North Sea is noted and covered in the requirements in the DCO but there is not much discussion around drainage in the report.
5.7.11	If the EA continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the IPC can grant consent, but would need to be satisfied that all reasonable steps have been taken to resolve the concerns.		The report mentions that the Environment Agency is satisfied with inclusion of requirement in draft DCO.
5.7.12	The IPC should not consent development in Flood Zone 2 in England or Zone B in Wales unless it is satisfied that the sequential test requirements have been met. The IPC		Both have been considered to be satisfied.

Para	Summary of requirement	Y/N/P	Comments
	should not consent development in Flood Zone 3 or Zone C unless it is satisfied that the Sequential and Exception Test requirements have been met.		
5.7.17	Where an increase in flood risk elsewhere cannot be avoided or wholly mitigated, the IPC may grant consent if it is satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure.		The ExA mentions that the resulting flood risk if the project goes ahead should be minimal but there is no specific mention of increase in flood risk elsewhere.
5.7.24	Essential energy infrastructure which has to be located in flood risk areas should be designed to remain operational when floods occur.		It is noted that the pump house at risk of flooding will be designed to withstand maximum water depth and wave inundation.
5.7.24	Energy projects proposed in Flood Zone 3b or Zone C2 in Wales, should only be permitted if the development will not result in a net loss of floodplain storage, and will not impede water flows.		The Environment Agency flood map given in the flood risk assessment shows that part of the development is located in Flood Zone 3 (high probability), i.e. Flood Zone 3a, rather than Flood Zone 3b.
5.7.25	Flood Warning and evacuation plans should be in place for those areas at an identified risk of flooding.		Requirement for the plan mentioned and included in draft DCO.

3.3.3. Coastal change

The requirements with respect to coastal change are outlined in Section 5.5 of EN-1 (Table 3.5 and Table B.1). The ExA report recognises these requirements and mentions that no issues with respect to coastal geomorphology have been raised by the Environment Agency or the Marine Management Organisation (MMO). It also notes the findings from the ES that assesses there should be no contribution from the outfall of the proposed development to longshore drift.

Table 3.5: EN-1 requirements for coastal change

Para	Summary of requirement	Y/N/P	Comments
5.5.7	Applicants should assess the impact of the proposed project on coastal processes and geomorphology, including by taking account of potential impacts from climate change.		The ExA report notes the ES assessment of the impact of the proposed development on longshore drift.
5.5.10	The IPC should be satisfied that the proposed development will be resilient to coastal erosion and deposition, taking account of climate change.		The ExA report notes that the land would be protected by the harbour wall and that no issues have been raised by the Environment Agency or by the MMO in relation to the Marine Licence. However, there is no specific mention of erosion or deposition.

Para	Summary of requirement	Y/N/P	Comments
5.5.14	The IPC should consult the MMO on projects which could impact on coastal change, since the MMO may also be involved in considering other projects which may have related coastal impacts.		It is mentioned that the ExA relies heavily on the views of the MMO as the enforcement body for marine activities.
5.5.17	Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast, in consultation with the MMO, the EA, LPAs, other statutory consultees, Coastal Partnerships and other coastal groups, as it considers appropriate. Where this is not the case the IPC should consider what appropriate mitigation requirements might be attached to any grant of development consent.		No issues with respect to coastal change.

3.3.4. Good design

The requirements with respect to good design are set out in Section 4.5 of EN-1 (Table 3.6 and Table B.1).

It is concluded by the ExA that the NPS requirements in relation to design have, on the whole, been complied with by the applicant and the proposals are considered to represent an appropriate design solution. Specifically, it is noted that the pump house is to be designed for water compatibility and constructed to withstand wave inundation and maximum water depth, as it is to be situated in an area of high flood probability.

Table 3.6: EN-1 requirements for good design

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		It is concluded that the NPS requirements in relation to design have, on the whole, been complied with.

3.3.5. Water quality and resources

The ExA report notes the requirements of EN-3 with respect to water quality and resources and recognises that the applicant has considered water quality and resources in its ES. It is mentioned in the report that the development will take water from the River Blyth estuary for the cooling system and discharge it to the North Sea. It notes that the Environment Agency has not raised any concerns regarding the sourcing or discharge of water. The ExA concludes that the application adequately addresses the issues and that the requirements of both EN-1 and EN-3 are covered in full.

Table 3.7: EN-1 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent.		The ExA recognises that this has been included in the ES.
5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.		The ExA notes the role of the Environment Agency in issuing an environmental permit.
5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.		The ExA concludes that the application adequately addresses the issues.

Table 3.8: EN-3 requirements for water quality and resources (biomass/waste only)

Para	Summary of requirement	Y/N/P	Comments
2.5.85	Where the project is likely to have effects on water quality or resources the applicant should undertake an assessment as required in EN-1, Section 5.15. The assessment should particularly demonstrate that appropriate measures will be put in place to avoid or minimise adverse impacts of abstraction and discharge of cooling water.		The various measures to minimise the impacts of the discharges are noted in the ExA report.
2.5.86	The IPC should be satisfied that the applicant has demonstrated measures to minimise adverse impacts on water quality and resources as described above and in EN-1.		The ExA concludes that the application adequately addresses the issues.

3.4. Hinkley Point C New Nuclear Power Station

The application is for a new nuclear power station on the Somerset coast. The development would include the generating stations as well as other linked items of infrastructure including park and ride sites, a bypass and road improvements, freight handling facilities, a temporary jetty and harbour and temporary accommodation for construction workers.

The application examination process included written evidence, hearings and a number of site inspections. Based on their findings, the Panel recommended that the DCO be made.

NPS EN-1 and NPS EN-6 are of most relevance to this application (DECC, 2011a, 2011e and 2011f). The decision letter highlights Section 2.2 of NPS EN-6 and the substantial weight that should be given to the benefits that would result from an application of this type (DECC, 2013b). It also references Section 4.1.1 of the NPS, identifying Hinkley Point as a potential suitable site for a new nuclear power station.

3.4.1. Climate change adaptation

The requirements with respect to climate change adaptation are set out in Section 4.8 of EN-1 (Table 3.9 and Table B.1). EN-6 also includes requirements specific to nuclear power generation (Table 3.10 and Table B.5).

The Panel's report recognises the requirements set out in Section 4.8 of NPS EN-1 with respect to the need for the design of the development to consider the potential impacts of climate change (The Planning Inspectorate, 2012a). It also recognises that the latest UK Climate Change projections should be used and that appropriate adaptation and mitigation measures should be identified to cover the lifetime of the infrastructure.

The report outlines the potential vulnerability of the site to the effects of climate change, due to its location on the coast and specifically mentions sea-level rise. It then states that 'the security of the site itself against inundation due to flooding, including flooding from the sea, is a factor that it is for others to regulate' (page 88) and 'accordingly, we do not comment further on the matter in this report'. The ExA references paragraph 4.8 of the report which states (page 15):

'Concerns raised with us by interested parties, but not subsequently addressed in this report, include (i) the risk of the site being affected by flooding (from rising sea levels, tsunami, storm surge or coastal change) and thereby compromising nuclear safety; (ii) the ability of the local road network to safely accommodate traffic in the event of a nuclear emergency arising on the site (including the possibility of such an emergency coinciding with another event such as an accident on the highway that would compromise its capacity); (iii) matters relating to the discharge of cooling water and the like from the site (including matters relating to the quality of such discharges); (iv) matters relating to the facilities available for the storage of nuclear waste on site (including the potential need for long-term storage of nuclear waste awaiting disposal); and (v) matters arising from the site's location adjacent to Hinkley Point A and B nuclear sites'.

Paragraph 4.9 on page 16 then states:

'These are all matters which, having regard to the advice in the relevant NPSs and advice received from the ONR (REP008), we are firmly of the view that it is for others to consider and regulate'.

However, the report does note that the potential for flood risk, mentioned in the ES, did include consideration of climate change projections. The risk during both the construction and operation of the site has been taken into account. It was assessed that there would be no risk.

The Panel is also satisfied that adaptation measures could be introduced without leading to any significant adverse consequential impacts. Their decision was informed through consideration of the proposed engineering designs. It states in the report that the Panel sees no reason to further question the matter (i.e. climate change).

Table 3.9: EN-1 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
4.8.5	Applicants must consider the impacts of climate change. The ES should set out how the proposal will take account of the projected impacts of climate change.		Noted that the ES takes into account future climate change projections.
4.8.6	Applicants have taken into account potential impacts of climate change using the latest UK Climate Projections available.		Mentions the latest UK Climate Projections.
4.8.7	Applicants should apply as a minimum, the emissions scenario that the Independent Committee on Climate Change suggests the world is currently most closely following – and the 10%, 50% and 90% estimate ranges.		This is something that the CCC has not and will not prescribe on.
4.8.8	There are not features of the design of new energy infrastructure critical to its operation which may be seriously affected by more radical changes to the climate beyond that projected in the latest set of UK climate projections.		No comment on this – Panel report mentions that the security of the site against inundation due to flooding is a factor for others to regulate.
4.8.10	If any adaptation measures give rise to consequential impacts (for example on flooding, water resources or coastal change) the IPC should consider the impact of the latter in relation to the application as a whole and the impacts guidance.		Noted that adaptation measures could be introduced without giving rise to any significant adverse consequential impacts.
4.8.11	Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's latest UK Climate Change Risk Assessment, when available and in consultation with the EA.		It is not mentioned what adaptation measures are based on, however it is noted that the assessment of flood risk concludes that there would be no risk to the development site.
4.8.12	Where adaptation measures are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the project and/or surrounding environment, the IPC may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise.		This is noted following consideration of the proposed engineering designs.

Table 3.10: EN-6 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
2.10.2	Nuclear power stations in the UK are most likely to be developed on coastal or estuarine sites. Applicants should therefore provide the IPC with information as to how the development incorporates adaptation measures to take account of the effects of climate change, including: • coastal erosion and increased likelihood of storm surge and rising sea levels; • effects of higher temperatures; and • increased risk of drought, which could lead to a lack of available process water.		Partially, only flood risk and sea-level are mentioned.
2.10.6	The IPC should have regard to advice from the Nuclear Regulators, in particular the ONR and the EA, in relation to climate change impacts and their views on the adaptation measures proposed.		Decision letter mentions regard to advice received from the ONR that the security of the site against inundation due to flooding is a factor for others to regulate.

3.4.2. Flood risk

The requirements with respect to flood risk are set out in Section 5.7 of EN-1 (Table 3.11 and Table B.1). EN-6 also includes requirements specific to nuclear power generation (Table 3.12 and Table B.5). It should be noted that EN-6 sets out exceptions to the application of the sequential test (see paragraph 5.7.12 in EN-1).

Flood risk is considered in detail in the report. These various flood issues have resulted in a number of requirements being imposed in the DCO. The issues are discussed by area as follows.

Stogursey

Stogursey is located approximately 1.5 km to the south of the main site boundary. Flood risk concerns have been widely expressed as power stations and other parts of the area have flooded in the past. The Panel's report outlines that concerns raised because of the safety implications of flooding at a nuclear power station are safety matters that fall within the remit of the Nuclear Regulators. The Panel has taken into consideration the assessments from the Office for Nuclear Regulation and the Environment Agency, and mentions the appropriate requirements that would need to be imposed in the DCO.

The increased probability of flooding to properties in the area as a result of valley infilling has been considered in detail. The report recognises that the potential flooding has been assessed in the applicant's flood risk assessment, which includes consideration of extreme flood events and climate change up to the year 2100. Mitigation measures include a DCO requirement for a flood risk management strategy, proposed by the Environment Agency. The Panel considers that these measures would be effective and recommends that the requirement be put in place.

Combwich

Combwich is located approximately 5km to the south-east of the main site boundary. The construction and operation of the laydown area has prompted concerns over the potential for increased flood risk. The applicant completed additional flood risk modelling work in response to initial concerns from the Environment

Agency about the adequacy of the modelling and flood risk assessment. The Panel's report mentions that this additional modelling met the Environment Agency's concerns.

The Panel studied the results of the flood risk assessment with regard to the potential for increased flood risk and is satisfied that the proposal would not need to be changed.

The Panel considered whether a further sequential test be necessary for the proposed laydown area, since it would be sited in an area of high flood probability (Flood Zone 3). They concluded that it is not required as they are satisfied that this was applied by the applicant during the site selection process. An alternative site, mainly in an area of low flood probability (Flood Zone 1) had been considered by the applicant but the Panel considered that this would not function as well and that the requirements of the Sequential Test have been met.

Cannington

Cannington is located approximately 8km to the south-east of the main site boundary. The proposed bypass and park and ride site prompted several concerns regarding flooding problems in the village. The Panel considered the bypass design and note that two balancing ponds and a detention pond are proposed. A number of requirements are recommended by the Panel to ensure works are completed in accordance with findings from the flood risk assessments. These requirements also ensure that appropriate arrangements are put in place for the provision and management of flood preventative measures.

Other

The Bridgwater accommodation blocks are to be removed once the power station is constructed. These are to be located on land within Flood Zone 3. The Panel states that the applicant's flood risk assessments do not look beyond the mid-2020s, and for these buildings to be permanent, there would need to be a longer term flood risk assessment.

Table 3.11: EN-1 requirements for flood risk

Para	Summary of requirement	Y/N/P	Comments
5.7.4	Applications for energy projects of 1 hectare or greater in Flood Zone 1 in England or Zone A in Wales113 and all proposals for energy projects located in Flood Zones 2 and 3 in England or Zones B and C in Wales should be accompanied by a flood risk assessment (FRA).		Flood risk assessments have been completed. It is noted that the Environment Agency initially had concerns with these assessments, the applicant completed additional modelling and this was confirmed by the Environment Agency to have met their concerns.
5.7.7	Applicants for projects which may be affected by, or may add to, flood risk should arrange pre-application discussions with the EA, and, where relevant, other bodies.		Assessments and recommendations from the Environment Agency have been considered.
5.7.8	If the EA has concerns about the proposal on flood risk grounds, the applicant should discuss these concerns with the EA and take all reasonable steps to satisfy the EA's concerns.		The report describes how the applicant met concerns regarding additional flood risk modelling at Combwich.
5.7.9	In determining an application for development consent, the IPC should be satisfied with various elements of flood risk approach.		Various elements of the flood risk approach are discussed and considered

Para	Summary of requirement	Y/N/P	Comments
5.7.10	For construction work which has drainage implications, approval for the project's drainage system will form part of the development consent issued by the IPC. The IPC will therefore need to be satisfied that the proposed drainage system complies with any National Standards. The IPC should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS.		It is noted that the draft DCO includes protective provisions, agreed with the Environment Agency concerning enforcement powers in relation to the maintenance of drainage works. Requirement for surface water drainage arrangements noted.
5.7.11	If the EA continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the IPC can grant consent, but would need to be satisfied that all reasonable steps have been taken to resolve the concerns.		The Environment Agency's views have been considered.
5.7.17	Where an increase in flood risk elsewhere cannot be avoided or wholly mitigated, the IPC may grant consent if it is satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure.		Mitigation measures have been described in the report.
5.7.24	Essential energy infrastructure which has to be located in flood risk areas should be designed to remain operational when floods occur.		There is no mention of essential energy infrastructure being located in flood risk areas. The design of infrastructure including a bridge, the laydown area and accommodation block is discussed.
5.7.24	Energy projects proposed in Flood Zone 3b or Zone C2 in Wales, should only be permitted if the development will not result in a net loss of floodplain storage, and will not impede water flows.		The flood risk assessment states that Combwich Wharf is partially located in both Flood Zone 3a and 3b. The ExA report considers the potential for increased flood risk and studies the results of the flood risk assessment, noting that the potential for flooding of properties in Combwich would not be increased.
5.7.25	Flood Warning and evacuation plans should be in place for those areas at an identified risk of flooding.		It is noted that a requirement in the DCO would provide for emergency flood planning arrangements and that this is not controversial. These arrangements would be in accordance with the flood risk assessment.

Table 3.12: EN-6 requirements for flood risk

Para	Summary of requirement	Y/N/P	Comments
3.6.6	Applicants should identify the potential effects of the credible maximum scenario in the most recent projections of marine and coastal flooding and demonstrate that in principle adaptation would be possible.		Noted that climate change up to year 2100 included in flood risk assessment for 1% AEP overtopping event.
3.6.7	Applicants must also be able to demonstrate that they could achieve further measures for flood management at the site in the future if future climate change predictions show they are necessary.		This is noted having considered the proposed engineering designs.
3.6.8	Where possible, safety and operational critical installations should be sited in the areas of the site at least risk of flooding.		The report considers various flood issues by area, referencing the type of development to be constructed.
3.6.9	The IPC should not conduct the Sequential Test for any of the listed sites.		This has not been done. For relevant areas, flood risk and the application of the sequential test (in the process of site selection) is noted.
3.6.11	Flood risk assessment: the IPC will need to be satisfied that a sequential approach has been applied at the site level to ensure that, where possible, critical infrastructure is located in the lowest flood risk areas within the site.		The ExA considers and discusses the sequential approaches at site-level
3.6.12	The IPC is still required to consider the Exception Test in accordance with Section 5.7 of EN-1 where the site is located in Flood Zone 3 in England (or Zone C in Wales).		There is no specific mention of the Exception Test.
3.6.15	The IPC should be satisfied that the applicant is able to demonstrate suitable flood risk mitigation measures.		Mitigation measures have been discussed.
3.6.16	Applicants should set out measures to mitigate the risk of flooding on or from individual sites that may result from the development.		Mitigation measures have been discussed.

3.4.3. Coastal change

The requirements with respect to coastal change are set out in Section 5.5 of EN-1 (Table 3.13 and Table B.1). EN-6 also includes a requirement specific to nuclear power generation (Table 3.14 and Table B.5).

Issues with respect to coastal change are recognised in the ExA report. The ExA notes involvement of the applicant, Natural England (NE), the Environment Agency, the Countryside Council for Wales (CCW) and the MMO in discussions with respect to concerns about changes in hydrodynamic processes and geomorphological processes. The ExA report outlines the various requirements in place to secure mitigation and agreement on the issues.

With respect to the EN-6 requirement, the ExA report states that ‘the security of the site itself against inundation due to flooding, including flooding from the sea, is a factor that it is for others to regulate’ (page 88) and ‘accordingly, we do not comment further on the matter in this report’.

Table 3.13: EN-1 requirements for coastal change

Para	Summary of requirement	Y/N/P	Comments
5.5.7	Applicants should assess the impact of the proposed project on coastal processes and geomorphology, including by taking account of potential impacts from climate change.		The ExA report notes that the MMO stated that they had received sufficient clarification from the applicant to withdraw their concerns about coastal processes and were satisfied that a Marine Licence would cover geomorphology issues.
5.5.10	The IPC should be satisfied that the proposed development will be resilient to coastal erosion and deposition, taking account of climate change.		Erosion impacts on the surrounding area, e.g. the Severn Estuary, are mentioned but coastal erosion nor deposition is mentioned with regard to the resilience of the proposed development.
5.5.14	The IPC should consult the MMO on projects which could impact on coastal change, since the MMO may also be involved in considering other projects which may have related coastal impacts.		The ExA report notes the MMO's views and concerns.
5.5.17	Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast, in consultation with the MMO, the EA, LPAs, other statutory consultees, Coastal Partnerships and other coastal groups, as it considers appropriate. Where this is not the case the IPC should consider what appropriate mitigation requirements might be attached to any grant of development consent.		The proposed DCO requirements affecting marine areas are mentioned and it is noted that the MMO confirmed they were content with these requirements.

Table 3.14: Other relevant EN-6 requirements

Para	Summary of requirement	Y/N/P	Comments
3.8.5	In applying the policy on mitigation set out in Section 5.5 of EN-1, and having taken account of the effects of climate change over the lifetime of the project (including any decommissioning period), the IPC should be satisfied that the application will include measures where necessary to mitigate the effects of, and on, coastal change.		The proposed DCO requirements affecting marine areas are mentioned and it is noted that the MMO confirmed they were content with these requirements.

3.4.4. Good design

The Panel's report states that the advice in NPS EN-1 and EN-6 with respect to the good design of energy infrastructure, and the need for it to be sustainable, attractive, durable and adaptable as it can be, has been considered. The EN-1 requirement is given in Table 3.15 and Table B.1.

The report specifically mentions Burn Brook bridge, that would be used by vehicles in an emergency, is subject to flooding. The Panel recognise that it is therefore necessary for the design of the bridge to consider the risk of flooding, but do not consider this an issue as the design of the bridge would be subject to approval by West Somerset District Council.

Table 3.15: Other relevant EN-1 requirements

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		It is concluded that the NPS requirements in relation to design have overall been complied with.

3.4.5. Water quality and resources

The ExA report notes and discusses the potential water quality impacts resulting from the abstraction and release of cooling water. The role of environmental permits in regulating discharges is recognised, and the appropriate requirements are considered.

Table 3.16: EN-1 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent.		The applicant's HRA report is noted, including mitigation through a series of requirements.
5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.		Various requirements considered by the ExA.
5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.		Various requirements considered by the ExA. The Code of Construction Practice is mentioned; this includes guidance to contractors on control measures.

Table 3.17: EN-6 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
3.7.4	The IPC should consider the cumulative effects of a development consent application for the construction of a new nuclear power station at a specific site with other major infrastructure proposals in accordance with the requirements of EN-1.		See EN-1 requirements
3.7.5	The IPC should liaise closely with the EA who will consider issues of water quality (including any water abstraction and discharge) as part of the environmental permitting process.		The ExA notes and considers the views of the Environment Agency and their role in the environmental permitting process

3.5. Redditch Branch Enhancement

The application is for a second railway track at Redditch, Worcestershire to run alongside the existing line. The track is to be 3.2 kilometres long. The development would also comprise a new platform and footbridge at Alvechurch station and the diversion of a public footpath near the station.

Development consent for the proposals set out in the application was granted.

As the NPS concerning rail infrastructure was not in place, the application was reported on s83(1)(b) of the Planning Act (PA) 2008. In addition, appropriate parts of the National Planning Policy Framework (NPPF) have been considered. Also of relevance in making the decision is any Local Impact Report, any prescribed matters and any other matter considered important and relevant by the Secretary of State. The relevant requirements of the draft National Networks NPS (Department for Transport, 2013a) are given in Table B.6.

3.5.1. Climate change adaptation

Climate change is not mentioned in the ExA report (The Planning Inspectorate, 2013b) or decision letter (Department for Transport, 2013b).

3.5.2. Flood risk

A number of potential impacts on the natural environment have been identified. These include matters concerning drainage, groundwater and flood risk. The applicant submitted a Flood Risk Assessment (paragraph 5.85 in the draft NPS) including River Basin Management Impact Assessment. The report recognises that the applicant consulted the Environment Agency on its proposals for drainage and groundwater. This is covered by paragraph 5.89 in the draft NPS. The potential flood risk was questioned by the Environment Agency following examination of the flood risk assessment submitted by the applicant and with consideration to drainage matters. It is recognised in the report that the Environment Agency provided subsequent confirmation in their Statement of Common Ground (SoCG) with the applicant that they were satisfied with the flood risk assessment. The Environment Agency's agreement to the proposed mitigation measures through the imposition of requirements is also confirmed in its SoCG.

The ExA concludes, and the Secretary of State agrees, that mitigation measures, secured through requirements included in the DCO, will adequately control such impacts.

3.5.3. Coastal change

This section is not relevant to the application.

3.5.4. Water quality and resources

There is no mention of impacts on water quality. With respect to water resources, the ExA report notes that the Environment Agency was consulted by the applicant on its proposals for handling groundwater. It also mentions that the Environment Agency has agreed to the proposed mitigation of possible impacts through imposition of requirements.

3.6. M1 Junction 10A

The application is for the grade separation of M1 Junction 10a on the south side of Luton. The development would include the removal of an existing roundabout, the widening of two roads and the construction of new roundabouts and slip roads.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2013c and Department for Transport, 2013c).

No NPS was available up to and by the completion of the examination. Consideration has therefore been given to the Local Impact Report; any matters prescribed in relation to development of a description to which the application relates; and any other matters considered both important and relevant to the decision. The relevant requirements of the draft National Networks NPS are given in Table B.6.

3.6.1. Climate change adaptation

The ExA considers the Development Strategy for Central Bedfordshire – Pre-Submission 2013 (DSCB), which was produced for and approved by Central Bedfordshire Council. One of the policies of relevance to the scheme and considered by the ExA in terms of the proposed development's conflict with, or support from, is Policy 48, which encourages adaptation to climate change. The ExA considers there to be no conflict with this policy.

3.6.2. Flood risk

The ExA considered policies identified of relevance to the proposed development in the Local Impact Report, specifically with respect to the development's support or conflict with the policy. ENV14 specifically concerns the water environment. It is recognised that the 'ES assesses no increased flood risk or contamination of watercourses from scheme with effective mitigation measures in place and EA has no outstanding objection' (page 9).

The DSCB is also considered by the ExA in terms of the proposed development's conflict with, or support from. Policy 49 of the DSCB assesses potential flood risk implications. The ExA recognises that the proposed development is not located within a higher probability flood zone and that this means there is no conflict with the policy provided that effective mitigation is put in place.

There is a requirement specific to drainage and another specific to flood risk assessment included in the DCO.

3.6.3. Coastal change

This section is not relevant to the application.

3.6.4. Water quality and resources

The ExA considered policies identified of relevance to the proposed development in the Local Impact Report, specifically with respect to the development's support or conflict with the policy. ENV14 specifically concerns the water environment. It is recognised that the 'ES assesses no increased flood risk or contamination of watercourses from scheme with effective mitigation measures in place and EA has no outstanding objection' (page 9).

The DSCB is also considered by the ExA in terms of the proposed development's conflict with, or support from. Policy 44 of the DSCB protects against pollution. The ExA report recognises that there is no conflict provided that effective mitigation measures are put in place.

It is recognised in the ExA report that the applicant's ES comprehensively assesses the development's environmental impacts. It is also mentioned that NE considers the ES to be robust, including the assessment of the lack of connectivity with the development in terms of hydrology. There is a requirement on measures to protect the water environment in the DCO, including sufficient monitoring of impacts and remedial measures where necessary. The ExA is satisfied that NE has no objections to the scheme and that the DCO sufficiently addresses its concerns on mitigation. This is covered in paragraphs 5.202 and 5.204 in the draft NPS.

The ExA report states that through construction of the scheme and the requirements in the DCO, it is satisfied that the mitigation measures specified in the ES can be provided, retained and maintained. It is also satisfied that these measures would minimise the environmental impacts satisfactorily.

3.7. The East Northamptonshire Resource Management Facility

The application is for the construction of new, and alteration of existing, facilities to recover and dispose of hazardous waste and dispose of low level radioactive waste. The proposed development is located at the East Northamptonshire Resource Management Facility in Northamptonshire.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2013d).

No NPS was available up to and by the completion of the examination as the relevant NPS was still in draft. However, the ExA has had regard to the draft NPS in carrying out the examination of the application. The report was prepared on the basis that the decision on the application is to be made under section 105 of the PA 2008, an approach that the Secretary of State agrees with (Department for Communities and Local Government, 2013). Consideration has been given to any Local Impact Report; any matters prescribed in relation to development of a description to which the application relates; and any other matters considered both important and relevant to the decision.

The relevant requirements of the Hazardous Waste NPS (Defra, 2013) are given in Table B.7.

3.7.1. Climate change adaptation

The ExA report mentions that the flood risk assessment completed for the proposed development takes into account the anticipated effects of climate change. The surface water management plan includes mitigation and adaptation measures. This plan has been approved by the Environment Agency. There is no other mention of climate change adaptation.

3.7.2. Flood risk

The ExA report states that the site for the proposed development is located in an area designated as Flood Zone 1 (low probability). It also recognises that a flood risk assessment has been completed, and this takes into consideration the potential impacts of climate change (paragraph 5.7.4 in the NPS). The calculations as part of the flood risk assessment indicate that the drainage system has sufficient capacity 'to accommodate the runoff during 1 in 100 year storm events without flooding'. The Environment Agency agrees with this (paragraph 5.7.7 in the NPS).

The possible impact from the operation of the development on flood risk assessment is covered in a section in the DCO (paragraph 5.7.19 in the NPS).

3.7.3. Coastal change

This section is not relevant to the application.

3.7.4. Good design

The design is mentioned in the ExA report through consideration of the SoCG between the applicant and the Environment Agency, specifically that "if there are implications for the design of the landfill based on the final published version of the EA documents these can and will be taken into account in the detailed engineering of the landfill sites" (page 32). Any changes to the aspect of the design are most likely to be ones that would result in an increased level of protection to the underlying groundwater. The ExA also recognises that the restoration of the site when landfill operations have finished forms part of the application and would aim to provide significant biodiversity gain. The ExA notes that NE agrees that this approach will have a positive effect on the natural environment and the profile of the landscaping would be included in the DCO. Good design is covered in paragraph 4.5.3 of the NPS.

3.7.5. Water quality and resources

Hydrogeology is one of the principal issues expected (by the ExA) to be addressed in the examination. This specifically includes the potential for hazardous materials to contaminate groundwater and aquifers should there be, for example, a spillage, accident, or failure of containment mechanisms. The ExA report also lists the following as principal issues under hydrogeology: modelling of possible propagation of hazardous materials; recovery and disposal of leachate during operation of the site once it has closed; and the adequacy of the hydrological risk assessment. With respect to other policy and consenting matters, the ExA has listed Environment Agency permits and their guidance on Groundwater Protection: Policy and Practice.

The ExA report recognises that site operations would be subject to pollution control and that this is the responsibility of the Environment Agency. The report also mentions that various activities at the site can only be carried out under permit terms issued by the Environment Agency.

The ExA report states that the facility is located on land that lies above a Principal Aquifer, the Lincolnshire Limestone. It has not been identified as a Source Protection Zone by the Environment Agency. The ExA report goes on to discuss the findings of the ES with respect to the direction of groundwater flows and the groundwater and surface water abstractions in the area. The Environment Agency has agreed this description of the water resources in the SoCG.

Issues raised with respect to emissions to water are discussed, the major concern being the possibility of radioactive material seeping into groundwater or getting into surface water, which could then get into local springs, rivers and then drinking water sources. The ExA completed a site visit accompanied by a local qualified hydrogeologist, to examine the area. It also notes the Environment Agency's Groundwater Protection Policy, specifically where a principal aquifer or source protection zone 3 may be in a suitable landfill location. The hydrogeologist argues that there may be insufficient natural barrier to avoid leakage and contamination of the aquifer and there was too high a risk of contamination of nearby springs. The ExA also notes that these concerns are supported by other interested parties and that there were other concerns including those on the model used to analyse risks associated with the disposal of radioactive waste.

The ExA notes the proposed plans for the management and monitoring of leachate and mentions that there would be a requirement in the DCO to restore the site once it has closed (paragraph 5.15.8 in the NPS). The ExA also notes the hydrogeological risk assessment completed as part of the EIA, to assess the risks from the disposal of hazardous waste. This used an approach that is preferred by the Environment Agency. The ExA report discusses the results of this modelling and notes the conclusion of the assessment that 'in respect of hazardous and non-hazardous pollutants, the site presents no significant risk to groundwater and is compliant with the Landfill Directive and the Environmental Permitting (England and Wales) Regulations 2010' (page 30). The ExA also notes that the Environment Agency has confirmed in its SoCG that it has no objection to the proposals in this respect and is of the view that controls can be achieved through environmental permit.

Further assessment was commissioned by the applicant to examine radiological risks and considered potential impacts in the short, medium and very long term. The assessment concludes that the risk as a result of contamination via groundwater and/or surface water is below the relevant assessment criteria and the ExA notes that the Environment Agency agrees with these conclusions. A statement in the SoCG between the applicant and the Environment Agency agrees that exposures will be controlled so they do not exceed the dose criteria (paragraph 5.15.9 in the NPS). The ExA notes that a new environmental permit will be required should development go ahead, to be issued by the Environment Agency. From the available information, the ExA concludes that it is satisfied that the pollution control framework can adequately regulate and monitor potential releases and that the Environment Agency has received all necessary information to issue environmental permits. The ExA is also satisfied that new permits will be issued and controlled by the Environment Agency once they are content there are no unacceptable risks. It is concluded by the ExA that requirements in the DCO are not necessary because of the environmental permits that will be in place.

With respect to significant impacts on European sites, the ExA report states that the ES has not identified any, which has been confirmed by NE in a SoCG. The ExA is therefore satisfied that an appropriate assessment will not be required. The Secretary of State agrees with this.

The possible impact from the operation of the development on water resources is covered in a section in the DCO. Other issues related to water resources will be covered by environmental permits.

3.8. Triton Knoll offshore wind farm

The application is for the construction and operation of an offshore wind farm, located approximately 46km off the coast of Norfolk and 33km off the coast of Lincolnshire, on the bed of the North Sea. As well as up to 288 wind turbines, the development would consist of generators, offshore substations, meteorological stations and underwater cabling.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2013e).

The NPS for Overarching Energy (EN-1) and for Renewable Energy (EN-3) are of relevance to the application (DECC, 2011a and 2011b).

3.8.1. Climate change adaptation

There is no specific mention of climate change adaptation nor the approaches taken by the applicant. The requirement under EN-3 notes that applicants should particularly set out how the proposal would be resilient

to storms (Table 3.18). This is not noted anywhere in the ExA report or the decision letter (DECC, 2013c). The requirements of EN-1 with respect to climate change adaptation can be found in Table B.1.

Table 3.18: EN-3 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
2.3.4	Offshore and onshore wind farms are less likely to be affected by flooding, but applicants should particularly set out how the proposal would be resilient to storms.		Storms are not mentioned in the ExA report or decision letter.

3.8.2. Flood risk

There is no specific mention of flood risk.

3.8.3. Coastal change

The ExA report notes concerns with respect to sandbanks of the Inner Dowsing, Race Bank & North Ridge candidate Special Area of Conservation (cSAC) regarding potential for changes to the sediment regime from construction of the development and to the wave climate arising from the presence of the foundations. The ExA makes reference to a technical note provided by the applicant that reviews potential wave impacts on coastal designated sites. No significant effects were anticipated. The ExA report also notes that no concerns were raised by other organisations about the status of the site or these features and that NE agreed that adverse effects on the cSAC, specifically concerning the sandbanks, can be excluded. The ExA therefore notes that it has no concerns and that the proposal will not impact on sandbanks in this cSAC.

The ExA report also specifically mentions the applicant's ES, which concludes that 'it is unlikely that the already dynamic Lincolnshire coastline and beaches will experience any significant change in littoral transport as a result of the small changes in wave height resulting from the presence of the Project, even when considering the worst case scenario' (page 104). The worst case scenario is based on the maximum development envelope of 333 wind turbine generators. It is concluded by the ExA that should there be any impacts on designated sites, these would be negligible.

Disturbance of the sea bed is specifically mentioned with respect to potential impacts on fishing. The ExA notes the advice of the MMO and the agreements reached between them and the applicant.

Table 3.19: EN-1 requirements for coastal change

Para	Summary of requirement	Y/N/P	Comments
5.5.7	Applicants should assess the impact of the proposed project on coastal processes and geomorphology, including by taking account of potential impacts from climate change.		It is noted that this is considered in the applicant's ES and a technical note that reviews potential wave impacts on coastal designated sites.
5.5.10	The IPC should be satisfied that the proposed development will be resilient to coastal erosion and deposition, taking account of climate change, during the project's operational life and any decommissioning period.		Scour protection is mentioned but erosion or deposition is not.
5.5.14	The IPC should consult the MMO on projects which could impact on coastal change, since the MMO may also be involved in considering other projects which may have related coastal impacts.		Recommendations from the MMO are discussed and considered.
5.5.17	Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast, in consultation with the MMO, the EA, LPAs, other statutory consultees, Coastal Partnerships and other coastal groups, as it considers appropriate. Where this is not the case the IPC should consider what appropriate mitigation requirements might be attached to any grant of development consent.		The report notes the agreements reached between the MMO and the applicant in relation to sea bed disturbance.

3.8.4. Good design

The ExA report references Section 4.5 of NPS EN-1 and recognises that design goes beyond simply considering the visual appearance of a development. It is noted that functionality, fitness for purpose and sustainability are equally important. Aspects of NPS EN-3 in relation to good design are also mentioned. The ExA report notes that, with respect to good design, the main issues are whether the proposed development is sustainable, attractive, durable, adaptable and functional. It is also clear in the report that the ExA is aware of the importance of good design in mitigating other potential impacts. Based on consideration of the available evidence, the ExA concludes that the modifications included within the recommended order would enable the design of the scheme to sufficiently meet the requirements of EN-1.

Table 3.20: EN-1 requirements for good design

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		Good design is extensively discussed with specific reference to the NPS.

3.8.5. Water quality and resources

There is no mention of further specific water quality or resources issues; issues with respect to changes to the sediment regime are discussed in Section 3.8.3. EN-1 requirements with respect to water quality and resources can be found in Table B.1.

3.9. Heysham to M6 Junction 34 Link road

The application is for new dual carriageway road of 4.8 kilometres in length. The road would link the junction of the A683 and A589 and junction 34 of the M6. It would also comprise associated development such as a 600 space park and ride car park, a new bridge over the River Lune and new slip roads.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2012b and Department for Transport, 2013d).

No NPS was available up to and by the completion of the examination. The recommendation has therefore been made under s83 (1)(b) for the Secretary of State to determine under s105 of the PA 2008. Consideration has also been given to the Local Impact Report; any matters prescribed in relation to development of a description to which the application relates; and any other matters considered both important and relevant to the decision.

The ExA report also notes the Ports Policy NPS, as the development would improve access to Heysham Port, and the NPS for Nuclear Power Generation as Heysham is listed as a potentially suitable site for a new nuclear power station. The relevant requirements of the draft National Networks NPS are given in Table B.6.

3.9.1. Climate change adaptation

There is no specific mention of climate change adaptation. However, climate change mitigation, specifically the increase of greenhouse gas emissions resulting from the development, is discussed and recognised as a significant negative factor.

3.9.2. Flood risk

The assessment of flood risk and the effects on local drainage during construction and operation is listed as one of the principal issues to be considered in relation to the proposed development.

The ExA report recognises that one person argued that the DCO scheme is in breach of government guidance with respect to flood risk and flood prevention, PPS25. This was specifically in regard to part of the development located in an area at risk of tidal flooding, which, it was suggested, may impede the flow of water, potentially leading to flooding of residential and other space nearby. The report highlights that both the Environment Agency and Lancashire County Council (LCC) confirmed that the argument was referring to a flood map that is out of date and withdrawn. The part of the road in question is indicated on the current map to not be in a flood risk area of concern, therefore this it is not an issue. The ExA report also mentions that the EA is satisfied with the Flood Risk Assessment that is included in the ES (paragraphs 5.85 and 5.89 of the draft NPS). Moreover, the development of the Link road would include outfalls to handle the run-off and it is anticipated that this would bring benefits to areas that suffer from poor drainage and surface water flooding. Drainage would also be improved at adjoining college playing fields.

Another area where concerns were raised on flood risk was the construction of a new bridge over the River Lune. The ExA report recognises that while this part of the development would be located in the floodplain (both tidal and fluvial Flood Zones 3a) the design of the bridge would put it higher above the river and set back from the river banks. It mentions that, provided the development is considered essential transport infrastructure, it meets requirements of the sequential test (paragraph 5.90 of the draft NPS). It also meets the exception test, with the effect of the works on flooding elsewhere assessed. The ExA reports discusses the specific flood risk assessment prepared for the site, which confirms that ‘there should be no possibility of

the bridge being a source of ponding of water upstream as a consequence of debris entrapment' due to the clearance of the bridge. There would also be no risk to road users.

Scour is another issue discussed in the ExA report, specifically on the piers in flood conditions. This is mentioned as accounted for in the design of the bridge, with re-profiling of the bank nearby proposed to mitigate any effects. The ExA report acknowledges that the application also details the methods necessary to minimise any effects on the river should there be a flood event while construction is taking place. These bridge works are recognised as being agreed to by the Environment Agency, with the ExA report concluding that there are no flood risk issues outstanding for this particular area of the development and that the works, defined as essential transport infrastructure, would meet the sequential and exception tests (paragraph 5.91 of the draft NPS).

Another concern, that the Link road would not solve surface water flooding problems that exist in one area, Hest Bank, was considered to not be an issue that counts against the proposed development. The reason given for this is that this part of the development would not worsen conditions uphill and should help to address surface water flooding problems by providing a high capacity new outfall.

3.9.3. Coastal change

This section is not relevant to the application.

3.9.4. Water quality and resources

The ExA report highlights one concern regarding the design of gulley traps, and that they had not been agreed with the Environment Agency. However, it is recognised that the Environment Agency and the LCC are in agreement that to address this and avoid pollution of the River Lune would simply require the selection of available appropriate filters later in the design process. A requirement to cover this point in the DCO has been included. Another concern regarding contamination of a cricket ground pitch would require the drainage attenuation pond to be appropriately designed. The Environment Agency and LCC are also in agreement over this matter and do not see it to be a problem with appropriate maintenance. The ExA has no reason to disagree with this and the avoidance of pollution in respect of all outfalls is covered in the DCO requirements (paragraph 5.204 of the draft NPS).

One further concern discussed in the ExA report is the possibility of slightly altered flow characteristics in a minor watercourse, crossed by the proposed Link road construction. The design of the Link road is discussed and views from LCC and the Environment Agency considered. It is recognised that no objection to this part of the development has been raised by the Environment Agency and concluded by the ExA that this issue should not count against the DCO scheme.

3.10. The Preesall Underground Gas Storage Facility

The application is for the construction and operation of an underground gas storage facility in Lancashire, with parts of the development proposed to be constructed on the east and west sides of the Wyre Estuary. The development would comprise up to 19 underground caverns, as well as other elements of associated development.

The ExA recommended that development consent should be granted, however the Secretary of State decided to refuse the application (The Planning Inspectorate, 2013f and DECC, 2013d). The decision letter discusses the need for this type of development as outlined in EN-1. The Secretary of State agrees with the

ExA's findings on relevant matters including flooding and surface water drainage and brine discharges to the Irish Sea. The application is refused because of the lack of geological data and the associated significant uncertainty with the suitability of the two proposed potential cavern development areas for underground gas storage. The geological information is insufficient to meet the purposes of NPS EN-4.

Both EN-1 and EN-4 are of relevance to this application (DECC, 2011a and 2011c).

3.10.1. Climate change adaptation

There is no specific mention of climate change adaptation. However, flood risk is extensively discussed. The requirements of EN-1 with respect to climate change adaptation can be found in Table B.1 while the requirements of EN-4 are given in Table B.3.

3.10.2. Flood risk

It is mentioned that the applicant's risk assessment considers risks to the surface facilities from flooding. The ExA report states that the applicant considers the risks (including other external hazards) to be generally low to extremely low.

The ExA report recognises that a flood risk assessment accompanied the application and that this is a requirement of NPS EN-1 paragraph 5.7.4. Neither Lancashire County Council nor Wyre Borough Council made any comments on flooding or drainage in their local impact reports and overall there were few comments on flooding from interested parties. It is mentioned in the ExA report that an SoCG has been agreed and signed by the applicant and the Environment Agency. This covers the flood risk assessment method used by the applicant, sources of flooding, coastal flood risk, the development implications with regard to the monitoring and repair of the flood defences and the requirements and approach to obtaining flood defence consent.

It is recognised in the ExA report that coastal flooding is the primary source of flood risk in the proposed development area, specifically from the Wyre estuary. Flood levels are also specified. The ExA report notes that the main Preesall site is protected by flood defences positioned on the eastern side of the Wyre estuary. It is reported by the Environment Agency that the land should be protected by these flood defences to a 1 in 200 year standard. There is also a potential fluvial flood risk but it is noted by the ExA that coastal flooding presents the worst case scenario. Groundwater flooding is highlighted in the ExA report, specifically that it is confirmed in the flood risk assessment to be a low risk, with appropriate protection measures in place.

A number of infrastructure assets are noted in the ExA report (informed by the flood risk assessment) to be located in Flood Zone 3. These include wellheads and manifolds, parts of the gas compressor compound, vent stack and firewater pond, switchyard, brine discharge pipeline at the sea wall crossing and sections of the main access road. For each of these elements of infrastructure, the ExA has noted whether it can accommodate flooding and if not how they will be designed. It is recognised in the ExA report that, for those elements of critical infrastructure located in Flood Zone 3, the sequential and exception tests have been applied. It is also noted that those critical assets unable to tolerate flooding would be located in Flood Zone 1. It is concluded by the ExA that those elements of infrastructure located in Flood Zone 3 pass the exception test and there will be no increase in flood risk elsewhere.

The design of specific aspects of certain assets is also noted by the ExA. For example, the floor levels of the buildings at the sea water and booster pump stations as well as at the gas compressor compound have been set at a level that is above the 1 in 200 year flood level indicated by the Environment Agency.

One aspect of the development is specifically mentioned with respect to displacement of floodwater. The ExA report notes it is stated in the flood risk assessment that work to understand whether additional flood storage is required to compensate for this will be completed at the detailed design stage.

Liability for maintenance of flood defences is also mentioned, in that protection measures have been agreed with the Environment Agency. Should the proposed development create an increased flood risk, the applicant would also need to cover any costs to restoring the existing flood protection to the current standard.

The surface water drainage strategy is discussed in the ExA report, with reference to the flood risk assessment. Specifically it is recognised that there should be no significant risk to proposed infrastructure from surface water flooding should a suitable strategy be implemented. The ExA states that they accept this strategy would ensure the effective management of surface water runoff within the boundary of the development and that there would be no increased risk to third parties.

Overall, the ExA concludes that the proposals for dealing with flood risks are satisfactory. The requirements with respect to flood risk are given in Table 3.21.

Table 3.21: EN-1 requirements for flood risk

Para	Summary of requirement	Y/N/P	Comments
5.7.4	Applications for energy projects of 1 hectare or greater in Flood Zone 1 in England or Zone A in Wales and all proposals for energy projects located in Flood Zones 2 and 3 in England or Zones B and C in Wales should be accompanied by a flood risk assessment (FRA).		A flood risk assessment accompanied the application with few comments from interested parties on flooding.
5.7.7	Applicants for projects which may be affected by, or may add to, flood risk should arrange pre-application discussions with the EA, and, where relevant, other bodies.		The SoCG has been signed and agreed between the applicant and the Environment Agency.
5.7.8	If the EA has concerns about the proposal on flood risk grounds, the applicant should discuss these concerns with the EA and take all reasonable steps to satisfy the EA's concerns.		The Environment Agency reports that the flood defences should protect the land on which the main Preesall site is located to a 1 in 200 year standard.
5.7.9	In determining an application for development consent, the IPC should be satisfied with various elements of flood risk approach.		The ExA report discusses the various elements of the flood risk approach and concludes that the applicant has complied with the requirements of EN-1.
5.7.10	For construction work which has drainage implications, approval for the project's drainage system will form part of the development consent issued by the IPC. The IPC will therefore need to be satisfied that the proposed drainage system complies with any National Standards. In addition, the development consent order, or any associated planning obligations, will need to make provision for the adoption and maintenance of any SuDS, including any necessary access rights to property. The IPC should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS, taking into account the nature		The surface water drainage strategy is discussed and the ExA states they accept this strategy.

Para	Summary of requirement	Y/N/P	Comments
	and security of the infrastructure on the proposed site.		
5.7.11	If the EA continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the IPC can grant consent, but would need to be satisfied that all reasonable steps have been taken to resolve the concerns.		The Environment Agency has agreed the SoCG with the applicant and reports that the flood defences should protect the land to a 1 in 200 year standard.
5.7.12	The IPC should not consent development in Flood Zone 2 in England or Zone B in Wales unless it is satisfied that the sequential test requirements have been met. The IPC should not consent development in Flood Zone 3 or Zone C unless it is satisfied that the Sequential and Exception Test requirements have been met.		It is recognised in the ExA report that, for those elements of critical infrastructure located in Flood Zone 3, the sequential and exception tests have been applied. It is also noted that those critical assets unable to tolerate flooding would be located in Flood Zone 1.
5.7.17	Where an increase in flood risk elsewhere cannot be avoided or wholly mitigated, the IPC may grant consent if it is satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure.		It is concluded by the ExA that there will be no increase in flood risk elsewhere.
5.7.24	Essential energy infrastructure which has to be located in flood risk areas should be designed to remain operational when floods occur.		This has been considered in the ExA report for the elements of infrastructure located in Flood Zone 3. The design of specific aspects of certain assets is also noted by the ExA, for example, the floor levels of the buildings. Further consideration will be given at the detailed design stage.
5.7.24	Energy projects proposed in Flood Zone 3b or Zone C2 in Wales, should only be permitted if the development will not result in a net loss of floodplain storage, and will not impede water flows.		It is understood from reviewing the ExA report and the decision letter that no development is proposed in Flood Zone 3b. The ExA report notes mention in the FRA that some infrastructure assets will be located in Flood Zone 3 (high probability of flooding). High probability is Flood Zone 3a, rather than 3b (the Functional Floodplain).
5.7.25	Flood Warning and evacuation plans should be in place for those areas at an identified risk of flooding.		The preparation of an evacuation plan in response to emergencies in general is recognised to be triggered by the Competent Authority, which will occur when the facility is close to being operational.

3.10.3. Coastal change

There is no mention of coastal geomorphology, erosion or deposition. The requirements of EN-1 with respect to coastal change can be found in Table B.1.

3.10.4. Good design

The design of the development is carefully considered by the ExA with reference to paragraph 4.5.1 of NPS EN-1. The ExA also considered which components could be improved in terms of their design within the landscape. It is concluded that there is limited scope to further reduce landscape impact. Various solutions have also been considered by the ExA, to determine how the visual impact of the gas compressor compound could be further mitigated, but it is concluded that the overall likely impact would still be a 'serious disbenefit of the proposal' (page 74). The Design and Access Statement is referred to in the section of the ExA report on flooding, specifically with respect the proposed development's coastal location. It says that buildings have been sited to avoid flooding. The design of specific aspects of certain assets is also noted by the ExA. For example, the floor levels of the buildings at the sea water and booster pump stations as well as at the GCC have been set at a level that is above the 1 in 200 year flood level indicated by the Environment Agency.

One aspect of the development is specifically mentioned with respect to displacement of floodwater. The ExA report notes that the flood risk assessment states that work to understand whether additional flood storage is required to compensate for this will be completed at the detailed design stage.

The requirements with respect to good design are given in Table 3.22.

Table 3.22: EN-1 requirements for good design

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		This has been carefully considered by the ExA.

3.10.5. Water quality and resources

The ExA report notes concerns raised by several individuals about the discharge of brine to the Irish Sea and the impact this could have on water quality and therefore fish stocks. It is concluded in the applicant's ES that any such impact would be very small and the ExA explored this issue further. It outlines the consent granted by the Environment Agency in 2007 to permit the discharge of brine and how this was reissued in 2011 to reflect the change in start date to correspond to the order if made. The ExA notes that, in response to requests to reconsider this discharge consent, the Environment Agency 'does not consider there have been any changes since the intention to grant the discharge consent to warrant a reassessment' (page 80). The ExA is therefore satisfied that there is no evidence to suggest that the impact of brine discharge will be 'perceptible beyond 50m of the end of the brine discharge pipeline' (page 80). It is also satisfied that the Environment Agency will consider and regulate measures to ensure arrangements for brine discharge, including monitoring requirements, through the consent.

With respect to water abstraction, it is mentioned that a water abstraction licence was granted by the Environment Agency in 2012.

The requirements with respect to water quality and resources are given in Table 3.23 and Table 3.24.

Table 3.23: EN-1 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent.		It is noted that the ES has considered the potential impacts of brine discharge on water quality and concluded that these would be very small.
5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.		The ExA is satisfied that the Environment Agency will consider and regulate measures to ensure arrangements for brine discharge, including monitoring requirements, through the consent.
5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.		Measures applied through the consent.

Table 3.24: EN-4 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
2.10.5	In the case of aquifer storage, the applicant should assess the impact of the displacement of groundwater with respect to its potential interference with groundwater flow pathways, mobilisation of contaminants, flood risk, and potential effects on groundwater dependant ecosystems.		This is not relevant.
2.10.7	Before making any decisions the IPC will need to liaise with the EA over any arrangements for licensing water abstraction. The IPC should not refuse development consent unless it has good reason to believe that any necessary abstraction licences and environmental permits will not subsequently be granted (see Section 5.15 of EN-1).		It is noted that the Environment Agency granted a water abstraction licence in 2012.
2.10.8	The IPC should be satisfied that the impacts on water quality and resources are acceptable in accordance with Section 5.15 of EN-1. The IPC should liaise with the EA over the potential for the new development to result in loss or reduction of supply to any licensed abstraction or unlicensed groundwater abstraction, or any potential interference with current legitimate uses of groundwater or surface waters, including environmental permits or any negative effect on a groundwater dependent ecosystem.		See Table 3.30.

3.10.6. Soil and geology

The ExA notes that an interested party expressed concern about the unstable nature of the subsoil and its suitability for installing a pipeline. With regards to subsidence, the ExA mentions that this is a recognised risk in EN-4. Lancashire County Council and Wyre Borough Council have agreed to a SoCG that states that 'the geology has been sufficiently defined for an analysis of the risks from gas migration to be assessed and

surface subsidence to be calculated, subject to confirmation by further drilling as the development proceeds' (page 39). The ExA considers the proposals and evidence in the report and notes research reports produced by the HSE. It concludes that adequate provisions have been made with respect to decommissioning the development and that the risk from general subsidence is acceptable.

The requirements with respect to soil and geology are given in Table 3.25.

Table 3.25: EN-4 requirements for soil and geology

Para	Summary of requirement	Y/N/P	Comments
2.23.6	Where the applicant has considered and discounted a route or routes on the ground that the soil is unstable and susceptible to landslip, the IPC should consult the HSE for their views on its suitability and its impact on the integrity of the pipeline.		The issues related to soil stability and subsidence have been extensively considered and discussed in the ExA report.

3.11. Galloper wind farm

The application is for the construction and operation of an offshore wind turbine generating station, located approximately 27km of the Suffolk coast in the North Sea. The development consists of a maximum of 140 wind turbines, as well as other necessary infrastructure including a collection platform, offshore substations, meteorological masts and cabling to a landfall point at Sizewell in Suffolk. Onshore infrastructure is also included such as cabling, an electrical substation compound, a screening landform and overhead electric lines.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2013g and DECC, 2013e).

The NPS for Overarching Energy (EN-1), for Renewable Energy (EN-3) and for EN-5 are of relevance to the application (DECC, 2011a, 2011b and 2011d).

3.11.1. Climate change adaptation

The ExA report recognises that section 4.8 of EN-1 refers to climate change adaptation and specifically mentions the requirement of paragraph 4.8.8 of EN-1.

The climate change adaptation requirement of EN-3 covers storms, and how the proposal would be resilient to these events. A condition in the DCO covers the issue of surveying following a storm event and specifies the approach to conducting surveys when the development has been constructed. The applicant would need to complete a survey following the first major storm event. The ExA report notes that the 'applicant identifies that nothing was identified within the ES or by any stakeholder that suggests this site is particularly sensitive to scour either under normal or storm conditions' (page 241).

The ExA considers views from the applicant and MMO with respect to surveying following a major storm event. It agrees with the MMO that a survey would need to be completed following each event to check that scour has not exceeded predicted amounts. The ExA notes that this approach is more likely to be consistent with the ES.

It is also noted by the ExA that they find no reason to recommend refusal of the development on the basis of climate change grounds.

The EN-3 requirements with respect to climate change adaptation are given in Table 3.26. The requirements of EN-1 with respect to climate change adaptation can be found in Table B.1.

Table 3.26: EN-3 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
2.3.4	Offshore and onshore wind farms are less likely to be affected by flooding, but applicants should particularly set out how the proposal would be resilient to storms.		Storm events are discussed in the ExA report.

3.11.2. Flood risk

Flood risk is noted in the ExA report with respect to the Sizewell nuclear plants due to their proximity to the proposed development. In a number of places in the applicant's ES and accompanying reports, the relationship with these plants is addressed and the need to avoid their associated offshore structures is recognised by the applicant. It is noted by the ExA that one of the areas of concern in relation to this plant includes mitigation of possible flooding from runoff during periods of high rainfall from the development site. Following a request by Suffolk County Council, the applicant will include a provision to intercept runoff from the proposed development site to prevent flooding of the road during periods of heavy rainfall. The ExA accepts this measure.

The specific requirements with respect to this flood risk are given in Table 3.27. All other relevant requirements with respect to flood risk can be found in Table B.1.

Table 3.27: EN-1 requirements for flood risk

Para	Summary of requirement	Y/N/P	Comments
5.7.17	Where an increase in flood risk elsewhere cannot be avoided or wholly mitigated, the IPC may grant consent if it is satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure.		This mitigation is noted in the report and accepted by the ExA.
5.7.20	Site layout and surface water drainage systems should cope with events that exceed the design capacity of the system, so that excess water can be safely stored on or conveyed from the site without adverse impacts.		This is noted with respect to the nuclear plant sites.

3.11.3. Coastal change

The ExA report notes the requirements of paragraph 5.5.10 in EN-1. It also mentions that EN-3 sets out the aspects of the physical offshore environment that could potentially be affected by offshore energy infrastructure, including waves and tides, water quality, scour effect, sediment transport and suspended solids. It is recognised by the ExA that the applicant has addressed the potential impacts of the proposed development, including its construction, operation and decommissioning, on sediment dynamics, waste and debris in several places in its ES.

The ExA posed a number of questions in relation to these concerns to which the applicant responded. A further query on the impact on coastal processes was raised and the ExA asked MMO, NE and the Environment Agency to comment on the applicant's response. The ExA requested one or more SoCG to be put in place between all relevant parties including the applicant, JNCC, NE, MMO, relevant local authorities,

Suffolk Wildlife Trust and the National Trust. The ExA report notes that an SoCG was produced by the applicant and the Environment Agency with respect to sediment dynamics, waste and debris that among other things agrees 'that the application has given due regard to the impact on water quality and resources' and 'that the Environment Agency has no objection or representation to make on this matter' (page 172). Another SoCG has been agreed with NE and JNCC with respect to suspended sediments and the predicted effects on the physical environment. The ExA concludes by saying it is satisfied that the applicant's ES meets the criteria set out in EN-1 and EN-3 and that there is agreement between the applicant and MMO, NE and the Environment Agency. It also notes that changes were made to the DCO accordingly and it is satisfied that there are no outstanding matters.

The ExA has also considered sediment dynamics in relation to European sites.

The requirements with respect to coastal change are given in Table 3.28.

Table 3.28: EN-1 requirements for coastal change

Para	Summary of requirement	Y/N/P	Comments
5.5.7	Applicants should assess the impact of the proposed project on coastal processes and geomorphology, including by taking account of potential impacts from climate change.		It is recognised by the ExA that the applicant has addressed the potential impacts of the proposed development in several places in its ES.
5.5.10	The IPC should be satisfied that the proposed development will be resilient to coastal erosion and deposition, taking account of climate change, during the project's operational life and any decommissioning period.		The ExA report specifically notes this requirement and examined the issues and is satisfied that the applicant's ES meets the guidance and criteria set out in EN-1 and EN-3.
5.5.14	The IPC should consult the MMO on projects which could impact on coastal change, since the MMO may also be involved in considering other projects which may have related coastal impacts.		MMO views have been considered.
5.5.17	Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast, in consultation with the MMO, the EA, LPAs, other statutory consultees, Coastal Partnerships and other coastal groups, as it considers appropriate. Where this is not the case the IPC should consider what appropriate mitigation requirements might be attached to any grant of development consent.		This and the changes made to the DCO are noted. The ExA is satisfied that there are no outstanding matters.

3.11.4. Good design

The ExA acknowledges that the extent to which the development can contribute to enhancing the quality of the area is limited by the nature of the type of development. The ExA also notes that good design is important for sustainability and fitness for purpose, and goes far beyond aesthetic considerations.

The requirements with respect to good design are given in Table 3.29.

Table 3.29: EN-1 requirements for good design

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		The ExA notes that good design is important for sustainability and fitness for purpose, and goes far beyond aesthetic considerations.

3.11.5. Water quality and resources

The ExA report notes that EN-3 sets out that water quality can be affected by offshore energy infrastructure. It recognises that applicant's ES assesses impacts on marine and coastal water quality with 'all applicable residual impacts are assessed as 'nil' other than accidental spillages in the operation and decommissioning phases, which are assessed as 'negligible' (page 169). The ExA notes that a condition in the DCO addresses the possibility of accidental spillages. A series of changes required by the MMO to the draft deemed marine licence is listed in the ExA report. It then goes on to note that each point was resolved to the agreement of both parties in a SoCG.

Other issues raised with respect to sediment dynamics, waste and debris are also discussed. These are covered in Section 3.11.3.

Water quality is also noted in the ExA report with respect to the Sizewell nuclear plants due to their proximity to the proposed development. It is noted by the ExA that one of the areas of concern in relation to this plant includes 'mitigating the potential for activities associated with cable installation immediately offshore to create suspended sediments and reduce the quality of water entering the Sizewell B cooling water intakes to an unacceptable level' (page 138). The ExA requested a SoCG for this and notes that a protective provision is proposed in the DCO by the applicant and EDF Energy. Based on this and the available evidence, the ExA recommends this protective provision is accepted.

It is also mentioned in the ExA report that the MMO considers that all marine ecology impacts have been identified and assessed in the ES.

The requirements with respect to water quality and resources are given in Table 3.30.

Table 3.30: EN-1 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent.		The ExA report recognises that applicant's ES assesses impacts on marine and coastal water quality.
5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.		The ExA notes that a protective provision is proposed in the DCO by the applicant and EDF Energy and recommends this is accepted. The ExA also notes that a condition in the DCO addresses the possibility of accidental spillages.
5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.		Mitigation measures are discussed.

3.12. Brechfa Forest West Wind Farm

The application is for the construction and operation of 28 wind turbine generators and other necessary infrastructure including access tracks, a substation, external transformers, underground cabling, a wind monitoring mast, construction compounds and a new borrow pit. The proposed development is located in Brechfa Forest in Carmarthenshire.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2012c and DECC, 2013f).

The NPS for Overarching Energy (EN-1) and for Renewable Energy (EN-3) are of relevance to the application (DECC, 2011a and 2011b).

3.12.1. Climate change adaptation

Climate change adaptation is not specifically mentioned. It should be noted that the ExA report specifies that 'while I have considered all issues I have not reported on issues where little or no evidence was provided which was pertinent to the examination' (page 17).

The requirements for climate change adaptation for EN-1 and EN-3 are given in Table B.1 and Table B.2 respectively.

3.12.2. Flood risk

Local people and others raised concerns about a potential increase in flood risk as a result of the proposed development. It is noted in the ExA report that the ES identifies those areas where there is a greater than 1% chance of flooding. The ES assesses the impact and has identified mitigation measures. With application of such measures the impact is assessed as negligible at all locations identified to be affected. The ExA recognises and discusses concerns raised by one organisation that specific details of certain mitigation

measures have not been identified in the ES. Although it does not identify the precise location of such measures, the ES does set out the mitigation principles.

The measures associated with sustainable drainage are also highlighted. The ExA recognises that these will be designed once the detailed design of the wind farm has been prepared. It mentions that this will be completed to appropriate system standards agreed with the Forestry Commission Wales (FCW) and Environment Agency Wales.

The ExA is satisfied that this approach to identifying mitigation measures is consistent with policy set out in NPS EN-3, because the exact location of the turbines is not identified in the application to allow flexibility with respect to micro-siting.

The ExA notes that Environment Agency Wales agrees in principle with the applicant's approach to surface water management and their requirements in the DCO. It is acknowledged that Environment Agency Wales requires surface water management details to be agreed with the relevant planning authority before authorised development starts. The applicant's approach to surface water management is considered acceptable by the ExA and Secretary of State.

The ExA recognises the role of Carmarthenshire County Council (CCC) as the lead local flood authority to consent to improvements or alterations to culverts that could affect the flow of a watercourse. The ExA notes that CCC agreed with the applicant in its SoCG that there would be no unacceptable impacts on hydrology, subject to securing the mitigation measures outlined in the ES.

The ExA concludes by attaching little weight to flooding or surface water management concerns, since relevant requirements are included in the DCO and the applicant's approach is shown to be acceptable.

It is also noted that an assessment of impacts from changes in drainage patterns and surface water flows is included in the applicant's ES and this does not identify impacts on the Special Areas of Conservation (SAC) which receive flows from the site. The Report on the Implications for European Sites also considers the nature of groundwater at the site, the distance to European sites and information in the ES with respect to groundwater and concludes that 'any water requirements for the proposed development are unlikely to affect ground water levels to an extent that they would impact upon either of the European sites identified' (page 167). The same report also notes the possibility of physical damage by erosion affecting water flows. It notes that the assessment of impacts (included in the ES) from changes in drainage patterns and surface water flows does not identify any impact on the SACs and mentions that 'the ES concludes that in relation to runoff rates and changes to flooding patterns, residual impacts are of minor or negligible significance, and that there would be no increase in peak runoff and flood levels as a result of the presence of the scheme' (Page 166).

The requirements with respect to flood risk are given in Table 3.31.

Table 3.31: EN-1 requirements for flood risk

Para	Summary of requirement	Y/N/P	Comments
5.7.4	Applications for energy projects of 1 hectare or greater in Flood Zone 1 in England or Zone A in Wales and all proposals for energy projects located in Flood Zones 2 and 3 in England or Zones B and C in Wales should be accompanied by a flood risk assessment (FRA).		A flood risk assessment is not mentioned. The flood risk map in the ES shows the 1% flood risk areas. No areas within the site boundary have been identified but a few surrounding areas have. It is noted in the ExA report that the ES identifies those surrounding areas where there is a greater than 1% chance of flood risk.
5.7.7	Applicants for projects which may be affected by, or may add to, flood risk should arrange pre-application discussions with the EA, and, where relevant, other bodies.		It is noted in the report that Environment Agency Wales has been involved in discussions.
5.7.8	If the EA has concerns about the proposal on flood risk grounds, the applicant should discuss these concerns with the EA and take all reasonable steps to satisfy the EA's concerns.		It is noted in the report that Environment Agency Wales has been involved in discussions.
5.7.9	In determining an application for development consent, the IPC should be satisfied with various elements of flood risk approach.		The applicant's approach to surface water management is considered acceptable by the ExA and Secretary of State.
5.7.10	For construction work which has drainage implications, approval for the project's drainage system will form part of the development consent issued by the IPC. The IPC will therefore need to be satisfied that the proposed drainage system complies with any National Standards. The IPC should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS.		ExA notes that Environment Agency Wales agrees in principle with the applicant's approach to surface water management and their requirements in the DCO. The applicant's approach to surface water management is considered acceptable by the ExA. It is noted in the ExA report that 'sustainable drainage measures will be designed when the detailed design of the wind farm is undertaken, and to appropriate sustainable drainage system standards agreed with Environment Agency Wales (EAW) and the Forestry Commission Wales (FCW)' (page 81). However, the maintenance of SuDS is not specifically mentioned.
5.7.11	If the EA continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the IPC can grant consent, but would need to be satisfied that all reasonable steps have been taken to resolve the concerns.		ExA notes that Environment Agency Wales agrees in principle with the applicant's approach to surface water management and their requirements in the DCO.
5.7.12	The IPC should not consent development in Flood Zone		This is not relevant to the application.

Para	Summary of requirement	Y/N/P	Comments
	2 in England or Zone B in Wales unless it is satisfied that the sequential test requirements have been met. The IPC should not consent development in Flood Zone 3 or Zone C unless it is satisfied that the Sequential and Exception Test requirements have been met.		
5.7.17	Where an increase in flood risk elsewhere cannot be avoided or wholly mitigated, the IPC may grant consent if it is satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure.		The mitigation measures, including the requirements in the DCO, are considered by the ExA.
5.7.24	Essential energy infrastructure which has to be located in flood risk areas should be designed to remain operational when floods occur.		Essential infrastructure is not located in flood risk areas.
5.7.24	Energy projects proposed in Flood Zone 3b or Zone C2 in Wales, should only be permitted if the development will not result in a net loss of floodplain storage, and will not impede water flows.		This is not relevant.
5.7.25	Flood Warning and evacuation plans should be in place for those areas at an identified risk of flooding.		This is not required for the site.

3.12.3. Coastal change

Coastal change is not of relevance to this application.

3.12.4. Good design

Design is mentioned in the context of landscape and visual impact. Further elements of the design are mentioned individually, for example, the track and the grid connection. It is noted that the ES mentions sustainable drainage measures, and that these will be designed when the detailed design of the wind farm is completed.

The requirements with respect to good design are given in Table 3.32.

Table 3.32: EN-1 requirements for good design

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		Design is discussed in the ExA report.

3.12.5. Water quality and resources

It is noted in the Decision Letter that the CCW initially had concerns regarding the potential impacts of the development on the water quality of the Afon Tywi and Afon Teifi SACs, especially during the construction of the development. The construction phase of the development was also separately identified as the main risk

to ground and surface water quality by the Environment Agency Wales. Implementation of the pollution prevention measures detailed in the draft construction method statement addressed their concerns.

It was also proposed by Environment Agency Wales to include water quality monitoring, before and during construction, as a requirement in the DCO. CCW were then satisfied that this was acceptable. The draft DCO also includes 'details of remedial action to be taken should monitoring identify adverse impacts on water bodies' (page 32, ExA report). It is concluded by the ExA that the proposed mitigation is appropriate, based on consideration of the evidence in the applicant's ES. The risk to other European Sites has been considered by the Secretary of State and is confident that the mitigation measures proposed would avoid the risk of any possible significant effect.

Concerns were raised about potential damage to the aquifer that lies under Brechfa Forest, with impacts on the supply of water from wells and boreholes. The ExA has considered the potential impacts of the development on private water supplies in their report and notes that Environment Agency Wales is generally satisfied with the applicant's proposals with respect to water management and also with the pollution prevention (mitigation) measures. The ExA concludes that any risk of adverse impact would be reduced to an acceptable level through the mitigation measures detailed in the Construction Method Statement (CMS). However, it is noted that the CMS requires approval from the CCC, which has responsibilities for protecting private water supplies.

The requirements with respect to water quality and resources are given in Table 3.33.

Table 3.33: EN-1 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent.		Evidence in the applicant's ES is noted in the ExA report.
5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.		A requirement has been included in the DCO following a request by the Environment Agency as a result of their concerns about the possible impacts on watercourses.
5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.		The ExA concludes that any risk of adverse impact would be reduced to an acceptable level through the mitigation measures detailed in the CMS. It is noted that the CMS requires approval from the CCC.

3.13. Kentish Flats offshore wind farm extension

The application is for an offshore wind farm extension, located off the North Kent coast on the southern side of the Outer Thames Estuary. The development would comprise between 10 and 17 additional turbines.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2012d and DECC, 2013g).

The NPS for Overarching Energy (EN-1) and for Renewable Energy (EN-3) are of relevance to the application (DECC, 2011a and 2011b).

3.13.1. Climate change adaptation

There is no specific mention of climate change adaptation or how the proposal would be resilient to storms. However, the ExA report does note that the site in which the development would be based, the Outer Thames Estuary, is 'reasonably well protected from southerly and westerly gales' but 'much more exposed to northerly and easterly heavy weather' (page 99). The requirement under EN-3 is given in Table 3.34. The requirements for climate change adaptation for EN-1 are given in Table B.1.

The ExA report does note that, with the exception of the effects on habitat, the updated application meets requirements of NPSs EN-1 and EN-3 and relevant provisions of the Marine Policy Statement. This is subject to the application being updated based on points raised during the examination, and to the conditions and mitigation requirements included in the DCO.

Table 3.34: EN-3 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
2.3.4	Offshore and onshore wind farms are less likely to be affected by flooding, but applicants should particularly set out how the proposal would be resilient to storms.		There is no specific mention of how the proposal would be resilient to storms

3.13.2. Flood risk

There is no specific mention of flood risk. The requirements with respect to flood risk can be found in Table B.1.

3.13.3. Coastal change

There is no mention of coastal erosion or deposition. Coastal processes are mentioned in the Report on the Implications for European Sites, specifically with respect to the Thanet Coast and Sandwich Bay Special Protection Area (SPA)/Ramsar. The report states that no significant impacts to water quality and coastal processes are expected and references the Habitats Regulations Assessment (HRA) report and ES.

The requirements with respect to coastal change are provided in Table B.1.

3.13.4. Good design

There is mention of design, but with respect to paragraph 5.9.8 of EN-1 which focuses on landscape and seascape impacts and also in the context of the potential effects on commercial fishing and noise. There is no specific mention of paragraph 4.5.3 of EN-1. Following examination of the available evidence, it is concluded by the ExA that the design process has been completed carefully.

The requirements with respect to good design are given in Table 3.35.

Table 3.35: EN-1 requirements for good design

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		The ExA has considered the design and concludes that the process has been completed carefully.

3.13.5. Water quality and resources

Water quality impacts are highlighted in Appendix E in the Report on the Implications for European Sites, specifically with respect to the Thanet Coast and Sandwich Bay SPA and the impact of landfall works.

The report notes the 1km zone of influence applied as a precaution and states that impacts from the construction, operation and decommissioning of offshore components of the development are anticipated to be highly localised and small scale. These impacts would occur 8km from the designated site. The matter is also discussed within the main text of the ExA report where it is noted that no significant impacts to water quality or physical processes are expected. The ExA report notes the mitigation measures in place to restrict the timing of landfall construction works.

It is mentioned in the ExA report that this conclusion appears to be broadly accepted by NE and other conservation bodies. The ExA also notes that the Environment Agency has raised no objection to the proposed development. The role of the Environment Agency to be responsible for designated bathing waters and shellfish waters is highlighted as is their ability to control emissions to protect defined water quality standards through relevant regulations.

Water quality effects are also discussed in the ExA report with respect to risks to shellfish. The ExA notes the lack of concern raised by either the Environment Agency or MMO and that no one has disputed the findings of the applicant's ES.

Mitigation measures for impacts on commercial fishing are included as provisions in the DCO. These include the programming of construction activity, and provision for water quality monitoring, as well as the technical specification of the cables.

The requirements with respect to water quality and resources are given in Table 3.36.

Table 3.36: EN-1 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent.		The ExA report notes the findings of assessments including the ES and the Report on the Implications for European Sites.
5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.		The ExA report notes the mitigation measures in place in the DCO with respect to the water environment.
5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.		Mitigation measures included as provisions in the DCO are discussed. The ExA considers and notes views of relevant organisations including the Environment Agency, NE and MMO.

3.14. Ipswich Chord

The application is for the construction and operation of a new railway link of 1,415m in length. The proposed development would link the Great Eastern Main Line and East Suffolk Line railways and be located to the north of Ipswich Goods Yard, Ipswich, Suffolk. The proposed development would include widening of an embankment and bridge, construction of a new railway bridge over a river, construction of a new railway embankment and replacement of an existing railway bridge.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2012e and Department for Transport, 2012a).

No NPS was available up to and by the completion of the examination. The recommendation has therefore been made according to s83(1) of the PA 2008. Consideration has also been given to the Local Impact Report; any matters prescribed in relation to development of a description to which the application relates; and any other matters considered both important and relevant to the decision. The relevant requirements of the draft National Networks NPS are given in Table B.6.

3.14.1. Climate change adaptation

There is no mention of climate change adaptation. The ExA report does highlight the East of England Plan as relevant policy, specifically the first objective of the plan to reduce the region's impact on, and exposure to, the effects of climate change. The East of England Plan is the regional spatial strategy and was published by the Secretary of State for Communities and Local Government.

3.14.2. Flood risk

There is no specific mention of flood risk. However, an HRA report, required where a project has the potential to affect a European Natura 2000 site, has been completed because the Stour and Orwell Estuaries SPA and Ramsar site could be affected by the development. The report states that surface water run off

rates will not be affected by the chord as it does not change the amount of impermeable land within the development area. It is also mentioned that any potential losses to the Environment Agency with respect to its landholdings are protected through inclusion of provisions in the DCO.

3.14.3. Coastal change

There is no specific mention of coastal change.

3.14.4. Water quality and resources

The ExA report notes the potential impacts mentioned in the ES with respect to a possible pollution event entering the River Gipping during construction. It is identified in the HRA report that water quality could be affected by runoff from construction sites, leaks or spills, or disturbance of contaminated land. Any changes in the water quality of the River Gipping could have impacts on bird species because the river feeds into the Stour and Orwell Estuaries.

The ES says that the project would not result in a significant effect with mitigation in place. The ExA required details of these mitigation measures from the applicant and, together with NE and the Environment Agency, the applicant submitted a SoCG that agrees the minimum measures required to prevent a water pollution incident, as well as monitor and manage pollution risks. It is stated in the SoCG that NE and the Environment Agency have no outstanding issues in relation to this (paragraph 5.202 of the draft NPS).

These pollution prevention measures and other information provided have been examined by the ExA who agrees that they would avoid the risk of pollution to the River Gipping and therefore mitigate any impact on the Orwell Estuary SSSI. Considering this, and the statement from NE ‘the proposed operations are not likely to damage the protected features of the Orwell Estuary SSSI’ (page 17) and that NE is content provided appropriate mitigation measures are in place. It is concluded by the ExA that there will not be damage to the protected features of the SSSI and that significant effects on the site are not likely (paragraph 5.204 of the draft NPS). The Secretary of State agrees with this and is satisfied it is unnecessary to undertake appropriate assessment for the site.

The ExA also mentions the Environmental Management Plan and the SoCG submitted by the applicant. The Environmental Management Plan includes all key environmental mitigation measures that will be provided. The SoCG was submitted with NE and the Environment Agency and agrees a minimum set of measures required to prevent a water pollution incident affecting the River Gipping, and to monitor and manage pollution risks, to be delivered through the Pollution Incident Control Plan (PICP). The PICP is secured through a requirement in the DCO.

With respect to water resources, it is mentioned in the ExA report that no requirement for water abstraction from the River Gipping has been identified.

3.15. North Doncaster Rail Chord

The application is for the construction and operation of a new railway link of 3.2 kilometres in length. It would link the Skellow and Askem railway lines and run to the north of Doncaster over the East Coast Main Line railway. The development would also comprise the construction of a new road bridge over the East Coast Main Line railway.

The ExA recommended that consent be given for the development (The Planning Inspectorate, 2012f and Department for Transport, 2012b).

No NPS was available up to and by the completion of the examination. The recommendation has therefore been made according to s83(1)(b) under section 105 of the PA 2008. Consideration has been given to any Local Impact Report; any matters prescribed in relation to development of a description to which the application relates; and any other matters considered both important and relevant to the decision. The relevant requirements of the draft National Networks NPS are given in Table B.6.

3.15.1. Climate change adaptation

Climate change adaptation is not specifically mentioned.

3.15.2. Flood risk

The ExA recognised relevant policies, with specific reference to Policy 4 of the relevant local plan: Flooding to avoid detriment and manage flood risk. It also recognises PPS 25 as relevant to the proposed development.

The ExA report discusses flood risk in relation to the construction of an underpass, a proposed alternative to a footpath diversion. Following consideration of the water levels in the area, the ExA argues that it would not be feasible because it is likely that flooding or standing water would be a persistent problem.

Requirements to the DCO were proposed by the Environment Agency in relation to the flood risk assessment and also the risks associated with piling affecting groundwater or contaminated land (paragraphs 5.85 and 5.89 of the draft NPS). The Secretary of State agrees that these additional provisions be included. Provisions for the protection of the Environment Agency are also included as a schedule in the DCO and the Secretary of State agrees that these should be retained.

The effects on local drainage measures, both during construction and operation, has been identified in the ExA report as being one of the initial principal issues in accordance with section 88 of the PA 2008. Drainage issues are extensively covered in the DCO, including amendments which were welcomed by the Environment Agency. One specific drainage issue was investigated by the ExA in more detail following concerns about the design, the outcome of which was decided that it would be an essential requirement for the development.

3.15.3. Coastal change

There is no specific mention of coastal change.

3.15.4. Water quality and resources

There are no specific water quality and resources issues mentioned in the ExA report or the decision letter. The ExA report does mention concerns from the Environment Agency regarding protection of rights in several plots adjacent to Thorpe Marsh. The Environment Agency removed their objections following extensive discussion and questions from the ExA, provided that protective provisions were included in a schedule in the DCO. This schedule includes amended protections as discussed with the applicant.

No significant impacts of the proposed development on any European or Ramsar sites have been identified by the ES or NE and it is confirmed that an appropriate assessment is not required.

3.16. Rookery South Resource Recovery Facility

This application is for the construction and operation of a resource recovery facility located within the Rookery South Pit in Bedfordshire. A number of different elements make up the proposed development, including an energy from waste (EfW) plant, a materials recycling facility (MRF), roads, hard standing areas, boundary fencing and other necessary infrastructure.

Development consent for the proposals was granted (Infrastructure Planning Commission, 2011).

The NPSs most relevant to this application are EN-1 and EN-3.

3.16.1. Climate change adaptation

There is no specific mention of climate change adaptation. However, it is mentioned that modelling considers flood risk during a 1 in 100 year event and 1 in 1000 year extreme event. This partially meets a requirement in EN-3 with respect to EfW generating stations (Table 3.37).

The EN-1 requirements with respect to climate change adaptation can be found in Table B.1.

Table 3.37: EN-3 requirements for climate change adaptation

Para	Summary of requirement	Y/N/P	Comments
2.3.3	EfW generating stations may also require significant water resources, but are less likely to be proposed for coastal sites. For these proposals applicants should consider, in particular, how plant will be resilient to: • increased risk of flooding; and • increased risk of drought affecting river flows.		Increased risk of flooding is assessed. The ExA report does not mention drought.

3.16.2. Flood risk

The ExA report notes that a number of arguments were received saying that the development would increase the risk of flooding. It mentions that a flood risk assessment was prepared to meet requirements of paragraph 5.7.4 in EN-1. The ExA recognises that Rookery South is subject to shallow seasonal flooding, being a former brick pit and crossed by a small watercourse. The ExA report discusses the modelling completed that shows that during a 1 in 100 year event, floodwater from the small watercourse may discharge into Rookery South pit. In accordance with an existing discharge event, this overflow would be managed and channelled to a new attenuation pond once the low level restoration scheme is implemented. Both the Environment Agency and River Ivel Internal Drainage Board have agreed to this strategy. Additional modelling showed that the resource recovery facility site, proposed to be raised, would be roughly three metres above the predicted flood level during a 1 in 100 year event. The modelling also looked at a 1 in 1000 year extreme event, which showed potential flooding upstream of the railway, flowing along the highway and car park to the attenuation pond. The ExA notes that vehicular or pedestrian access would not be comprised because of the modest depth and speed of flow predicted.

It has been agreed by the Environment Agency and the applicant that the resource recovery facility platform would sit within Flood Zone 2. The ExA also notes that the Environment Agency and applicant agreed that there would not be any loss of floodplain storage or interruption to the flood routing process as a result of the development, since it would be situated outside of the floodplain. The ExA uses this information to conclude that it sees no reason to refuse the development on flooding grounds.

The ExA also discusses the surface water drainage proposals and notes modelling results that show that the impermeable surfaces associated with the resource recovery facility could be drained to the attenuation pond without the pond overflowing during an extreme flood event.

The ExA notes proposals from the applicant to deal with potentially contaminated water running off from the MRF to discharge it to a catch pit and collection lagoon and treat the water. It agrees that there is a possibility for the watercourse to be polluted in this way and notes the concerns of interested parties including the Stewartby Water Sports Club. It recognises that the Environment Agency would assess the design and operation of the proposed treatment plant and would also set standards for effluent quality through the permits that it grants.

As a result, the ExA states that it finds 'no reason to refuse the DCO on flooding grounds or on account of the foul water drainage strategy proposed' (page 57). The ExA also concludes that the surface water and foul drainage provisions are not deficient as suggested by a consortium of interested parties.

The requirements with respect to flood risk are given in Table 3.38.

Table 3.38: EN-1 requirements for flood risk

Para	Summary of requirement	Y/N/P	Comments
5.7.4	Applications for energy projects of 1 hectare or greater in Flood Zone 1 in England or Zone A in Wales and all proposals for energy projects located in Flood Zones 2 and 3 in England or Zones B and C in Wales should be accompanied by a flood risk assessment (FRA).		It is recognised that a flood risk assessment has been prepared to meet the requirements of this paragraph.
5.7.7	Applicants for projects which may be affected by, or may add to, flood risk should arrange pre-application discussions with the EA, and, where relevant, other bodies.		Views and involvement of the Environment Agency are discussed in the ExA report.
5.7.8	If the EA has concerns about the proposal on flood risk grounds, the applicant should discuss these concerns with the EA and take all reasonable steps to satisfy the EA's concerns.		Views and involvement of the Environment Agency are discussed in the ExA report.
5.7.9	In determining an application for development consent, the IPC should be satisfied with various elements of flood risk approach.		The ExA uses this information to conclude that it sees no reason to refuse the development on flooding grounds.
5.7.10	For construction work which has drainage implications, approval for the project's drainage system will form part of the development consent issued by the IPC. The IPC will therefore need to be satisfied that the proposed drainage system complies with any National Standards. The IPC should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS.		The ExA discusses the surface water drainage proposals and finds no reason to refuse the DCO on account of the foul water drainage strategy proposed. The ExA report notes that overflow would be managed and channelled to an attenuation pond and pumped, a strategy agreed with the Environment Agency and the River Ivel Internal Drainage Board. However, there is no specific mention of maintaining SuDS.
5.7.11	If the EA continues to have concerns and objects to the grant of development consent on the grounds of flood		The ExA notes that there is agreement between the Environment

Para	Summary of requirement	Y/N/P	Comments
	risk, the IPC can grant consent, but would need to be satisfied that all reasonable steps have been taken to resolve the concerns.		Agency and the applicant.
5.7.12	The IPC should not consent development in Flood Zone 2 in England or Zone B in Wales unless it is satisfied that the sequential test requirements have been met. The IPC should not consent development in Flood Zone 3 or Zone C unless it is satisfied that the Sequential and Exception Test requirements have been met.		The sequential test is not specifically mentioned however it is noted in the report that the ExA finds 'no reason to refuse the DCO on flooding grounds or on account of the foul water drainage strategy proposed'.
5.7.17	Where an increase in flood risk elsewhere cannot be avoided or wholly mitigated, the IPC may grant consent if it is satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure.		The ExA notes that the Environment Agency and applicant agreed that there would not be any loss of floodplain storage or interruption to the flood routing process as a result of the development.
5.7.24	Essential energy infrastructure which has to be located in flood risk areas should be designed to remain operational when floods occur.		The resource recovery facility site, proposed to be raised, would be roughly three metres above the predicted flood level during a 1 in 100 year event.
5.7.24	Energy projects proposed in Flood Zone 3b or Zone C2 in Wales, should only be permitted if the development will not result in a net loss of floodplain storage, and will not impede water flows.		This is not relevant to the application. The ExA report notes that the development would be located outside of the floodplain and that is was agreed with the Environment Agency that 'the proposals would not give rise to any loss of floodplain storage or interrupt the flood routing process' (page 52/53).
5.7.25	Flood Warning and evacuation plans should be in place for those areas at an identified risk of flooding.		There is no mention of flood warning or evacuation plans.

3.16.3. Coastal change

This section is not relevant to the application.

3.16.4. Good design

The ExA notes the advice given in paragraph 4.5.1 of NPS EN-1 and looked especially carefully at the proposed design solution. The efficiency of the structure of the plant is discussed with consideration to some views that the design is flawed. It is concluded that in the context of the development's intended function and considering the design process, the proposed design is acceptable.

The requirements with respect to good design are given in Table 3.39.

Table 3.39: EN-1 requirements for good design

Para	Summary of requirement	Y/N/P	Comments
4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.		The ExA looks especially carefully at the proposed design solution, concluding that is acceptable.

3.16.5. Water quality and resources

The ExA notes a revision to the strategy to pipe contaminated runoff and foul water offsite for treatment at a sewage treatment plant and it is now proposed to treat effluent on site before discharging it to the surface water system. The ExA notes that this revision has been made in response to discussions with the Environment Agency and representations made by Anglian Water. The ExA mentions that it was advised that there would be no detrimental effects to the surface water quality in the receiving water bodies with the proposed on-site treatment. It was decided by the ExA to accept and examine the proposed amendment.

The ExA considers the effect the proposal could potentially have on Stewartby Lake water quality, an issue raised by the local water sports club. It is emphasised that foul or process water from the plant would be treated before it is discharged into Mill Brook. The ExA report states that the design and risks associated with the treatment plant will be considered by the Environment Agency in due course. Limits associated with the quantity and quality of effluent would also be determined by the Environment Agency. It is concluded by the ExA that regulation of the discharges is a matter for the Environment Agency.

The requirements with respect to water quality and resources are given in Table 3.40 and Table 3.41.

Table 3.40: EN-1 requirements for water quality and resources

Para	Summary of requirement	Y/N/P	Comments
5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent.		The ExA mentions that it was advised that there would be no detrimental effects to the surface water quality in the receiving water bodies with the proposed on-site treatment.
5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.		The ExA report states that the design and risks associated with the treatment plant will be considered by the Environment Agency in due course.
5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.		The ExA report states that the design and risks associated with the treatment plant will be considered by the Environment Agency in due course. It is concluded by the ExA that regulation of the discharges is a matter for the Environment Agency.

Table 3.41: EN-3 requirements for water quality and resources (biomass/waste only)

Para	Summary of requirement	Y/N/P	Comments
2.5.85	Where the project is likely to have effects on water quality or resources the applicant should undertake an assessment as required in EN-1, Section 5.15. The assessment should particularly demonstrate that appropriate measures will be put in place to avoid or minimise adverse impacts of abstraction and discharge of cooling water.		See Table 3.40.
2.5.86	The IPC should be satisfied that the applicant has demonstrated measures to minimise adverse impacts on water quality and resources as described above and in EN-1.		The ExA report states that the design and risks associated with the treatment plant will be considered by the Environment Agency in due course. It is concluded by the ExA that regulation of the discharges is a matter for the Environment Agency.

4. References

Department for Communities and Local Government (2013) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed East Northamptonshire Resource Management Facility (ENRMF) Order

Department of Energy and Climate Change (2011a) Overarching National Policy Statement for Energy (EN- 1)

Department of Energy and Climate Change (2011b) National Policy Statement for Renewable Energy Infrastructure (EN-3)

Department of Energy and Climate Change (2011c) National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

Department of Energy and Climate Change (2011d) National Policy Statement for Electricity Networks Infrastructure (EN-5)

Department of Energy and Climate Change (2011e) National Policy Statement for Nuclear Power Generation (EN-6) Volume I of II

Department of Energy and Climate Change (2011f) National Policy Statement for Nuclear Power Generation (EN-6) Volume II of II – Annexes

Department of Energy and Climate Change (2013a) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed North Blyth Power Station Order

Department of Energy and Climate Change (2013b) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Hinkley Point C (Nuclear Generating Station) Order

Department of Energy and Climate Change (2013c) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Triton Knoll Offshore Wind Farm Order

Department of Energy and Climate Change (2013d) Secretary of State Decision Letter and Statement of Reasons: Application for the Preesall (Underground Gas Storage Facility) Order

Department of Energy and Climate Change (2013e) Secretary of State Decision Letter and Statement of Reasons: Application for the Galloper Wind Farm Order

Department of Energy and Climate Change (2013f) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Brechfa Forest West Wind Farm Order

Department of Energy and Climate Change (2013g) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Kentish Flats Extension Order

Department for Environment, Food and Rural Affairs (2013) National Policy Statement for Hazardous Waste: A framework document for planning decisions on nationally significant hazardous waste infrastructure

Department for Transport (2012a) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Network Rail (Ipswich Chord) Order

Department for Transport (2012b) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Network Rail (North Doncaster Chord) Order

Department for Transport (2013a) Draft National Policy Statement for National Networks, December 2013

Department for Transport (2013b) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Network Rail (Redditch Branch Enhancement) Order

Department for Transport (2013c) Secretary of State Decision Letter and Statement of Reasons: Application for the Proposed M1 Junction 10A (Grade Separation) Order

Department for Transport (2013d) Secretary of State Decision Letter and Statement of Reasons: Application for the proposed Lancashire County Council (Torrisholme to the M6 Link (A683 completion of Heysham to M6 Link Road)) Order

Infrastructure Planning Commission (2011) Rookery South Resource Recovery Facility Order: Panel's Decision and Statement of Reasons

The Planning Inspectorate (2012a) Hinkley Point C (Nuclear Generating Station) Order: Panel's Report to the Secretary of State

The Planning Inspectorate (2012b) Heysham to M6 Junction 34 Link road, North of Lancaster Order: Examining Authority's Report of Findings and Conclusions and Recommendation to the Secretary of State for Transport

The Planning Inspectorate (2012c) Brechfa Forest West Wind Farm: Examining Authority's Report of Findings and Conclusions and Recommendation to the Secretary of State for Energy and Climate Change

The Planning Inspectorate (2012d) Kentish Flats Extension Order: Examining Authority's Report to the Secretary of State

The Planning Inspectorate (2012e) Rail Chord North of Ipswich Goods Yard: Examining Authority's Report of Findings and Conclusions and Recommendation to the Secretary of State for Transport

The Planning Inspectorate (2012f) North Doncaster Rail Chord, North of Doncaster, Near Shaftholme: Examining Authority's Report of Findings and Conclusions and Recommendation to the Secretary of State for Transport

The Planning Inspectorate (2013a) The North Blyth Biomass Power Station Order: Examining Authority's Report to the Secretary of State

The Planning Inspectorate (2013b) Redditch Branch Enhancement Scheme: Examining Authority's Report of Findings and Conclusions and Recommendation to the Secretary of State for Transport

The Planning Inspectorate (2013c) Grade Separation of M1 Junction 10a Luton: Examining Authority's Report of Findings and Conclusions and Recommendation to the Secretary of State for Transport

The Planning Inspectorate (2013d) The East Northamptonshire Resource Management Facility Order: Examining Authority's Report of Findings, Conclusions and Recommendations to the Secretary of State

The Planning Inspectorate (2013e) Triton Knoll Offshore Wind Farm: Panel's Report to the Secretary of State for Energy and Climate Change

The Planning Inspectorate (2013f) The Preesall (Underground Gas Storage Facility) Order: Panel's Report of Findings and Conclusions and Recommendation to the Secretary of State

The Planning Inspectorate (2013g) The Galloper Wind Farm Order: Panel's Report to the Secretary of State

Appendices

A. Applications for Nationally Important Infrastructure since 2010

Table A.1: Applications for Nationally Important Infrastructure

ID	Application	Location	Developer	Date Of application submission	Date of acceptance/non-acceptance for examination	Follow on Twitter	Status	Sector
1	Redditch Branch Enhancement Scheme	Between Redditch and Alvechurch	Network Rail	04/09/2012	01/10/2012	RedditchBES	DCO granted on 31/10/2013	Rail
2	M1 Junction 10a Grade Separation - Luton	Junction 10a M1 Luton	Luton Borough Council	29/06/2012	27/07/2012	LutonM1_10a	DCO granted on 30/10/2013	Road
3	Port Blyth New Biomass Plant	Port Blyth in Northumberland	North Blyth Energy Ltd	15/03/2012	11/04/2012	PortBlyth	DCO granted on 24/07/2013	Energy - biomass
4	East Northants Resource Management Facility	2.6km north of Kings Cliffe East Northamptonshire	Augean PLC	14/03/2012	11/04/2012	ENorthantsRMF	DCO granted on 11/07/2013	Radioactive waste facility
5	Triton Knoll Offshore Wind Farm	Greater Wash	Triton Knoll Offshore Wind Farm Limited	31/01/2012	23/02/2012	Triton_Knoll	DCO granted on 11/07/2013	Energy - Offshore wind
6	Heysham to M6 Link Road	North of Lancaster M6 J34 to junction of A683 & A589	Lancashire County Council	06/12/2011	23/12/2011	HeyshamtoM6Link	DCO granted on 19/03/2013	Road
7	Preesall Saltfield Underground Gas Storage	Preesall Saltfield, Over Wyre, Lancashire.	Halite Energy Group Ltd	01/12/2011	23/12/2011	PSGasStorage	DCO refused on 09/04/2013	Gas

ID	Application	Location	Developer	Date Of application submission	Date of acceptance/non-acceptance for examination	Follow on Twitter	Status	Sector
8	Galloper Offshore Wind Farm	Approximately 27km off the coast of Suffolk	Galloper Wind Farm Ltd	21/11/2011	19/12/2011	GalloperWind	DCO granted on 24/05/2013	Energy - Offshore wind
9	Brechfa Forest West Wind Farm	Carmarthenshire, Wales	RWE Npower Renewables	04/11/2011	30/11/2011	BrechfaWindFarm	DCO granted on 12/03/2013	Energy - Offshore wind
10	Hinkley Point C New Nuclear Power Station	Hinkley Point Somerset	NNB Generation Company Limited	31/10/2011	24/11/2011	HinkleyPoint	DCO granted on 19/03/2013	Energy - nuclear
11	Kentish Flats Extension	Kentish Flats, Kent	Vattenfall	14/10/2011	10/11/2011	KentishFlatsExt	DCO granted on 19/02/2013	Energy - Offshore wind
12	Ipswich Rail Chord	1km north of Ipswich goods yard	Network Rail	29/06/2011	21/07/2011	IpsRailChord	DCO granted on 05/09/2012	Rail
13	North Doncaster Rail Chord (near Shaftholme)	North Doncaster	Network Rail	22/06/2011	19/07/2011	DonRailChord	DCO granted on 16/10/2012	Rail
14	Rookery South Energy from Waste Generating Station	Rookery South Pit, Near Stewartby, Bedfordshire	Covanta Rookery South Limited	05/08/2010	26/08/2010	n/a	DCO granted on 13/10/2011	Energy - waste

Source: http://infrastructure.planningportal.gov.uk/projects/register-of-applications/ [11December 2013]

B. National Policy Statement review

The relevant paragraphs from each of the NPSs are given here. The paragraphs highlighted in grey provide background information that has not specifically been used in the review, but is still of relevance to assessing current and future weather-related hazards.

B.1. Overarching National Policy Statement for Energy (EN-1)

Table B.1: EN-1 requirements

Criteria for "good design" for energy infrastructure		
P50	4.5.3	The IPC needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be.
Climate change adaptation		
P57	4.8.3	The IPC may take into account energy utilities' reports to the Secretary of State when considering adaptation measures proposed by an applicant for new energy infrastructure.
P57	4.8.4	In certain circumstances, measures implemented to ensure a scheme can adapt to climate change may give rise to additional impacts, for example as a result of protecting against flood risk, there may be consequential impacts on coastal change (see Section 5.5).
P57	4.8.5	Applicants must consider the impacts of climate change when planning the location, design, build, operation and, where appropriate, decommissioning of new energy infrastructure. The ES should set out how the proposal will take account of the projected impacts of climate change. While not required by the EIA Directive, this information will be needed by the IPC.
P58	4.8.6	The IPC should be satisfied that applicants for new energy infrastructure have taken into account the potential impacts of climate change using the latest UK Climate Projections available at the time the ES was prepared to ensure they have identified appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure. Should a new set of UK Climate Projections become available after the preparation of the ES, the IPC should consider whether they need to request further information from the applicant.
P58	4.8.7	Applicants should apply as a minimum, the emissions scenario that the Independent Committee on Climate Change suggests the world is currently most closely following – and the 10%, 50% and 90% estimate ranges. These results should be considered alongside relevant research which is based on the climate change projections.
P58	4.8.8	The IPC should be satisfied that there are not features of the design of new energy infrastructure critical to its operation which may be seriously affected by more radical changes to the climate beyond that projected in the latest set of UK climate projections, taking account of the latest credible scientific evidence on, for example,

		sea level rise (for example by referring to additional maximum credible scenarios – i.e. from the Intergovernmental Panel on Climate Change or EA) and that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime.
P58	4.8.9	Where energy infrastructure has safety critical elements (for example parts of new fossil fuel power stations or some electricity sub-stations), the applicant should apply the high emissions scenario (high impact, low likelihood) to those elements. Although the likelihood of this scenario is thought to be low, it is appropriate to take a more risk-averse approach with elements of infrastructure which are critical to the safety of its operation.
P58	4.8.10	If any adaptation measures give rise to consequential impacts (for example on flooding, water resources or coastal change) the IPC should consider the impact of the latter in relation to the application as a whole and the impacts guidance set out in Part 5 of this NPS.
P58	4.8.11	Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's latest UK Climate Change Risk Assessment, when available and in consultation with the EA.
P58/59	4.8.12	Adaptation measures can be required to be implemented at the time of construction where necessary and appropriate to do so. However, where they are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the project and/or surrounding environment (for example coastal processes), the IPC may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise, rather than at the outset of the development (for example increasing height of existing, or requiring new, sea walls).
P59	4.8.13	The generic impacts advice in this NPS and the technology specific advice on impacts in the other NPSs provide additional information on climate change adaptation.
Coastal change – introduction		
P80	5.5.5	This section only applies to onshore energy infrastructure projects situated on the coast. The impacts of offshore renewable energy projects on marine life and coastal geomorphology are considered in the Renewable Energy NPS.
Coastal change – applicant's assessment		
P80	5.5.7	Applicants should assess the impact of the proposed project on coastal processes and geomorphology, including by taking account of potential impacts from climate change. If the development will have an impact on coastal processes the applicant must demonstrate how the impacts will be managed to minimise adverse impacts on other parts of the coast. Applicants should assess the vulnerability of the proposed development to coastal change, taking account of climate change, during the project's operational life and any decommissioning period.
Coastal change – IPC decision making		
P81	5.5.10	The IPC should be satisfied that the proposed development will be resilient to coastal erosion and deposition, taking account of climate change, during the project's operational life and any decommissioning period.
P81	5.5.13	The IPC should examine the broader context of coastal protection around the proposed site, and the influence in both directions, i.e. coast on site, and site on coast.

P81	5.5.14	The IPC should consult the MMO on projects which could impact on coastal change, since the MMO may also be involved in considering other projects which may have related coastal impacts.
P81	5.5.16	Substantial weight should be attached to the risks of flooding and coastal erosion. The applicant must demonstrate that full account has been taken of the policy on assessment and mitigation in Section 4.22 of this NPS, taking account of the potential effects of climate change on these risks as discussed above.
Coastal change - mitigation		
P81	5.5.17	Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast, in consultation with the MMO, the EA, LPAs, other statutory consultees, Coastal Partnerships and other coastal groups, as it considers appropriate. Where this is not the case the IPC should consider what appropriate mitigation requirements might be attached to any grant of development consent.
Flood risk – introduction		
P84	5.7.2	The applicant and the IPC should take account of the policy on climate change adaptation in Section 4.8.
Flood risk – applicant's assessment		
P84	5.7.4	Applications for energy projects of 1 hectare or greater in Flood Zone 1 in England or Zone A in Wales and all proposals for energy projects located in Flood Zones 2 and 3 in England or Zones B and C in Wales should be accompanied by a flood risk assessment (FRA). An FRA will also be required where an energy project less than 1 hectare may be subject to sources of flooding other than rivers and the sea (for example surface water), or where the EA, Internal Drainage Board or other body have indicated that there may be drainage problems. This should identify and assess the risks of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account.
P85	5.7.7	Applicants for projects which may be affected by, or may add to, flood risk should arrange pre-application discussions with the EA, and, where relevant, other bodies such as Internal Drainage Boards, sewerage undertakers, navigation authorities, highways authorities and reservoir owners and operators. Such discussions should identify the likelihood and possible extent and nature of the flood risk, help scope the FRA, and identify the information that will be required by the IPC to reach a decision on the application when it is submitted. The IPC should advise applicants to undertake these steps where they appear necessary, but have not yet been addressed.
P85	5.7.8	If the EA has concerns about the proposal on flood risk grounds, the applicant should discuss these concerns with the EA and take all reasonable steps to agree ways in which the proposal might be amended, or additional information provided, which would satisfy the Environment Agency's concerns.
Flood risk – IPC decision making		
P86	5.7.9	In determining an application for development consent, the IPC should be satisfied that where relevant:

		• the application is supported by an appropriate FRA; • the Sequential Test has been applied as part of site selection; • a sequential approach has been applied at the site level to minimise risk by directing the most vulnerable uses to areas of lowest flood risk; • the proposal is in line with any relevant national and local flood risk management strategy; • priority has been given to the use of sustainable drainage systems (SuDS) (as required in the next paragraph on National Standards); and • in flood risk areas the project is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed over the lifetime of the development.
P86	5.7.10	For construction work which has drainage implications, approval for the project's drainage system will form part of the development consent issued by the IPC. The IPC will therefore need to be satisfied that the proposed drainage system complies with any National Standards published by Ministers under Paragraph 5(1) of Schedule 3 to the Flood and Water Management Act 2010. In addition, the development consent order, or any associated planning obligations, will need to make provision for the adoption and maintenance of any SuDS, including any necessary access rights to property. The IPC should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS, taking into account the nature and security of the infrastructure on the proposed site. The responsible body could include, for example, the applicant, the landowner, the relevant local authority, or another body, such as an Internal Drainage Board.
P86	5.7.11	If the EA continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the IPC can grant consent, but would need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the EA to try to resolve the concerns.
P86	5.7.12	The IPC should not consent development in Flood Zone 2 in England or Zone B in Wales unless it is satisfied that the sequential test requirements have been met. The IPC should not consent development in Flood Zone 3 or Zone C unless it is satisfied that the Sequential and Exception Test requirements have been met. The technology-specific NPSs set out some exceptions to the application of the sequential test. However, when seeking development consent on a site allocated in a development plan through the application of the Sequential Test, informed by a strategic flood risk assessment, applicants need not apply the Sequential Test, but should apply the sequential approach to locating development within the site.
P87	5.7.17	Exceptionally, where an increase in flood risk elsewhere cannot be avoided or wholly mitigated, the IPC may grant consent if it is satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure as set out in Part 3 above. In any such case the IPC should make clear how, in reaching its decision, it has weighed up the increased flood risk against the benefits of the project, taking account of the nature and degree of the risk, the future impacts on climate change, and advice provided by the EA and other relevant bodies.

Flood risk - mitigation		
P88	5.7.20	Site layout and surface water drainage systems should cope with events that exceed the design capacity of the system, so that excess water can be safely stored on or conveyed from the site without adverse impacts.
P88	5.7.21	The surface water drainage arrangements for any project should be such that the volumes and peak flow rates of surface water leaving the site are no greater than the rates prior to the proposed project, unless specific off-site arrangements are made and result in the same net effect.
P89	5.7.23	The sequential approach should be applied to the layout and design of the project. More vulnerable uses should be located on parts of the site at lower probability and residual risk of flooding. Applicants should seek opportunities to use open space for multiple purposes such as amenity, wildlife habitat and flood storage uses. Opportunities should be taken to lower flood risk by reducing the built footprint of previously developed sites and using SuDS.
P89	5.7.24	Essential energy infrastructure which has to be located in flood risk areas should be designed to remain operational when floods occur. In addition, any energy projects proposed in Flood Zone 3b the Functional Floodplain (where water has to flow or be stored in times of flood), or Zone C2 in Wales, should only be permitted if the development will not result in a net loss of floodplain storage, and will not impede water flows.
P89	5.7.25	The receipt of and response to warnings of floods is an essential element in the management of the residual risk of flooding. Flood Warning and evacuation plans should be in place for those areas at an identified risk of flooding. The applicant should take advice from the emergency services when producing an evacuation plan for a manned energy project as part of the FRA. Any emergency planning documents, flood warning and evacuation procedures that are required should be identified in the FRA.
Water quality and resources – applicant's assessment		
P112	5.15.2	Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment as part of the ES or equivalent. (See Section 4.2.)
Water quality and resources – IPC decision making		
P113	5.15.5	The IPC will generally need to give impacts on the water environment more weight where a project would have an adverse effect on the achievement of the environmental objectives established under the Water Framework Directive.
P113	5.15.6	The IPC should satisfy itself that a proposal has regard to the River Basin Management Plans and meets the requirements of the Water Framework Directive (including Article 4.7) and its daughter directives, including those on priority substances and groundwater. The specific objectives for particular river basins are set out in River Basin Management Plans. The IPC should also consider the interactions of the proposed project with other plans such as Water Resources Management Plans and Shoreline/Estuary Management Plans.

P113	5.15.7	The IPC should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment.
Water quality and resources - mitigation		
P113	5.15.8	The IPC should consider whether mitigation measures are needed over and above any which may form part of the project application. (See Sections 4.2 and 5.1.) A construction management plan may help codify mitigation at that stage.
P113	5.15.10	The impact on local water resources can be minimised through planning and design for the efficient use of water, including water recycling.

Source: Department of Energy and Climate Change (2011a)

B.2. Renewable Energy Infrastructure (EN-3)

Table B.2: EN-3 requirements

Climate change adaptation		
P8	2.3.2	Biomass generating stations are likely to be proposed for coastal or estuarine sites where climate change is likely to increase risks from flooding or rising sea levels, for example. In such cases applicants should, in particular, set out how the proposal would be resilient to: • effects of rising sea levels and increased risk from storm surge; • increased risk of flooding; • impact of higher temperatures; and • increased risk of drought affecting river flows.
P8	2.3.3	EfW generating stations may also require significant water resources, but are less likely to be proposed for coastal sites. For these proposals applicants should consider, in particular, how plant will be resilient to: • increased risk of flooding; and • increased risk of drought affecting river flows.
P8	2.3.4	Offshore and onshore wind farms are less likely to be affected by flooding, but applicants should particularly set out how the proposal would be resilient to storms.
P8	2.3.5	Section 4.8 of EN-1 advises that the resilience of the project to climate change should be assessed in the Environmental Statement (ES) accompanying an application. For example, the impact of increased risk of drought as a result of higher temperatures should be covered in the water quality and resources section of the ES.
Biomass/Waste impacts: water quality and resources – applicant's assessment		
P25	2.5.85	Where the project is likely to have effects on water quality or resources the applicant should undertake an assessment as required in EN-1, Section 5.15. The assessment should particularly demonstrate that appropriate measures will be put in place to avoid or minimise adverse impacts of abstraction and discharge of cooling water.
Biomass/Waste impacts: water quality and resources – IPC decision making		
P25	2.5.86	The IPC should be satisfied that the applicant has demonstrated measures to minimise adverse impacts on water quality and resources as described above and in EN-1.

Source: Department of Energy and Climate Change (2011b)

B.3. Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

Table B.3: EN-4 requirements

Climate change adaptation		
P8	2.2.2	As climate change is likely to increase risks to some of this infrastructure, from flooding or rising sea levels for example, applicants should in particular set out how the proposal would be resilient to: • increased risk of flooding; • effects of rising sea levels and increased risk of storm surge; • higher temperatures; • increased risk of earth movement or subsidence from increased risk of flooding and drought; and • any other increased risks identified in the applicant's assessment.
P8	2.2.3	The IPC should expect that climate change resilience measures will form part of the relevant impact assessment in the Environment Statement (ES) accompanying an application. For example, future increased risk of flooding should be covered in the flood risk assessment.
Underground natural gas storage impacts: water quality and resources – applicant's assessment		
P13	2.10.3	In a salt cavity development, the applicant should provide an assessment of the effect of abstracting water for solution mining on groundwater resources, the natural environment and the public water supply. The applicant should assess whether water abstraction for the new development is likely to result in the loss or reduction of water available to any licensed or unlicensed groundwater abstractions or ecological receptors such as rivers and wetlands dependent upon groundwater. The applicant should also assess the impact of the mobilisation of salt and other pollutants, with respect to groundwater quality. This should be part of the ES (see Section 5.15 of EN‑1).
P13	2.10.5	In the case of aquifer storage, the applicant should assess the impact of the displacement of groundwater with respect to its potential interference with groundwater flow pathways, mobilisation of contaminants, flood risk, and potential effects on groundwater dependant ecosystems.
P13	2.10.6	Applicants are advised to make contact, at or before the pre-application stage, with the Environment Agency (EA) to discuss the requirements for abstraction licences and environmental permits and other consents (see Section 5.15 of EN-1).
Underground natural gas storage impacts: water quality and resources – IPC decision making		
P13/ 14	2.10.7	Before making any decisions the IPC will need to liaise with the EA over any arrangements for licensing water abstraction. The IPC should not refuse development consent unless it has good reason to believe that any necessary abstraction licences and environmental permits will not subsequently be granted (see Section 5.15 of EN-1).
P14	2.10.8	The IPC should be satisfied that the impacts on water quality and resources are acceptable in accordance with Section 5.15 of EN-1. The IPC should liaise with the EA over the potential for the new development to result in loss or reduction of supply to any licensed abstraction or unlicensed groundwater abstraction, or any potential interference

		with current legitimate uses of groundwater or surface waters, including environmental permits or any negative effect on a groundwater dependent ecosystem.
Gas and oil pipelines impacts: soil and geology – IPC decision making		
P32	2.23.6	Where the applicant has considered and discounted a route or routes on the ground that the soil is unstable and susceptible to landslip, the IPC should consult the HSE for their views on its suitability and its impact on the integrity of the pipeline.

Source: Department of Energy and Climate Change (2011c)

B.4. Electricity Networks Infrastructure (EN-5)

Table B.4: EN-5 requirements

Climate change adaptation		
P9	2.4.1	Part 2 of EN-1 provides information regarding the Government's energy and climate change strategy including policies for mitigating climate change. Section 4.8 of EN-1 sets out the generic considerations that applicants and the IPC should take into account to help ensure that electricity networks infrastructure is resilient to climate change. As climate change is likely to increase risks to the resilience of some of this infrastructure, from flooding for example, or in situations where it is located near the coast or an estuary or is underground, applicants should in particular set out to what extent the proposed development is expected to be vulnerable, and, as appropriate, how it would be resilient to: • flooding, particularly for substations that are vital for the electricity transmission and distribution network; • effects of wind and storms on overhead lines; • higher average temperatures leading to increased transmission losses; and • earth movement or subsidence caused by flooding or drought (for underground cables).
P10	2.4.2	Section 4.8 of EN-1 advises that the resilience of the project to climate change should be assessed in the Environmental Statement (ES) accompanying an application. For example, future increased risk of flooding would be covered in any flood risk assessment (see Section 5.7 in EN-1).

Source: Department of Energy and Climate Change (2011d)

B.5. Nuclear Power Generation (EN-6)

Table B.5: EN-6 requirements

Climate change adaptation		
P14/15	2.10.2	Nuclear power stations in the UK are most likely to be developed on coastal or estuarine sites. Without appropriate mitigation measures the potential effects of climate change could mean these sites become at greater risk of flooding than if they were located inland (see Section 3.6 of this NPS). Applicants should therefore provide the IPC with information as to how the development incorporates adaptation measures to take account of the effects of climate change, including: • coastal erosion and increased likelihood of storm surge and rising sea levels; • effects of higher temperatures; and • increased risk of drought, which could lead to a lack of available process water.
P15	2.10.3	Section 4.8 of EN-1 sets out that the ES should take into account how the proposal will take account of the projected impacts of climate change. This should include climate change adaptation.
P15	2.10.4	The GDA process looks at the capability of the power station's generic design features to take into account the effects of climate change. The subsequent site licensing and environmental permitting processes ensure that new nuclear power stations will be located, constructed, operated and decommissioned with the long-term impacts of climate change in mind.
P15	2.10.5	The relevant Nuclear Regulators will assess the evidence provided by applicants that external hazards to the proposed nuclear power station have been considered. This will include consideration of the reasonably foreseeable effects of climate change over the lifetime of the power station.
P15	2.10.6	Section 2.7 sets out the role of the Nuclear Regulators. The IPC should have regard to advice from the Nuclear Regulators, in particular the ONR and the EA, in relation to climate change impacts and their views on the adaptation measures proposed. Where issues of climate change adaptation fall within the role of the Nuclear Regulators (whether as part of GDA, site licensing or environmental permitting) the IPC should act in accordance with Section 2.7 of this NPS.
Nuclear impact: flood risk – introduction		
P20	3.6.1	Generic flood risk impacts of new energy NSIPs are covered in Section 5.7 of EN-1. In addition, policy specific to new nuclear power stations is set out below. It should be noted that the policy set out in Section 5.7 of EN-1 is relevant to applications for new nuclear power stations with the exception of the application of the Sequential Test and Exception Test (see below).
Nuclear impact: flood risk – applicant's assessment		
P20	3.6.6	In addition to meeting the requirements of Section 5.7 of EN-1, applicants should identify the potential effects of the credible maximum scenario in the most recent projections of marine and coastal flooding and demonstrate that in principle adaptation would be possible.

P20	3.6.7	Applicants must also be able to demonstrate that they could achieve further measures for flood management at the site in the future if future climate change predictions show they are necessary.
P20	3.6.8	Where possible, safety and operational critical installations should be sited in the areas of the site at least risk of flooding.
Nuclear impact: flood risk – IPC decision making		
P21	3.6.9	The Sequential Test (see Section 5.7 of EN-1) has been undertaken by the Government as part of the SSA. As a result, the IPC should not conduct the Sequential Test for any of the listed sites – this requirement of EN-1 does not apply to applications for development consent for new nuclear development on any of the sites listed in this NPS. The Government has taken a sequential approach to the SSA by assessing all sites at a strategic level, including in relation to flooding, and by using the results of the Alternative Sites Assessment (see Section 2.4 of this NPS). The Government has considered whether or not the objectives of this NPS can be met through reasonably available alternative sites in lower flood risk zones.
P21	3.6.10	In conducting the Sequential Test the Government concluded that sites within this NPS in lower flood risk zones were not reasonably available alternatives to those in higher flood risk zones. This is because, as set out in paragraphs 2.4.3 and 2.4.4 of this NPS, the Government determined that the only potentially suitable sites for the deployment of new nuclear power stations in England and Wales before the end of 2025 are those listed in this NPS; and that all of the sites listed in this NPS are required to be listed to allow sufficient flexibility to meet the urgent need for new nuclear power stations whilst enabling the IPC to refuse consent should it consider it appropriate to do so. The Government also notes the advice of the independent regulators that all the sites have the potential to be protected from flood risk throughout their lifetime.
P21	3.6.11	Applicants will still need to submit a flood risk assessment in accordance with Section 5.7 of EN-1. The IPC will need to be satisfied that a sequential approach has been applied at the site level to ensure that, where possible, critical infrastructure is located in the lowest flood risk areas within the site.
P21	3.6.12	Subject to paragraph 3.6.13 below, the IPC is still required to consider the Exception Test in accordance with Section 5.7 of EN-1 where the site is located in Flood Zone 3 in England (or Zone C in Wales).
Nuclear impact: flood risk - mitigation		
P22	3.6.14	It is the Government's view, based on the Nuclear AoS and the SSA, that all sites listed in this NPS have the potential to be adequately protected from flood risk (including the potential effects of climate change, taking into account the UK Climate Impacts Programme 2009).
P22	3.6.15	Based on the advice of the relevant Nuclear Regulators, the IPC should be satisfied that the applicant is able to demonstrate suitable flood risk mitigation measures. These mitigation measures should take account of the potential effects of the credible maximum scenario in the most recent marine and coastal flood projections. Applicants should demonstrate that future adaptation/flood mitigation would be achievable at the site, after any power station is built, to allow for any future credible predictions that might arise during the life of the station and the interim spent fuel stores.

P22	3.6.16	Applicants should set out measures to mitigate the risk of flooding on or from individual sites that may result from the development, including any associated infrastructure such as possible marine landing jetties/docks. For further information on mitigation measures see Section 5.7 of EN-1.
Nuclear impact: water quality and resources		
P23	3.7.4	The IPC should consider the cumulative effects of a development consent application for the construction of a new nuclear power station at a specific site with other major infrastructure proposals in accordance with the requirements of EN-1 (in particular Section 4.2 of EN-1).
P23	3.7.5	The IPC should liaise closely with the EA who will consider issues of water quality (including any water abstraction and discharge) as part of the environmental permitting process (see Section 2.7 of this NPS).
Nuclear impact: coastal change - mitigation		
P25	3.8.5	In applying the policy on mitigation set out in Section 5.5 of EN-1, and having taken account of the effects of climate change over the lifetime of the project (including any decommissioning period), the IPC should be satisfied that the application will include measures where necessary to mitigate the effects of, and on, coastal change.

Source: Department of Energy and Climate Change (2011e and 2011f)

B.6. Draft National Policy Statement for National Networks

Table B.6: Draft NPS for National Networks requirements

Climate change adaptation		
P33	4.31	Section 10(3)(a) of the Planning Act requires the Secretary of State to have regard to the desirability of mitigating, and adapting to, climate change in designating a NPS.
P33	4.33	New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the provision of green infrastructure.
P34	4.35	Applicants must consider the impacts of climate change when planning the location, design, build and operation. The ES should set out how the proposal will take account of the projected impacts of climate change.
P34	4.36	Where transport infrastructure has safety critical elements, the applicant should apply the high emissions scenario (high impact, low likelihood) to those elements critical to the safe operation of the infrastructure.
P34	4.37	The applicant should take into account the potential impacts of climate change using the latest UK Climate Projections available at the time the ES was prepared to ensure they have identified appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure. Should a new set of UK Climate Projections become available after the preparation of the ES, the Examining Authority should consider whether they need to request further information from the applicant.
P34	4.38	If any adaptation measures give rise to consequential impacts the Secretary of State should consider the impact of those in relation to the application as a whole and the impacts guidance set out in this part of this NPS (e.g. on flooding, water resources, biodiversity, landscape and coastal change).
P34	4.39	The applicant should demonstrate that there are not critical features of the design of new national networks infrastructure which may be seriously affected by more radical changes to the climate beyond that projected in the latest set of UK climate projections, taking account of the latest credible scientific evidence on, for example, sea level rise (e.g. by referring to additional maximum credible scenarios – i.e. from the Intergovernmental Panel on Climate Change or EA) and that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime.
P34	4.40	Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's national Climate Change Risk Assessment and consultation with statutory consultees.
P34	4.42	Where adaptation measures are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the project and/or surrounding environment (e.g. coastal processes), the Secretary of State may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise, rather than at the outset of the development (e.g. reserving land for future extension, increasing height of an existing sea wall, or requiring a new sea wall).

Coastal change – applicant's assessment		
P56	5.64	Applications for development in a Coastal Change Management Area (CCMA) should make it clear why there is a need for it to be located in a CCMA. For developments In a CCMA, applicants should undertake an assessment of the vulnerability of the proposed development to coastal change, taking account of climate change, during the project's operational life.
Coastal change – decision making		
P56	5.68	When assessing applications in a CCMA, the Secretary of State should not grant development consent unless it is demonstrated that the development will be safe over its planned lifetime and will not have an unacceptable impact on coastal change.
P57	5.71	Substantial weight should be attached to the risks of flooding and coastal erosion. The applicant must demonstrate that full account has been taken of the policy on assessment and mitigation in paragraphs 5.85-5.107 of this NPS, taking account of the potential effects of climate change on these risks.
Coastal change – mitigation		
P57	5.73	The Secretary of State should also ensure development granted consent in a CCMA is not impacted by coastal change – if necessary by limiting the planned life-time of the proposed development and including restoration requirements where these are necessary to reduce the risk to people and the development.
Flood risk – introduction		
P59	5.83	The applicant, the Examining Authority and the Secretary of State (in taking decisions) should take account of the policy on climate change adaptation in paragraphs 4.31 to 4.42.
P59	5.84	Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. But where development is necessary, it should be made safe without increasing flood risk elsewhere. The guidance supporting the National Planning Policy Framework explains that essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk, is permissible in areas of high flood risk, subject to the requirements of the Exception Test.
Flood risk – applicant's assessment		
P60	5.85	Applications for projects in the following locations should be accompanied by a flood risk assessment (FRA): • Flood Zones 2 and 3, medium and high probability of river and sea flooding; • Flood Zone 1 (low probability of river and sea flooding) for projects of 1 hectare or greater, projects which may be subject to other sources of flooding (local watercourses, surface water, groundwater or reservoirs), or where the Environment Agency has notified the local planning authority that there are critical drainage problems.
P60	5.86	This should identify and assess the risks of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account.
P60	5.89	Applicants for projects which may be affected by, or may add to, flood risk are advised to seek sufficiently early pre-application discussions with the Environment Agency, and, where relevant, other flood risk management bodies such as lead local flood authorities, Internal Drainage Boards, sewerage undertakers, highways authorities and reservoir

		owners and operators. Such discussions can be used to identify the likelihood and possible extent and nature of the flood risk, to help scope the FRA, and identify the information that will be required by the Secretary of State to reach a decision on the application once it has been submitted and examined. If the Environment Agency has concerns about the proposal on flood risk grounds, the applicant is encouraged to discuss these concerns with the Environment Agency and look to agree ways in which the proposal might be amended, or additional information provided, which would satisfy the Environment Agency's concerns, preferably before the application for development consent is submitted.
Flood risk – decision making		
P61	5.90	Where flood risk is a factor in determining an application for development consent, the Secretary of State should be satisfied that, where relevant: • the application is supported by an appropriate FRA; • the Sequential Test (see paragraph 101 of the National Planning Policy Framework) has been applied as part of site selection and, if required, the Exception Test (see paragraph 102 of the National Planning Policy Framework).
P61	5.91	When determining an application the Secretary of State should be satisfied that flood risk will not be increased elsewhere and only consider development appropriate in areas at risk of flooding where, informed by a flood risk assessment, following the Sequential Test and, if required, the Exception Test, it can be demonstrated that: • within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and • development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and it gives priority to the use of sustainable drainage systems.
P61	5.92	For construction work which has drainage implications, the Secretary of State will need to be satisfied that the proposed drainage system complies with any National Standards published by Ministers under Paragraph 5(1) of Schedule 3 to the Flood and Water Management Act 2010.
P61/ 62	5.92	The development consent order, or any associated planning obligations, will need to make provision for the adoption and maintenance of any Sustainable Drainage Systems (SuDS), including any necessary access rights to property. The Secretary of State, should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS, taking into account the nature and security of the infrastructure on the proposed site. The responsible body could include, for example, the applicant, the landowner, the relevant local authority, or another body such as the Internal Drainage Board.
P62	5.93	If the Environment Agency continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the Secretary of State can grant consent, but would need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the Environment Agency to try and resolve the concerns.
P62	5.94	The Secretary of State should expect that reasonable steps have been taken to avoid, limit and reduce the risk of flooding to the proposed infrastructure and others. However,

		the nature of linear infrastructure means that there will be cases where: • upgrades are made to existing infrastructure in an area at risk of flooding; • infrastructure in a flood risk area is being replaced; • infrastructure is being provided to serve a flood risk area; and • infrastructure is being provided connecting two points that are not in flood risk areas, but where the most viable route between the two passes through such an area.
P62	5.95	The design of linear infrastructure and the use of embankments in particular, may mean that linear infrastructure can reduce the risk of flooding for the surrounding area. In such cases the Secretary of State should take account of any positive benefit to placing linear infrastructure in a flood-risk area.
P62	5.96	Where linear infrastructure has been proposed in a flood risk area, the Secretary of State should expect reasonable mitigation measures to have been made, to ensure that the infrastructure remains functional in the event of predicted flooding.
P64	5.104	Site layout and surface water drainage systems should cope with events that exceed the design capacity of the system, so that excess water can be safely stored on or conveyed from the site without adverse impacts.
P64	5.105	The surface water drainage arrangements for any project should be such that the volumes and peak flow rates of surface water leaving the site are no greater than the rates prior to the proposed project, unless specific off-site arrangements are made and result in the same net effect.
P64	5.107	The sequential approach should be applied to the layout and design of the project. Vulnerable uses should be located on parts of the site at lower probability and residual risk of flooding. Applicants should seek opportunities to use open space for multiple purposes such as amenity, wildlife habitat and flood storage uses. Opportunities can be taken to lower flood risk by improving flow routes, flood storage capacity and using SuDS.
Water quality and resources – applicant's assessment		
P81	5.196	Applicants should make early contact with the relevant regulators including the Environment Agency for abstraction licensing and with water supply companies likely to supply the water. Where the project is likely to have adverse effects on the water environment, the applicant should ascertain the existing status of, and carry out an assessment of the impacts of the proposed project on water quality, water resources and physical characteristics as part of the Environmental Impact Assessment (EIA) and set this out in Environmental Statement (ES) (if EIA development) or equivalent.
Water quality and resources – applicant's assessment		
P82	5.200	The Secretary of State will generally need to give impacts on the water environment more weight where a project would have adverse effects on the achievement of the environmental objectives established under the Water Framework Directive.
P82	5.201	The Secretary of State should be satisfied that a proposal has had regard to the River Basin Management Plans and the requirements of the Water Framework Directive (including Article 4.7) and its daughter directives, including those on priority substances and groundwater. The specific objectives for particular river basins are set out in River Basin Management Plans. In terms of Water Framework Directive compliance, the overall aim of projects should be no deterioration of ecological status in watercourses, and to

		ensure that Article 4.7 of the Water Framework Directive Regulations does not need to be applied. The Secretary of State should also consider the interactions of the proposed project with other plans such as Water Resources Management Plans, Shoreline/Estuary Management Plans and Marine Plans.
P82	5.202	The Examining Authority and the Secretary of State should consider proposals to mitigate adverse effects on the water environment put forward by the applicant and whether appropriate requirements should be attached to any development consent and/or planning obligations entered into. If the Environment Agency continues to have concerns and objects to the grant of development consent on the grounds of impacts on water quality/resources, the Secretary of State can grant consent, but will need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the Environment Agency to try to resolve the concerns and that the Environment Agency is satisfied with the outcome.
Water quality and resources - mitigation		
P83	5.203	The impact on local water resources can be minimised through planning and design for the efficient use of water, including water recycling.
P83	5.204	The Secretary of State should consider whether the mitigation measures put forward by the applicant which are needed for operation and construction (and which are over and above any which may form part of the project application) are acceptable. A construction management plan may help codify mitigation.
P83	5.205	The project should adhere to any National Standards for sustainable drainage systems (SuDS). The National SuDS Standards will introduce a hierarchical approach to drainage design that promotes the most sustainable approach but recognises feasibility, and use of conventional drainage systems as part of a sustainable solution for any given site given its constraints
P83	5.206	The risk of impacts on the water environment can be reduced through careful design to facilitate adherence to good pollution control practice. For example, designated areas for storage and unloading, with appropriate drainage facilities, should be clearly marked.

Source: Department for Transport (2013a)

B.7. National Policy Statement for Hazardous Waste

Table B.7: Hazardous Waste NPS requirements

Criteria for "Good Design" for hazardous waste infrastructure		
P30	4.5.3	Given the importance which the Planning Act places on good design and sustainability, the Secretary of State needs to be satisfied that hazardous waste infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be. In so doing, the applicant should therefore take into account both functionality (including fitness for purpose and sustainability) and aesthetics (including its contribution to the quality of the area in which it would be located) as far as possible. Whilst the applicant may not have any or very limited choice in the physical appearance of some hazardous waste infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, landform and vegetation. Furthermore, the design and sensitive use of materials in any associated development such as electricity substations will assist in ensuring that such development contributes to the quality of the area.
Climate change adaptation		
P31	4.6.1	Section 10(3)(a) of the Planning Act requires the Secretary of State to have regard to the desirability of mitigating, and adapting to, climate change in designating a NPS.
P31	4.6.2	Climate change is likely to mean that the UK will experience hotter, drier summers and warmer, wetter winters. There is an increased risk of flooding, drought, heatwaves, intense rainfall events and other extreme events such as storms, wildfires as well as rising sea levels.
P31	4.6.3	Adaptation is therefore necessary to deal with the potential impacts of these changes that are already happening. For example, some hazardous waste facilities will use a lot of water and applications for such facilities will need to take account of projected changes in the availability of water resources. Further advice on flooding risk is given in section 5.7 and on implications for coastal change in section 5.5.
P31	4.6.4	To support planning decisions, the Government produces a set of UK Climate Projections and is developing a statutory National Adaptation Programme. In addition, the Government's Adaptation Reporting Power will ensure that reporting authorities (a defined list of public bodies and statutory undertakers) assess the risks to their organisation presented by climate change.
P31	4.6.5	In certain circumstances, measures implemented to ensure a scheme can adapt to climate change may give rise to additional impacts, e.g. as a result of protecting against flood risk there may be consequential impacts on coastal change.
P31	4.6.6	New hazardous waste infrastructure will typically be long-term investments which will need to remain operational over many decades, in the face of a changing climate. Consequently, applicants must consider the impacts of climate change when planning the location, design, build, operation and, where appropriate, decommissioning of new hazardous waste infrastructure. The ES should set out how the proposal will take account of the projected impacts of climate change.

P32	4.6.7	Applicants should use the latest set of UK Climate Projections to ensure they have identified appropriate adaptation measures. Applicants should apply as a minimum, the emissions scenario that the independent Committee on Climate Change suggests the world is currently most closely following – and the 10%, 50% and 90% estimate ranges. These results should be considered alongside relevant research which is based on the climate change projections.
P32	4.6.8	In addition, where hazardous waste infrastructure has safety critical elements, the applicant should apply the high emissions scenario (high impact, low likelihood) to those elements critical to the safe operation of the infrastructure.
P32	4.6.9	The applicant should take into account the potential impacts of climate change using the latest UK Climate Projections available at the time the ES was prepared to ensure they have identified appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure. Should a new set of UK Climate Projections become available after the preparation of the ES, the Examining Authority should consider whether they need to request further information from the applicant.
P32	4.6.10	If any adaptation measures give rise to consequential impacts the Secretary of State should consider the impact of those latter in relation to the application as a whole and the impacts guidance set out in this part of this NPS (e.g. on flooding, water resources and coastal change).
P32	4.6.11	The applicant should demonstrate that there are not critical features of the design of new hazardous waste infrastructure which may be seriously affected by more radical changes to the climate beyond that projected in the latest set of UK climate projections, taking account of the latest credible scientific evidence on, for example, sea level rise (e.g. by referring to additional maximum credible scenarios – i.e. from the Intergovernmental Panel on Climate Change or EA) and that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime.
P32	4.6.12	Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's national Climate Change Risk Assessment, and in consultation with statutory consultees.
P32	4.6.13	Adaptation measures can be required to be implemented at the time of construction where necessary and appropriate to do so.
P32	4.6.14	Where adaptation measures are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the project and/or surrounding environment (e.g. coastal processes), the Secretary of State may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise, rather than at the outset of the development (e.g. reserving land for future extension, increasing height of existing, or requiring a new, sea wall).
Consideration of Waste Electrical and Electronic Equipment treatment facilities		
P38	4.14.2	Any WEEE treatment facility is likely to need access to adequate water and energy supplies and access to national transport networks. The amount of water and energy required for this sort of work may be considerable and may contribute to adverse effects on water supplies and greenhouse emissions. Applicants must demonstrate that a reliable and adequate water supply is available for the proposed development. The amount of water abstracted from the environment during operation will be controlled by a separate abstraction licence.

Consideration of oil regeneration plant		
P39	4.15.2	Oil regeneration facilities will require an abundant supply of water and have significant energy requirements. Applicants must demonstrate that a reliable and adequate supply of water will be available for the facility. The amount of water abstracted from the environment during operation will be controlled by a separate abstraction licence. Where possible applicants should treat and recycle water effluent produced by the facility, and the Secretary of State should give weight to the benefits of recycling water effluent in considering the relative benefits and impacts of the proposed development. Applicants should consider a location close to adequate existing renewable or low carbon energy sources.
Coastal change – applicant's assessment		
P54	5.5.5	Where relevant, and in a Coastal Change Management Area, applicants should undertake an assessment of the vulnerability of the proposed development to coastal change, taking account of climate change, during the project's operational life and any decommissioning period.
Coastal change – decision making		
P54	5.5.9	When assessing applications in a Coastal Change Management Area, the Secretary of State should consider development appropriate where it is demonstrated that it will be safe over its planned lifetime and will not have an unacceptable impact on coastal change.
P54	5.5.11	Substantial weight should be attached to the risks of flooding and coastal erosion. The applicant must demonstrate that full account has been taken of the policy on assessment and mitigation in Section 5.7 of this NPS, taking account of the potential effects of climate change on these risks as discussed above.
Coastal change - mitigation		
P55	5.5.12	Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast in consultation with the MMO, the Environment Agency, Local Planning Authorities, other statutory consultees, Coastal Partnerships and other coastal groups, as it considers appropriate. The Secretary of State should consider whether the mitigation requirements put forward by an applicant are acceptable and whether requirements should be attached to any grant of development consent in order to secure their delivery.
P55	5.5.13	The Secretary of State should also ensure appropriate development in a Coastal Change Management Area is not impacted by coastal change by limiting the planned life-time of the proposed development through temporary permission and restoration conditions where necessary to reduce the risk to people and the development.
Flood risk - introduction		
P57	5.7.2	The applicant, the Examining Authority and the Secretary of State (in taking decisions) should take account of the policy on climate change adaptation in Section 4.6.
Flood risk – applicant's assessment		
P57	5.7.4	Applications for hazardous waste projects of 1 hectare or greater in Flood Zone 1 and all proposals for hazardous waste projects located in Flood Zones 2 and 3 should be accompanied by a site-specific flood risk assessment (FRA). A FRA will also be required

		where a hazardous waste project less than 1 hectare may be subject to sources of flooding other than rivers and the sea (e.g. surface water), or where the Environment Agency, Internal Drainage Board or other body has notified the local planning authority that there are critical drainage problems.
P57/ 58	5.7.5	In preparing an FRA the developer should also: • consider the risk of all forms of flooding arising from the project (including in adjacent parts of the United Kingdom) in addition to the risk of flooding to the project and demonstrate how these risks will be managed and where relevant mitigated so that the development remains safe throughout its lifetime; • take the impacts of climate change into account clearly stating the development lifetime over which the assessment has been made; • consider the vulnerability of those using the site, including arrangements for safe access; • where there is a requirement for co-location of hazardous waste facilities, take account of the potential cumulative impacts; • take account of the nature of the particular types of hazardous waste and consider whether there is an increased pollution or accident risk during flooding; • include the assessment of the remaining (known as 'residual') risk after risk reduction measures have been taken into account and demonstrate that this is acceptable for the particular project; • consider if there is a need to remain operational during a worst case flood event over the development's lifetime.
P58	5.7.7	Applicants for projects which may be affected by, or may add to, flood risk are advised to seek sufficiently early pre-application discussions with the Environment Agency, and, where relevant, other bodies such as Internal Drainage Boards, sewerage undertakers, highways authorities and reservoir owners and operators. Such discussions can be used to identify the likelihood and possible extent and nature of the flood risk, to help scope the FRA, and identify the information that will be required by the Secretary of State to reach a decision on the application once it has been submitted and examined. Such discussions could be, but do not necessarily have to be, carried out as part of an applicant's statutory pre-application consultation under the Planning Act. If the Environment Agency has concerns about the proposal on flood risk grounds, the applicant is encouraged to discuss these concerns with the Environment Agency and look to agree ways in which the proposal might be amended, or additional information provided, which would satisfy the Environment Agency's concerns, preferably before the application for development consent is submitted.
Flood risk – decision making		
P58/ 59	5.7.8	Where fold risk is a factor in determining an application for development consent, the Secretary of State should be satisfied that, where relevant: • the application is supported by an appropriate FRA; • the Sequential Test [see 5.7.12] has been applied as part of site selection and, if required, the Exception Test [see 5.7.13]; • a sequential approach (see paragraph 5.7.12) has been applied at the site level to

		minimise risk by directing the most vulnerable uses to areas of lowest flood risk, unless there are overriding reasons to prefer a different location; • in areas at risk of flooding priority has been given to the use of sustainable drainage systems (SuDS; • in flood risk areas the project is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed over the lifetime of the development.
P59	5.7.9	For construction work which has drainage implications, approval for the project's drainage system will form part of any development consent issued by the Secretary of State. The Secretary of State will therefore need to be satisfied that the proposed drainage system complies with any National Standards published by Ministers under Paragraph 5(1) of Schedule 3 to the Flood and Water Management Act 2010. In addition, the development consent order, or any associated planning obligations, will need to make provision for the adoption and maintenance of any SUDS, including any necessary access rights to property. The Secretary of State should be satisfied that the most appropriate body is being given the responsibility for maintaining any SUDS, taking into account the nature and security of the infrastructure on the proposed site. The responsible body could include, for example, the applicant, the landowner, the relevant local authority, or another body such as the Internal Drainage Board.
P59	5.7.10	If the Environment Agency continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the Secretary of State can grant consent, but would need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the Environment Agency to try and resolve the concerns.
P59	5.7.11	The Secretary of State should not consent development in Flood Zone 2 unless it is satisfied that the Sequential Test requirements have been met. It should not consent development in Flood Zone 3 unless it is satisfied that the Sequential and Exception test requirements have been met (see below). However, when seeking development consent on a site allocated in a development plan through the application of the Sequential Test, informed by a strategic flood risk assessment (SFRA), applicants need not apply the Sequential Test, but should apply the sequential approach to locating development within the site.
Flood risk - mitigation		
P60	5.7.17	Hazardous waste infrastructure which has to be located in flood risk areas should be designed to remain operational when floods occur.
P61	5.7.18	The receipt of and response to warnings of floods is an essential element in the management of the residual risk of flooding. Flood warning and evacuation plans should be in place for those areas at an identified risk of flooding. The applicant should take advice from the emergency services when producing an evacuation plan for the project as part of the FRA. Any emergency planning documents, flood warning and evacuation procedures that are required should be identified in the FRA.
P61	5.7.19	The Secretary of State should consider whether the applicant has made suitable proposals to mitigate flood risk. If necessary, appropriate requirements should be attached to any development consent and/or planning obligations entered into.

Water quality and resources – applicant's assessment		
P80	5.15.2	Applicants should make early contact with the relevant regulators including the Environment Agency for abstraction licensing and with utilities companies likely to supply the water. Where the project is likely to have adverse effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on water quality, water resources and physical characteristics as part of the Environmental Impact Assessment (EIA) and set this out in Environmental Statement (ES) (if EIA development) or equivalent. Facilities which handle contaminants which present a high risk to the water environment should be located away from water courses and outside aquifer and source protection zones.
P80	5.15.4	Applicants should demonstrate that they have incorporated, where possible, design measures such as independent water storage and collection facilities, opportunities for reuse, the use of an automated leak detection, building specific metering and rain harvesting. For facilities with a high degree of water use applicants must state what measures they intend to put in place to provide suitable mitigation. The applicant must state what emergency response procedures should be put into place to deal with any pollution incident quickly and the measures that will be used to avoid any adverse effects from accidental spills.
Water quality and resources – decision making		
P81	5.15.6	The Secretary of State will generally need to give impacts on the water environment more weight where a project would have adverse effects on the achievement of the environmental objectives established under the Water Framework Directive.
P81	5.15.7	The Secretary of State should be satisfied that a proposal has had regard to the River Basin Management Plans and the requirements of the Water Framework Directive (including Article 4.7) and its daughter directives, including those on priority substances and groundwater. The specific objectives for particular river basins are set out in River Basin Management Plans. The Secretary of State should also consider the interactions of the proposed project with other plans such as Water Resources Management Plans, Shoreline/Estuary Management Plans and Marine Plans.
P81	5.15.8	The Examining Authority and the Secretary of State should consider proposals to mitigate adverse effects on the water environment put forward by the applicant and whether appropriate requirements should be attached to any development consent and/ or planning obligations entered into to. If the Environment Agency continues to have concerns and objects to the grant of development consent on the grounds of impacts on water quality/resources, the Secretary of State can grant consent, but will need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the Environment Agency to try to resolve the concerns and that the Environment Agency is satisfied with the outcome.
Water quality and resources – mitigation		
P81	5.15.9	The Secretary of State should consider whether the mitigation measures put forward by the applicant which are needed for operational, construction and decommissioning phases (and which are over and above any which may form part of the project application) are acceptable. A construction management plan may help codify mitigation.

P81	5.15.10	The risk of impacts on the water environment can be reduced through careful design to facilitate adherence to good pollution control practice. For example, designated areas for storage and unloading, with appropriate drainage facilities, should be clearly marked.
P81	5.15.11	The impact on local water resources can be minimised through planning and design for the efficient use of water, including water recycling.

Source: Department for Environment, Food and Rural Affairs (2013)

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