



Department
for Environment
Food & Rural Affairs

Department for Environment, Food and Rural Affairs

A consultation on the government's proposed strategy for the third round of the climate change Adaptation Reporting Power

February 2018



© Crown copyright 2018

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v.3. To view this licence visit www.nationalarchives.gov.uk/doc/open-government-licence/version/3/ or email PSI@nationalarchives.gsi.gov.uk

This publication is available at www.gov.uk/government/publications

Any enquiries regarding this publication should be sent to us at:

acc_reportingpower@defra.gsi.gov.uk

www.gov.uk/defra

Contents

A.	Introduction.....	5
	Purpose of this consultation?	5
	What are we proposing?	5
	What are the objectives of the Adaptation Reporting Power in the third round?	6
	Responding to the consultation	6
	After the consultation.....	6
B.	Consultation.....	7
	Background	7
	What was done in the previous rounds of reporting?	7
	Evaluation of previous cycles of reporting	8
	Participation Levels	9
	Other reporting regimes	9
	Proposal for reporting.....	10
	Timescales	11
	How will government use these reports?.....	11
C.	Monetising costs of the Adaption Reporting Power	11
	Monetising benefits of the Adaptation Reporting Power.....	12
	Private benefits	13
	Societal benefits.....	13
	Other benefits.....	13
D.	The approach to using the Reporting Power	15
	Criteria for identifying reporting organisations	15
	Is the organisation eligible as a reporting organisation?.....	15
	Applying the criteria.....	17
	Application of criteria for the third round of the Adaptation Reporting Power	18

Organisations included.....	19
Organisations that submitted reports in the previous rounds	19
Potential new organisations identified for the third round	22
Organisations which are already considering key climate risks.....	23
Other organisations not being included	25
E. Support for reporting organisations.....	26
F. Additional circumstances in which the Secretary of State may request reports	27
G. Devolved and reserved matters	28
H. Organisations under consideration for the third round of adaptation reporting	32
Annex A: Potential for Adaptation Reporting to provide coverage on CCRA 2017 risks	35

A. Introduction

Purpose of this consultation?

1. To seek your views on the proposed strategy for the third round of the Adaptation Reporting Power, to be laid before Parliament in 2018.

What are we proposing?

2. The Adaptation Reporting Power was introduced under the Climate Change Act 2008. It provides for infrastructure operators and public bodies to report on how they are addressing current and future climate impacts. Under the five yearly cycle of the Climate Change Act 2008, the government is required to set out and consult on its strategy for reporting. This strategy is required to be laid in Parliament alongside the National Adaptation Programme (NAP).
3. In the next round of reporting the government is proposing to build on the voluntary approach established in the second round of reporting, drawing on the lessons from previous rounds and agreeing sectoral and organisational proposals for reporting. Government is therefore not intending to issue directions under the third round of the Adaptation Reporting Power, but proposes that reporting is done in line with the reporting power on a voluntary basis.
4. In doing so, we seek to recognise:
 - a. the value of participating in the process which organisations derived from previous reporting cycles;
 - b. the differences between organisations across and within sectors, the different business and regulatory pressures which exist and the diversity of approaches and experiences on climate change risk management across all reporting organisations;
 - c. the importance of reports in understanding sectoral and national levels of resilience and the link to the work of the Adaptation Sub-Committee (ASC) of the Committee on Climate Change's reports to Parliament on progress addressing climate change risks and implementing the NAP;
 - d. the need to prevent duplication with regulatory and businesses processes and the developments towards greater disclosure of climate risks in organisation's annual reports both as part of the amendments to the Companies Act 2006 and the Task Force on Climate-related Financial Disclosures.

What are the objectives of the Adaptation Reporting Power in the third round?

5. We propose that future reporting should be underpinned by the following principles:
- is proportionate, risk-based and streamlined to minimise burdens or duplications;
 - is built on previous rounds of reporting to improve report quality and participation; and
 - is clear that the primary objective of reporting is to support the integration of climate change risk management into the work of reporting organisations, with a secondary objective of understanding the level of preparedness of key sectors to climate change, at a sectoral and national level, to feed into the ASC's reports to Parliament.

Responding to the consultation

6. We would prefer you to respond online using link <https://consult.defra.gov.uk/environmental-quality/adaptation-reporting> . Our preferred method of receiving responses is online because it is the fastest and most cost-effective way to collate and analyse responses. However, responses can also be sent by email or post to:

acc_reportingpower@defra.gsi.gov.uk

Defra
Environmental Quality
Climate Adaptation team – ARP consultation
Area 2A, Nobel House,
Smith Square, London, SW1P 3JR

After the consultation

7. When this consultation ends, we will summarise the responses and place this summary on our website at: <https://www.gov.uk/defra>. This summary will include a list of organisations that responded but not personal names, addresses or other contact details.
8. Copies of responses will be made available to the public on request. If you do not want your response (including your name, contact details and any other personal information) to be publicly available, please say so clearly in writing when you send your response to the consultation. Please explain why you need to keep details confidential. We will take your reasons into account if someone asks for this information under Freedom of Information legislation. But, because of the law, we cannot promise that we will always be able to keep those details confidential. Please note, if your computer automatically includes a confidentiality disclaimer, this will not count as a confidentiality request.

B. Consultation

Background

9. The Climate Change Act 2008 gives the Secretary of State the power to direct reporting organisations (those with functions of a public nature or statutory undertakers) to produce reports detailing:
 - the current and future projected impacts of climate change on their organisation;
 - proposals for adapting to climate change;
 - an assessment of progress towards implementing the policies and proposals set out in previous reports.
10. This is known as the Adaptation Reporting Power.
11. The Adaptation Reporting Power was introduced to help ensure reporting organisations are taking appropriate action to adapt to the future impacts of climate change. It helps do this both directly, through engaging organisations in reporting, and indirectly, through raising awareness, building capacity in organisations, and making examples of good practice publicly available.
12. Under the Climate Change Act 2008, the government's proposed approach or strategy for exercising the Adaptation Reporting Power should be subject to consultation with relevant parties.
- 13. This document will, following consultation, constitute the “report on exercise of power to give directions” required under Section 65 of the Climate Change Act (2008).**

What was done in the previous rounds of reporting?

14. Since the Climate Change Act 2008 entered into force the adaptation reporting process has been through two cycles.
15. First, in 2009, when the Secretary of State laid before Parliament a strategy for exercising this power. The strategy focused on major infrastructure providers from the energy, transport and water sectors and 91 organisations were directed to report. A number of other organisations were invited to submit reporting. Statutory guidance was published to guide reporting organisations on the content of their submissions and a formal evaluation of reports was carried out. In total, 105 organisations took part.
16. The second cycle of adaptation reporting started in 2013, when the government laid before Parliament its second strategy. This strategy set out a voluntary, light touch and flexible approach to reporting, which was supported by stakeholders who responded to the consultation. This, contrary to the first cycle of reporting, was a 'bottom-up' approach to reporting and no formal guidance was offered to reporting organisations. In total, 86 organisations took part.

17. We are now consulting on our proposed strategy for the third round of the Adaptation Reporting Power. The final strategy for the Adaptation Reporting Power will be laid before Parliament alongside the UK's NAP later in 2018.

Evaluation of previous cycles of reporting

18. At the conclusion of the second cycle of adaptation reporting, we commissioned the Adaptation and Resilience in the Context of Change (ARCC¹) network and the Adaptation Sub-Committee (ASC) of the Committee on Climate Change to produce an evaluation of the previous cycles of adaptation reporting. ARCC's evaluation focused on the experience of reporting organisations and the benefits they derived from the process². The ASC evaluation considered the extent to which the reports supported work for the Climate Change Risk Assessment and the ASC's own reports to Parliament on progress on preparedness for climate change³.

19. The evaluation found that:

- a) the reporting process made a significant contribution to driving adaptation. The reporting process helped organisations in the identification and appreciation of climate risks to services, assets, and functions, thereby supporting the creation of programmes of activity to improve the understanding of risk. Reporting was considered important in driving the planning for adaptation work and gaining organisational, senior level and external engagement. The act of undertaking Adaptation Reporting Power reporting gave legitimacy to climate adaptation issues within sectors and demonstrated action/resilience to stakeholders. It provided a catalyst for discussion and, ultimately, action on climate change. The reports were considered a useful communication tool to gain strategic buy-in and presented opportunities for partnership and sector engagement. Reporting gave coherence to policy frameworks across different areas and assisted the mapping of new policy proposals, such as in the financial sector. Adaptation Reporting Power reporting also demonstrated that organisations were already adapting to climate change and mitigating their specific climate change risks. Some sectors were particularly advanced and were running their own research programmes on adaptation.
- b) overall, reporting organisations welcomed the light-touch and flexible approach adopted for the second round of reporting. On balance more organisations valued voluntary reporting, although a significant number noted that mandatory reporting would have eased senior level buy-in and sign-off.
- c) the ASC considered the reports provided important evidence that would not otherwise be available and were valuable in evaluating the government's NAP and informing the ASC's statutory report to Parliament. Reports supplied helpful case studies and some outlined how actions had reduced risks. Overall, the reports were valuable for the ASC's reports to Parliament on the progress being made to address climate change risks by key infrastructure sectors.

¹ <http://www.arcc-network.org.uk/>

² <http://www.arcc-network.org.uk/wp-content/pdfs/ARP-report-for-Defra-04-2017.pdf>

³ <https://www.theccc.org.uk/wp-content/uploads/2017/03/Adaptation-Reporting-Power-Second-round-review-Committee-on-Climate-Change-March-2017.pdf>

- d) There were limitations in the reports, which needed to be considered when designing the third round:
- i) it was not possible to build a picture of climate change risks and opportunities at the national or sector level to feed into the national Climate Change Risk Assessment. This was due in part to a number of organisations dropping out of the reporting process presenting gaps in sector coverage;
 - ii) there was a wide variation in the level of detail on actions provided, with some reports providing a high level description of actions and others including evidence on the costs and benefits. This variation affected the extent to which sector and national level progress in reducing vulnerability to the impacts of climate change could be assessed. It also proved difficult to track the progress of actions since the first round of Adaptation Reporting Power reporting and it was unclear whether the actions were being tracked by the organisations themselves. This was potentially due to the light touch flexible nature of reporting and lack of detailed guidance given to reporting organisations.
 - iii) there was a lack of quantified evidence describing how the actions taken have helped to reduce future vulnerability. This was partly due to the light touch flexible approach to reporting and lack of detailed guidance, but fundamentally due to a general difficulty in quantifying information on actions and resulting benefits. Subsequent discussions with reporting organisations found that while some quantification will be possible there will continue to be a genuine gap in quantified data due to the time needed to collect information and for benefits to be realised and quantified.

Participation levels

20. In the second round of reporting 111 organisations were invited to submit reports to government, of which 86 organisations took part. A mandatory approach may drive up participation, however this alone is unlikely to drive up the quality of reporting. In the third cycle of reporting we intend to build on the previous rounds by increasing voluntary participation as well as improving report quality.

Other reporting regimes

21. Since the publication of the government's last strategy, a voluntary reporting framework has been developed by the Task Force on Climate-related Financial Disclosures (TCFD). This aims to provide for voluntary, consistent, climate-related financial risk disclosures by companies for use in providing information to investors, lenders, insurers, and other stakeholders. A number of organisations, such as the Climate Disclosures Standards Board and the Sustainability Accounting Standards Board, are planning to undertake work to integrate the recommendations of the TCFD within their frameworks.
22. An amendment to the Companies Act 2006, necessitated by the transposition of the EU's Non-Financial Reporting Directive, is also relevant here. It requires companies to report on environmental matters, including the company's impact on the environment. Large public interest entities (traded companies, banking companies,

authorised insurance companies or companies carrying on insurance market activity) with over 500 employees are required to include a non-financial statement within their strategic report. This statement must contain information that is necessary for an understanding of the company's development, performance and position and the impact of its activity on various matters, such as environmental matters (including the impact of the company's business on the environment). If the company does not have a policy in relation to any of these matters, the statement must provide a clear and reasoned explanation for the company's not doing so. These changes apply to financial years commencing 1 January 2017 so coverage of this in strategic reports should start from the first quarter of 2018.

Proposal for reporting

23. In the third round of reporting the government is seeking to build on the previous cycles of reporting. We propose to develop a hybrid between the top-down directed approach of the first round and the bottom-up flexible approach in the second round by agreeing with reporting organisations sector- or organisation-specific reporting proposals.
24. Government does not intend to issue directions under the third round of the Adaptation Reporting Power, but proposes that reporting is done in line with the reporting power on a voluntary basis.
25. We propose to build on the work of reporting organisations from the second round of reporting by focussing on the following principles, to:
 - be proportionate, risk-based and streamlined to minimise burdens or duplications;
 - build on previous rounds of reporting to improve report quality and participation; and
 - be clear that the primary objective of reporting is to support the integration of climate change risk management into the work of reporting organisations, with a secondary objective of understanding the level of preparedness of key sectors to climate change, from critical infrastructure operators and public bodies at a sectoral and national level to feed into the ASC's reports to Parliament.
26. By seeking to agree sectoral or organisational proposals on reporting, we will address much of the feedback from our evaluation and achieve the following benefits:
 - greater consistency and detail of reporting;
 - freedom for reporters to set out their perspectives and approaches to climate risks in accordance with the needs and priorities of their organisation;
 - an increase in participation within sectors, driven by greater clarity on content and expectations in reporting proposals;
 - greater coherence between the work of reporting organisations and the work of the ASC in reporting to Parliament on progress addressing climate change risks and implementing the NAP;
 - acknowledgement of the differences between organisations across and within sectors and of the unique sector characteristics including their specific regulatory processes;

- appreciation of the diversity of approaches and experiences across all reporting organisations and history of previous work undertaken on climate change adaptation.

Do you agree that reporting in the third round should continue to be voluntary?

Do you agree with the principles for reporting in the third round?

Do you agree that reporting in the third round should build on the second round by agreeing sector or organisational reporting proposals?

Timescales

27. Pending the outcome of this consultation, government will continue discussions with potential reporting organisations to determine timescales for reporting. Our priority in these discussions will be to find a timescale that best suits reporting organisations in order to minimise burdens and streamline the process against any other regulatory pressures. We have already had preliminary discussions with some organisations about the best time for them to produce an adaptation report considering existing regulatory timetables and processes. We would expect organisations to report within the period 2019 – 2021 with a final deadline of 31 December 2021. See table 2 for the proposed overall timetable for the reporting process.
28. **Do you agree that the reporting date should be determined by sector, reflecting on regulatory or business pressures within the reporting window of 2019-2021, with a final deadline of 31 December 2021?**

How will government use these reports?

29. Evidence from reporting organisations suggests that the overriding benefit from reporting is that it supports organisations on their journey towards greater understanding of climate change implications for their business and progress on addressing vulnerabilities and impacts. We intend to design the third cycle of reporting so it best meets this objective.
30. The secondary objective of reporting is to assess and validate the progress made to date by reporting organisations during the previous two adaptation reporting cycles and understand the level of preparedness at sector and national level. This will feed into the ASC's biennial reports on progress of work to address climate change risks to Parliament.

C. Monetising costs of the Adaption Reporting Power

31. The costs of reporting will be completely borne by reporting organisations, which will need to dedicate staff time to undertake the reporting.

32. In the impact assessment for the second round a range was constructed using the mean and median of costs reported by 22 reporting organisations from the first round. The findings are reproduced here in current prices⁴.

Table 1. Summary statistics of cost of reporting in the first round converted to 2017 prices

Sum:	£1,028,797
Mean:	£46,763
Median:	£31,779
Standard deviation:	£58,526

33. We anticipate an additional cost to government in terms of providing support to reporting organisations. We estimate this will be a cost to government for facilitating the reporting process and providing support to reporting organisations of between £1,344 and £2,688⁵ per report. Engagement on reporting done on a sector basis could lead to economies of scale and we are keen to explore this where this approach would secure greater participation.

Monetising benefits of the Adaptation Reporting Power

34. Our evaluation pointed to a number of benefits of reporting, from improved understanding of risks and more informed planning for actions, as well as enhanced engagement with stakeholders, customers, sectors and internally with senior management. Reports from previous rounds demonstrated that a range of actions were being taken to address current vulnerabilities and manage future risks. A reporting organisation is likely to choose to implement an adaptation action if it is cost effective.
35. As outlined, the benefits of reporting are numerous, interdependent and unique to each reporting organisation. It is difficult to predict the size of the benefits of adaptation action, or when they will materialise given current uncertainty of the magnitude of climate change impacts. This assessment instead seeks to provide an overview of the potential benefits of reporting rather than an analysis of the benefits of the specific individual adaptation actions contained in reports.
36. It is anticipated that the Adaptation Reporting Power reporting will bring a wide variety of private benefits to reporting organisations and wider benefits to society.

⁴ Wages were adjusted in line with inflation and are presented in 2018 prices.

⁵ Half the cost of guidance for mandatory reports

Private benefits

37. The Adaptation Reporting Power reporting will help to identify relevant climate change risks for the reporting organisations and help to incorporate these into current risk management processes. This may lead to the introduction of adaptation measures that would not otherwise have been identified as needed or implemented. Reporting will also encourage reporting organisations to consider appropriate early adaptive action. This is of particular importance for sectors where long-term planning is required. Reporting can also provide benefits as it would bridge information gaps allowing organisations to maximise opportunities and minimise costs and threats from climate change.

Societal benefits

38. There will be an unavoidable level of climate change, regardless of future global emissions, because of the existing accumulation of greenhouse gases in the atmosphere. As a consequence, adaptation will be necessary in the UK. The government's ambition is to leave the environment in an improved state and an important part of this is looking forward, understanding climate change impacts and taking action to address them. Hence, there are a number of ways that Adaptation Reporting Power reporting provides wider societal benefits. If organisations with public functions and those providing critical infrastructure services which are fundamental to society, implement measures to address climate change impacts and risks, there will be a reduction or avoidance of future societal disruptions and costs leading to wider positive impacts to businesses, the economy and the environment. Identifying these risks through the Adaptation Reporting Power reporting can potentially avoid the problem of costs being borne by third parties as long-term risks are incorporated into organisations' strategic frameworks.

Other benefits

39. The Adaptation Reporting Power reporting will provide the government and the ASC with information on current understanding, and the benefit to organisations, of incorporating to climate change into their risk management strategies.

Table 2: Adaptation Reporting Power Timeline	
1. Formal consultation on strategy	Winter 2017-8
2. Strategy laid before Parliament	Summer 2018
3. Reporting proposals for sectors and organisations, setting out the scope of report, agreed and invitations submitted	Mid-End 2018
4. Reporting organisations prepare reports and submit to agreed deadlines	2019 – 2021
5. Draft reports submitted to the Secretary of State	Up to end 2021
6. Concerns surrounding commercial confidentiality submitted to the Secretary of State, with alternative reports for publication which take into account commercial and confidentiality proposals	Timescales will vary
7. Secretary of State notifies reporting organisations of commercial confidentiality decisions based on objections received under section 63 (7) of the Climate Change Act 2008	Within 3 months of receipt
8. Reporting organisation takes on board comments and submits final report to the Secretary of State	Within 3 months
9. Final reports published by the Secretary of State in accordance with section 63(6), and/or by the organisation themselves	Timescales will vary
10. Reports' findings fed into ASC's ongoing work to assess progress on adaptation	2019-2021

D. The approach to using the Reporting Power

Criteria for identifying reporting organisations

40. In the Government's first strategy, we defined criteria to designate reporting organisations which were within scope. For the third round we propose that reporting is proportionate, risk based and streamlined to minimise burdens and duplications. We will therefore build on the previous criteria and use the following methodology:
- identifying those organisations which are eligible for reporting;
 - identifying those organisations that are vulnerable to the projected impacts of climate change as according to the UK's Climate Change Risk Assessment (CCRA) published in January 2017⁶;
 - preventing duplication by identifying organisations which are not already subject to other adaptation reporting requirements, or are not already covered by an existing voluntary agreement;
 - targeting reporting organisations proportionately.
41. We set out in our first strategy that reporting organisations previously identified would not automatically mean that they will be asked to report in future rounds of reporting, particularly if there is sufficient evidence that adaptation has been embedded into existing regulatory and reporting systems. Hence, all reporting organisations will be identified through the methodology above for each cycle of reporting, which may not result in exactly the same organisations being invited to report in each cycle.

Is the organisation eligible as a reporting organisation?

42. Organisations which are eligible must fulfil either or both of the below sub-criteria⁷:
- a) Statutory Undertakers as listed in the Town and Country Planning Act 1990. They are:
 - persons with statutory authorisation to carry on any of the following: railway, light railway, tramway, road transport, water transport, canal, inland navigation, dock, harbour, pier or lighthouse undertaking or any undertaking for the supply of hydraulic power or a relevant airport operator; and
 - gas transporters, anyone holding an electricity generation, transmission or distribution licence or an air traffic services licence, water or sewerage undertakers, the Environment Agency, universal postal service providers and the Civil Aviation Authority.
 - b) Organisations with functions of a public nature. Defining 'organisations with functions of a public nature' needs to occur on a case-by-case basis. We have

⁶ <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2017>

⁷ Note that Parliament, the Devolved Authorities and Legislatures, Ministers, Government Departments and Executive Agencies are all excluded.

applied the following six characteristics to provide guidance in this (note that organisations do not have to meet all characteristics):

- the extent to which in carrying out the function in question the body is publicly funded;
- the extent to which the organisation's activities are underpinned by statute. For example, are an organisation's functions recognised by or provided for in legislation? If not, does the organisation nevertheless operate under the authority of the government or of another part of the public sector;
- whether the organisation exercises extensive or monopolistic powers, for example, by regulating entry to a trade or profession;
- whether the organisation's source of power is derived from more than voluntary submission to its jurisdiction. For example, where a party has no choice but to submit to its jurisdiction if they wish to take part in a particular activity;
- whether the organisation seeks to achieve some collective benefit for the public, and is accepted by the public as having the authority to do so; and
- in the case of a regulatory organisation, whether, but for the existence of that organisation, the Government would inevitably have intervened to regulate the activity in question.

Is the organisation vulnerable to climate change?

43. The publication of the UK's second national Climate Change Risk Assessment represents the UK's latest assessment of the threats and opportunities from climate change. We have considered the risk assessment and identified reporting organisations which are both vulnerable to projected impacts of climate change, and organisations that are responsible or partially responsible for addressing those same impacts. Annex A sets this relationship out.

Would the Adaptation Reporting Power be duplicative?

44. Inviting organisations to report was considered duplicative if the organisation has existing regulation (or regulation coming into force) or a voluntary agreement that:
- requires a comprehensive assessment of the risks to the functions of the organisation from climate change;
 - requires a programme of measures to be drawn up and progress reported on in implementing the findings of this programme of measures;
 - requires the findings to be made publicly available.

Would the effort in developing an adaptation report be disproportionate to the reporting organisation?

45. A very large number of organisations are theoretically eligible under the reporting power, and clearly it would be disproportionate to engage very small organisations in reporting on climate change.
46. For this reason we are proposing to focus at a strategic level to reduce any burden on smaller organisations. Where appropriate we will be asking 'umbrella'

organisations to report on behalf of their members. These proposals are outlined in further detail below.

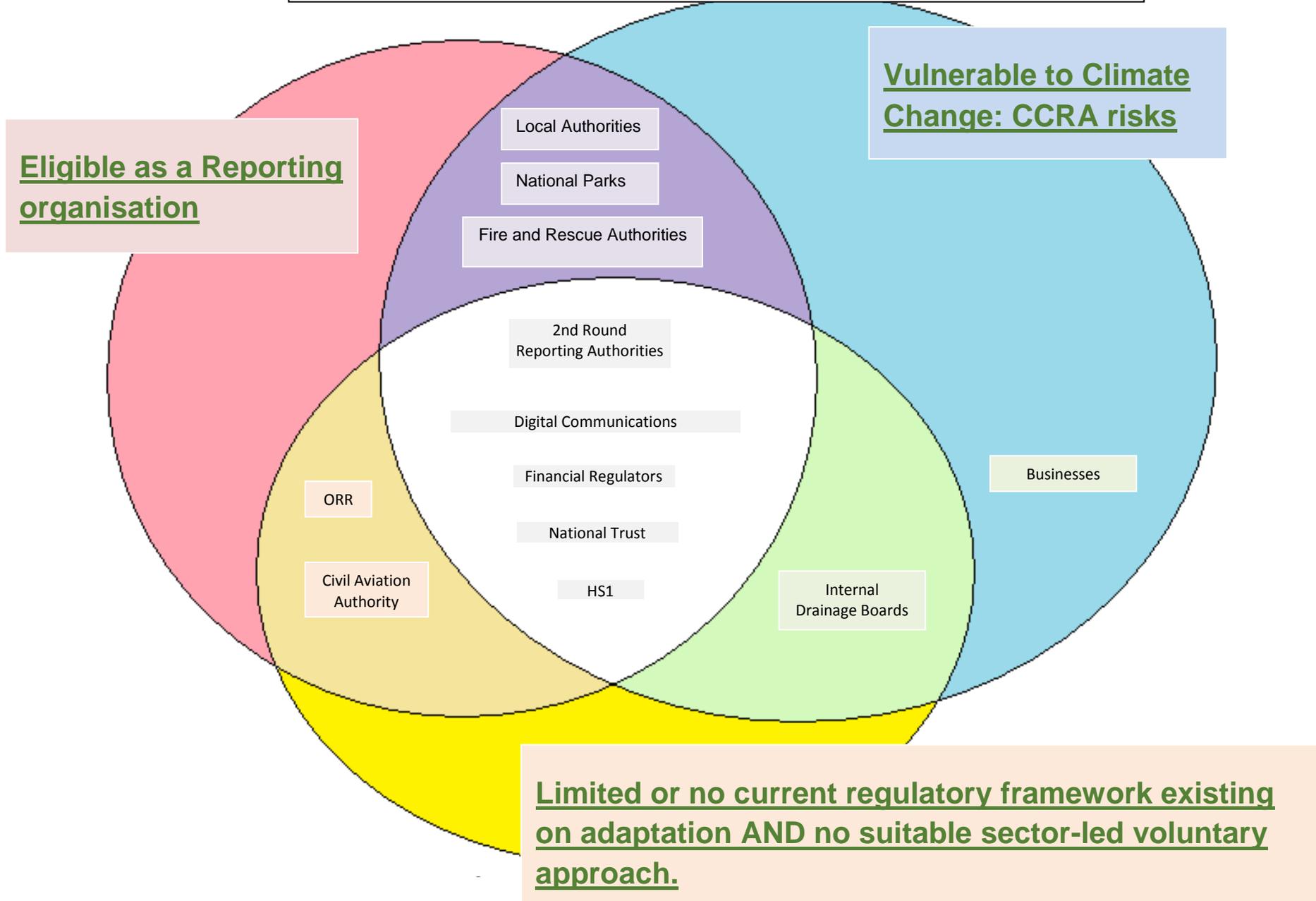
**Do you agree that the criteria for identifying eligible organisations are reasonable?
Are there other factors that might be useful to consider?**

Applying the criteria

47. The Venn diagram (Diagram 1 below) sets out our assessment of which organisations meet 3 of the 4 criteria outlined above. The criterion of proportionality has been removed for simplicity. Section H lists all the organisations which are under consideration for the third cycle of reporting.

Diagram 1

**Application of criteria for the third round of the
Adaptation Reporting Power**



Organisations included

Organisations that submitted reports in the previous rounds

Transport Sector

48. The transport sector features across the 2017 Climate Change Risk Assessment and is therefore important for adaptation reporting. It includes organisations responsible for roads, railways, airports lighthouses and ports. During this consultation we will seek to agree which of these organisations will participate in the third round.
49. We are engaging with the Airport Operators Association and NATS to ascertain how reporting for the aviation infrastructure sector will be carried out in the third round of the Adaptation Reporting Power. As part of these discussions, we will seek to agree a template for aviation infrastructure reporting, which incorporates airports and air navigation service providers. We will seek to agree common approaches which draw on the work the industry has undertaken, including as part of its Sustainable Aviation agenda, so that future reporting can build on the positive experiences of the previous round and contribute to a wider sector appreciation of resilience to climate impacts.
50. We will work with British Ports Association and UK Major Ports Group to establish a template for ports to report in the third cycle of reporting. We will seek to recognise areas of importance to ports while ensuring consistency of reporting, so this work can contribute to a better understanding of the resilience of ports to climate impacts.
51. We will ask Network Rail, Highways England, Transport for London, General Lighthouse Authorities and Euro Tunnel Ltd to report in the third round. We will work with these organisations to agree the focus of reports to ensure they cover areas of importance and seek to ensure transparency and consistency of reporting with other transport sectors.

Energy Sector

52. The energy sector is identified as an important sector for adaptation reporting, in view of the sector's vulnerability to extreme weather events identified in the Climate Change Risk Assessment. It includes organisations responsible for electricity transmission and distribution, as well as gas transportation. We are also including the sector regulator Ofgem.
53. We have been engaging with the Energy Networks Association to agree a sector template which focusses on areas of relevance to the electricity transmission and distribution sector and gas transporters to achieve a uniform approach to actions monitoring and evaluation. This will build on the sector's helpful approach to risk assessment undertaken in previous reporting rounds. We would expect the following companies to participate:
 - 5 Gas Distribution Networks (National Grid, Cadent Gas, Wales & West Utilities, SGN and Northern Gas Networks);

- all electricity transmission and distribution companies have indicated that they want to make separate submissions in addition to a national view provided by a separate ENA submission. This will include National Grid, Western Power Distribution, UK Power Networks, Scottish and Southern Electricity Networks, Scottish Power Electricity Networks, Northern Power Grid and Electricity North West. In addition, Northern Ireland Electricity are also expected to take part in the discussions.
54. The electricity generation companies reported via Energy UK in the previous round and have expressed a wish to report collectively on their sectoral resilience to climate change in the third round. We expect about 10 companies to be included in this approach. Like the ENA, we will continue to work with Energy UK and electricity generators to establish a common approach which builds on good practice from previous reports.
55. We will work with the energy sectors to ensure any duplication with other reporting regimes is minimised, is focussed on relevant risk areas identified in the most recent risk assessment, and best meets sector needs in a resource efficient way in line with regulatory processes.
56. Ofgem will produce a report in the third cycle of adaptation reporting, which will allow us to understand Ofgem's assessment of the sector's resilience to current and future climate impacts.

Public Bodies

57. A range of public bodies were previously identified for reporting and participated in reporting. These organisations include:
- Environment Agency
 - Forestry Commission
 - Natural England
 - Seafish Industry Authority
 - Marine Management Organisation
 - Sustainable Development Unit for NHS and Public Health
 - Maritime and Coastguard Agency.
58. We will continue to engage with these public bodies to develop a consistent approach to reporting in the third round which focusses how their duties, areas of responsibility and sectoral interests are impacted by climate change and how these impacts will be addressed.

Digital Communications

59. In the last cycle of adaptation reporting the data centre sector, through the trade body Tech UK, produced a report to cover data centres and some member telecoms companies. The Electronic Communications Resilience and Response Group (EC-RRG, which represents the wider telecoms sector) separately produced its own standalone reports (see para 68-69). We will build on this work to secure more detailed engagement from the digital communications sector as part of reporting under this strategy.

60. We will also continue to engage with Ofcom to determine the basis of a report from them in the third cycle of adaptation reporting. Such a report could allow us to understand Ofcom's assessment of how climate change impacts the effective operation of its regulatory functions.

Water Sector

61. The water sector was identified within the Climate Change Risk Assessment as a crucial sector for reporting.
62. The water sector is tightly regulated and water companies already produce information that is suitable for the adaptation reporting process through the existing cycle of work for Drought Plans, Water Resource Management Plans and the Ofwat Price Review process. Government will work with water companies to produce an Adaptation Reporting Power reporting template which reduces any unnecessary duplication and ensures that water companies are able to provide progress reports which fit with their regulatory timescales and contribute to a wider understanding of the sector's resilience to climate change. During this consultation we will confirm which water companies will participate.
63. We will also work with Ofwat to produce a report in the third cycle of adaptation reporting, which will allow us to understand Ofwat's assessment of the resilience of the sector to current and future climate impacts.

Financial Regulators - Prudential Regulatory Authority of the Bank of England

64. In the second round of reporting, the Prudential Regulatory Authority of the Bank of England reported on the risks to the insurance sector. Since then, the PRA have initiated a review on the impact of climate change on the banking sector. We will work with the PRA and other financial regulators (outlined in paragraph 70 and 71 below) to understand the scope of further work in this field and to ensure this work continues to be embedded into relevant components of the financial services sector.

Historic Environment

65. In the second round of reporting Historic England reported for the first time. This was a helpful submission and in the third round we hope to expand reporting to include other bodies, such as the English Heritage Trust.
66. We will work with the Historic Environment Adaptation Working Group to establish a template for the Historic Environment sector to report in the third cycle of reporting. We will seek the involvement of Historic England and English Heritage Trust to explore whether the sector can report jointly to minimise burdens while allowing for a more comprehensive assessment of the sector's approach to climate risk management.
67. As part of this, we will also discuss with the National Trust if they will participate in this exercise.

Potential new organisations identified for the third round

Digital Communications Sector

68. In the telecoms sector climate change issues are predominantly considered within individual companies, but also collectively via the industry-led resilience group, the Electronic Communications - Resilience and Response Group. The EC-RRG leads on resilience and the sector's emergency plan. In addition, the telecoms sector has produced two standalone climate change adaptation reports (2013 and 2017), which set out the sector approach to resilience to current extreme weather. These reports outline the industry's extensive risk management strategies which take account of a wide range of risks, including severe weather and climate change related risks. These strategies are updated regularly and there is regular testing of emergency processes at both individual company level and collectively as part of EC-RRG.
69. Following up on this, government is continuing engagement with the data centre and telecoms sectors to develop an approach to reporting in the third cycle of reporting. This will seek to recognise the existing mechanisms in place within digital communication companies to address a range of risks, the sector's resilience plans and emergency response procedures and the characteristics of the sector such as its relatively short asset life.

Financial Regulators - The Pensions Regulator, Financial Conduct Authority and Financial Reporting Council

70. The ASC have recommended to government that there should be greater coverage of financial services through the exercise of the Adaptation Reporting Power. While private entities are outside the scope of adaptation reporting, we have approached the following financial regulators to ask them to consider participation in future reporting:
- The Pensions Regulator - TPR works with employers and those responsible for running pensions to protect people's savings in workplace pensions.
 - The Financial Conduct Authority – the FCA seeks to protect consumers through the effective management of mortgages, savings and pensions and enhance the integrity of the UK financial system.
 - The Financial Reporting Council – the FRC regulates auditors, accountants and actuaries and produce the UK's Corporate Governance and Stewardship Codes. FRC seeks to ensure the transparency and integrity in business. FRC's work is aimed at investors and others who rely on company reports.
71. The Pensions Regulator, the Financial Conduct Authority and the Financial Reporting Council have indicated that they are open to continuing dialogue on the prospect of participating in the third cycle. We will continue to engage with these regulators to consider how we can improve reporting in this area.

High Speed 1

72. HS1 Ltd owns and operates the UK's first section of high speed rail between London and the Channel Tunnel, including St Pancras International, Stratford International, Ebbsfleet International and Ashford International stations. Initial views from HS1 are that it will undertake to produce a report in the third cycle of reporting. We will discuss and agree with HS1 the scope of their Adaptation Reporting Power report on climate change risks to ensure it is consistent with the rest of the transport sector.

Are there any other sectors which you believe should be included on the list?

Are there any organisations that the Government proposes to invite to report which you believe should not be included?

Are there any organisations that have not been included which you believe should be?

Organisations which are already considering key climate risks

Local councils

73. Local councils are independently elected and autonomous bodies. They are largely independent of central government and are directly accountable to their electorates, with powers conferred on them by acts of Parliament. Government's commitment to localism and devolution means delegating power to the lowest appropriate level. Local councils play a crucial part in this, both in carrying out responsibilities from central government, and in devolving power further where possible.
74. Local councils play a significant role in addressing the risks from climate impacts and have a number of duties and responsibilities which allow them to do this. These are detailed below:
- a. Lead Planning Authorities are required to take account of adaptation, by virtue of the Planning and Compulsory Purchase Act 2004 (as amended). This requires that development plans must include 'policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change'. This requirement is well-covered in planning practice [guidance on climate change](https://www.gov.uk/guidance/climate-change).⁸ Lead Planning Authorities are required to consult on and publish their local plans.
 - b. In addition, under the Flood and Water Management Act 2010 Lead Local Flood Authorities, which are county and unitary authorities, have responsibility for local flood risk management. This ensures that flooding from surface run-off, groundwater and ordinary watercourses is identified and managed as part of an agreed local flood risk management strategy. County and unitary authorities in England already have a number of reporting requirements in relation to implementation of local flood risk management duties under the 2010 Act. The original reporting requirements were introduced when the duties were new and were on the progress being made to develop local flood risk management strategies, the asset register and the number of flood investigations councils have undertaken and published within the year. They have recently been changed so

⁸ <https://www.gov.uk/guidance/climate-change>

what authorities will be asked to report on will be more outcome focused e.g. what authorities use their local flood risk management strategy to influence/deliver rather than whether they have one. The data is collected annually as of 31 March.

- c. As mentioned above, as well as reporting on progress implementing requirements of the Flood and Water Management Act 2010, Lead Local Flood Authorities are required to consult on and publish local flood risk strategies. The vast majority of Lead Local Flood Authorities have done this. In addition, they must produce and publish flood investigation reports where they deem it necessary and appropriate, which examine the causes of flooding incidents and how future risk of that event reoccurring will be addressed as well as the role of any relevant risk management authority.
- d. Under the Civil Contingencies Act 2004 local councils are category one responders and must prepare and plan for emergencies in partnership with other local responders, such as police, fire and ambulance services, utilities and the Environment Agency. Emergencies include those linked to climate impacts such as flooding, water scarcity, and extreme heat. Category one responders have a statutory duty to publish their emergency plans. Most local resilience forum areas maintain multi-agency plans (including multi-agency flood plans where flooding is a significant risk). Local authorities are closely involved in planning and response phases and they usually lead multi-agency work during the recovery phase following incidents.
- e. Upper and single tier local authorities report to central government on performance on local biodiversity annually. Data (in part supplied by Local Nature Partnerships) on the proportion of local sites where positive conservation management is being achieved to assess effectiveness of local delivery. This gives information on the link between climate change and impacts on biodiversity.

75. In view of the fact that local councils already have a range of duties and reporting obligations highlighting the important role they play in addressing a range of climate risks we do not see a strong case for additional reporting on adaptation in the next cycle. Hence, we do not propose to include local councils within this strategy, but will consider other means where we can work with councils on their current responsibilities to address ongoing challenges to address climate risks as part of the National Adaptation Programme.

National Park Authorities

76. We do not propose to invite the National Park Authorities to complete a separate climate change adaptation report in the third cycle of adaptation reporting. National Park Authorities already produce mandatory five year management plans, which embed the consideration of climate change. Instead, we will ask National Park Authorities to include more information on their climate change risk assessments and actions they are taking or planning to take within their five yearly management plans. This will eliminate duplication with an existing regulatory reporting mechanism. We will develop transitional arrangements to allow all National Park Authorities to begin incorporating more information on climate risks and actions within their mandatory management plans.

Fire and rescue authorities

77. Services are delivered in England by 45 fire and rescue authorities of differing size and structure. Central government provides a national framework, and allocates financial resources through Revenue Support Grant and other means.
78. Each fire and rescue authority must produce an integrated risk management plan that identifies and assesses all foreseeable fire and rescue related risks that could affect its community, including those of a cross-border, multi-authority and/or national nature. The plan must have regard to the community risk registers produced by Local Resilience Forums and any other local or national risk analyses as appropriate. Given the scope and robustness of integrated risk management planning process, fire and rescue authorities have not been included in this adaptation reporting strategy to avoid duplication with existing reporting arrangements.

Other organisations not being included

Businesses

79. Climate change will present both challenges and opportunities for businesses. Research undertaken by Acclimatise⁹ found that 85% of the direct physical climate related risks identified by companies had a corresponding risk management action in place.
80. The Adaptation Reporting Power does not apply to the vast majority of businesses. However, amendments to the Companies Act 2006 will mean publicly traded businesses with over 500 employees will need to report on material environmental, including climate change, risks as part of their annual reports. Other initiatives like the Task Force on Climate-related Financial Disclosures may also drive up disclosures in companies' annual financial filings.

Transport

81. Based on submissions made by the Civil Aviation Authority and the Office of Road and Rail we will not invite them to participate in reporting in the third round.
82. In 2016 the CAA reviewed its legal duties and developed its strategy¹⁰ and business plan, to better align with our specific responsibilities. Having reviewed its environmental responsibilities, the CAA has decided it will not be undertaking any specific work on climate adaptation within the next five year period.
83. ORR have suggested that they are not well placed to report in a way they believe would add additional or useful insights. ORR state they do not have the ability to comment on the suitability of existing climate change adaptation plans for individual regulated businesses. However, ORR routinely publish an assessment of asset management and resilience for these organisations. This includes ORR's six-

⁹ <http://www.acclimatise.uk.com/2016/05/12/acclimatise-authors-important-report-on-uk-private-sector-resilience-market-opportunities-for-climate-products-services/>

¹⁰ <http://www.caa.co.uk/Our-work/Corporate-reports/Strategic-Plan/Our-five-year-strategic-plan/>

monthly documents [Network Rail Monitor](#)¹¹ and [Annual Assessment of Highways England's performance](#)¹². ORR's [data portal](#)¹³ includes data on asset performance, energy use and carbon emissions, which is also included in its [annual statistical release](#).¹⁴

Internal Drainage Boards

84. Internal Drainage Boards play a crucial role in managing flood risk and water levels on behalf of their communities. In order for the burden to be proportional to the considerable variability in sizes between Internal Drainage Boards, we had explored the prospect for the Association of Drainage Authorities, an umbrella organisation, to produce a report on behalf of its members. In the second round of reporting ADA did not report due to lack of resources and they are not in a position to produce a report in the third cycle of reporting. ADA will therefore not be invited to participate in view of the proportionality criteria, however, ADA will keep this matter under consideration.

E. Support for reporting organisations

85. Feedback to date suggests the majority of reporters require a steer from government on the content of reports, which we will seek to provide in sectoral and organisational reporting proposals, rather than formal guidance.

86. Another area of support is likely to be the next set of climate change projections which will be published in 2018. The UKCP18 project will build upon the current set of projections (UKCP09) to provide the most up-to date assessment of how the climate of the UK may change over the 21st century. UKCP18 will update the probabilistic projections over land and provide a set of high-resolution spatially-coherent future climate projections for the globe at 60km scale and for the UK at 12km scale. The 12km climate model will be further downscaled to a level previously only used for short-term meteorological modelling allowing realistic simulation of high impact events such as localised heavy rainfall in summer. The marine projections will also be updated for sea-level rise and storm surge. The projections will therefore allow for an improved understanding of climate impacts and risks, to better inform adaptation planning. Use of the updated projections will be vital for adaptation reporting organisations.

87. UKCP18¹⁵ will have a phased release, with the core raw data products coming out later in 2018 (to support research that could feed into the next Climate Change Risk

¹¹ <http://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/monitoring-performance/network-rail-monitor>

¹² <http://orr.gov.uk/highways-monitor/publications/highways-monitor-annual-assessment-of-highways-englands-performance>

¹³ <http://dataportal.orr.gov.uk/browse/reports/2>

¹⁴ <http://orr.gov.uk/statistics/published-stats/statistical-releases>

¹⁵ <http://www.metoffice.gov.uk/binaries/content/assets/mohippo/pdf/uk-climate/uk-cp/ukcp18-project-technical-overview.pdf>

Assessment), followed by a launch of the full UKCP18 data interface and support products at the end of 2018.

F. Additional circumstances in which the Secretary of State may request reports

88. As provided for in the Climate Change Act 2008, the Secretary of State must outline the circumstances in which directions might be made that are not indicated within this document. This section outlines the circumstances which may result in directions to report being given to organisations. These circumstances are:
- where a future event exposes vulnerability;
 - where evidence is obtained of bodies' poor performance to reduce vulnerability to climate change;
 - where a new body is created that fulfils the criteria outlined in section D; or
 - where an existing body's role changes so that it fits these criteria.

Where a future event, or increase in available evidence, exposes previously unidentified vulnerability

89. It is possible that an extreme weather event of similar severity to the 2015/16 storms and floods may occur in the UK and highlight the vulnerability of organisations or sectors not currently included as reporting organisations. If such an event occurs it is important that the government can act quickly to respond to any additional vulnerabilities highlighted.
90. The government therefore reserves the right to ask reporting organisations, not currently included, to report if future events display a previously unidentified vulnerability in a sector or organisation.

Where there is evidence that an organisation is not performing to a regulators' required standard against objectives to reduce vulnerability to climate change

91. Where organisations have an alternative regulatory regime that incorporates adaptation, their performance against those standards can be assessed. Where a key public authority is assessed by its regulators to be failing in fulfilling its adaptation requirements, it will be open to the Secretary of State to require an adaptation report under the Adaptation Reporting Power.

Where a new body is created that fulfils the criteria

92. Section D outlines a series of criteria under which an organisation may be invited to report. New bodies can be created under statute, or licences passed to new organisations. For this reason the Secretary of State might require or invite any organisation newly fulfilling the criteria outlined in section D to report.

Where an existing body's role changes so that it fits the criteria

93. As with the creation of new bodies, a public authority or its statutory functions are subject to change. For this reason the Secretary of State might require or invite any organisation to report where its functions change so that it fulfils the criteria outlined in section D.

Do you agree with the additional situations in which organisations may be asked to report? Would you suggest any others should be included?

G. Devolved and reserved matters

94. The strategy for the use of this power has been developed following discussion with officials from the devolved administrations.
95. All relevant sections and schedules of the act extend to the whole of the UK, except as stated in the Act. The Secretary of State has the power to issue directions to report to reporting organisations in devolved administrations but cannot give directions relating to a reporting organisation's devolved functions.
96. The reporting power can only be used on organisations whose functions are in England or are outside England and relate to reserved matters in Scotland, non-devolved matters in Wales and excepted matters in Northern Ireland.
97. Some of the functions exercised by these organisations in the devolved administrations relate to matters which are not fully devolved. The devolved administration still has some joint or concurrent control over these functions with a Minister of the Crown, or there are requirements for consent or consultation.
98. The legal obligations of the Secretary of State to consult or obtain consent before he may give directions relating to these functions are set out in section 64 of the Act. In practice, requirements to gain consent or consult vary on a case-by-case basis and the Secretary of State will consult with or request consent from devolved administrations on those issues with consultation, consenting or joint/concurrent control requirements prior to directions being issued. Any resulting direction to an organisation to report will only be related to non-devolved matters, and functions in England.

As this reporting round is taking a voluntary approach and is not issuing directions to reporting organisations, there are no conflicts with devolved administrations over reserved, non-devolved or excepted matters.

Corresponding powers

Wales

99. The Climate Change Act 2008 provides the power to Welsh Ministers to issue directions to report and produce Statutory Guidance, mirroring the Secretary of State's powers, for reporting organisation's devolved functions in Wales. There are

similar requirements on Wales to gain consent or consult with the Secretary of State on any issues overlapping with those of other organisations.

100. The act also provides Welsh ministers with the power to issue guidance that reporting organisations must have regard to when preparing an adaptation report if they have functions that are exercisable in Wales, or have devolved Wales functions.
101. Welsh ministers have not directed any reporting organisations to prepare reports, however they are supporting organisations in Wales to assess and manage climate risks by issuing statutory guidance¹⁶ and by providing advice and tools through our Adaptation Knowledge Transfer Programme.
102. Parts 1 to 3 of the guidance provide a step-by-step approach to developing a planned response to the threats and opportunities presented by climate change. Part 4 provides guidance on implementing the plan, and Part 5 addresses monitoring and reviewing. The guidance draws on the latest international research and good practice in this area.
103. At a local level, the Well-being of Future Generations (Wales) Act 2015 sets a statutory framework requiring Public Service Boards (PSBs) to account for climate risks in their local well-being assessment, and to use these assessments as a foundation to develop well-being plans. The membership of Public Service Boards include local councils, Local Health Boards, the Welsh Fire and Rescue Authority and Natural Resources Wales. Each PSB must improve the economic, social, environmental and cultural well-being of its area by working to achieve the well-being goals set out in the Well-being of Future Generations (Wales) Act 2015.
104. At a pan-Wales level, the Welsh Government is reviewing the latest evidence and will be producing a new Climate Change Adaptation Plan for Wales in 2018.

Northern Ireland

105. The Act does not give any powers to Northern Irish Ministers (by contrast with the situation in Wales) and no similar power is available under any other legislation. Therefore the only power applicable in Northern Ireland is the Secretary of State's power to issue guidance and directions to reporting organisations in relation to a reporting organisation's non-devolved functions. In practice, many issues in Northern Ireland are completely reserved and devolved, so the powers of the Climate Change Act 2008, in relation to the Adaptation Reporting Power, are relatively limited in scope. Requesting consent or consultation may apply where this is not the case, as set out above.
106. As required under section 60 of the UK Climate Change Act 2008, Northern Ireland is developing a second Northern Ireland Climate Change Adaptation Programme (NICCAP2) which will address the threats and opportunities identified in the latest UK Climate Change Risk Assessment. The NICCAP2 will be laid before the Northern Ireland Assembly in 2019.

¹⁶ Adaptation guidance in Wales:

<http://wales.gov.uk/topics/environmentcountryside/climatechange/preparing/how/guidance/?lang=en>

107. Organisations that wish to widen their understanding and knowledge of the impacts of climate change within Northern Ireland and the adaptation sectors necessary to deal with it, can contact Climate Northern Ireland.¹⁷

Scotland

108. The Climate Change (Scotland) Act 2009 gained Royal Assent on 4th August 2009. Section 44 of the act places a duty on 'public bodies' to act when exercising their functions in a way which is best calculated to:

- deliver on emission targets;
- deliver on an Adaptation Programme laid under Section 53 of the act; and
- deliver in a way which is sustainable.

109. These duties came into force on 1 January 2011 and apply to all 'public bodies', defined as a Scottish public authority within the meaning of section 3(1)(a) of the Freedom of Information (Scotland) Act 2002 (as amended). The Scottish Government published guidance on the public bodies' duties on 04/02/2011.¹⁸

110. The Scottish act also allows Scottish ministers, by order, to impose other climate change duties, to require reports on compliance with climate change duties, and to designate one or more bodies or persons to monitor compliance and to carry out investigations.

111. Further to section 44 of the Act, the Scottish Government introduced the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015 requiring all named public sector organisations to submit reports on their compliance with their climate change duties under the Climate Change Act. Currently, 180 public sector organisations report annually under this legislation.

112. The Scottish Government supports and encourages climate action from all public bodies in Scotland and recognises the key leadership role they have to play in tackling climate change and adapting to the impacts of climate change. The Scottish Government funds the Sustainable Scotland Network to act as a central gateway, providing support, resources and facilitating collaborative working.

113. Work is currently underway by the Scottish Government to develop its second Scottish Climate Change Adaptation Programme (SCCAP2). This will build on the excellent start made on adaptation in Scotland following the Scottish Government's first Scottish Climate Change Adaptation Programme (SCCAP1) published in 2014, will take into account the second Climate Change Risk Assessment CCRA2, in particular the Scottish Evidence Report, which was published in July 2016, together with the recommendations made by the ASC in its independent assessment of SCCAP1 undertaken in Sept 2016.

¹⁷ Climate Northern Ireland consists of representatives from central and local government, the business community, the voluntary sector and professional organisations. Please see <http://www.climatenorthernireland.org.uk/index.html>

¹⁸ Link to Scottish Government guidance on the public bodies duties <http://www.scotland.gov.uk/Publications/2011/02/04093254/0>

114. Any Scottish organisations seeking advice or support on how best to adapt to a changing climate can contact Adaptation Scotland¹⁹, an advice service funded by the Scottish Government.

¹⁹ Adaptation Scotland web site - <http://www.adaptationscotland.org.uk/1/1/0/Home.aspx>

H. Organisations under consideration for the third round of adaptation reporting

Organisation name
1. Anglian Water Services Ltd
2. Sembcorp (Bournemouth and West Hampshire Water) Plc
3. Bristol Water Plc
4. South Staffordshire Water Plc
5. Cambridge Water Company Plc
6. Essex and Suffolk Water
7. Northumbrian Water Ltd
8. Portsmouth Water Ltd
9. Severn Trent Water Ltd
10. South East Water Ltd
11. South West Water Ltd
12. Southern Water Services Ltd
13. Sutton and East Surrey Water Plc
14. Thames Water Utilities Ltd
15. United Utilities Water Plc
16. Affinity Water (incorporating Veolia Water Central Ltd, Veolia Water East Ltd, Veolia Water Southeast Ltd)
17. Wessex Water Services Ltd
18. Yorkshire Water Services
19. Office of Gas and Electricity Markets (OFGEM)
20. OFCOM
21. Water Services Regulation Authority (OFWAT)
Energy UK writing sector report for energy generation, including:
22. Centrica
23. Drax Power Limited
24. Uniper
25. E.ON UK
26. EDF energy
27. RWE Generation UK
28. InterGen
29. ENGIE
30. Scottish and Southern Energy
31. Scottish Power Generation Ltd
32. Innogy
33. Energy Networks Association

34. National Grid Electricity Transmission Plc
35. Scottish Hydro Electric Transmission Limited (SSE)
36. Scottish Hydro Electric Power Distribution Plc (SSE)
37. Southern Electric Power Distribution Plc (SSE)
38. SSE Pipelines Limited
39. SP Transmission Limited (Scottish Power)
40. SP Manweb Plc (Scottish Power)
41. SP Distribution Limited (Scottish Power)
42. Western Power Distribution (East Midlands) Plc
43. Western Power Distribution (West Midlands) Plc
44. Western Power Distribution (South Wales) Plc
45. Western Power Distribution (South West) Plc
46. UK Power Networks (Eastern)
47. UK Power Networks (London)
48. UK Power Networks (South East)
49. Electricity North West Limited
50. Northern Power Grid Plc
51. Northern Power Grid (Yorkshire) Plc
52. Northern Power Grid (North East) Plc
53. Cadent Gas
54. National Grid Gas Plc
55. Northern Gas Networks
56. SGN Plc
57. Wales and West Utilities Limited
58. Tech UK for the UK Data Centre sector
59. Electronic Communications – Resilience and Response Group
60. Highways England
61. Transport for London
62. Eurotunnel Ltd
63. Network Rail Infrastructure Limited
64. High Speed 1 Ltd
65. Birmingham International Airport
66. Cardiff International Airport
67. East Midlands Airport
68. Manchester International Airport
69. Edinburgh Airport
70. Glasgow International Airport
71. London Gatwick Airport
72. London Heathrow Airport
73. London Luton Airport

74. London Stansted Airport
75. NATS
76. ABP Harbour Authority Hull
77. ABP Harbour Authority Humber
78. ABP Harbour Authority Immingham
79. ABP Harbour Authority Southampton
80. Dover Harbour Board
81. Mersey Docks and Harbour Company
82. Port of Sheerness Ltd
83. Milford Haven Port Authority
84. PD Teesport Ltd
85. Port of London Authority
86. The Port of Felixstowe
87. Harwich Haven Authority
88. Corporation of Trinity House of Deptford Strond
89. Northern Lighthouse Board
90. Natural England
91. Environment Agency
92. Forestry Commission
93. Sustainable Development Unit (SDU) for NHS and Public Health
94. Marine Management Organisation
95. Seafish Industrial Authority for the wild capture seafood industry
96. Maritime and Coastguard Agency
97. Historic England
98. English Heritage Trust
99. National Trust
100. Prudential Regulatory Authority
101. The Pensions Regulator
102. The Financial Conduct Authority
103. The Financial Reporting Council

Annex A: Potential for Adaptation Reporting to provide coverage on CCRA 2017 risks

This table sets out the risks identified in the CCRA and our assessment of which sectors are impacted by these risks.

CCRA17 risk	CCRA score	CCRA rationale	Potential for coverage in ARP reports	Sectors/organisations impacted								
				Road	Rail infrastructure	Airports	Light-houses MCA ²⁰	Ports	Water	Energy Generation	Electricity/gas distributors and transmitters	Communications
In1: Risks of cascading failures from interdependent infrastructure networks	Action required	More action needed to enhance arrangements for information sharing in order to improve understanding of critical risks arising from interdependencies.	Measures or outcomes from recording failures caused by interdependencies. Set out interdependencies which present risks	X	X	X	X	X	X	X	X	X
In2: Risks to infrastructure services from river, surface water and groundwater flooding	Action required	More action needed to manage increasing risk to existing assets and networks and ensure increased risk is accounted for in design and location of new infrastructure.	Measures or outcomes from recording disruption caused by flooding and actions taken	X	X	X		X	X	X	X	X
In3: Risks to infrastructure services from coastal flooding and erosion	Action required	More action needed to manage increasing risk to existing networks (including flood and coastal erosion risk management infrastructure) from sea-level rise and increased rate of erosion.	Assess assets vulnerable to coastal flooding. Measures or outcomes from recording disruption	X	X	X	X	X	X	X	X	X
In4: Risks of	Action	More action needed to	Impacts/disruption from	X	X	X		X	X	X	X	X

²⁰ MCA – Maritime and Coastguard Agency

CCRA17 risk	CCRA score	CCRA rationale	Potential for coverage in ARP reports	Sectors/organisations impacted									
				Road	Rail infrastructure	Airports	Light-houses MCA ²⁰	Ports	Water	Energy Generation	Electricity/gas distributors and transmitters	Communications	
sewer and surface water flooding due to heavy rainfall	required	deliver sustainable drainage systems, upgrade sewers where appropriate and tackle drivers increasing surface runoff (e.g. impermeable surfacing in urban areas).	sewer and surface water flooding										
In5: Risks to bridges and pipelines from high river flows and bank erosion	Research priority	More research needed on implications of projected changes in river flows on future risk of scour/erosion.	Outline actions being undertaken to understand risk	X	X							X	X
In6: Risks to transport networks from slope and embankment failure caused by heavy rainfall events	Action required	More action needed to locate and remediate embankments and cuttings at risk of failure.	Policies or measures to incorporation into asset design	X	X								
In7: Risks to hydroelectric generation from low or high river flows	Watching brief	Monitor impacts and be ready to adapt operations given observed impacts.	Measures to monitor impacts/actions taken							X			
In8: Risks to subterranean and surface infrastructure from subsidence	Watching brief	Monitor changes in temperature and rainfall patterns to update assessments of subsidence risk.	Measures to monitor changes in temperature, rainfall patterns and update assessments of subsidence risk	X	X	X						X	X
In9: Risks to	Action	New policies needed to	Measures for taking a						X				

CCRA17 risk	CCRA score	CCRA rationale	Potential for coverage in ARP reports	Sectors/organisations impacted									
				Road	Rail infrastructure	Airports	Light-houses MCA ²⁰	Ports	Water	Energy Generation	Electricity/gas distributors and transmitters	Communications	
public water supplies from drought and low river flows	required	deliver more ambitious reductions in water consumption and establish strategic planning of new water-supply infrastructure. More action needed to put in place reforms of the water abstraction licencing regime.	longer term approach to water resource management										
In10: Risks to electricity generation from drought and low river flows	Watching brief	Continue to monitor risks including as a result of deploying carbon capture and storage. Ensure appropriate siting of new infrastructure and use of cooling technologies	Review evidence for risks, outline measures being taken to monitor long term risks and adaptation							X			
In11: Risks to energy, transport and digital infrastructure from high winds and lightning	Research priority	More research needed on the implications of increased vegetation growth rates on future risks of damage from falling trees during storms.	Measures for monitoring disruption by wind and lightening and adaptation actions taken on vegetation management	X	X	X	X	X			X		X
In12: Risks to offshore infrastructure from storms and high waves	Research priority	More research needed to assess climate risks to existing and planned off-shore renewable energy infrastructure.	Measures for monitoring disruption by high waves and storms, adaptation actions taken				X	X		X	X		
In13: Risks to transport, digital and energy	Sustain current action	Continue current actions to reduce risks, maintenance and renewals of	Most significant for rail. Measures for continued monitoring of impacts and	X	X	X				X	X		X

CCRA17 risk	CCRA score	CCRA rationale	Potential for coverage in ARP reports	Sectors/organisations impacted								
				Road	Rail infrastructure	Airports	Light-houses MCA ²⁰	Ports	Water	Energy Generation	Electricity/gas distributors and transmitters	Communications
infrastructure from extreme heat		infrastructure networks.	actions taken									
In14: Potential benefits to water, transport, digital and energy infrastructure from reduced frequency of extreme cold events	Sustain current action	Continue current actions to reduce risks, including cold-weather planning and response.	Outline current actions on managing cold	X	X	X			X	X	X	X
BU5: Risks to business from reduced employee productivity, due to infrastructure disruption and higher temperatures in working environments	More Research needed	More research needed on disruption to ICT, power and transport infrastructure which prevents workers accessing premises or working remotely, and on impacts of higher temperatures on employee safety and productivity.	Measures for recording failures which result in implications for workforce productivity	X	X	X					X	X
PB2: Risks to passengers from high temperatures on public transport	Sustain current action	The action underway in London to assess and manage risks of overheating on public transport should continue, together with similar action as needed elsewhere in the UK.	Outline current measures undertaken to address this risk		X							

CCRA17 risk	CCRA score	CCRA rationale	Potential for coverage in ARP reports	Sectors/organisations impacted								
				Road	Rail infrastructure	Airports	Light-houses MCA ²⁰	Ports	Water	Energy Generation	Electricity/gas distributors and transmitters	Communications
PB13: Risks to health from poor water quality	Sustain current action	Current policies and mechanisms to assess and manage risks to water quality in the public water supply should continue to be implemented.	Outline current measures undertaken to address this risk						X			
PB14: Risk of household water supply interruptions	Sustain current action	Policies are in place to safeguard the continuity of public water supplies during droughts and from burst pipes in cold weather. These risks should be kept under review to make sure long-term risks continue to be managed appropriately.	Outline current measures undertaken to address this risk						X			

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
Ne1: Risks to species and	Action required	More action needed to reduce existing pressures,	Assessment of implications for conservation objectives	X	X	X	X	X	X	

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
habitats due to inability to respond to changing climatic conditions		<p>improve size and condition of habitats, restore degraded ecosystems, and deliver coherent ecological networks.</p> <p>More action needed to factor climate change into conservation planning and site management.</p> <p>More action needed to reduce existing pressures, improve size and condition of habitats, restore degraded ecosystems, and deliver coherent ecological networks.</p> <p>More action needed to factor climate change into conservation planning and site management.</p>	and site management (and fishery management) from changes in species populations and compositions							
Ne2: Opportunities from new species' colonisation	Action required	<p>More action needed to deliver coherent ecological networks.</p> <p>More action needed to factor climate change into conservation planning and site management.</p>	Outline opportunities to be realised from new species' colonisation	X	X	X	X	X	X	
Ne3: Risks and opportunities from changes in	Research Priority	More research needed into developing integrated land use planning based upon	Measures for monitoring trends and implications on forest production,			X	X	X	X	

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
agricultural and forestry productivity and land suitability		changing suitability. More research needed on the nature and scale of changing land suitability and its impacts. More research needed into crop varieties, tree species and agricultural systems that are resilient to future climate change.	(agricultural productivity, and soil health) related to climate change.							
Ne4: Risks to soils from increased seasonal aridity and wetness	Action required	More action needed to reduce existing pressures on soils, increase uptake of soil conservation measures and restore degraded soils.	Measures for long-term monitoring of soil health, in terms of soil organic carbon levels, erosion rates and soil biota is also needed, particularly of carbon-rich soils, to address knowledge gaps of the magnitude of this risk and its geographical variations.			X	X	X	X	
Ne5: Risks to natural carbon stores and carbon sequestration	Action required	More action needed to restore degraded carbon stores, particularly peatlands. More research needed to account for climate change impacts on carbon stores in the UK GHG projections.	Reporting on actions taken to improve the condition of degraded soils, restore peat habitats and encourage the wider uptake of soil conservation. Outline any actions taken to diversify the existing forest stock and to better			X	X	X	X	

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
			understand provenances that are drought-tolerant. Outline work done to consider the nature of the planting stock (species and genetics) when restocking woodlands to ensure carbon sequestration function is maintained							
Ne6: Risks to agriculture and wildlife from water scarcity and flooding	Action required	More action needed to reduce pollution and over-abstraction and improve the ecological condition of water bodies Ensure decisions on use of water allow for necessary environmental flows and take account of climate change.	Report on actions taken to improve the condition of water bodies and to encourage the wider uptake of management practices that help to reduce the impacts of low and high flows			X	X	X	X	
Ne7: Risks to freshwater species from higher water temperatures	Research priority	More research needed on scale of risk and effectiveness of adaptation measures.	Outline any work done to understand implications for freshwater species from higher temperatures.	X	X	X	X		X	
Ne8: Risks of land management practices exacerbating flood risk	Action required	Deliver wider uptake of natural flood management in high-risk catchments especially where there are likely to be carbon storage, water quality and biodiversity benefits.	Outline assessment of land management practices which may exacerbate downstream flood risk			X	X	X	X	

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
		<p>Implement catchment-scale planning for flood risk management.</p> <p>Review potential for adverse flood risk outcomes from land management subsidies.</p>								
Ne9: Risks to agriculture, forestry, landscapes and wildlife from pests, pathogens and invasive species	Sustain current action	<p>Continue to implement surveillance and bio-security measures.</p> <p>Continue current research efforts into the impact of climate change on emerging and long-term risks.</p> <p>Develop cross-sectoral initiatives for risk assessment and contingency planning.</p>	<p>Outline work undertaken to understand long term climate risks/ impacts from pests, pathogens and invasive species, implement surveillance and bio-security measures</p>	X	X	X	X	X	X	
Ne10: Risks to agriculture, forestry, wildlife and heritage from change in frequency and/or magnitude of extreme weather and wildfire events	Sustain current action	<p>Continue to build resilience of ecosystems to drought, flood and fire.</p> <p>Continue current efforts to manage and respond to wildfires.</p> <p>Monitor heat stress impacts on livestock.</p> <p>Continue current efforts to manage impacts of high winds on forestry.</p>	<p>Measures for monitoring impacts of severe weather/wildfires and report on actions taken</p>			X	X	X	X	

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
		<p>Continue to build resilience of ecosystems to drought, flood and fire.</p> <p>Continue current efforts to manage and respond to wildfires.</p> <p>Monitor heat stress impacts on livestock.</p> <p>Continue current efforts to manage impacts of high winds on forestry.</p>								
Ne11: Risks to aquifers, agricultural land and freshwater habitats from salt water intrusion	Sustain current action	<p>Continue actions to manage salinity risks to freshwater habitats.</p> <p>Monitor impacts on aquifers to assess whether risks are increasing.</p>	Monitor impacts on aquifers to assess whether risks are increasing.			X	X		X	
Ne12: Risks to habitats and heritage in the coastal zone from sea-level rise; and loss of natural flood protection	Action required	More action needed to deliver managed realignment of coastlines and create compensatory habitat.	<p>Outline monitoring of habitat change and sediment budgets for all the UK coasts to better understand differential response and resilience to SLR (and extreme wave and storm events).</p> <p>Outline understanding of the resilience of coastal habitats/landforms to</p>			X	X		X	

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
			present and future SLR rates together with identification of potential thresholds for major loss under different adaptation options							
Ne13: Risks to, and opportunities for, marine species, fisheries and marine heritage from ocean acidification and higher water temperatures	Research priority	More research needed to better understand magnitude of risk to marine ecosystems and heritage.	<p>Outline efforts to understand potential impacts of climate change on marine biodiversity and fisheries, especially changes in acidity, dissolved oxygen content, temperature and ocean stratification.</p> <p>Outline efforts to understand the social and economic implications for the UK fishing industry of changes in the distribution and abundance of fish stocks. Outline whether adaptation requires any additional or alternative actions to be taken</p>	X	X	X	X		X	
Ne14: Risks and opportunities from changes in landscape character	Watching brief	Monitor impacts and ensure climate change is accounted for in future landscape character assessments.	Outline efforts to monitor the use and effectiveness of tools such as the National Character Area profiles to help people and decision-makers better understand and visualise			X	X	X	X	

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
			changes in landscape as a direct and indirect result of climate change							
PB1: Risks to health and wellbeing from high temperatures	Action required	There are approximately 2,000 heat-related deaths per year across the UK. The risk to health is likely to increase in the future as temperatures rise. Around 20% of homes in England overheat even in the current climate. There is some evidence that the risks of overheating in hospitals, care homes, schools and offices will increase in the future. There is more evidence for England than for the devolved administrations. Policies do not exist at present to adapt homes or other buildings to higher temperatures.	Outline efforts to understand impacts on health (and wellbeing) from NHS building temperatures							X
PB3: Opportunities for increased outdoor activities from higher temperatures	Watching brief	Leisure and other activities are likely to be taken up autonomously by people as the climate warms.	Outline ongoing work to address this opportunity [and perceived benefits]			X		X		X

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
PB4: Potential benefits to health and wellbeing from reduced cold	Action required	<p>Currently there are between 35,800 and 49,700 cold-related deaths per year across the UK. Climate change alone is projected to reduce the health risks from cold, but the number of cold-related deaths is projected to decline only slightly</p> <p>due to the effects of an ageing population increasing the number of vulnerable people at risk. Further measures need to be taken in the next 5 years to tackle large numbers of cold homes and reduce cold effects on health, even with climate warming.</p>	Outline efforts taken to better understand effect of current policies on cold-related deaths							X
PB5: Risks to people, communities and buildings from flooding	Action required	Under the most optimistic flood defence investment scenario for England, the level of risk declines but remains high by mid-century, and future spending plans for the devolved administrations are unclear. Increases in flood risk cannot be avoided under a 4°C climate scenario even if the most ambitious adaptation pathway considered in this report	Outline work done to increase capacity at community level health systems				X			X

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
		were in place.								
PB6: Risks to the viability of coastal communities from sea level rise	Research priority	Research is needed to better characterise the impacts from sea level rise on coastal communities, thresholds for viability, and what steps should be taken to engage and support affected communities.	Outline long term implications from SLR and incorporate actions within long term plans	X	X	X	X	X		
PB7: Risks to building fabric from moisture, wind and driving rain	Research priority	More research is needed to better determine the future level of risk and what adaptation further steps might be appropriate.	Outline work to understand implications for NHS buildings from driving rain, mould, and damp							X
PB8: Risks to culturally valued structures and the wider historic environment	Research priority	Climate-related hazards damage historic structures and sites now, but there is lack of information on the scale of current and future risk, including for historic urban green spaces and gardens as well as structures.	Outline work to better quantify the current and future risks to the historic built environment from climate change, and assess appropriate measures to put in place			X				
PB9: Risks to health and social care delivery from extreme weather	Action required	There is some evidence of inconsistent planning for extreme weather across the UK. Surveys indicate that	Outline approaches to integrate management of extreme weather within health and social care							X

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
		many Clinical Commissioning Groups, NHS providers, GPs and Local Authorities may not have appropriate plans in place.	systems							
PB10: Risks to health from changes in air quality	Research priority	More research is needed to understand the influence of climate change on ground level ozone and other outdoor air pollutants (especially particulates), and how climate and other factors (behaviour) affect indoor air quality.	Outline how changes to climate other than increasing temperatures, such as changing wind patterns and blocking episodes, could impact those living with chronic respiratory conditions. Outline how implications are being managed							X
PB11: Risks to health from vector-borne pathogens	Research priority	Further work is needed to improve the monitoring and surveillance of vector species and related infectious disease, and to assess the extent to which current efforts are focussed on those infections that pose the biggest long-term risks.	Outline efforts for monitoring and surveillance of emerging infections, vectors and pathogens due to climate change.							X
PB12: Risk of food borne disease cases and outbreaks	Watching brief	Regulations in place to monitor and control food-related hazards should be kept under review.	Continue work horizon scanning and ongoing monitoring of any implications from climate change							X

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
Bu1: Risks to business sites from flooding	Action required	More effort is needed in England to address flood risks and inform businesses of their current and future exposure and what steps they might take to limit impacts.	Outline actions taken by relevant (where linked to bodies' responsibilities) sector businesses to address flood risk	X	X	X	X	X	X	X
Bu2: Risks to business from loss of coastal locations and infrastructure	Research priority	More effort is needed in England to address flood risks and inform businesses of their current and future exposure and what steps they might take to limit impacts.	Outline actions taken by relevant (where linked to bodies' responsibilities) sector businesses to address risks from loss of coastal locations	X	X	X	X	x	X	X
Bu6: Risks to business from disruption to supply chains and distribution networks	Sustain current action	Sustain and monitor the uptake of existing guidance which helps businesses improve the resilience of supply chains and distribution networks, particularly at the international level.	Outline current measures to address climate change risks to supply chains		X					
It1: Risks from weather-related shocks to international food production and trade	Action required	At present there is no co-ordinated national approach to ensure the resilience of the UK food system. Coordinated approaches require broad participation across policy, industry and	Measures for recording disruptions caused by weather related shocks to fisheries trade		X					

CCRA17 Risks	Category	CCRA scoring rationale	Potential for coverage in Adaptation Reporting Power reports	Sectors/organisations impacted						
				Marine Management Organisation	Sea Fish Industry Authority	Heritage bodies	Environment Agency	Forestry Commission	Natural England	Sustainable Development Unit for NHS and health sector
		research.								
It2: Imported food safety risks	Research priority	There is a gap in surveillance systems to monitor food safety at source and through complex international supply chains.	Measures for record measures taken to improve understanding of this risk to fish stocks		X					
It7: Opportunities from changes in international trade routes	Watching brief	Potential changes in trade routes are already being assessed and the issue should continue to be monitored.	Outline any measures taken to take advantages to new opportunities for trade		X					