

# ICE submission to Defra consultation on the Fourth Round of the Climate Adaptation Reporting Power (ARP)

April 2023

## Introduction

Established in 1818 and with over 95,000 members worldwide, the Institution of Civil Engineers (ICE) exists to deliver insights on infrastructure for societal benefit, using the professional engineering knowledge of our global membership.

This response has been informed by the ICE's policy position statement on how can the UK's infrastructure be made more climate resilient.

This submission is based on the following areas of focus set out by Defra:

- **truncating the reporting window** so that this and future rounds align with the timetable for the UK Climate Change Risk Assessment, while streamlining and standardising the requirement on existing reporting organisations;
- **whether or not the process should remain voluntary or be made mandatory;**
- **providing more guidance** on issues such as risk interdependencies.

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## Summary

Climate change-related disasters across the world have focused attention on the need for climate-adaptive and resilient infrastructure. Further quantitative assessment is essential to help us understand risks better.

Even with progress towards net zero carbon emissions targets, climate change is happening and will continue to develop.

The UK's infrastructure is facing pressures that, for the most part, it was not designed to withstand.

Without adaptation and improved emergency response to build in greater resilience, our infrastructure will lose its value, damage repairs will be costly and increasingly frequent, and infrastructure users will face high levels of disruption.

The ICE is ready to support Defra in promoting the benefits of ARP reporting in developing stronger resilience and adaptation measures for infrastructure owners and operators.

## 1. Do you agree with the objectives and principles for this round of reporting? Please give your reasons as necessary.

Yes – the ICE is in agreement with the primary objectives and principles for ARP4.

The ARP is key to how the adaptation policy cycle functions and provides a unique source for understanding the UK's infrastructure-related climate risks. To effectively plan for future climate risks to the UK's infrastructure, action must be prioritised on its most vulnerable elements and the ARP enables mitigation against the threatening impacts of climate change.

## 5. Should ARP reporting remain voluntary or be made mandatory in round four? Please give your reasons as necessary.

There is currently a prominent gap in understanding of physical climate risks to our infrastructure. This level of understanding also varies depending on the owners of specific infrastructure assets.

The Climate Change Committee last year found that 20% of invited organisations in the ARP process did not submit a voluntary return. The CCC also found that around half of the organisations that were invited but did not report had reported in previous rounds, "indicating that their engagement with the ARP process has gone down."<sup>1</sup> Essentially, this means the climate resilience of some of the UK's crucial infrastructure is not known, and this is creating gaps in risk coverage.

Furthermore, there is a lack of accurate record-keeping which makes it harder to understand asset condition data. As indicated in the National Infrastructure Commission's 2020 report on the need for resilient infrastructure systems, infrastructure operators should proactively adapt, and where necessary transform, their infrastructure systems or services over time to enhance resilience.<sup>2</sup>

Common existing understanding of climate change and its potential negative impacts on infrastructure is still underdeveloped. Many of the current critical infrastructure assets have been designed based on historical needs and predictions, now outdated by the evolving climate challenges facing us. Asset classification should be reconsidered based on these future needs. Some organisations, such as Network Rail, have taken steps to address threats to assets by understanding how the International Standards Organization's (ISO) document 14090, the world's first international standard on climate adaptation, is relevant to its preparations to address climate impacts and improve its existing assets.<sup>3</sup> Network Rail has published Weather Resilience and Climate Change Adaptation Plans for all its routes, outlining climate hazards, vulnerability assessments, and measures to respond to these.<sup>4</sup>

In general across the sector, under-resourcing and budget constraints limiting the funding available to asset owners for maintenance and adaptation measures have led to a reactive and short-term approach, fixed on the lowest costs. It is imperative first to understand how to better maintain the condition of existing assets, to improve how their resilience can be improved in the future.

Knowledge sharing between the engineering community can play a critical role in providing this information. During system stress events, there must be sufficient capacity to meet these demands. Further quantitative assessment can help us understand risks better.

Making the ARP mandatory would ensure infrastructure owners and operators can understand the impact of failure at both a quantitative and qualitative level. Currently, adaptation reporting is mainly qualitative, which makes it difficult for the

<sup>1</sup> Climate Change Committee (2022) [Understanding climate risks to UK infrastructure: Evaluation of the third round of the Adaptation Reporting Power](#)

<sup>2</sup> National Infrastructure Commission (2020) [Anticipate, React, Recover: Resilient Infrastructure Systems](#)

<sup>3</sup> International Standards Organization (2019) [ISO 14090:2019 – Adaptation to Climate Change – Principles, Requirements and Guidelines](#)

<sup>4</sup> Network Rail (2017) [Weather Resilience and Climate Change Adaptation Plans](#)

government and regulators to compare the degree of preparedness of different infrastructure owners and operators and focus on the less resilient.

Mandating quantitative assessment, including financial quantification of expected damages/losses or impacts in a 'do nothing' scenario, would focus resilience efforts on the most material risks and ensure a systems-thinking approach to infrastructure is embedded in policy development and infrastructure planning.

Only with a complete picture of how the UK's systems are linked can the government effectively plan for the coming challenges. The government will not get this complete picture until the ARP process becomes mandatory.

The ICE recognises Defra's proposal for the closing date for the next cycle of reporting to be brought forward to late 2024, from 2026, in order to enable better alignment to inform the UK Climate Change Risk Assessment and National Adaptation Programme cycles. The ICE agrees with this approach, not least as it means that ARP reports will be available in time to inform these statutory assessments.

Realistically, mandating the ARP by the end of 2024 with the current limited amount of guidance on offer to organisations is a difficult prospect. But looking ahead to ARP5, it is clear that the government and infrastructure owners and operators need to get serious on resilience and adaptation reporting. If the government can give an indication now that ARP5 will be mandatory – and set out a clear narrative for why, focusing on the fact that the UK is not currently prepared for climate change – it is likely more organisations will start to report in ARP4 so they can familiarise themselves with the process.

In the longer term for ARP5, the government should use its power under the UK Climate Change Act to make ARP reporting mandatory.

## 6. Should the position be reviewed again ahead of round five? Please give your reasons as necessary.

Yes. The reasons for this have been highlighted in the answer above.

## 8. What else can government do to encourage additional coverage in sectors where gaps have been identified? How should we determine proportionality in these sectors?

The ICE recommends that the ARP reporting window is aligned with the timetable for the UK Climate Change Risk Assessment (CCRA) in this and future rounds. This will help to create a more holistic overview of climate risks and fill in coverage gaps and make more organisations feel inclined to submit reports if they feel like it will have a genuine impact on national resilience and adaptation planning.

Seeing as the UK government is considering the approach to the fourth CCRA, with the aim to scale up the level of ambition compared to previous CCRA's,<sup>5</sup> it is even more important for ARP reporting to align with the timetable for the next CCRA to ensure that national climate risk planning is as effective as possible and learns from the mistakes of previous reporting rounds.<sup>6</sup>

However, organisations require further support with ARP reporting, particularly those organisations who have not previously submitted reports to ensure that there is not a decreasing pool of information. As highlighted earlier, the CCC found that 20% of organisations invited to submit reports did not submit reports, therefore it is clear that these coverage gaps need to be closed to develop more holistic nationwide assessments of climate risk.<sup>7</sup>

<sup>5</sup> HM Government (2022) [UK Climate Change Risk Assessment 2022](#)

<sup>6</sup> Climate Change Committee (2022) [Understanding climate risks to UK infrastructure: Evaluation of the third round of the Adaptation Reporting Power](#)

<sup>7</sup> Ibid.

ARP4 is an opportunity to get more detailed information from organisations on the costs of reporting, the costs of adaptation action and the benefits of taking action now. This will both inform and demonstrate the positive impacts of adaptation reporting for organisations.

## 14. How can reporting by regulators best reflect their important oversight role?

It is not clear how the regulatory framework which sets out the parameters for funding infrastructure investments values resilience. Regulators themselves should be playing a key role in furthering national adaptation and resilience.

The Joint Committee on the National Security Strategy made a recommendation for cross-sectoral standards for resilience to be introduced to provide a basis for more effective future planning and investment.<sup>8</sup> Any regulatory framework would need to reflect these to ensure appropriate incentives are in place, and for standards implemented to guide investment across critical national infrastructure

All regulators should report on how they are updating regulatory approaches, in relation to adaptation and resilience, and how they are embedding adaptation into their regulatory frameworks to ensure that resilience efforts are focused on the most material risks.

## 17. Would a requirement to report on the detail of interdependent risks help to drive progress in assessing and managing these? Please give any supporting reasons.

Yes.

It is important for the ARP to become mandatory to ensure organisations are taking the appropriate necessary action to improve future resilience against the impacts of climate change. In addition to this, reporting on interdependent risks would provide more data that would enable organisations to understand better how they can take action against these risks.

However, more guidance will be needed on how to measure and quantify resilience for infrastructure owners and operators who will need to report on their assets.

To ensure that this information regarding asset status is collated, shared and fairly made available to interested parties, Defra, under the remit of the ARP, should have the authority to oversee standards of protection for key infrastructure that would be relevant at a systems level and to address concerns around data-sharing by providing equal access. This would ensure that owners and operators have the information they need on the level of resilience of infrastructure their assets depend on to support investment decisions. Furthermore, this would also raise attention to the benefits of resilience for asset owners, who often focus on short term cost benefit analysis (CBA).

A 2020 Vivid Economics report emphasises that the conventional cost-benefit analysis (CBA) approach to project appraisal in the UK inadvertently disadvantages those for whom the environment and its corresponding services are at stake.<sup>9</sup> Even when there are well-known adverse environmental repercussions relating to projects, challenges expressing these changes in monetary terms and lack of valuation evidence can result in their omission from CBA, despite what is outlined in the HM Treasury Green Book.<sup>10</sup> A requirement to report on the detail of interdependent risks would therefore help to improve future resilience.

<sup>8</sup> Joint Committee on the National Security Strategy (2023) [Readiness for Storms Ahead? Critical National Infrastructure in an Age of Climate Change: Government Response to the Committee's First Report](#)

<sup>9</sup> Vivid Economics for WWF UK (2020) [Keeping Us Competitive: A UK Investment Strategy for Net Zero](#)

<sup>10</sup> HM Treasury (2022) [The Green Book](#)

## 18. How can government encourage cross-sector working and collaboration on interdependencies as part of the adaptation reporting process?

ARP guidance should include more guidance for organisations on what interdependencies are and how they need to be addressed. The new National Resilience Framework could provide more detailed information around this.

The National Infrastructure Commission (NIC) has previously recommended that individual operators develop long-term resilience strategies which take these interdependencies into account.<sup>11</sup> The government has agreed to take this forward in its National Resilience Framework – however, no set timeline has been provided for this.

While climate change is taken into account in the design of specific infrastructure assets, it is very much only on a project-by-project basis, without a proper resilience framework.

Climate resilience and future adaptation must be considered and prioritised during the development of policy and legislation by the government. Asset owners and policymakers need to take a long-term and systems-wide perspective that considers risks and interdependencies from assets in other sectors, and ensure that they build in sufficient flexibility for infrastructure to adapt to potential future impacts which haven't yet been predicted.

## 21. What supporting guidance would be useful to minimise reporting burdens and ensure that reports are generating useful insights?

Templates to follow with a clear explanation of how the ARP reporting process works would have the dual purpose of both removing burdens on the reporting organization but also ensuring the reports provide relevant insight that Defra can use in developing plans to mitigate future climate risks.

These would be particularly beneficial for organisations submitting reports for the first time.

## 29. What advice, guidance and incentives do Local Authorities need to help develop their climate risk management practices?

Local government has a key role to play in supporting climate-adaptive infrastructure. It is important that long-term strategic and local development plans focus on adaptation measures and that local government leadership makes this an organisational priority.

The NIC has called for regulators to engage more with devolved administrations, Metro Mayors, local government, utility companies, consumer groups, elected representatives and members of the public – and take their views into account in strategic decision-making, including investment.<sup>12</sup> Communities must be placed at the heart of the decisions that shape the future of their local areas.

Changes needed to the regulatory system to support resilience and climate-adaptive infrastructure should also include placing a statutory responsibility on local authorities to consider climate adaptation in the development and growth of their communities and local areas. Currently, it is not clear how the regulatory framework which sets out the parameters for funding infrastructure investments values resilience. The local plan process works to track and analyse feedback from local people in developing a holistic overview of what the future of their area looks like and provides a framework for housing needs and other economic, social and environmental priorities.

Adaptation and resilience must be a key consideration for councils and communities shaping future local plans. In particular, climate policies relating to furthering resilience and adaptation must be embedded within policy narratives of

<sup>11</sup> National Infrastructure Commission (2020) [Anticipate, React, Recover: Resilient Infrastructure Systems](#)

<sup>12</sup> National Infrastructure Commission (2019) Strategic Investment and Public Confidence

local plans. This can be mandated by placing a statutory responsibility on local authorities to consider climate adaptation in the development and growth of their communities and local areas within their local plans. Future planning reforms should include requiring all planning bodies to ensure that all new and existing infrastructure developments are climate-adaptive.

Some local authorities have already started to consider climate resilience and adaptation in their local planning, such as Bristol City Council. The council has developed a Keep Bristol Cool mapping tool, including a Heat Vulnerability Index, for council officers and other policymakers and practitioners in the area, such as urban designers, landscape architects or emergency planners, to explore how current heat vulnerability varies across different neighbourhoods and how climate change may increase temperatures in the future.<sup>13</sup> The tool gives insights into how urban heat risks vary across the city and within communities and identifies the areas where high temperatures and heatwaves could have the biggest impact on people's health and wellbeing.

Significant changes to the National Planning Policy Framework (NPPF) are needed, including providing local planning authorities with the power to prioritise the Climate Change Act in planning policy over developer viability, and removing competition between climate mitigation and adaptation criteria and other planning contributions.

A legal duty that ties planning to net zero goals and climate adaptation should be considered to ensure that energy infrastructure is fit for purpose relating to both climate mitigation and adaptation. Local planning authorities should set out clear expectations for the information they require from applicants on climate impacts and ensure that this information is accessible to all. No new development should be permitted that exacerbates existing climate risks.

Local governments must be able to assume accountability for the resilience of the infrastructure within the communities they serve. This would be achieved through providing local governments with a statutory responsibility to consider climate adaptation in the development and growth of their communities and local areas through Local Plans. Local planning authorities should set out clear expectations for the information they require from applicants on climate impacts and ensure that this information is accessible to all.

Government and Defra can assist local authorities through working together, alongside organisations such as the Environment Agency, to provide guidelines on climate risk management best practice.

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<sup>13</sup> Bristol City Council (2023) [Keep Bristol Cool](#)