

DETAILS AND PROJECT SPECIFICATION

DESK STUDY: INTERNATIONAL RISKS OF CLIMATE CHANGE TO THE UK

Competition Code	
Date for return of tenders	
Address for tender submission (the Competition Code must be shown on the email title and the tender, otherwise your tender may not be accepted)	
Number of copies required	
Contact for information relating to this project specification	
Proposed ownership of intellectual property	Defra
Proposed start date	April 2012
Proposed end date	June 2012

Background

The global climate is changing, with global average temperatures projected to continue rising over the coming century, leading to continued shifts in weather patterns, rising sea levels and increased frequency and intensity of extreme weather events. Current and historic green house gas emissions mean that a certain amount of warming is inevitable. Mitigation efforts will help to limit the rise in temperatures and the potential scale of any impacts, but some increases are now unavoidable.

The UK Climate Change Act 2008 makes the UK the first country in the world to have a legally binding long term framework to cut GHG emissions and a framework for building the UK's ability to adapt to a changing climate. The Climate Change Act 2008 requires the Government to:

- To carry out an assessment of the risks and opportunities for the UK from the impacts of climate change (Climate Change Risk assessment (CCRA), every five years; and
- To develop a National Adaptation Programme (NAP) setting out the Government's proposals and policies to address the risks identified in the CCRA.

The Climate Change Risk Assessment (CCRA) 2012, was published in January 2012, and assessed (and where possible monitored) the main risks and opportunities in the UK from Climate Change.

The National Adaptation programme (NAP), which is due for publication in 2013, will build on the CCRA and further economic analysis, and set out Government's adaptation policies and actions to address the risks identified under 5 key themes: Agriculture & Forestry, Business, Health & Wellbeing, Buildings & Infrastructure and Natural Environment.

Impacts of climate change for the UK: Global vs. Domestic

The UK CCRA 2012 provided an overview and assessment of the risks of a changing climate in the UK, in and across various sectors. The analysis did not cover, in any detail, the impacts of climate change to the UK from impacts abroad.

The National Adaptation Programme, however, will need to take impacts of climate change globally into account and consider them alongside domestic impacts, identify actions and policies needed to address these risks.

Analysis to date indicates strongly that climate change, whether through direct impacts domestically or indirectly through impacts globally, does not pose any new threats to the UK, but is primarily a 'risk multiplier'. The UK is already vulnerable to global climatic events; through for example, disruptions to supply chains, traded goods and affects on international relations. Climate change is projected to increase the frequency, magnitude and severity of these risk and impact. However, at present, there is very little information available on the scale and likelihood of such changes; but, it is likely that these impacts may pose more of a threat to the UK than impacts domestically.

Despite the level of uncertainties about magnitude of impacts and timescales involved, climate change impacts overseas are expected to affect the UK in diverse ways. In some instances, climate change may be a strong driver of the impact (for example, impacts on transport networks due to sea level rise), in others, it may simply be a small contributor to an increasing risk, and so impact, brought about by another much stronger driver (for example, increase in pressure on natural resources due to population growth). The timescales considered also have a significant impact on the contribution climate change will make to the magnitude of a risk; for example, up to the 2040s the impacts of climate change on the UK, from international impacts, are considered unlikely to be significant, but increase significantly beyond this timescale up to 2100.

Global impacts of climate change on the UK

Analysis to date indicates that climate change impacts globally are expected to have implications for the UK in relation to:

- UK's Diplomacy, foreign policy and Security;
- International infrastructure impacting on availability of energy, resources, commodities, manufacturing and supply chains;
- Finance and trade; and
- Human health and social values (including Migration patterns and income distribution)

There are also potentially opportunities for the UK, for example for UK Businesses providing technical solutions such as low-carbon technologies and coastal engineering, and for the finance and insurance industries.

In developing the NAP, it is important to understand how these key UK sectors and areas will be affected as the world experiences changes in temperature, extreme weather, sea level rise and precipitation from climate change in the decades ahead.

The HMG report 'Climate Resilient Infrastructure: Preparing for a Changing Climate' published in 2011, highlighted the need for further consideration of how international impacts of climate change may affect natural infrastructure. It suggested that, based on the findings from the Foresight IDCC study, consideration should be given to whether further work is needed to examine how climate change impacts globally may affect infrastructure service delivery, supply chains and access to resources.

Better understanding of the main risks and opportunities, and the relative contribution from climate change, are essential in supporting better decision making on current and future UK foreign and domestic policies, especially those which have implications in 20 to 30 years and beyond timescales, and will help ensure more sustainable action is taken to increase the resilience of the UK.

To support the development of the National Adaptation programme, and in that context to also take forward the recommendations in the Climate Resilient Infrastructure Report, Defra wishes to commission a desk study to collate, analyse and prioritise the risks to the UK from impacts of climate change abroad (up to 2020s, 2050s and 2080s).

This desk based study should:

- **Identify, and then focus on, risks and opportunities where climate change is a significant driver for global risks to the UK, and include an assessment of the relative significance of each over 3 timescales (up to the 2020s, 2050s and 2080s).**
- **Evaluate the relative importance of the global risks against the main domestic risks identified in the CCRA over the 3 time periods.**
- **To help support development of adaptation policies and actions, also include an assessment of current UK responses to extreme climate events abroad, focusing on weather related events which are projected to increase in magnitude and frequency as a result of climate change. An evaluation of the effectiveness of current approaches to managing these impacts and any lessons learnt/new approaches developed should also be included.**

Detailed Requirements

The proposal should address the following:

1. Risks:

- An overview of the evidence in published journals, Government funded research reports and Government Policy publications relating to international risks of climate change to provide a summary of implications, over the 3 time periods, for:
 - UK's diplomacy and foreign policy and national security (cross cutting);
 - Human health and social values in the UK (CCRA theme: Health & Wellbeing);
 - International infrastructure leading to consequences for the UK economy (CCRA theme: Buildings & Infrastructure, Agriculture & Forestry, Natural Environment and Business); and
 - UK finance and trade (CCRA Theme: Business).

The analysis should build on – but not duplicate – the outputs from the Foresight IDCC Report.

- Based on the key impacts identified above, develop a high level approach to allow an evaluation (semi-quantitative analysis) of:

- The relative contribution of climate change to the risks within each area (and theme) and separately to the UK as a whole;
- Ranking of the risks (from high to low) to identify the risks where climate change is a significant contributor to the magnitude and scale of the risk (vs. other drivers).

For some risks, and in some sectors, such as impacts on infrastructure and supply chains, a more quantitative assessment should be possible, based on previous analysis. For others, such as impacts on diplomacy and foreign policy, where quantitative information will be limited or lacking, analysis should be based on available data and expert judgement.

Ranking of the risks should be based on the contribution of climate change to the risk, and not the overall magnitude of the risk to the UK, and will need to be primarily based on expert judgement, but should be based on specific and appropriate criteria and consistent methodology/approach.

- An assessment of the relative magnitude of the risk posed to the UK from international impacts of climate change vs. domestic impacts, as identified in the CCRA.

Focus should be on the top 10 domestic and international risks identified, and providing a narrative/steer on the risks to the UK from climate change, disregarding whether the impacts are directly on the UK or indirectly through impacts abroad. The question to address is 'Are impacts abroad going to pose more of a threat to the UK than impacts domestically?'

In the short timescale of this project, it will not be possible to develop a robust and systematic methodology to rank and evaluate the main risks to the UK. An approach along the lines of the National Security Strategy, based on information available, and expert opinion should be utilised, unless another methodology can be shown to be more effective. Criteria and framework for the evaluation should be agreed with Defra before the analysis is taken forward.

2. Opportunities:

- An overview of the evidence in published journals, Government funded research reports and Government Policy publications relating to opportunities for the UK from global impacts of climate change, for business and finance sectors and others.

The analysis should build on – but not duplicate – the outputs from the Foresight IDCC Report.

3. Responses to current extreme weather events: what can we learn?

UK is already exposed to global climatic events, affecting prices of imported commodities, energy and cost of foreign aid. Global markets and Governments manage these risks with

greater or less impacts on the UK depending on the scale and the issue. Consideration of current approaches to managing the main risks identified in this analysis, and their effectiveness in containing or minimising impacts on the UK, could help support decisions on future strategies to manage these risks as their frequency or magnitude increases due to climate change.

- Brief case studies should be carried out on 4 – 6 recent global climatic events with significant implications for the UK and a qualitative narrative provided. Key areas to consider are the impacts on different UK sectors, and the response by the UK (Government, markets, businesses).

4. *Recommendations for future work:*

- Make recommendation on key areas where further analysis should be taken forward to help support developing of the UK Governments National Adaptation Programme, including to examine how climate change impacts globally may affect infrastructure service delivery, supply chains and access to resources as follows:
 - Short term analysis which could support current round of the NAP; and
 - Longer term research and analysis needed to take forward action for the second round of the Climate Change Risk Assessment (CCRA2) and NAP2.

Applicants should consider some useful recent sources of information:

- The Foresight report on the international dimensions of climate change:
(<http://www.bis.gov.uk/foresight/our-work/projects/current-projects/international-dimensions-of-climate-change>)
- The Climate Resilient Infrastructure: Preparing for a Changing Climate:
<http://www.defra.gov.uk/publications/files/pb13520-infrastructure-adaptation-supplementary.pdf>
- National Security Strategy – 2011:
http://interactive.cabinetoffice.gov.uk/documents/security/national_security_strategy.pdf
- Climate: Observations, Projections and Impacts:
<http://www.metoffice.gov.uk/media/pdf/t/r/uk.pdf>
- UK Climate Change Risk Assessment:
<http://randd.defra.gov.uk/Document.aspx?Document=TheUKCCRA2012EvidenceReport.pdf>
- UKTI Reports on Opportunities
- CSA's analysis on '**high impact low probability events**'.
- Adaptation Sub Committee analysis on highlighting the gaps of the CCRA in terms of international and indirect impacts.
- ACC Economics of Climate Resilience (ECR) on impacts of climate change on business and supply chains (details from Defra)

Output and Timetable

The outputs from the project should be a report to Defra written in plain English aimed at Government Policy makers. It should be structured into clear chapters to reflect the detailed requirements 1-4 above and contain a short (2 pages) executive summary.

Timetable

Deadline for bids	
Award contracts	
Start Date	April
Interim Report (outputs of desk study covering points 1 and 2 above)	June
Final Report	End July

Publication

Defra may wish to publish the final report but the primary aim of the analysis will be to inform and support development of policies for the NAP, and for identifying key gaps and analysis required to improve our understanding of key impacts of climate change internationally on the UK, and future adaptation programmes.