

## UKCP18 Demonstration Projects: A Call for Proposals

The UKCP18 project is looking to offer technical support to a number of prospective users of the updated climate projections to carry out a number of demonstration projects showing how the updated climate projections can be used in practice. As UKCP18 is a major upgrade to the national climate projections, projects need to demonstrate how to use the new information to carry out climate risk assessment studies that inform adaptation decision-making.

The aim is to develop the methodologies for using UKCP18 data products, to ensure that users are ready for them at the time of the launch in March 2018. Note that no data will be available before launch for these projects (other than dummy data if required).

Demonstration projects will be showcased at thematic workshops in late 2017 to promote wider discussions on the use of the UKCP18 data products. This document sets out the types of projects that the UKCP18 project is seeking to facilitate, the timeline for the projects and the expected outputs from the projects.

### Demonstration Project Aims

The primary aims of the demonstration projects are:

- To understand how to use UKCP18 project data products for climate risk assessment
- To inform guidance such that users are prepared for using the UKCP18 data products at launch
- To identify products in addition to the climate data that may be required to support decision-making.

### Selection Criteria

The demonstration projects will be facilitated by the UKCP18 project team, supplying bespoke information and advice to users for the duration of the UKCP18 project. The number of projects that can be supported will be limited by time and resources. Our aim is that the final suite of projects selected will between them cover the following criteria:

- **Audience** - will the project appeal to a wide range of users, e.g. data experts, policy specialists, sustainability professionals, etc.?
- **Novelty** - demonstrate the novelty of UKCP18 products and approach – see appendix;
- **Scalability** - can the project produce a national assessment of a risk or impact?;
- **Sectoral coverage** - does the project address a sector of interest, e.g. natural environment, infrastructure, business, local government;

- **CCRA Evidence Gaps** - does the project address any evidence gaps highlighted by the recent CCRA Evidence Report (see <https://www.theccc.org.uk/UK-climate-change-risk-assessment-2017/>)?;
- **Feasibility** - can the project be delivered in a useful timeframe?; and
- **Complexity** - does the project build capacity for applying new UKCP18 data to impact analysis that will support national scale adaptation work e.g.to contribute to CCRA3? Does the project help inform the messaging around the new projections and how it can be further translated to bespoke audiences?

### **Timeline (approximate and subject to change)**

As climate model data will not be available until Spring 2018 when it will be released to all users, the projects will need to focus on the methodology and deal with data products conceptually, i.e. understand how the project could be carried out hypothetically – possibly using dummy data. Projects will report before launch but will be in a good position to apply those methodologies to the available data after launch.

Jan 2017	Call for project proposals
End-Feb 2017	Selection of projects
Start-Apr 2017	Dummy data available if required
Mid-Oct 2017	Deadline for demonstration projects write-up
Nov-Dec 2017	Thematic workshops
End-March 2018	UKCP18 project climate projections launched

### **Expected Outputs**

A short project report following a template provided by the UKCP Project Team will be produced and published alongside the UKCP18 project material. The report will include the following details:

- The specific decision for which climate information is needed
- The information that would be required
- Details of how the information would be applied
- An evaluation of the benefit of the information

The projects will be presented at thematic workshops late 2017. The projects will also provide feedback on the data products as well as advise on the support or guidance that should be developed to help others use them.

## **Project Proposals**

Please send us an abstract (500 words max.) for each of your proposed demonstration projects to [ukcpproject@metoffice.gov.uk](mailto:ukcpproject@metoffice.gov.uk) describing how it meets the aims and selection criteria. If you require dummy data, please provide details of the anticipated climate model variables including spatial and temporal resolution. Deadline for proposals is Monday 13 February 2017. Should you require any further information or wish to discuss potential projects further, please contact us at [ukcpproject@metoffice.gov.uk](mailto:ukcpproject@metoffice.gov.uk).

## Appendix: Novel Aspects of UKCP18 climate data

- **Time series of probability distribution functions at the monthly resolution and/or with a user-defined baseline period.** In UKCP09, the probability distribution functions (pdfs) were provided for 30-year time horizons. Following the work of Sexton and Haris (2014)<sup>i</sup>, the pdfs will now include information at an annual time step for each month over the 21st century). This will provide information on variability and also provides the opportunity for a user-defined baseline period (a requirement often asked by users). Projects that wish to look at the updated pdfs could demonstrate the added value of this additional flexibility.
- **Climate model data at the global scale.** This will be the first set of UK climate projections that provide data at the global scale. Projects could look at the benefit this may bring.
- **Improved weather types in the UK from the global coupled climate model.** There have been many advances in the Hadley Centre's global coupled climate model since the last update to the UK's national climate projections. These have led to improvements in representing weather patterns such as blocking that can cause persistent, prolonged conditions. Projects could demonstrate how the results of this new, improved modelling capability would be used.
- **Very high resolution climate model products.** An ensemble of very high resolution (less than 5km) climate model projections for the whole of the UK will be provided. The ensemble will offer more realistic projections of intense rainfall events that occur frequently in the summer in the UK as well as data at a high spatial and temporal resolution (up to hourly). Projects could look at how to implement this new information or how to use the data-intensive high resolution dataset.
- **Combining results from different land projection products.** Projects could look at how to combine the results from the three strands of land projections (i.e. the update of the pdfs, the global climate model projections and the very high resolution model projections). An example project could be setting a global and/or regional realisation/storyline in the context of the uncertainty described by the pdfs.
- **Sea-level and storm surge projections - an update to coastal infrastructure risk assessment?** Sea-level rise and storm surge will also be updated in the UKCP18 project and this may have implications for some critical infrastructure risk assessments that have been carried out in the past. For example, a project could look at the implications for the Thames Estuary 2100 project<sup>ii</sup>.

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<sup>i</sup> Sexton D and Haris G, 2015. The importance of including variability in climate change projections used for adaptation, *Nature Climate Change*, 5, 931–936, doi:10.1038/nclimate2705

<sup>ii</sup> <https://www.gov.uk/government/publications/thames-estuary-2100-te2100>