Providing Climate Information

Lessons learned from striving to support decision and policy making

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Key Lessons Learned

- **Information needed is that to support decision and policy making**
  - Descriptions of the current and future climate or impacts are necessary but insufficient
  - Means starting with the decision / policy – vulnerabilities, sensitivities, thresholds
- **Sustained and informed engagement of users and providers**
  - Aim is sustained and informed engagement from concept to delivery and beyond
  - Continuous improvement informed by users' needs and science capabilities and developments – dynamic nature of the demand and supply
- **Both access and support are necessary**
  - Making climate information accessible is necessary, but insufficient
- **One product / approach does not fit all**
  - Single snapshots are insufficient – dynamic nature of the supply and demand

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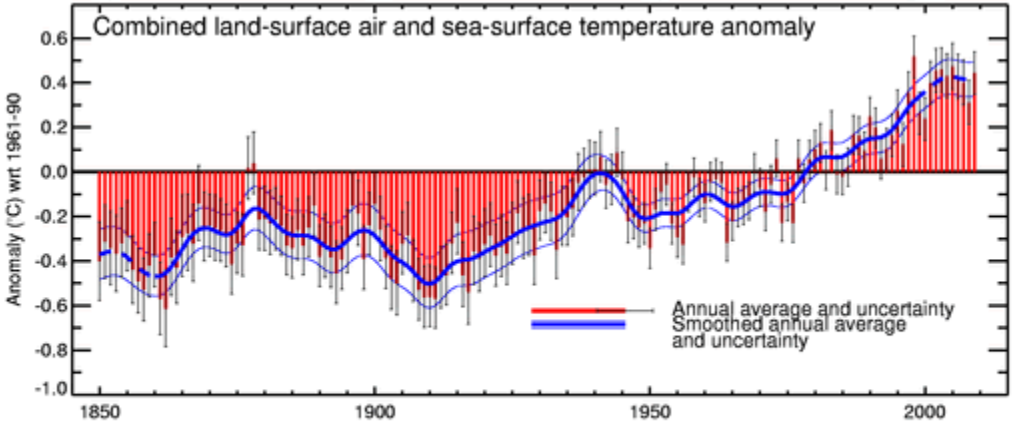
Need for information and support is changing

- Recognition that climate is changing and will continue to change – need for action
- Requirement to move from merely identifying potential climate , impacts and adaptation options to understanding risks and identifying, appraising and implementing viable and robust adaptation options
- Broadening of community needing and using this type of information – from primarily research to decision support (e.g., statutory requirements)
- Need for a balance between what science can provide and what the user community requires – product, presentation and support.
- Not just about climate change throughout the century – focus is also on today and the near future (next 5 – 10 years).
- Need to provide information that meets these needs and that recognises the varied capacities of the user community – decision and policy-relevant information



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Met Office Hadley Centre

www.metoffice.gov.uk/hadobs

Information Needed

Often more than 'traditional' climate variables

- Consistent with thresholds and sensitivities
- Defined by users and consistent with the science – informed balance
- Decision and policy-relevant
- Includes derived variables and statistics – past, present, trends and near term, as well as climate futures

Implications for adaptation appraisal and evaluation

- Recognise the need for appraisal of identified options using criteria such as flexibility, robustness, effectiveness, urgency, costs, benefits, etc.
- Consistent with the needs to evaluate implemented measures.

Decision-Relevant Climate Information

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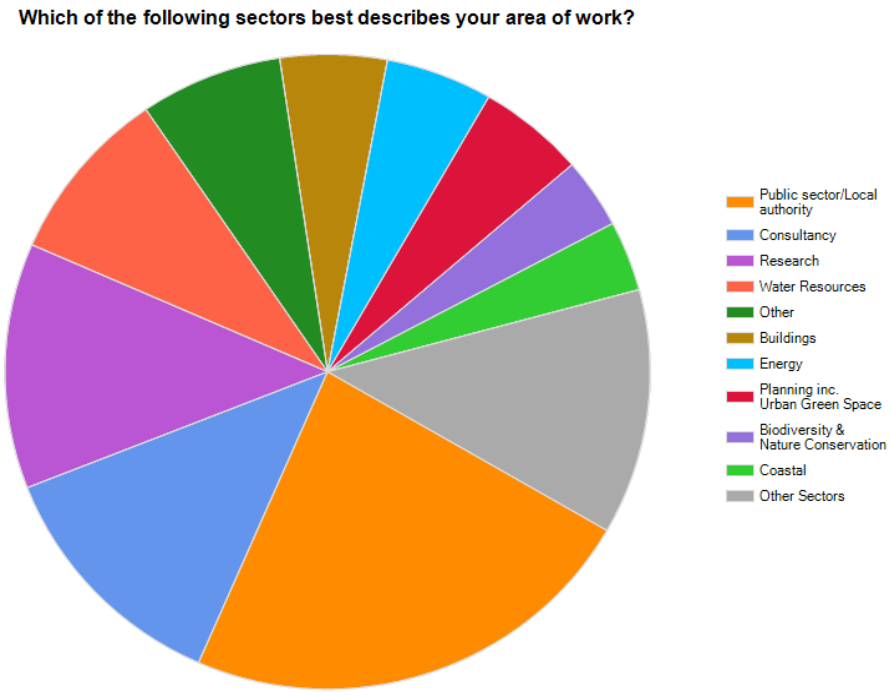
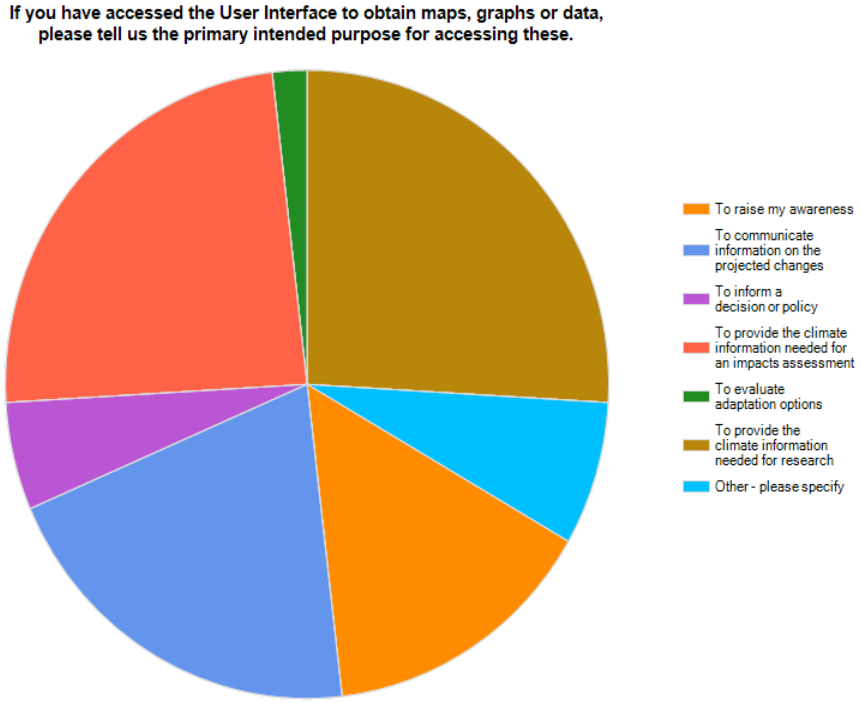
Who are the Users? Why are they using?

More than researchers



For more than research



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Information Needed

Based on an understanding of:

Nature of the decision, investment or policy

- Timeframe – present, near term, lifecycle management, investment cycles

System(s) of interest – assets, community, ecosystem services, resources

- Understanding sensitivities, thresholds – historical performance and expert/professional/operations experiences

Addressing the current situation

- Coping capability and causes of failure – addressing existing adaptation deficit
- Question of what you are adapting from – what is the adaptation baseline

Capacity to use information

- Skills and capacity of decision-makers and associated processes

User-Informed Climate Information

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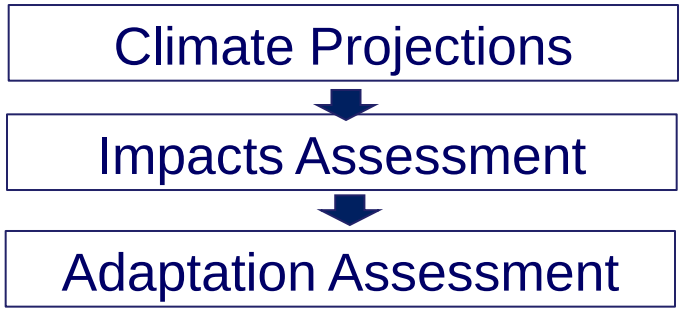
Predict, Optimise and Relax

- Focus is on the climate and projected changes
- Often assumes that we are adapted to "today"
- Traditionally follows a linear model:



- Focus is on getting the climate "right" – uncertainty remains a barrier to decision making
- Tendency for decision and policy makers to hold off awaiting 'better' climate information and there is a need to start over each time there is new set of scenarios / projections

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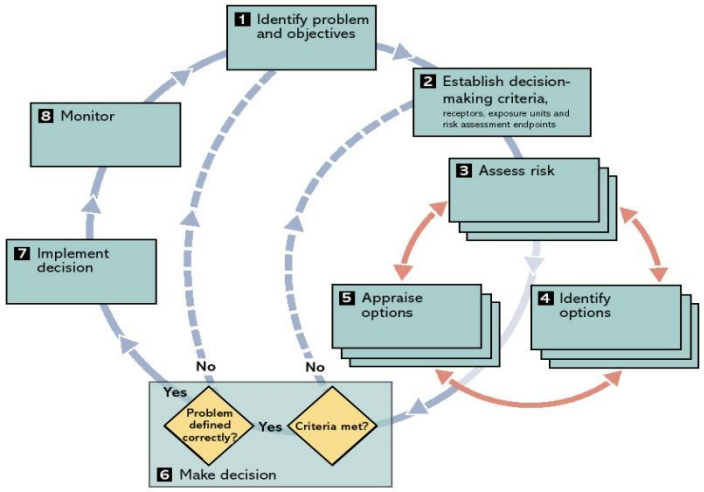
Assess, Adjust and Review

- Focus is on understanding the risks associated with the climate (and other) drivers
- Assumes that "today" may need some further adaptation (benefits the day job)
- Follows a recursive model that supports learning and continuous improvement
- Uncertainty and risk are made explicit and addressed, and can be communicated



- Allows for "adjustments" as benefits, opportunities and changes in risk are apparent and/or realised

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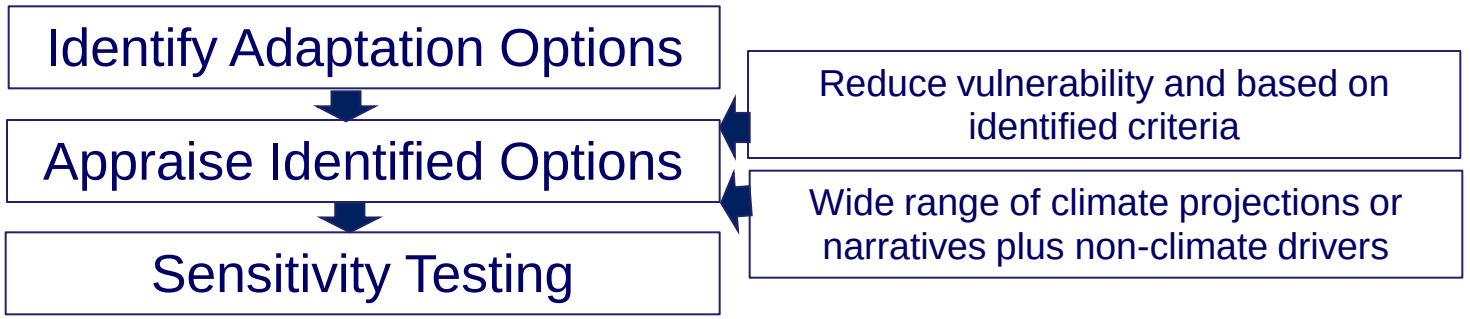
Robust Option Assessment

- **Where uncertainty and vulnerability are high**
- **Identify options that perform well (not necessarily optimally) over a wide range of conditions – now and in the future**
- **Start with no (low)- regrets**



- **Flexible and open-ended adaptation options**
- **Monitoring and evaluation of option performance with identified triggers for change**

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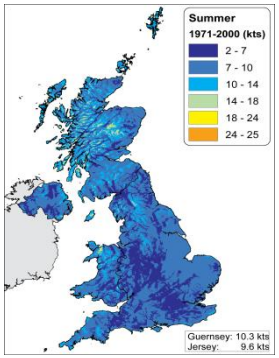
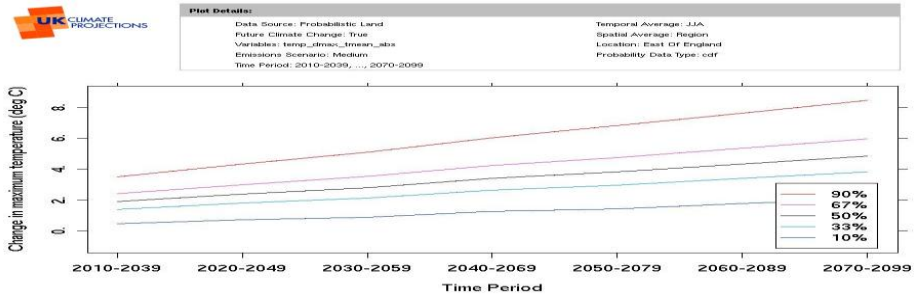
Access to different types of information

- **Not all users need projections data –** what is needed depends on the intended use – *historical information , key findings, headline messages, narratives, maps and graphs, data and analytical tools*



Warmer and wetter winters, with hotter and drier summers
The summer mean daily maximum temperature is projected to increase from 4.8ºC to 8.4ºC.
There is a projected two-fold increase in the frequency of summer drought by the 2050s.

UKCP09 Weather Generator and its associated Threshold Detector



- Complexity of information available requires that support be provided to:
  - Select the climate information that is required; and
  - Support the use of the what is available including identifying periods/areas of particular interest.

Concern that users often become mesmerised by the numbers

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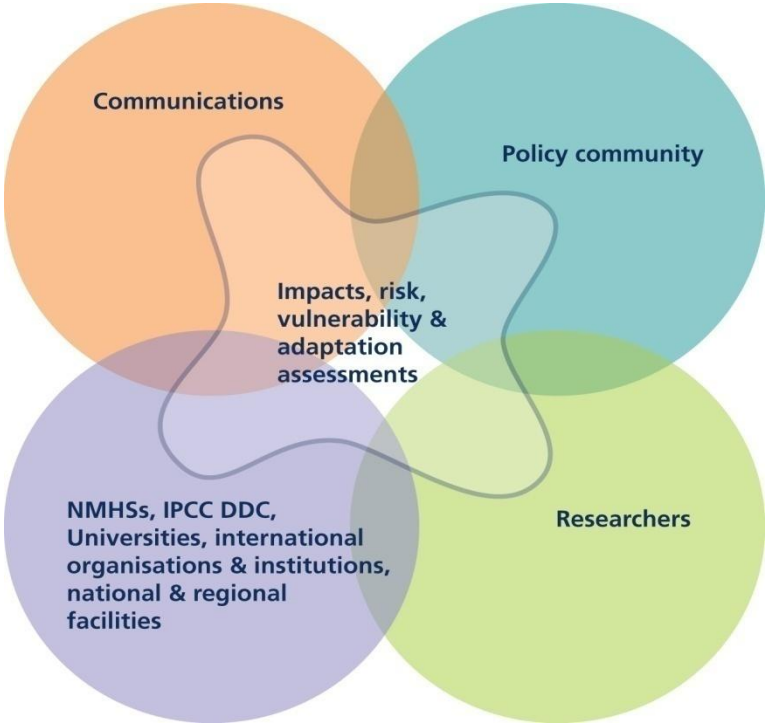
Engaging Providers and Users

Who are the Providers?

- NMHSs, IPCC DDC, Universities, International Organisation and Institutions, and National / Regional Facilities



More than consultations!

Need for informed and sustained engagement involving both users and providers throughout the process – development, dissemination, providing support, and continuous improvement.

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Mechanisms for Engaging – Shared Learning

Users' Advisory Panel – representatives of the users

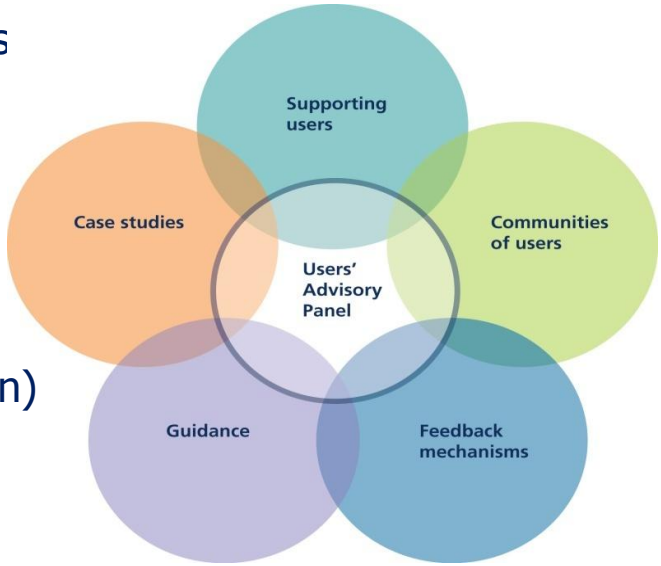
- Providing advice and feedback on proposed directions and developments
- Opportunity to suggest enhancements and extras – new and modifications to the information and support provided

Communities of Users – common interests

- Opportunities to share lessons learned and challenges of using the information – working as a community
- Working with the providers and other experts / practitioners

Guidance (online and hard copy)

- How the information can be used and should not be used and why
- Linking the uses (impacts, vulnerability, risks and adaptation) to the climate science



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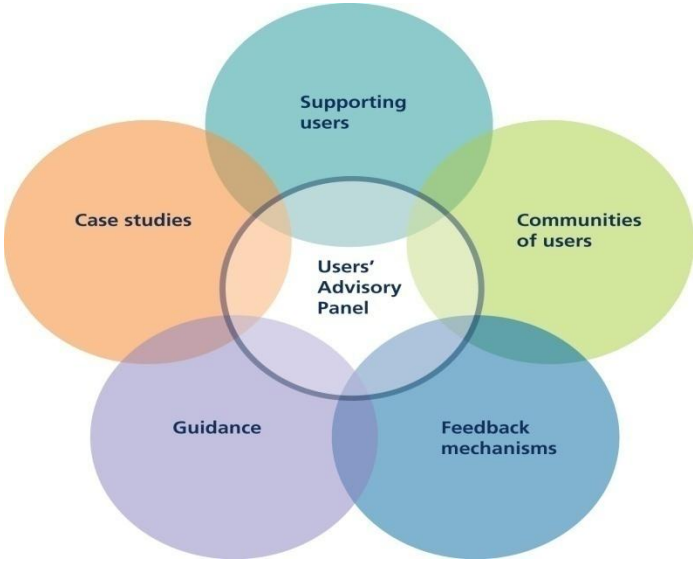
Mechanisms for Engaging – Shared Learning

Case Studies – part of the guidance

- How others have used the information
- Working with users to demonstrate how they have used the information and why they have chosen to do so

Feedback Mechanisms

- Online feedback opportunities – helpdesk
- Online forum, feedback surveys and questionnaires



Supporting Users

- Training (face-to-face) and online (including e-learning and webinars)
- Working with users as part of their assessment processes

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Positive Impacts of Engagement

- Delivered information that is recognised as directed at informing use rather than just describing the climate
- Guidance and User Interface designed and tested with users
- Language and terminology understandable to users
- User buy-in (ownership) in the process and the products
- Users providing and using case studies
- Providers have a better understanding of users needs and priorities
- Users have a better understanding of what can and cannot be delivered and how climate information can and cannot be used
- Desire by users and providers to sustain engagement

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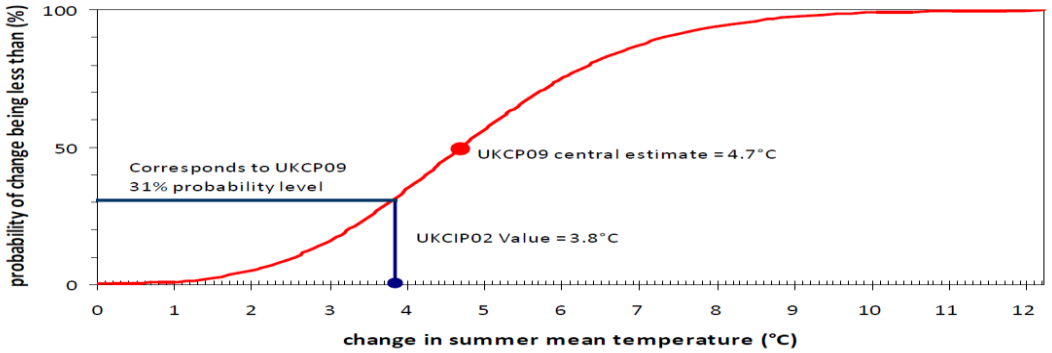
Challenges – Using UKCP09

Dealing with uncertainty – will always exist in observations and future

- How to communicate uncertainty so that it can inform decisions and policies
- Is optimal adaptation appropriate considering uncertainties?
- Desire for single set of information
  - Costs in terms of time and capacity
  - Interpretation of outputs?
  - Easier to use

How to better support these users?

Who owns the risk?



Balance between providing generic and decision-specific support

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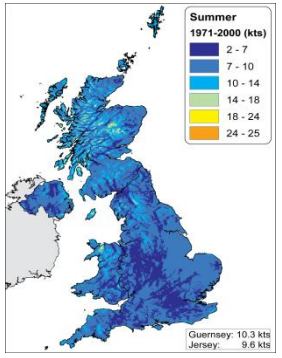
Challenges – Using UKCP09

Higher resolution information

- Misinterpretation that higher resolution = higher accuracy



Enhanced Accessibility

- Mesmerised by the numbers
  - Going straight to the climate data without understanding what is needed (understanding sensitivities and thresholds of system)

Using the guidance

- Going straight to the outputs enhancing the likelihood of ineffective or misuse

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Challenges Ahead - Continuing to Support

Evolving user and provider communities – need to embrace

- User communities and needs are changing – better definition of their needs, new users, enhanced requirements, wide range of capacities
- Available climate information and analytical capacities are changing

These suggest that a single periodic snapshot is no longer sufficient – target is to increase utility to users

- Additional and enhanced analytical tools
- Different types of presentations of the available information
- Introduction of new climate information
- Enhance capability to extract decision-relevant information from the available outputs

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Challenges Ahead – Engagement

Evolving user and provider communities

- Need for continued and informed engagement to support appropriate use evolving with needs and science
- Recognise the different types of users and information that should be available (generic/specific?)

These suggest the need to explore means for:

- More effectively engaging users across the *emerging* user community – exploring alternative engagement models
- Encouraging sharing of experience and partnership working
- Broadening the community of providers engaged

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Learning from experience and sharing

Information needed is that to support decision and policy making

Sustained and informed engagement of users and providers

Both access and support are required

One product / approach does not fit all

http://www.ukcip.org.uk

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