



Climate services in the UK A Met Office perspective

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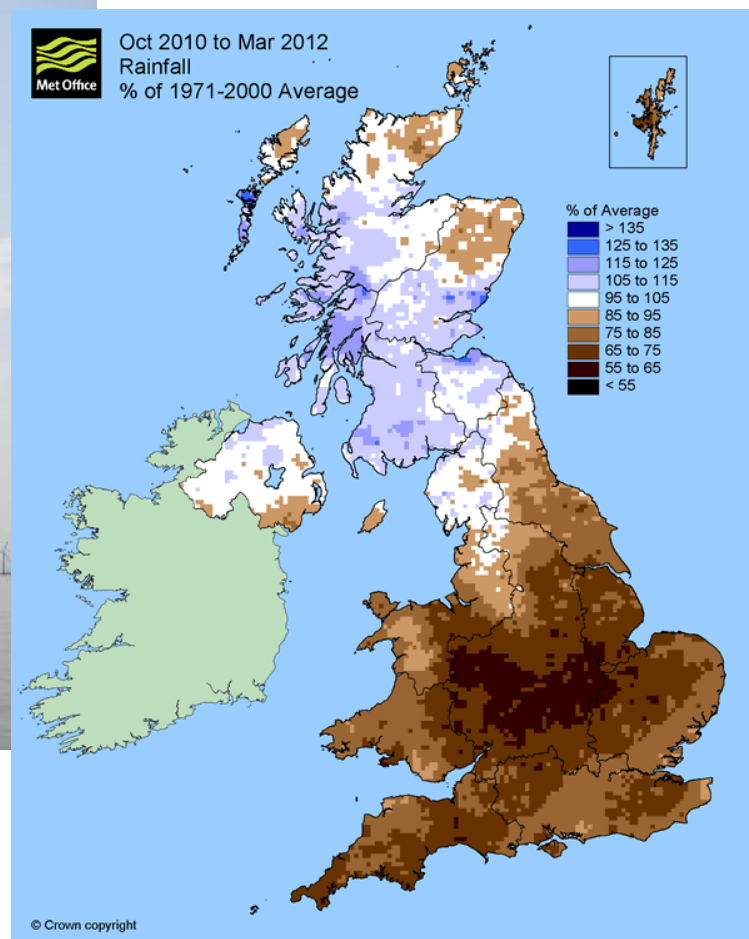
**Record Cold
December 2010**

**Coldest December
on record***

**March 2010 to
February 2012
driest on record***



**Impacts of
extreme weather**



* Records start in 1910

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Climate Services

Met Office role:

National Met Service, PSRE, Trading Funds,
National weather and climate capability

World Meteorological Organisation:
Global Framework for Climate Services

UK Climate Service



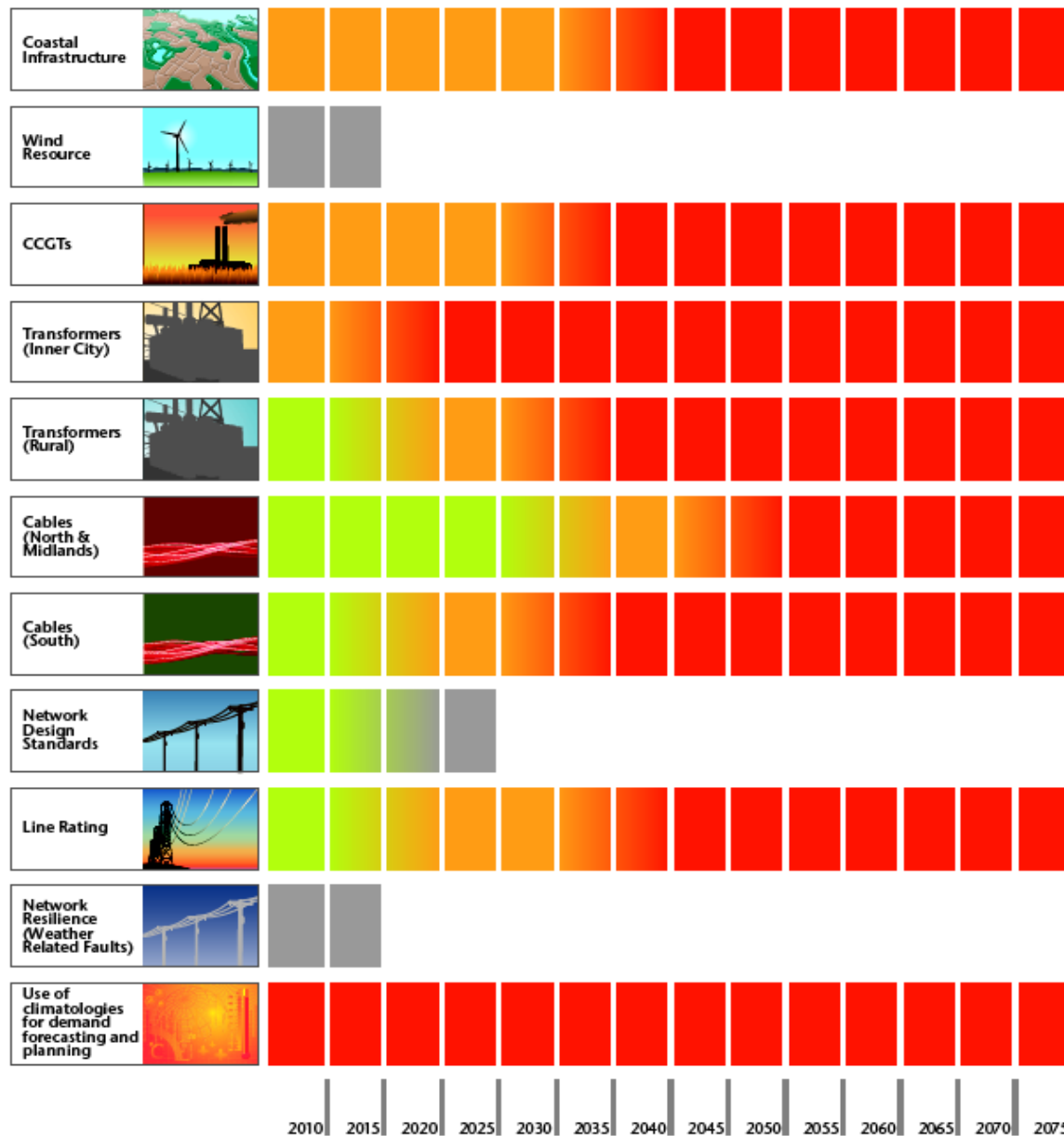
Generating services: case studies

Impacts of climate change on energy generation

Wind farm planning

Coastal flood defences

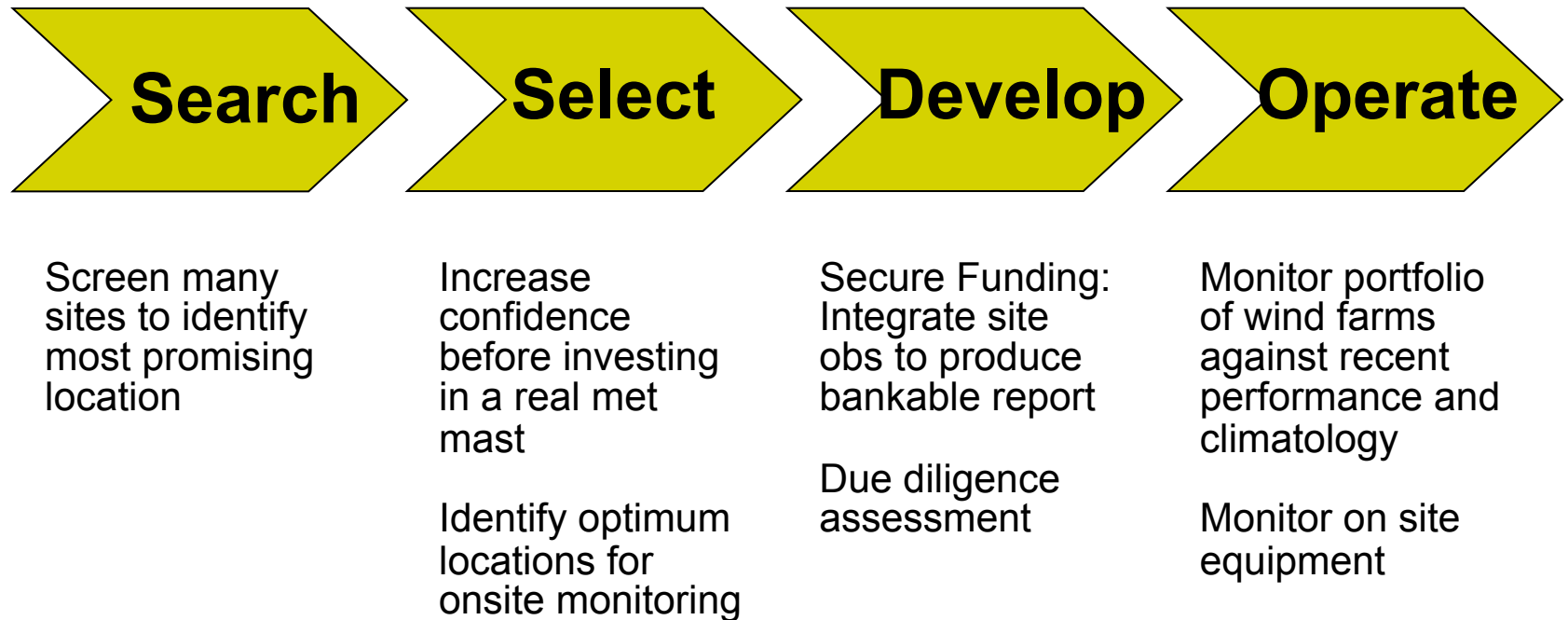
Climate Change Adaptation Planning Guide



EP2 Headline results



Wind Farm Planning



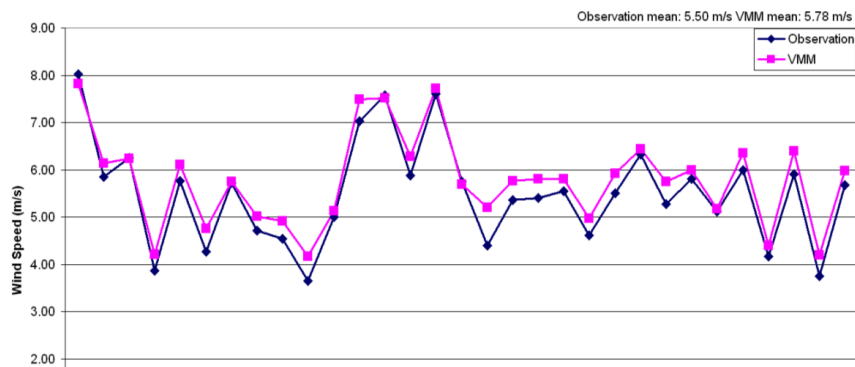
European Verification

Verification – Onshore

- Farmland in gently rolling hills
- Bias of +0.28 m/s (VMM 5% higher)



Monthly Mean Wind Speed - 50m Height, Gentle Hills

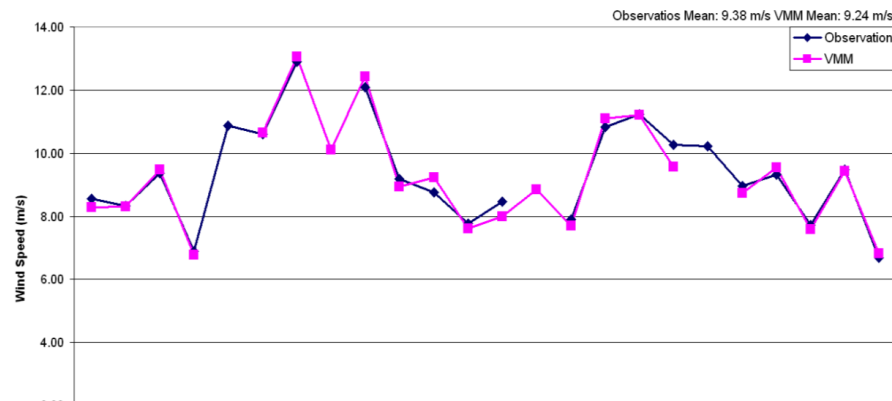


Verification – Off-shore

- Round 2 Site
- Bias of -0.14 m/s (VMM 1.5% too low)



Monthly Mean Wind Speed - 70m height, Off-shore

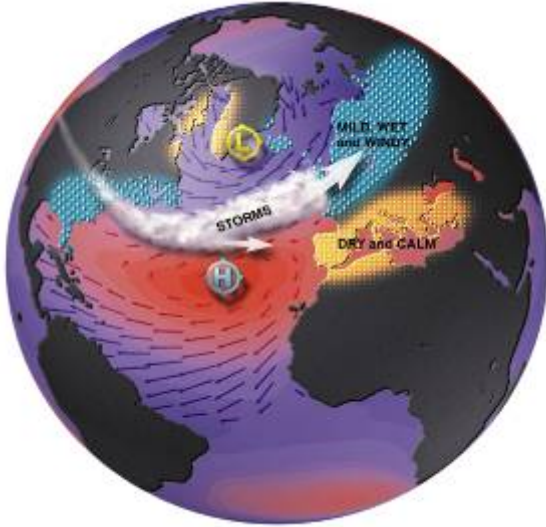


The Met Office has an established track record delivering these services in the UK (and some other regions of Europe) – a detailed verification report is available.

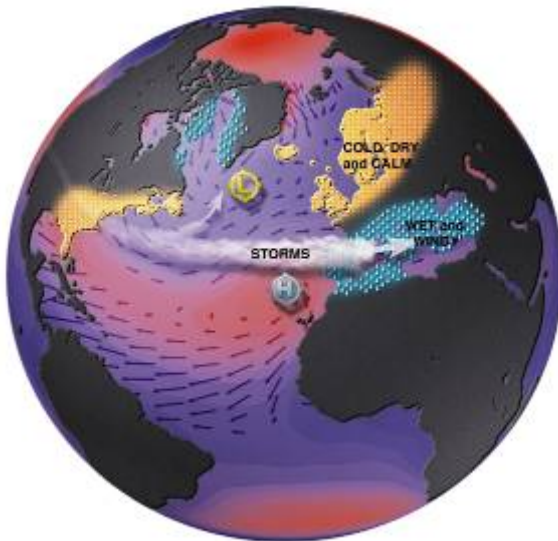


Other Challenges

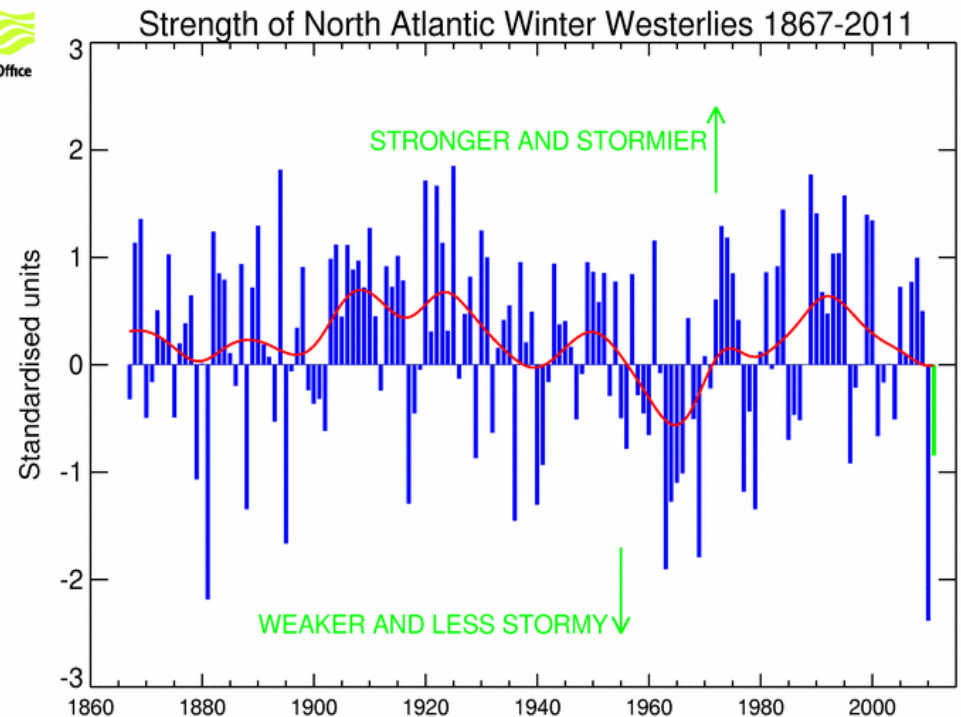
The North Atlantic Oscillation (NAO)



Positive
stormy
phase
over UK



Negative
quieter
phase

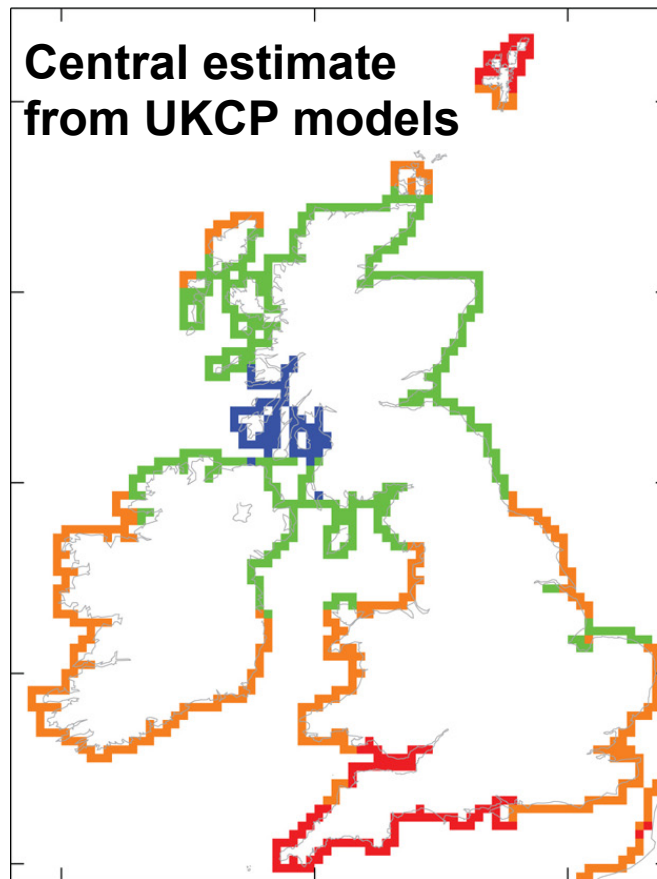


- Advice to Environment Agency
- Simulated flood in the Thames Estuary
- Model projections
 - average sea level - most likely 20-80cm 2m possible
 - intensity and frequency of storm surges up to 0.7m
- Inform future design improvements to the Thames Barrier



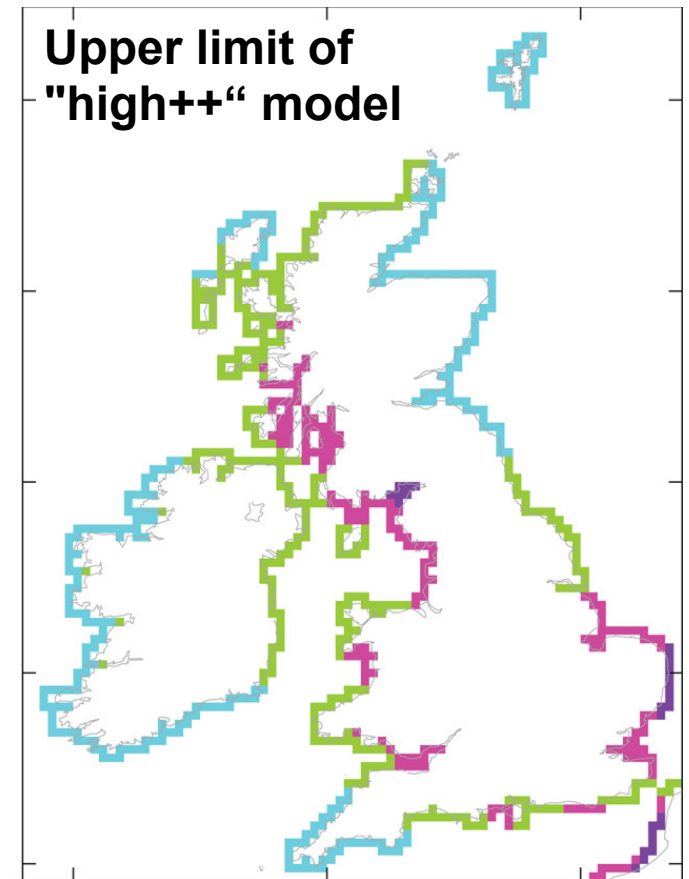
Probability forecasts of coastal flood risk allow for a balanced approach to decision making

Change in
extreme sea
level of 50 year
storm



20 30 40 50 60

Sea level change (cm)



210 240 270 300 330

Sea level change (cm)

Met Office value within the supply chain

Cotton fields



Factories



Warehouses



Delivery



In-store



Crop Decisions

Harvesting

Distribution

Stocking

Sales

**Growing loc Route Based Forecast • Weather Se • Short Range Forecast 1- 5 days
Crop specie Hazard Alerts & Weath • 1 - 14 day C • National Reach of our Forecasts**

Gritting services for la • Stock Estir • Post Sales Weather Analysis

Climate Change Consultancy for ke • Forecast resource in key business decisions

- Inc • Short Range Forecasts assist in harvest timing decisions
- Ba • 1 - 3 Monthly Forecasts to aid region change
- Afi



Met Office
Hadley Centre

