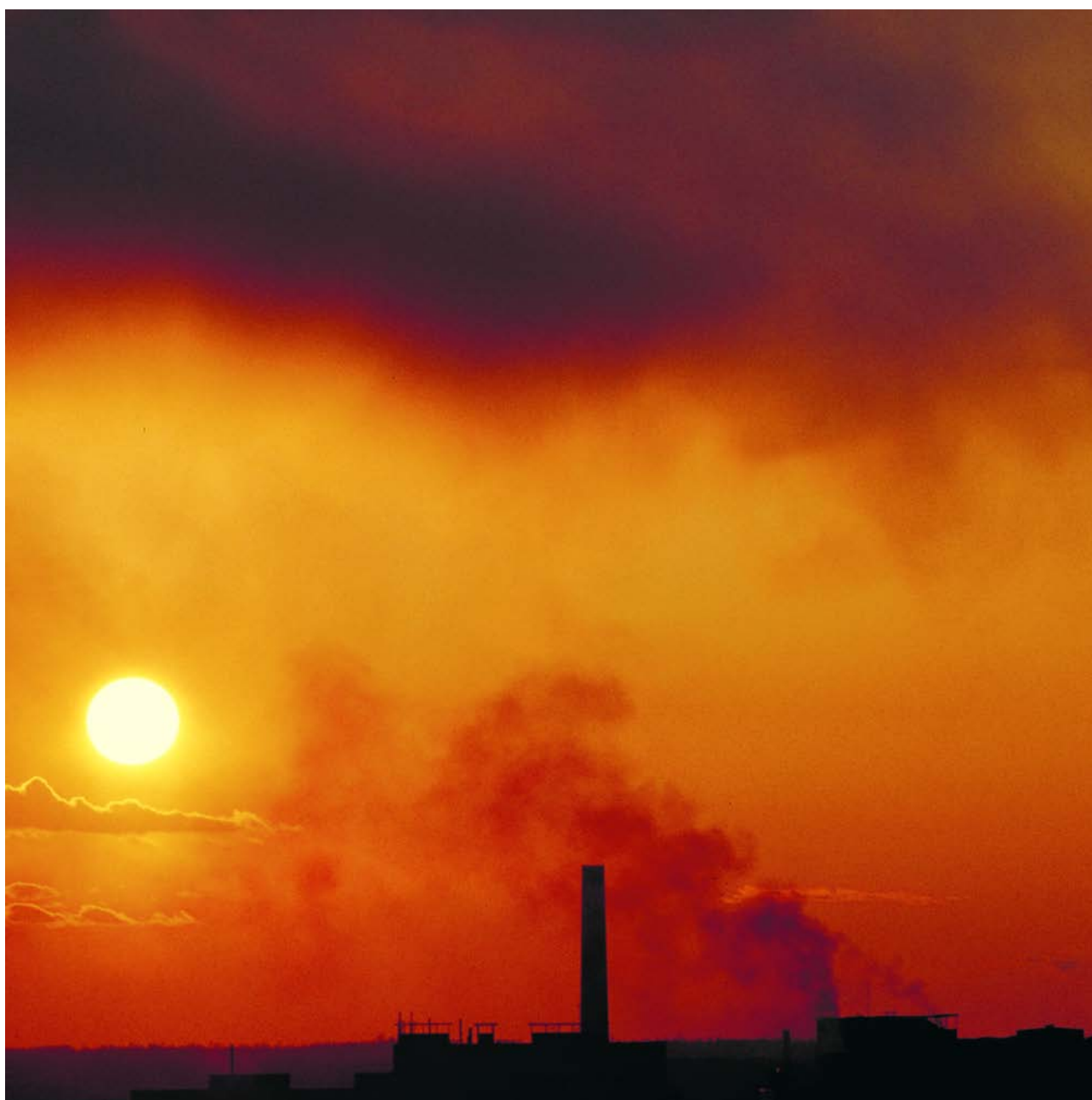


Scoping Study – Climate Change Impacts on the UK Energy Industry





Introduction

In 2006 the Met Office joined the energy industry in a pioneering study on climate change impacts. In a landmark collaboration, the nation's weather experts teamed up with E.ON UK, EDF Energy and the National Grid to use climate predictions, created by the Met Office's Hadley Centre, to understand how climate change will affect future energy use and demand and what further information the industry may need to adapt to those changes.

Objective of study

The general consensus is that the world is warming due to the global effects of greenhouse gas emissions from human activity. Regional studies are suggesting local changes in temperature and precipitation patterns, wind and wave activity, and floods and storms that could profoundly affect society.



By the 2050s, within the lifecycle of current and planned energy infrastructure, generating effectiveness, network resilience and energy demand will alter due to climate change. Corporate planning demands that important decisions are based upon the best available information. Present climate information does not enable the industry to make informed decisions on future infrastructure and operational requirements. However, good decisions are needed to ensure future UK energy security and affordability. This scoping study was commissioned to qualitatively assess the scale of climate change impacts, and begin a process that would enable the UK energy industry to anticipate the impacts of climate change and plan to adapt.

Approach

The approach undertaken was designed to identify the highest-risk impacts of climate change on the UK energy industry by:

- desktop review of the existing climate change research on the physical impacts in the industry across the UK;
- evaluating regional climate change and extreme event information;
- in-depth interviews with energy industry experts to identify key elements of the industry that are sensitive to climate change;
- literature review of the socio-economic context;
- evaluating regional climate model and extreme event predictions and identifying their relevance for industry operating practices, trends and thresholds;
- conducting a limited amount of new research on the wind characteristics modelling in order to test the feasibility of developing industry applications;
- assessing the level of understanding of current and planned climate change impacts and management of risk across the energy industry.



This venture was the first nationwide attempt to identify how climate change will affect energy generation, distribution and transmission as well as demand. The study also aimed to identify any positive impacts of changes to our climate. Factors taken into account included how climate change could affect energy demand through population growth and movement, greater use of air conditioning and effects on the performance of generating plant. The study aimed to help energy companies plan for the future and could help shape all aspects of future energy provision and supply.

Firm/Consultant's experience

Project/assignment name:

Scoping study on the impacts of climate change on the UK energy industry

Project country:

UK

Duration of assignment:

3.5 months

Name of client:

National Grid, EDF Energy and E.ON UK

Total number of staff-months on the assignment:

6.5 man-months

Project address:

Met Office,
FitzRoy Road, Exeter, EX1 3PB,
United Kingdom

Start date (month/year):

Completion date (month/year):

February 2006 – May 2006

Number of professional staff-months provided by associated consultants:

N/A

Name of associated consultants, if any:

N/A

Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):

Fiona Hewer – Project Manager
Richard Betts – Project Quality Assurance
Gavin Brown, Mark Gallani,
Rob Harrison, Debbie Hemming – Project Team

Narrative description of project:

To conduct a scoping study on the impacts of climate change on generation, distribution, transmission and supply and demand of energy in the UK. The main focus timescale is the 2050s (2041 – 2070), but information on current climate, 2020s and 2080s is also included.

Description of actual services provided by your staff within the assignment:

A scoping study was produced to qualitatively assess the scale of climate change impacts, and begin a process that would enable the UK energy industry to anticipate the impacts of climate change and plan to adapt.

The approach undertaken was designed to identify the highest-risk impacts of climate change on the UK energy industry by:

- desktop review of the existing climate change research on the physical impacts in the industry across the UK;
- evaluating regional climate change and extreme event information;
- in-depth interviews with energy industry experts to identify key elements of the industry that are sensitive to climate change;
- literature review of the socio-economic context;
- evaluating regional climate model and extreme event predictions and identifying their relevance for industry operating practices, trends and thresholds;
- conducting a limited amount of new research on the wind characteristics modelling in order to test the feasibility of developing industry applications;
- assessing the level of understanding of current and planned climate change impacts and management of risk across the energy industry.

Met Office FitzRoy Road Exeter EX1 3PB United Kingdom
Tel: +44 (0)1392 885680 Fax: +44 (0)1392 885681
Email: enquiries@metoffice.gov.uk www.metoffice.gov.uk

Produced by the Met Office © Crown copyright 2006 06/0281b Met Office and the Met Office logo are registered trademarks

