

Changing Climates Part I: Britain

12

CASS: Briefings

CASS

Corpus Approaches
to Social Science

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Published 2016 by

The ESRC Centre for Corpus
Approaches to Social Science (CASS),
Lancaster University, UK

Research

Carmen Dayrell, John Urry, Tony McEneaney

CASS Centre Director

Andrew Hardie

Series Editing & Design

Robbie Love

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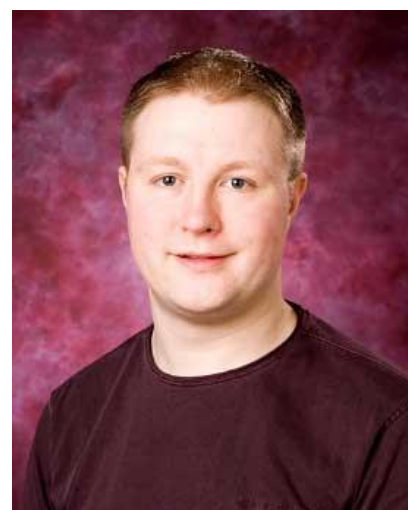
The ESRC funded Centre for Corpus Approaches to Social Science (CASS) is a research centre based at Lancaster University which aims to bring the methods and benefits of the corpus approach to other disciplines.

From the Centre Director

The corpus approach harnesses the power of computers to allow analysts to work to produce machine aided analyses of large bodies of language data - so-called *corpora*. Computers allow us to do this on a scale and with a depth that would typically defy analysis by hand and eye alone.

In doing so, we gain unprecedented insights into the use and manipulation of language in society. The centre's work is generating such insights into a range of important social issues like climate change, hate crime and education. This series of briefings aims to spread the social impact and benefits of the work being done by the centre and, in so doing, encourage others to use our methods in future.

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Dr Andrew Hardie

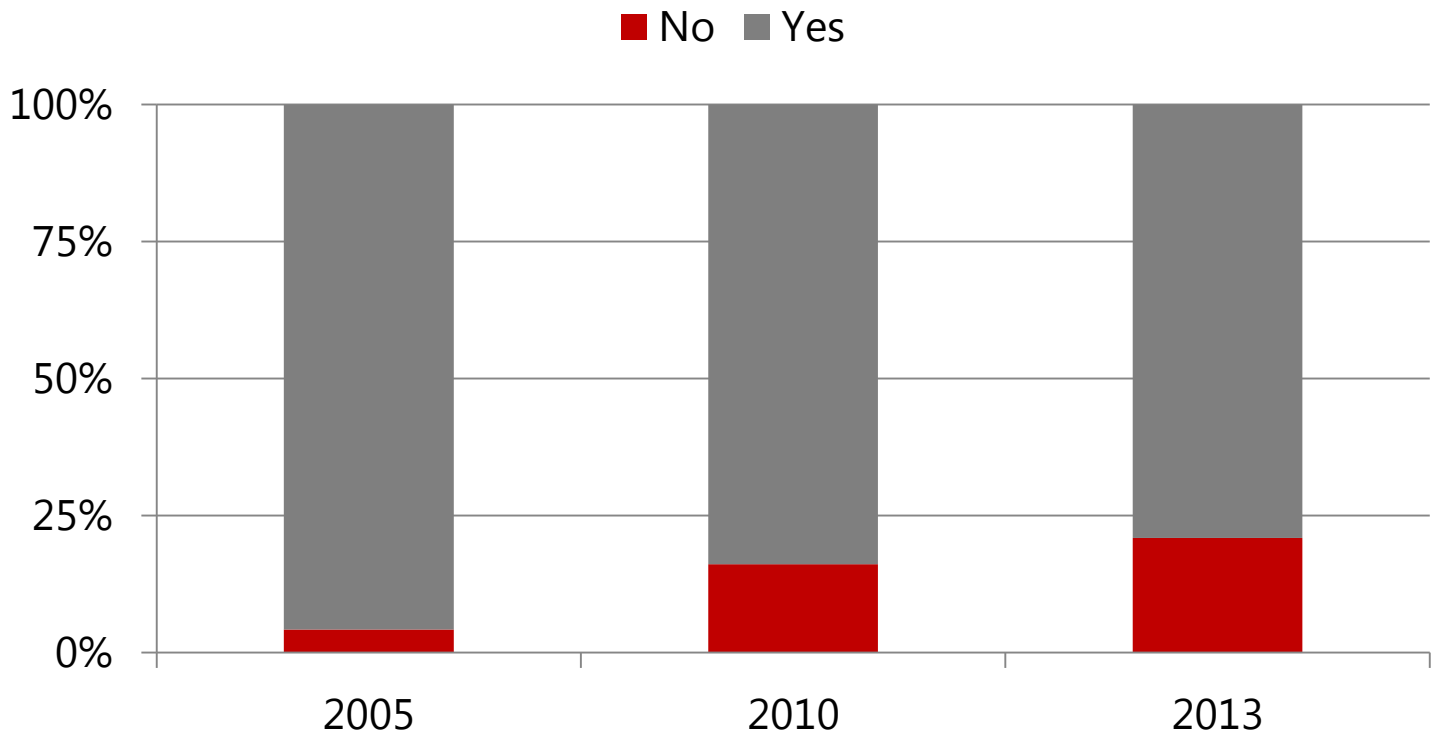
Climate change is now widely recognised as one of the major challenges that humanity will have to face in the 21st century. There is growing scientific evidence that humans are changing the climate system with the substantial amount of greenhouse gas (GHG) emissions being spewed into the atmosphere since the pre-industrial era. As the global temperature increases, so do the risks of abrupt and irreversible changes. It is expected to affect all continents and countries at all levels of development.

The 2011 *UK National Ecosystem Assessment* warns that ecosystems and biodiversity are expected to experience major changes in the coming decades due to the increased frequency of extreme weather events and changes to rainfall patterns. Such events will have serious implications for agriculture, flood control and other provisioning and regulating services.

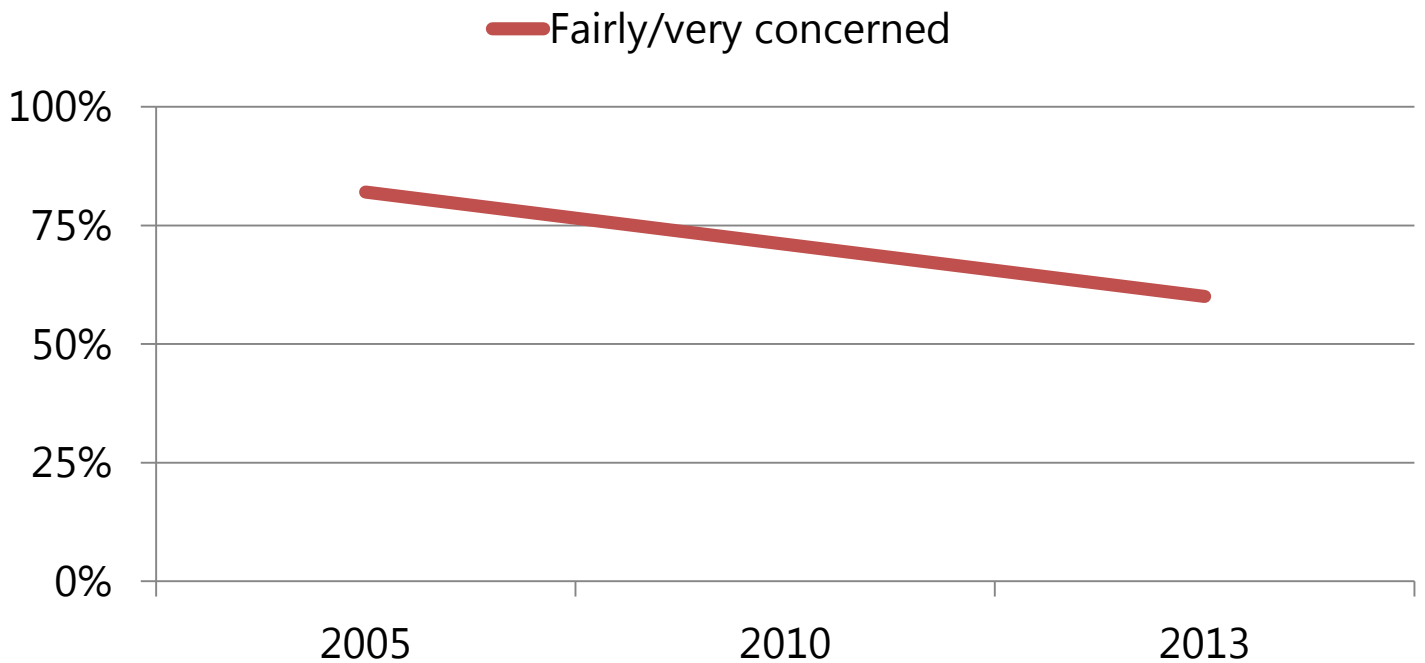
Public opinion in Britain

Despite the broad scientific consensus on climate change, UKERC survey evidence shows that climate change scepticism is increasingly prominent in Britain.

Is the world's climate changing?



How concerned are you about climate change?



As human actions at the very centre of the problem, such mismatch between the scientific discourse and the public perception of the gravity of the problem is a matter for concern.

This research project explores one type of discourse that is believed to influence the ways in which the public has perceived and responded to climate change issues: the news media discourse. Our primary purpose is to examine how climate change issues have been framed in British broadsheet newspapers between 2003 and 2013.

We seek to answer the following questions:

- 1. What concerns are revealed in the media debate?**
- 2. How does the press conceptualise the causes of climate change and ways to mitigate it?**
- 3. To what the extent and in what ways are solutions discussed?**

Data

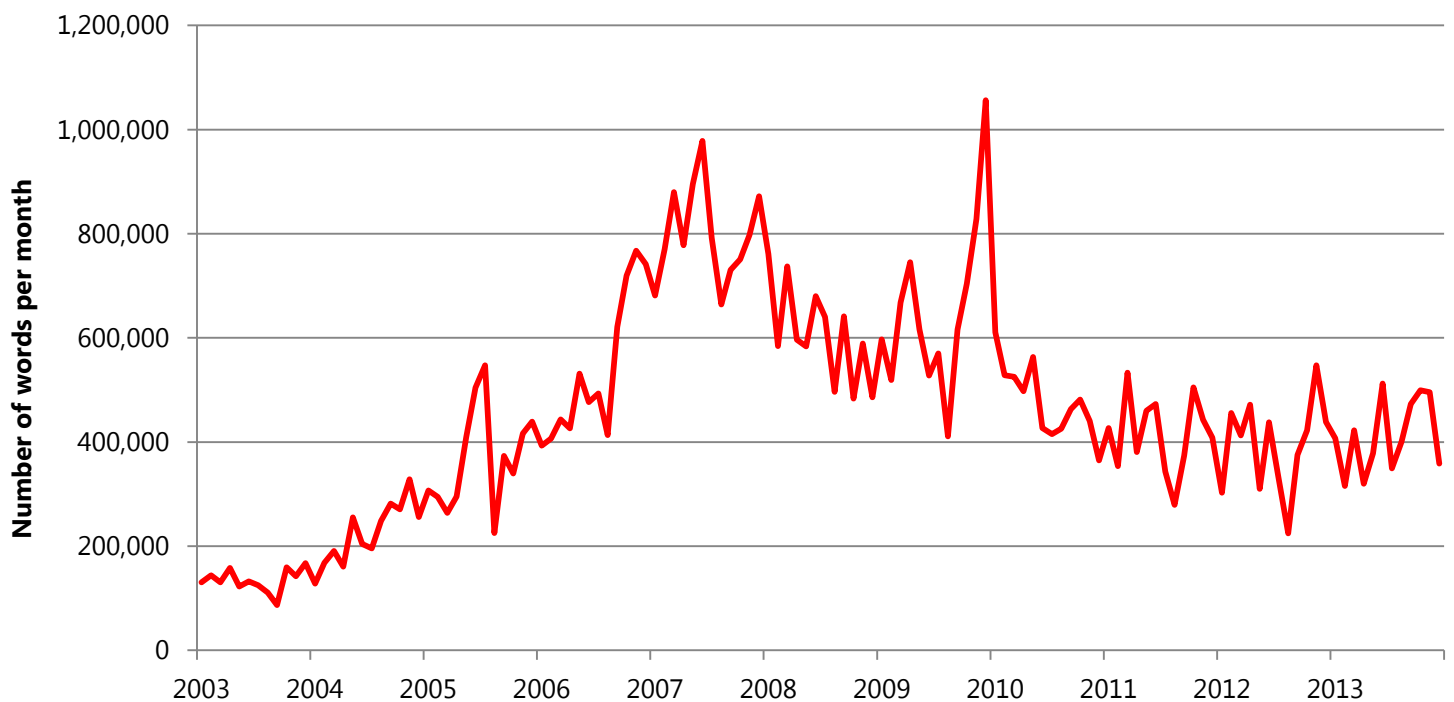
Our corpus consists of 86,088 texts (60.9 million words) making reference to climate change published by major British broadsheet newspapers between 01/01/2003 and 31/12/2013, in their weekday or Sunday publications.

Newspapers included in the corpus

The Times	The Sunday Times
The Guardian	The Observer
The Daily Telegraph	The Sunday Telegraph
The Independent	Independent on Sunday
The Herald	Sunday Herald
The Scotsman	Scotland on Sunday

Texts contain one or more of the following query words/terms:
climate change OR global warming OR carbon trading OR carbon emissions OR carbon cuts OR carbon reduction OR greenhouse gas(es) OR greenhouse initiative OR renewable OR renewables.

The graph below shows the number of words per month across the entire period under analysis.



Climate change is a real phenomenon caused by human activities

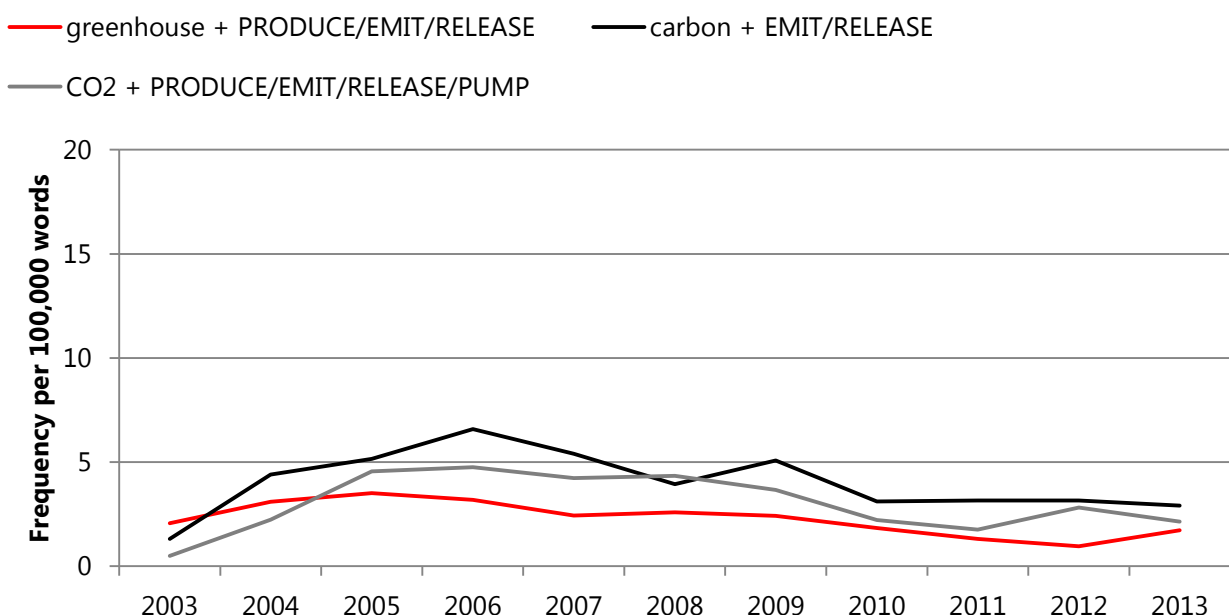
The press frequently mentions the increased concentration of GHGs in the atmosphere, which exacerbates the *greenhouse effect* – the process by which the Earth's atmosphere traps sunlight and heat.

If we continue to burn fossil fuels at current rates, levels of carbon dioxide in the atmosphere will reach 550 ppm (parts per million) - double pre-industrial levels - by around 2050.

(The Guardian 15/04/2006)

It is feared that if the concentration of CO2 in the atmosphere increases, the rise in global temperatures will exceed 3.8F (2C), causing floods and droughts. (The Daily Telegraph 22/11/2010)

Relative frequency of the co-occurrence of *greenhouse*, *carbon*, and *CO2* with the verbs PRODUCE, EMIT, RELEASE and/or PUMP



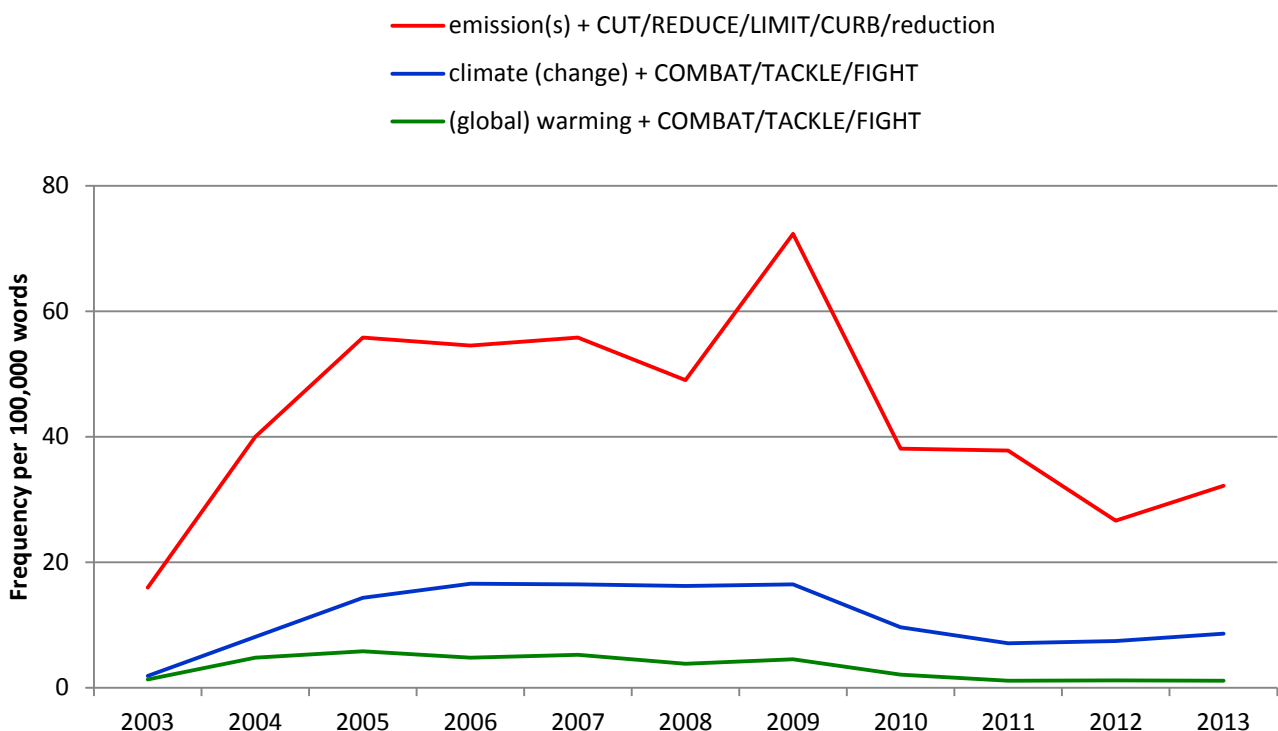
Climate change requires urgent action

Climate change is a serious matter for concern with devastating impacts on the Earth's system, thus requiring urgent global action to avert the looming environmental disaster that lies ahead.

The United Nations' Intergovernmental Panel on Climate Change (IPCC) has given warning that carbon dioxide emissions should at least be halved by 2050 to avoid the most catastrophic effects. (The Times 24/05/2007)

The press stresses the need to address the problem, especially between 2005 and 2009 when negotiations over the terms and conditions of international agreements were frequently mentioned.

Relative frequency of the co-occurrence of *emission(s)*, *climate*, and *warming* with the verbs referring to the need to tackle the problem



Climate scepticism underlies the entire debate

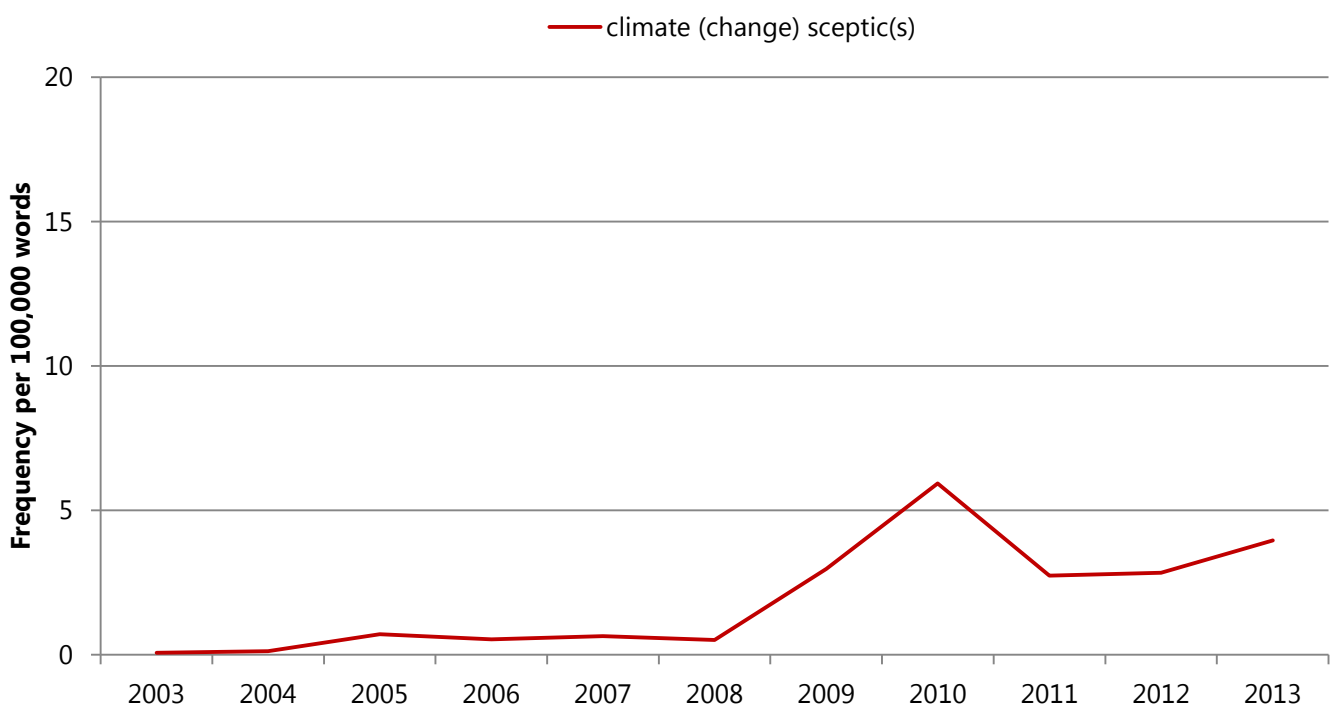
While most of the debate within the broadsheet papers revolves around the reality of climate change, the press also gives voice to those who deny it, or part of it.

He is a sceptic on man-made global warming, believing that the evidence has been squeezed to fit a political agenda . (The Herald 08/01/2005)

... the fact is that Tony [Abbott] and the people who put him in his job do not want to do anything about climate change. They do not believe in human caused global warming. (The Guardian 08/07/2013)

Climate scepticism underlies the entire debate, becoming increasingly more prominent from 2008 onwards.

Relative frequency of the phrase *climate (change) sceptic(s)* across time



Britain is not a major emitter of greenhouse gases

Neither Britain nor Europe are portrayed as top emitters of greenhouse gases, despite occupying the 14th and 3rd positions respectively in the world's ranking. When *UK* or *Britain* occurs around the phrase *greenhouse gas emitter(s)*, it refers to a given source of emission within the country, such as in:

While aviation now emits only 7% of the carbon dioxide emissions released by Britain's private vehicles, it is on course to be an equal greenhouse gas emitter by 2012.

(The Guardian 06/10/2006)

China and the USA are cited as major polluters.

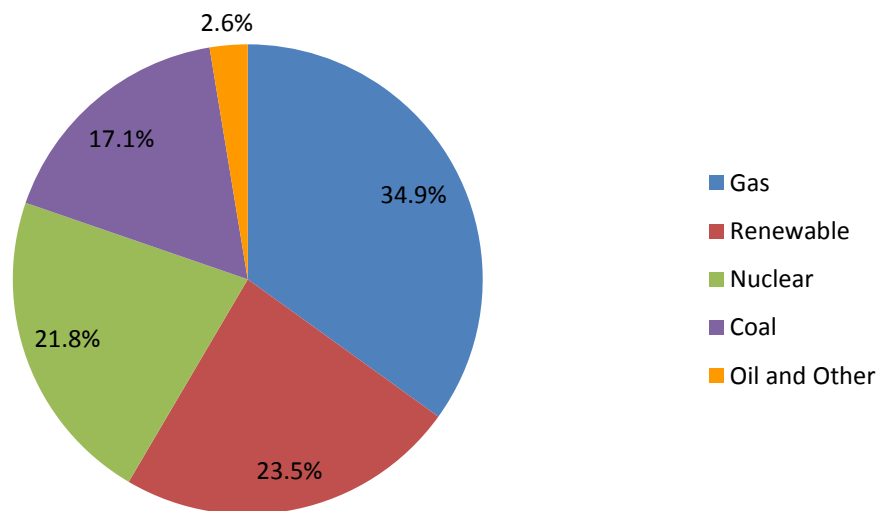
Placenames around the phrase *greenhouse gas emitter(s)*

Country/Region	Number of hits
China	129
USA	104
India	19
UK/Britain	15
Australia	12
Indonesia	11
Brazil	10
Japan	5
Europe	3
South Africa	2
Germany	1
Mexico	1

Energy is at the centre of the problem

With most electricity generated from fossil fuels– the energy sector represents 33% of the UK’s total emissions in 2013 (National Statistics 2015).

Sources of electricity generation in the UK



Source:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/407432/20150203_2013_Final_Emissions_statistics.pdf

Although natural gas accounts for the largest share of electricity generation, coal sparks the harshest criticism in the press, as the dirtiest of all fossil fuels. Much of the discussion in the broadsheet press revolves around the UK’s plans to redesign its energy mix by decommissioning conventional coal-fired power plants and replacing them with low-carbon energy sources. Wind and nuclear power emerge as alternatives but there is no consensus on their use.

Nuclear power

For some, nuclear power is a stable and cheap energy source that should be kept open for ensuring supply while tackling climate change.

It [a paper by departmental civil servants for Alan Johnson] says nuclear should be looked at as an option for tackling climate change and protecting the energy supply. (The Independent 09/05/2005)

For others, nuclear power produces deadly waste and it is risky and not commercially viable without public subsidy.

Scotland and the rest of the UK could meet their energy needs and combat climate change without resorting to nuclear power. Nuclear is a polluting and expensive distraction from the real action required by politicians to tackle climate change. (The Herald 12/01/2008)

Renewable energy

Renewable energy is mostly framed as a promising option for Britain given the UK's world leading capacity to generate electricity from renewable sources.

"Scotland has the potential to be Europe's renewable energy power house. Scotland has enormous renewable resources with 25% of Europe's wind power and 10% of the wave power," Salmond said. (The Times 05/09/2004)

The press frequently mentions Britain's plans to expand renewable energy use to meet EU targets. Wind power receives the greatest attention.

Companies ranging from E.ON to Airtricity and ScottishPower have been granted exclusivity rights to build offshore wind farms in ten sites in Scottish territorial waters. (The Scotsman 07/04/2010)

At the same time, the broadsheet press also highlights the intermittent nature of renewable sources, high costs and the negative visual impact on the British countryside.

That is because wind and solar are intermittent and unreliable. Every solar panel and every wind machine must be backed up by reliable power for when the sun is not shining and the wind is not blowing... (The Times 02/12/2007)

Without massive subsidy no wind farm would be commercially viable. (The Herald 19/01/2012)

In fact the visual impact of wind farms is by some distance the most significant factor in public resistance to them. (The Independent 07/11/2003)

Contribution of this study

This research seeks to inform ways of thinking. Given that the media discourse can have a direct impact on the public's perceptions of climate change, gaining a better understanding of how the issue has been framed in the press can offer policymakers insights on how the people have perceived the issue and their response to policies. This in turn can help them engage with public discourse and hence enhance communication, raise awareness and influence it. Through that, this study opens up the possibility of changing social practices and hence effective action to combat climate change may be achieved.

Part of our aim at CASS is to make Corpus Linguistics accessible, which is why we have created our **free online FutureLearn course**. With the course, we aim to demonstrate that corpus approaches can offer researchers from all disciplines unique, valuable insights into the use and manipulation of language in society. We provide all you need to start 'doing' Corpus Linguistics yourself.

This briefing should act as an introduction and companion to the course where you will begin to apply the concepts and methods mentioned here in a practical way relevant to your field of interest.

The course is free, can be done from home, and comes with a whole range of content and support from world-leading scholars in the field of Corpus Linguistics. For more, visit:

futurelearn.com/courses/corpus-linguistics

For more about CASS and our freely available resources, please visit: **cass.lancs.ac.uk**



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CASS: Briefings is a series of short, quick reads on the work being done at the ESRC/CASS research centre at Lancaster University, UK. Commissioning work from internationally recognised academics in the field of Corpus Linguistics, *CASS: Briefings* set out to make cutting edge research easily accessible, providing a good introduction to the variety of vital and exciting research going on in the area of Corpus Linguistics.



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