

AUGUST 2013

GREEN ENERGY

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MOTION:

“WE SHOULD INVEST NOW IN A LOW CARBON ECONOMY POWERED BY RENEWABLES”

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INTRODUCTION

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Fossil fuels have provided the primary source of energy since the industrial revolution. Despite investment in nuclear power from the 1960s and a variety of renewable energy sources over the last two decades, the proportion of energy production accounted for by fossil fuels has changed little since the early 1970s [Ref: [Financial Times](#)]. Until recently a major concern about fossil fuels has been when they will run out. However, technological innovation has allowed for the successful extraction of conventional oil and gas in ever more challenging environments and the extraction of unconventional oil and gas from previously uneconomic sources. In the United States this latter development has delivered an unprecedented boom in oil and gas production [Ref: [EconoMonitor](#)]. A greater abundance of economically viable fossil fuels would be straightforwardly good news were it not for the pressing issue of climate change. Scientists report that the concentration of CO₂ in the atmosphere reached 400 parts per million this year for the first time since records began in 1958 and warned that such levels have not occurred since before humans existed three to five million years ago [Ref: [BBC News](#)]. Another report, *Unburnable Carbon 2013*, warns that burning the resources already identified by the world's top 200 fossil fuel companies would lead to an unsanctionable 6C of global warming, and argues that this demonstrates over investment in fossil fuels [Ref: [Guardian](#)]. Is it now time to invest in a low carbon economy instead?



Climate change revisited

Throughout the late 1990s and early part of this century, climate change was one of the biggest issues on the international political agenda. However, following the failure of the 2009 Copenhagen Climate Change Conference to reach agreement on reducing carbon emissions, climate change has received far less political attention. For critics of our ongoing dependence on fossil fuels, this situation results from a lamentable lack of leadership on the part of politicians adopting a short-term point of view and refusing to face-up to the enormous difficulties we are storing up for future generations [Ref: [Guardian](#)]. Whilst few disagree with the basic physics that tells us increased levels of CO₂ in the atmosphere caused by burning fossil fuels will result in atmospheric warming, the debate has centred on the extent and consequences of the warming that is likely to ensue. Some fear that we are already locked onto a path of global warming with worrying and unpredictable consequences [Ref: [World Bank](#)]. Leading scientists have pointed to the increased likelihood of heat waves, heavy rainfall and hurricanes to warn of how severe the consequences are likely to be if we don't radically alter our energy production and consumption patterns soon [Ref: [Guardian](#)]. Others have criticised these scientists for using alarmist tactics and highlighting the very worst case scenarios to frighten the public and to scare politicians into taking action. Those critical of the consensus claimed on behalf of climate science - frequently dubbed 'climate sceptics' - argue that our scientific knowledge of the implications of rising CO₂ levels is inadequate for catastrophic predictions [Ref: [Australian](#)]. Recent recognition that recorded average global temperature has substantially slowed, or even plateaued, over the past decade or so, has generated much discussion over gaps in our knowledge and understanding of climate change [Ref: [New York Times](#)].

'Frack, Baby, Frack'?

There are many reasons why a significant shift away from fossil fuels now is

neither practical nor desirable. First and foremost is the fact that access to affordable and plentiful sources of energy is necessary for economic and social development, both in the developing world and the developed. According to the United Nations initiative Sustainable Energy for All, 1.3 billion people lack electricity to light their homes or conduct business, whilst nearly 40% of the world's population 'rely on wood, coal, charcoal, or animal waste to cook their food' [Ref: [Sustainable Energy for All](#)]. In this context, the fact that global energy demand has and continues to grow significantly is a good news story. According to the International Energy Agency (IEA) global energy demand doubled from 6,030 Million Tonnes of Oil Equivalent (Mtoe) in 1975 to 12,380 Mtoe in 2010 - and is predicted to increase by a further 35% by 2035 [Ref: IEA]. Nevertheless, the fact that the proportion of energy supplied via fossil fuels has remained above 80% for decades, is a key concern for many. However, the CO₂ emissions associated with each type of fossil fuel differs. Coal is widely regarded as the fuel associated with the highest emissions whilst natural gas is thought to produce up to 50% less CO₂ than coal when used to generate electricity [Ref: [Wall Street Journal](#)]. Consequently there has been a lot of interest in the role natural gas - whether produced conventionally as with North Sea gas or unconventionally as with shale gas in the United States - could play as a 'bridge fuel' to significantly reduce carbon emissions if it supplants the use of coal, especially in Europe and North America [Ref: [The Energy Collective](#)]. This, coupled with its downward impact on energy prices, has caused much excitement about the 'shale gas revolution' in the United States, which has been variously credited with: boosting manufacturing, reducing carbon emissions, providing consumers with lower energy prices, creating jobs and - especially when the boon in unconventional oil is also taken into account - making the country far more self-sufficient in meeting its energy needs [Ref: [Economist](#)]. Other countries, notably Australia and China, are keen to follow the US and exploit their shale gas and oil deposits. Earlier this year the British Geological Survey announced that the likely scale of shale gas deposits in the

UK was far higher than previously thought – estimating that one major field covering 11 counties in northern and central England, Bowland Shale, contains about 1,300 trillion cubic feet of gas [Ref: [BGS](#)]. The BGS warn that the amount of gas that is economically recoverable is currently unknown and will depend on ‘the economic, geological and social factors’ prevailing at each operation [Ref: [Telegraph](#)]. Leaving aside specific concerns about environmental and social impacts, not all are convinced shale gas will move us towards a lower carbon future. For example, a study by the UK’s Tyndall Centre for Climate Change Research argues that the US might be burning less coal as a consequence of shale gas, but it is also now exporting more coal for use in other parts of the world, so the overall benefits of switching fuels is not so great [Ref: [Financial Times](#)]. Nevertheless, Prime Minister David Cameron made a major intervention into the public debate in August to argue that the UK must seize this opportunity [Ref: [Telegraph](#)].

Renewable energy - a necessary expense?

For some, the potential consequences of global warming necessitate a far more rapid shift away from fossil fuels towards renewable energy and nuclear power. However, rather than viewing this as an economic burden, they argue that we need to recognise it as an economic opportunity. The eminent economist Nicholas Stern has recently argued that we already have the technologies to allow us to decarbonise the European power sector by the 2030s and that a time of depressed economies is ‘exactly the time to invest in the growth story of the future’ [Ref: [Grantham Research Institute](#)]. According to Stern, investing in a new sustainable energy infrastructure will have multiple benefits: from curbing the impacts of climate change, to stimulating economic growth and insulating Europe from the negative economic impacts of volatile fossil fuel prices that have, in part, been responsible for driving up the energy bills of domestic and businesses users. This summer, Energy and Business Minister Michael Fallon opened the world’s second largest offshore wind farm off the

coast of Suffolk, stating that the technology could power 11 million homes by the end of the decade [Ref: [Reuters](#)]. Advocates of renewable energy, whilst recognising they still require subsidies, point to the dramatic strides that have been made in developing the technology. This summer a number of reports pointed to the rapidly falling costs associated with solar power, with prices plummeting by 80% in the past five years, and predictions of solar power becoming economic without subsidy in parts of the world that benefit from high levels of sunshine [Ref: [Financial Times](#)]. The case for immediate investment in renewable energy becomes clear, advocates argue, once we take account of the full economic costs of fossil fuels. [Ref: [Guardian](#)]. Bjorn Lomborg has argued that far too much public money has already been spent on subsidising renewable energy for far too little gain because the technology is simply not ready. In his opinion, it makes no sense to make a massive investment in a new renewable energy infrastructure now when the technology is insufficiently advanced. Rather, we should keep the climate change problem in perspective and make major investments in R&D to develop renewable energy sources for the future [Ref: [Financial Times](#)]. From this perspective, the switch to green energy should and will occur when it is cheap enough – and not before. For others, this type of thinking will simply lead to more ‘market irrationality’ of the type seen in the recent financial crisis; only this time leading to an attempt to burn the vast fossil fuels reserves with unconscionable consequences for us all [Ref: [Guardian](#)].

ESSENTIAL READING

Sharing the benefits of Asia's solar boom

Jeff Spross *Business Spectator* 12 August 2013

US Shale Revolution, Staggering Global Potential

EconoMonitor 20 June 2013

Unburnable fuel

Economist 4 May 2013

FOR

This gamble on carbon and the climate could trigger a new financial crisis

Kevin Watkins *Guardian* 2 August 2013

Humanity is on a crash course with carbon

Mark Lynas *Independent* 22 July 2013

Energy companies are paying a heavy price for shunning renewables

Phillip Inman *Guardian* 21 July 2013

The case for a European low-carbon economy

Lord Nicholas Stern *Grantham Research Institute* 12 July 2013

Burn our planet or face financial meltdown. Not much of a choice

Will Hutton *Observer* 21 April 2013

AGAINST

German Green Energy Bluster Running Out Of Wind

Larry Bell *Forbes* 13 August 2013

We cannot afford to miss out on shale gas

David Cameron *Telegraph* 12 August 2013

Only cheaper 'green' fuels will force changes in energy use

Bjorn Lomborg *Financial Times* 29 July 2013

The Greens Can't Defy Gravity. They Are Finished

Tim Montgomerie *The Times* 22 July 2013

Why Nobody Ever Calls The Weather Normal

Matt Ridley *Australian* 10 July 2013

IN DEPTH

Obsolete Before It's Even Law, The Energy Bill Has Proved A Dismal Failure

Jeremy Warner *Telegraph* 1 July 2013

What to Make of a Warming Plateau

Justin Gillis *New York Times* 10 June 2013

Deep sigh of relief

Economist 16 March 2013

New Report Examines Risks of 4 Degree Hotter World by End of Century

World Bank 18 November 2012

We have the climate predictions but do we have the political will to adapt?

David King *Guardian* 18 June 2009

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BACKGROUNDEERS

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Clean Energy

Greenpeace 2013

New shale gas resource figure for central Britain

British Geological Survey 2013

Re-drawing the Energy Climate Map

IEA 10 June 2013

Technically Recoverable Shale Oil and Shale Gas Resources

US Energy Information Administration 10 June 2013

Bridging the Gap? Natural Gas and Long-Term Climate Change

Goals

Grant McDermott *The Energy Collective* 4 April 2013

World Energy Outlook, Presentation to the Press

IEA 12 November 2012

Renewable Energy Outlook

IEA 2012

Renewable Energy

Guardian

Good Ideas

Statoil

ORGANISATIONS

British Geological Survey

Department of Energy & Climate Change

Greenpeace International

Intergovernmental Panel on Climate Change

International Energy Agency

Office of Unconventional Gas and Oil (OUGO)

Renewable Energy Association

Statoil

Sustainable Energy for All

Tyndall Centre for Climate Change Research



IN THE NEWS

Fracking protesters in court over disruption
Guardian 14 August 2013

Fracking 'threatens God's glorious creation'
Telegraph 13 August 2013

Renewables: A rising power
Financial Times 8 August 2013

Britain opens world's second-largest offshore wind farm
Reuters 7 August 2013

Giant gas platform sinks below waves
BBC News 5 August 2013

Saudi Prince: Fracking Is Threat To Kingdom
Sky News 29 July 2013

World Bank to limit financing of coal-fired plants
Reuters 16 July 2013

Tax break boost for shale gas explorers
Telegraph 13 July 2013

Obama: 'We Don't Have Time for a Meeting of the Flat Earth Society'
Atlantic 25 June 2013

Carbon dioxide passes symbolic mark
BBC News 10 May 2013

Rise in U.S. Gas Production Fuels Unexpected Plunge in Emissions
Wall Street Journal 18 April 2013

Shale gas benefits called into question
Financial Times 29 October 2012

Shale gas will not cut EU import dependence: study
Reuters September 2012

UK wind power predictable enough to keep lights on, says think tank IPPR
Telegraph 30 August 2012

Treasury messing with UK clean energy policy, say MPs
BBC News 23 July 2012

Are the lights about to go out all over Britain?
Telegraph 31 March 2012

US on path to energy self-sufficiency
Financial Times 18 January 2012

Natural Gas Could Serve as 'Bridge' Fuel to Low-Carbon Future
Scientific American 25 June 2010

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