

Ending fossil fuel dependency



"Quaker Peace & Social Witness is working with and on behalf of Quakers to speak out and create pressure in the UK for an energy economy that does not rely on fossil fuels."

We live in a fossil fuel economy. There are few economic activities in the UK that do not currently rely on the extraction, combustion or trade of coal, oil or gas. However, our dependency on fossil fuels has damaging effects on the Earth's ecosystems and our global society. More sustainable and just alternatives to our current energy economy are possible.

Through their policies and investments, those in political and economic power play a large role in determining how energy is produced, sold and used. The UK government could make choices that would end this country's fossil fuel dependency. This would enable the UK to play its part in cutting global greenhouse gas (GHG) emissions, limiting demand for extraction, and influencing other states to do the same. However, powerful companies and individuals have strong financial interests in maintaining our current energy economy. Despite the damage caused by fossil fuel dependency, the government and others are yet to take adequate action to transform our energy system.

Quakers in Britain recognise that our environmental crisis is deeply connected to economic inequality and destructive forms of economic growth. Quaker Peace & Social Witness is working with and on behalf of Quakers to speak out and create pressure in the UK for an energy economy that does not rely on fossil fuels. This briefing will discuss fossil fuel dependency, its impacts on people and the Earth, and how a transition to a more sustainable and just energy economy is possible.

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The fossil fuel economy

Around 85% of energy consumed in the UK derives from oil, gas and coal.¹ Much of our infrastructure, services, production and use of goods currently relies on this energy. At present, losing access to this energy would cause short-term instability to our society and economy. Maintaining 'energy security' is therefore a priority for government. Under current policy, this means maintaining a constant source of oil, gas and coal.

Like many states, the UK provides active financial and political support to the fossil fuel industry, including direct subsidies and tax breaks. Although this support for fossil fuels lacks transparency, world governments are now estimated to subsidise the industry by up to \$1 trillion per year.² Research indicates that global fossil fuel subsidies total 12 times the amount for renewables.³

Government support for the industry bolsters vast profits for corporations and their investors. In December 2012, £900 billion was invested in companies on the London Stock Exchange whose primary business was the extraction of, or services associated with the production of, fossil fuels. This compared to just £5 billion invested in renewable energy, and formed around 25% of all shares listed there.⁴ In 2011, the top five global oil companies alone made £86 billion in profit,⁵ equalling more than twice the GDP of Ghana in the same year.⁶ Use of tax avoidance measures enables the industry to minimise loss of profits to the public purse. In 2011, British oil companies Shell and BP paid less than 3% tax on profits to HMRC,⁷ compared to the standard 26% corporation tax rate.

Like other dominant economic sectors, the fossil fuel industry holds considerable political power and is among those described as having 'revolving door'⁸ access to government. Many government ministers and advisers have close ties with energy corporations,⁹ and companies assign extensive resources to lobbying the UK government.

Fossil fuel dependency affects the UK's global political role. Foreign policy can often be seen to help secure fossil fuel sources abroad. In recent years, the UK has given diplomatic support to companies such as BP and Shell to gain controversial extraction licences overseas including in Libya, Russia, and Azerbaijan.¹⁰ Following the 2003 invasion of Iraq, the government was accused of helping UK corporations secure Iraqi oil reserves in its post-war recovery.¹¹ Fossil fuel corporations are among those in contracts with the government's UK Export Finance department, which guarantees income when overseas buyers do not pay.¹² The military also provides support for the fossil fuel industry, with the Royal Navy protecting key offshore extraction sites and transport routes.¹³ The UK and other nations' continued support for the industry affects their legitimacy on the global stage in efforts to tackle climate change, undermining their potential leadership in agreeing a global, legally-binding agreement to cut GHG emissions.

A fossil fuels future?

Since the Industrial Revolution, fossil fuels have aided higher living standards for many, providing employment, warmth, relief from physical labour, transport, abundance of food, and new economic opportunities. However, it is now clear that dependency on fossil fuels is threatening the Earth's climate and ecosystems, and the security and wellbeing of many communities. It is also clear that the wellbeing of individuals and communities can be achieved in more sustainable and just ways.

Hitting the limits of a stable climate

We could face irreversible climate change in the coming decades if global GHG emissions are not cut. About 87% of global human-made carbon dioxide emissions derive from fossil fuels.¹⁴ In 2009, UN member states recognised the need to maintain average climatic warming below a 2°C

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rise from 1990 levels. Achieving this limit would likely still present a 50% risk of runaway climate change. But with little action to cut emissions, research indicates that the Earth is now on a trajectory for 4°C warming if emissions are not cut, risking unprecedented heatwaves, droughts, floods, and other impacts on humans and ecosystems.¹⁵

Exactly how much oil, gas and coal remain in the Earth is unknown. However, sources will not run out in time to avoid climate chaos. Climate change models suggest that in order to maintain a 75% chance of containing warming below 2°C, no more than 20% of the carbon dioxide embedded in proven conventional fossil fuel reserves worldwide can be burnt. However, this does not include increasingly available unconventional sources of fuel, holding far more carbon than conventional sources in total. This indicates that only a small fraction of fossil fuel reserves can be exploited if we are to avoid runaway climate change¹⁶ (see box 1).

Extreme extraction

Despite warnings of climate chaos, corporations continue to capture and exploit fossil fuel sources. The industry is not only locking our energy economy in to 'business as usual'; corporations, with support from governments and financiers, are pursuing unconventional fuel sources previously economically or technologically unviable to exploit. With new innovations in extraction, and the high value of fuels, the industry is increasingly turning to 'extreme extraction'. This term has no official definition but describes highly resource- and energy-intensive extraction methods that often cause more local environmental and social damage and create fuels with higher emissions from extraction to combustion (or 'life-cycle emissions'). Sources may be lower in quality in crude form, mixed with other materials like shale or rock or more thinly distributed and therefore require more energy and resources to produce usable fuels from them.

BOX 1

Fossil fuels: too much remaining

565 gigatonnes: the most CO₂ that can be emitted globally in order to stay within 75% chance of avoiding 2°C warming.

2,900 gigatonnes: CO₂ embedded in proven conventional fossil fuel reserves worldwide.

\$35 trillion: the total estimated value of remaining conventional fossil fuel reserves under current global policies.

42,000 gigatonnes: the approximate amount of CO₂ embedded in fossil fuel sources if 'unconventional' reserves, fast becoming unlocked by extreme extraction, are accounted for.²⁷



Extreme extraction methods include mountain-top removal coal mining, where large explosions allow access to new coal sources. Elsewhere, underground coal gasification methods ignite thin or fractured coal seams and capture gas produced by the process. Shale gas fracturing (or 'fracking') has led to opposition in the UK due to the use of chemicals, contamination of water supplies and emissions-intensive processes. Offshore oil and gas extraction is also becoming more extreme, with companies exploiting deeper and more remote sources. The UK government has provided subsidies in the form of a 50% tax break for extraction of oil and gas sources such as those in the North Sea,¹⁷ and more recently for shale gas.¹⁸

"Shell and BP operate in the tar sands oil industry in Canada, often claimed to be the most extreme and destructive of new extraction techniques."



BOX 2

The Alberta tar sands: UK companies at the frontiers of extreme extraction

British oil companies BP and Shell, and banks RBS and Barclays, are among the many investing in the extraction of crude oil in Alberta, Canada. The process to extract and refine the oil is highly energy- and water-intensive. The area affected is now larger than the size of England. The tar sands industry is causing extreme air pollution and has devastated the landscape and many local waterways and ecosystems. In 2012, NASA scientist James Hansen claimed that if the industry continues into the coming decades, carbon emissions from the industry alone will mean 'game over' for efforts to maintain a stable climate.²⁸ The Canadian government and the oil industry are now intensively lobbying the UK and EU to open up European markets to tar sands fuel.

BOX 3

Oil and UK military aid in the Niger Delta

Shell Petroleum Development Company (SPDC), jointly owned by British oil company Shell and the Nigerian government, has drilled for oil in the Niger Delta since the 1930s. Despite creating vast profits for Shell and some of Nigeria's political and economic elite, the region is affected by poverty and violent conflict. Drilling has led to decades of environmental damage and health problems. Armed groups regularly attack Shell's infrastructure and are met with retaliation from government armed forces. The Nigerian government has faced accusations of oppressing communities in order to protect the oil operations of SPDC. In 2013, The UK Ministry of Defence had spent £12 million on military aid for Nigeria since 2001. It was revealed that Shell had lobbied the UK to increase military aid to Nigeria in order to help protect SPDC oil fields.²⁹



Many extreme extraction methods are not new but are fast becoming a focus for corporations, including for British companies such as BP, Shell and Cuadrilla. UK companies are also investing heavily in controversial extraction techniques overseas. Shell and BP operate in the tar sands oil industry in Canada, often claimed to be the most extreme and destructive of new extraction techniques (see box 2). UK finance corporations are also involved in extreme extraction. HSBC, RBS and Barclays are all key investors in large-scale or unconventional fossil fuel extraction projects around the world.

The seeds of war

With continued global dependency on fossil fuels, it is likely that both the extraction of and the emissions from fossil fuels will exacerbate insecurity and vulnerability among communities around the globe. Claims over fossil fuel sources and the profit made from them are highly contested in many parts of the world. The rights and dignity of local communities are often undermined by the drive for revenues. The discovery of fossil fuels has been described as a 'resource curse' rather than a means of national prosperity in some developing countries. As fuel extraction is highly profitable and dependent on geographic areas, locations with fossil fuel sources or infrastructure often become militarised by state forces, private security or militia groups (see box 3).

Human-made climate change, predominantly caused by fossil fuel emissions, will exacerbate conflicts over, and inequalities in access to, land, water and food. Temperature and rainfall pattern change are devastating harvests in places such as India, Africa's Sahel region and the mid-western United States. This has contributed to increases in global food prices.¹⁹ Rising sea levels resulting from climate change are also already causing insecurity in low-lying coastal regions such as Bangladesh and the Solomon Islands.

An energy economy of unequal benefits

People have always benefitted unequally from fossil fuels. We have seen that the poorest are often the most affected by climate change and extraction. However, economic inequality also means that a minority of the global population experience the greatest benefits of a fossil fuel economy. Twenty per cent of the world's population, nearly all living in developing countries, do not have access to electricity.²⁰ Even in the UK many households live in 'fuel poverty' (see box 4). Richer consumers can better afford the fuel to heat their homes and use carbon-intensive travel and other goods and services. Research shows that there is a strongly positive correlation between a UK household's disposable income and its members' collective carbon footprint.²¹

With fossil fuel sources increasing in value, energy prices are rising. In the UK these costs are usually passed on to consumers via just six supply companies now providing energy for 99% of homes. Regulator Ofgem accuses these companies of stifling competition and working together to maintain high prices.²² Some, along with the government, often cite levies for green technologies as the cause of rising consumer bills. Yet research indicates that the prime reason for higher bills is the rising cost of gas.²³ Unlike fossil fuel subsidies, which derive from the public purse, funding for green technologies is often added to consumer bills, making them more visible and vulnerable to public backlash. This perpetuates the belief that green alternatives are necessarily more expensive, and that the UK must therefore choose between affordable and sustainable energy.

Ending fossil fuel dependency

"Where we see crisis, we also see opportunity to remake society as a communion of people living sustainably as part of the natural world."

From *A Quaker Response to the Crisis of Climate Change*, 2009.

Quaker Peace & Social Witness is speaking out with and on behalf of Quakers for an end to fossil fuel dependency. We are working to engage with decision-makers, support grassroots activism, and find ways of creating social change in the UK that would build a more sustainable and just energy economy. Ending our dependence on fossil fuels is possible, and it will help reduce the impact of our lives and economy on people and the Earth. But creating this transition is a big challenge. As well as changes made by individuals, political change is needed.

Creating the shift

In 2008, after widespread grassroots pressure, the UK government introduced the Climate Change Act. The act commits the UK to cut national greenhouse gas emissions to 80% lower than 1990 levels by 2050. This would not only reduce our climate impact, but help restrict demand for fossil fuel extraction. However, little progress has since been made. Viable technologies and strategies are available to help us build a sustainable and just economy, but political and economic support is needed to make these alternatives central to our economy.

The UK government can help end fossil fuel dependency in the UK in three key ways. Firstly, government must help reduce the political power of the fossil fuel industry. It can resist the privileged access of the industry to political decision-making, for example by placing restrictions on corporate lobbying, and recognise that strategies for economic security and human wellbeing need not rely on the use of fossil fuels and the dominance of the fossil fuel industry. Greater transparency over government support for the industry is needed. However, the government, and civil society, must also actively ensure that energy policy is informed by democratic processes by which the needs and views of citizens are heard over big business.

BOX 4

Fuel poverty in the UK

The measure of fuel poverty shows the effect of rising fuel prices and economic inequality in the UK. Fuel poverty is when a household's energy bills cost more than 10% of its income. Approximately 3.9 million UK households were in fuel poverty in 2012. Fuel poverty is more likely to affect households on lower income. In 2011, fuel poverty affected 33% of households with an income of up to £30,000 a year, but affected just 2% of those with incomes above £30,000.³⁰



Secondly, limits and regulations on fossil fuel use and GHG emissions can be set. Commitments like the Climate Change Act require fossil fuel reduction strategies for all sectors of the UK economy. The UK, alone or through the EU, could also implement climate and environmental impact standards on the goods and services that it trades with overseas, helping to address fossil fuel use abroad. Such strategies and regulations would inform the investment and consumption habits of businesses and citizens.

Thirdly, the government can support energy alternatives with investment and incentives. With energy demand reduction strategies, investment in energy efficiency and greater interconnection of the national grid with Europe, the UK could build a power system based on renewable energy by 2030.²⁴ Furthermore, with financial incentives and support, government could better enable communities to invest in their own renewable energy projects, enabling people to control and benefit directly from small-scale, renewable energy generation. Investing in sustainable and affordable public transport could significantly reduce the overall impact of our transport system. Providing and incentivising investment beyond our current economic centres could enable healthier and more self-reliant local communities, requiring people to travel shorter distances in their daily lives. The UK could also play a key role in the development of sustainable energy overseas by ensuring that policies and aid budgets prioritise this alongside poverty reduction.

The transition to an economy free from fossil fuels could not only help tackle injustices resulting from climate change and fuel extraction; it could also create an energy system with economic benefits for all. Despite efforts by the fossil fuel industry to persuade the public of the contrary, it is becoming increasingly clear that a low-carbon energy system in the long term would be more affordable to everyone, both as tax-payers and consumers. For example, research suggests that wind power would prove more cost effective to government and consumers than gas, the key focus of the UK government's electricity generation strategy.²⁵ If government resources designated to supporting the fossil fuel industry were shifted to support low-carbon technologies, the UK could have access to both sustainable and affordable energy. A power system based on the efficient use of renewables-based energy, in which the supply and sale of energy are better regulated, could reduce green-house emissions, cut demand for extraction and help tackle fuel poverty in the UK.

The investment needed for this transition would also create much-needed jobs and encourage sustainable economic activity in the UK. In recent years the government has cut or delayed spending to tackle climate change and support sustainability, citing the need to reduce the national deficit. However, many economists believe that instead of reducing investment spending, the government could help support healthy and socially useful economic activity by investing in sectors like the 'green economy'.²⁶ The UK has high levels of unemployment, and with enough investment the sectors needed to build a sustainable, renewables-based energy economy could provide many thousands of jobs. Sectors like renewable energy, energy efficiency, and public transport could create UK jobs, with the training benefits that these bring.

Ending fossil fuel dependency and building a sustainable and just energy economy would not only tackle the harm and injustices resulting from climate change and fuel extraction; it would also help deliver the benefits of such an economy to all. This is a key opportunity to build a more just society and economy for people and the Earth.

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Take action

Quaker Peace & Social Witness (QPSW)'s Sustainability & Peace Programme works to help Quakers take action on sustainability and calls on the government and others for political change. To keep up to date and learn about opportunities for you and your meeting to take action:

Visit www.quaker.org.uk/speak-out for news on the latest campaigns and actions.

Sign up to QPSW's *Earth & Economy* newsletter and e-updates at www.quaker.org.uk/earth-economy-signup.

Read about how to reduce the ecological impact of your life and your meeting at www.quaker.org.uk/sustainability.

Find out more or tell us your news and opportunities for action on fossil fuels and other sustainability issues by contacting Sunniva Taylor, Sustainability & Peace Programme manager on 020 7663 1047 or at sunnivat@quaker.org.uk.

Endnotes

1. World Bank data, 2013.
2. Heinrich Böll Foundation, *Low Hanging Fruit* report, 2012.
3. Bloomberg, 29 July 2010. 'Fossil Fuel Subsidies Are Twelve Times Renewables Support': www.bloomberg.com/news/2010-07-29/fossil-fuel-subsidies-are-12-times-support-for-renewables-study-shows.html (web article). Accessed 15/08/2013.
4. World Development Movement, *Carbon Capital Handbook*, 2013.
5. Centre for American Progress, 2012. 'Big Oil's Banner Year': www.americanprogress.org/issues/green/news/2012/02/07/11145/big-oils-banner-year/ (web article). Accessed 03/08/2013.
6. World Development Indicators, 2013.
7. Platform London, *Making a Killing* report, 2013.
8. World Development Movement, 2013. Fossil fuel web of power online interactive infographic: www.wdm.org.uk/carbon-capital/nexus. Accessed 25/07/2013.
9. *Ibid.*
10. Platform London, *Making a Killing* report, 2013.
11. *The Independent*, 9 April 2011. 'Secret memos expose link between oil firms and invasion of Iraq': www.independent.co.uk/news/uk/politics/secret-memos-expose-link-between-oil-firms-and-invasion-of-iraq-2269610.html. Accessed 22/08/2013.
12. UK Export Finance, *Export Credits Guarantee Department Annual Report and Accounts 2012–13*, 2013.
13. The Royal Navy, 2013. 'What the Navy does' (website): www.royalnavy.mod.uk/About-the-Royal-Navy/What-the-Navy-Does/Protecting-our-economy. Accessed 27/08/2013.
14. Le Quéré, C. (2013), 'The global carbon budget 1959–2011'. *Earth System Science Data*, 5, pp. 165–85.
15. World Bank, *Turn down the heat: why a 4°C warmer world must be avoided*, 2012.
16. Berners Lee, M. & Clark, D. (2013), *The Burning Question*, Profile Books, Croydon, pp. 32–33 and 88–89.
17. Friends of the Earth, *Fossil fuel tax breaks in the UK* briefing, February 2013.
18. *The Guardian*, 19 July 2013. 'George Osborne unveils "most generous tax breaks in world" for fracking'.
19. Hitzemann, A.A., 2012, 'The United States, Niger & Jamaica: Food (In)Security & Violence in a Globalised World': <http://sustainablesecurity.org/article/united-states-niger-jamaica-food-insecurity-violence-globalised-world> (web article). Accessed 08/08/2013.
20. The World Bank, 2013. 'Energy: The Facts' (website). Accessed 02/09/2013.
21. Fahmy, E. et al, 'The distribution of UK household CO₂ emissions: Interim report', Joseph Rowntree Foundation, 2011.
22. Telegraph, 12 June 2013, 'Ofgem outlines proposals to "break stranglehold" of big six energy suppliers on electricity market': www.telegraph.co.uk/finance/newsbysector/energy/10114905/Ofgem-outlines-proposals-to-break-stranglehold-of-big-six-energy-suppliers-on-electricity-market.html. Accessed 08/08/2013.
23. Committee on Climate Change, *Energy prices and bills – impacts of meeting carbon budgets* report, December 2012.
24. WWF-UK, *Positive Energy: how renewable electricity can transform the UK by 2030* report, October 2011.
25. Cambridge Econometrics, *A Study into the Economics of Gas and Offshore Wind: A report for Greenpeace and WWF-UK*, November 2012.
26. New Economics Foundation, *The Cuts Won't Work* report, December 2009.
27. Berners Lee, M. & Clark, D. (2013), *The Burning Question*, Profile Books, Croydon, pp. 32–33 and 88–89.
28. *The Guardian*, 19 May 2013. 'Tar sands exploitation would mean game over for climate, warns leading scientist'.
29. Platform, *Armed Extraction: The UK Military in Nigeria* briefing, 2013.
30. uSwitch.com, '6.3 million or almost a quarter of households are in fuel poverty' press release, 6 July 2011.

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