The Co-operative Bank

Friends of the Earth

THE FUTURE STARTS HERE: THE ROUTE TO A LOW-CARBON ECONOMY

This report summarises research carried out on behalf of The Co-operative Bank's campaign partnership on climate change with Friends of the Earth. The research, published in full as *Living Within a Carbon Budget*, demonstrates both the need and the means by which we can make a successful, low-carbon economy a reality in our lifetimes.

Climate change is one of the greatest threats facing humanity and the planet. The most comprehensive and realistic assessment of the long-term energy economy of the UK ever produced, *Living Within a Carbon Budget*, shows that to avoid the worst impacts of climate change we must reduce carbon dioxide emissions substantially and start putting the mechanisms in place to do so very soon. The report provides a route map for the UK to do that – describing how we can make the transition to a low-carbon economy that sets an example to the rest of the world.

THE SCIENCE

Unchecked climate change will lead to more extreme weather and higher sea levels. Billions of lives are at risk, especially in developing countries that have done least to cause the problem. To avoid this scientists say we need to prevent average global temperatures rising any more than 2°C above pre-industrial levels. This will require keeping atmospheric concentrations of the main greenhouse gas, carbon dioxide, as far below 450 parts per million as possible.

THIS REPORT

Research for The Co-operative Bank and Friends of the Earth by the Tyndall Centre for Climate Change at The University of Manchester, demonstrates for the first time:

- **The urgent need to reduce emissions and introduce a comprehensive action plan by 2010.**
- **The UK's carbon budget – how much carbon dioxide the UK can release up to 2050 and still play its part in tackling climate change.**
- **How the UK can develop a clean economy that lives within this carbon budget.**

The research report *Living Within a Carbon Budget* concludes that the Government must act now to reduce emissions, and within the next four years must introduce a comprehensive action plan to substantially reduce energy consumption and drive innovation. Delay will mean the cuts will have to be greater.

Carbon dioxide emissions have not fallen in the UK since 1990, despite Government claims to the contrary. The Government's figures have ignored emissions from international aviation and shipping.

Friends of the Earth's Big Ask campaign is calling for a legislative framework to deliver year-on-year reductions in carbon dioxide. The Co-operative Bank supports The Big Ask campaign.

Our route map shows how creating the right policy framework now will drive the technological solutions necessary to make the transition to cleaner energy sources over the next two decades. It illustrates changes in daily life as the UK moves to a healthy, low-carbon economy.

RESEARCH PARAMETERS

The research assumed that the structure of the UK economy will not change significantly to 2050; and that it will continue to grow at around 2.5 per cent per year. The research suggests that by 2050 population will increase by around 7 per cent and household numbers by 9.6 per cent.

The full report *Living Within a Carbon Budget* by the Tyndall Centre for Climate Change at the University of Manchester, for The Co-operative Bank and Friends of the Earth England, Wales and Northern Ireland, in collaboration with Friends of the Earth Scotland, can be found at: www.foe.co.uk/resource/reports/living_carbon_budget.pdf

PATHWAYS TO A LOW-CARBON ECONOMY, 2006-2030

POLICY FRAMEWORK 2015-2020

Entire UK economy now covered by emissions trading scheme or carbon taxes, giving businesses incentives to reduce emissions and invest in research and development. Technological advances spreading across all sectors. Innovation improving carbon emissions in transport, services, industry and households.

TECHNOLOGY 2015-2020

Carbon capture and storage starts being used. Hydrogen fuel cells being developed and tested. Steady increase in use of renewables: sun, wind, wave, tides and biomass.

DAILY LIFE 2020

New buildings increasingly have zero demand for active heating: passive solar and insulation becoming the norm. Solar water heating being included in all new homes and many refurbishments. Rolling programme of domestic renewables. Super-efficient LED lighting becoming the norm. Fridges, washing machines etc becoming more efficient.

POLICY FRAMEWORK 2030

Government continues tracking emissions and delivering year-on-year cuts in line with Climate Change Law introduced in 2007. Financial incentives needed less often as innovation increasingly drives changes. Public encouraging innovation through purchasing.

TECHNOLOGY 2030

Energy consumption reduced by almost a third from 2004. Carbon dioxide emissions down by 70 per cent from 2004 Fossil fuel use down by 30 per cent from 2004. Renewable power now accounts for 13 per cent of all energy, and a third of electricity. Hydrogen beginning to be used, especially in industry. Fossil fuels still major energy source but CO_2 from almost half fossil fuel use is now being captured and stored. CO_2 emissions from aviation, surface transport, industry, services and households have fallen.

DAILY LIFE 2030

Energy consumption in homes reduced by a quarter from 2010. People continue to travel as much as in 2004 but more people per train, bus and aeroplane. Bio-fuels being used for a proportion of fuel needs. Around 10 per cent fewer cars on the road. City centres car free. More people walking, cycling or using more efficient public transport. Planes flying slower to improve efficiency. Domestic and some European flights have declined. Larger high-speed trains have more efficient engines.

Carbon emissions 2030

Our route map shows how creating the right policy framework now (upper line) will drive the technological solutions (middle line) necessary to make the transition to cleaner energy sources over the next two decades. It illustrates changes in daily life (lower line) as the UK moves to a healthy, low-carbon economy.

YEAR 2020

YEAR 2030

LOW CARBON FOR THE HIGH LIFE

Taking action to reduce carbon dioxide emissions is not just about averting disaster. A low-carbon economy will offer social, personal and economic benefits:

- More jobs in sustainable industries.
- More home-grown energy and less reliance on imported oil, gas and coal.
- Cleaner air and fewer road accidents.
- Better health as more people choose to cycle and walk.
- Spending less on flood defences and clean-up.
- Spending less helping poorer countries deal with the impacts of climate change.

Daily life does not need to be radically different. In a low-carbon economy we will have warm houses, leisure, jobs, and be able to travel. What will change radically is how energy efficient our lives are, and where we get our energy from.

A POLITICAL OPPORTUNITY

Living Within a Carbon Budget demonstrates that we can meet our emissions targets by cutting energy consumption now and putting in place within the next four years a comprehensive programme for change.

Opinion polls show people want the Government to do more on climate change, and major businesses have told Tony Blair they want the Government to act.

The UK is highly influential in the international community. Committing to a low-carbon economy will blaze the trail for the rest of the world.

Tony Blair, Gordon Brown and David Miliband, as well as David Cameron and Menzies Campbell, must work together to rise to the challenge of climate change – a challenge as great as any faced by political leaders in the past.

Reducing demand for energy is the first priority. The technologies are available or nearly ready to make big cuts in emissions. Government intervention is essential at all levels to realise their full potential

- Cutting waste – insulation by double glazing, loft lagging and draught exclusion.
- Saving energy – energy-efficient appliances at home, in the work place and industry.
- Cleaner land transport – longer trains, energy-efficient cars and buses, cycling and walking.
- Wind – UK has the best wind resource in Europe.
- Wave and tidal power – predicted to provide electricity for homes and businesses.
- Micro-generation – small wind-turbines, solar heating and electricity turning houses into power stations.
- Combined heat and power – waste heat from electricity generation to heat homes and offices.
- Hydrogen from renewables – could power some industry and transport in the next 30 years.
- Carbon capture and storage – an emerging technology and interim solution that extracts carbon dioxide from power stations and stores it underground.

Living Within a Carbon Budget demonstrates that a nuclear power programme is not a prerequisite to a low-carbon future.

Friends of the Earth

The Co-operative Bank

Friends of the Earth campaigning in partnership with The Co-operative Bank

Making life better for people by inspiring solutions to environmental problems

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