

UK's Global Warming Challenge Heats-up **By Angela Singleton, London Press Service**

Climate change is the greatest environmental challenge facing the world today. Rising global temperatures will bring changes in weather patterns, rising sea levels and increased frequency and intensity of extreme weather events.

Most scientists agree that temperatures will rise by between two and six degrees Celsius this century, caused mainly by carbon emissions from burning fossil fuels for power and transport, putting millions of lives at risk from floods and famines.

Global warming is a challenge for business, government and individuals alike.

The way to reduce and reverse global warming is to cut the use of fuels that emit carbon when burned.

Ever since scientists with the British Antarctic Survey discovered the hole in the ozone layer, the United Kingdom government has taken the threat of global warming seriously. In 1997, the UK subscribed to the Kyoto Protocol binding developed countries to reduce emissions of the six main greenhouse gases, including carbon dioxide (CO₂).

The Kyoto Protocol was signed by 141 countries in 1999, with the United States declining to join the agreement. Some developing countries, such as India and China, have ratified the protocol but are not required to reduce carbon emissions under the agreement, despite their large populations.

The UK has established a domestic goal of a 20 per cent reduction in CO₂ emissions below 1990 levels by 2010, and 12.5 per cent reductions in other greenhouse gases. These targets far exceed the ones set by Kyoto.

And in a new draft Climate Change Bill, the UK government has just announced world-leading plans for an ambitious 60 per cent cut in carbon emissions by 2050. The new law, if passed by parliament, would commit future governments to legally binding targets.

Any business or public body would have a "cap" for the amount of carbon dioxide it was allowed to emit and it would have to use low-carbon technology or buy carbon credits on the open market if it wanted to use more power than its allocation.

Professor Julia Slingo is acting director of the Walker Institute at the University of Reading, southern England, and climate director of the UK's National Centre for Atmospheric Sciences. She commented:

"The science is clear - climate change is here and it's likely to get worse. With this Climate Change Bill the UK is giving an unambiguous message both at home and internationally that action is needed to deal with climate change.

"As well as reducing greenhouse gas emissions to lessen potential impacts, the world will need to adapt to climate change. In the UK that could mean improving flood defences to cope with an increased risk of flooding or adapting our buildings and transport systems to cope with extreme heat. What businesses and governments require are more confident forecasts of local and regional changes in climate and extremes, not just for the 2050s but for 2010 or 2015. This is now the challenge for science."

UK Prime Minister Tony Blair said recently that there is a "tremendous opportunity" for action on climate change. Following a meeting with German Chancellor Angela Merkel, Mr Blair said that G8 leaders had a chance to create a new framework for when the Kyoto agreement ends in 2012.

The UK government commissions a wide range of scientific research on climate change and funds programmes on climate modelling and work on impacts and adaptation. It funds a number of programmes to encourage the reduction of emissions such as the Climate Change Levy, Climate

Change Allowances and Energy Trading Schemes, as well as the Carbon Trust and the Energy Saving Trust.

Improving energy efficiency is a vital part of the government's strategy. In April 2001, the government introduced a climate change levy on energy suppliers that aims to encourage businesses to use energy more efficiently. Money from the tax is channeled into such measures as the development of renewable energy, including solar, wind and biomass production. The aim was to provide five per cent of UK electricity supplies by the end of 2003 and 10 per cent by 2010.

In 2006, Chancellor Gordon Brown asked former World Bank chief economist Sir Nicholas Stern to analyse the financial implications of climate change. The Stern Report was published in October 2006, with Sir Nicholas claiming that urgent action on global warming was vital, and that delay would multiply the cost 20 times.

Stern said the world must shift to a "low-carbon global economy" through measures including the development of new technologies, taxation, carbon trading and increased aid for developing countries. He said acting now to cut emissions would cost about one per cent of global gross domestic product each year.

In a radical climate action plan, London hopes to become the greenest city in the world by cutting carbon emissions by 60 per cent within 20 years. The plan aims to slash carbon output by reducing demand and wastage across the whole spectrum from individuals to households, businesses and local governments.

London's 7.5 million people will be urged to turn off lights, switch to low-energy lightbulbs and not to leave TVs, computers and any equipment on stand-by after use. Householders will be offered big subsidies to insulate their homes that account for 40 per cent of carbon emissions.

"This will make London the first city in the world to have a really comprehensive plan to cut its carbon emissions," said Mark Watts, climate change adviser to London Mayor Ken Livingstone. Businesses and local governments, which emit some 33 per cent of the carbon, will be awarded green badges of merit for cleaning up their acts. "The private sector is moving faster than the public sector on climate change. Companies want to be seen having good green credentials," said Watts.

One company that is keen to promote its green credentials is Virgin Fuels, a new branch of the Virgin group, headed by Sir Richard Branson. Branson has committed 1.6 billion pounds to tackle climate change. He is pledging all profits from his Virgin air and rail interests over the next 10 years to combating rising global temperatures. Much of the investment will focus on biofuels, an alternative to oil-based fuels and made from plants.

The UK government has ordered filling stations to source five per cent of their fuel from renewable energy by 2010. A government spokesman said: "The UK is already leading the way in Europe in reducing our greenhouse gas emissions. We will continue to press for an international agreement to control global emissions in the long run."

UK Environment Secretary David Miliband said: "We are setting hard targets for ourselves. We think that's the right way to set an example for the developing countries, the Chinas and Indias of this world. We have all got to be part of this solution."

One UK organisation that has been working for some time on rainfall and surface pressure monitoring projects with scientists from China and India is the Hadley Centre for Climate Change, part of the UK's Meteorological Office.

Karen Wordsworth, international development partner at the Met Office, said: "Politically, the UK is very strong on climate change and, scientifically, we are strong too, having already provided drought monitoring models in Africa and the SADC [Southern African Development Community] region."

"Recently, we have been working closely with the Chinese Met Authority. One major project that we are involved with is a flood prevention scheme on the banks of the Yangtze river. We have an exchange programme set up and a group of Chinese scientists has already visited the UK to examine how we work at close quarters."

Ms Wordsworth continued: "In India, we have been working with the Indian Met Service, also on flood prevention projects, and in Sri Lanka where we have been helping to build a dam. At the moment we are trying to engage the World Bank to support reconstruction and the impacts of climate change in these areas."

China is the world's second-biggest emitter of greenhouse gases after the US. This has prompted the Chinese government's growing emphasis on the trading of carbon credits.

These credits create a market for reducing greenhouse emissions by giving a monetary value to the cost of polluting the air. A credit gives the owner the right to emit one tonne of carbon dioxide. Credits can be exchanged between businesses or bought and sold in international markets at the market price

China was the most popular location for projects generating carbon credits and took a 63 per cent share of the market for selling credits in 2006. India generated 12 per cent of credits.

A groundbreaking deal worth up to 400 million pounds to buy 29.5 million tonnes of carbon credits from China was recently announced.

The agreement will allow a Chinese chemical company to construct a special system for eliminating a super-greenhouse gas, HFC 23. It, in turn, will sell carbon permits to companies such as Centrica, owner of British Gas, allowing it to meet its carbon reduction targets while continuing with its current rate of emissions.

The London-based investment bank Climate Change Capital (www.climatechangecapital.com) is behind the deal and has set up a 445 million pounds investment fund specifically aimed at carbon schemes. Ryan McDonagh, senior analyst at London-based Icecap, carbon-credit asset managers and traders, said that the UK has about 40 per cent of the sector's market worldwide.

The Xinfeng household-waste disposal plant in Guangzhou, China, recently signed a contract with Icecap. Icecap will pay about 50 million US dollars to Xinfeng by 2012 for the plant to develop its methane-based power generation projects. In return, Xinfeng is to cut its CO₂ emissions by five million tonnes in the coming five years, with the credits given to Icecap. Other Icecap projects include methane capture at coal mines in India, South Korea and South Africa.

Specialist UK consultancies are also leading the field in pioneering global approaches such as carbon offsetting (the most popular offsets are tree planting schemes) and ecological footprinting (an indicator of environmental sustainability). Other areas of expertise include carbon trading.

The City of London was the leading location for international carbon trading in 2006. Carbon trading puts price tags on the release of greenhouse gases so that they can be included in economic decisions.

According to a World Bank report, traders based in the UK have been responsible for buying 43 per cent of the carbon traded under the Kyoto Protocol.

Sustainable energy is also another area that the UK excels in, as showcased by companies such as Garrad Hassan, one of the country's leading independent consultancies in grid-connected wind energy.

Headquartered in Bristol, the company has won major contracts in Japan, Korea and China, and recently signed an agreement with China's Zhejiang Windey Engineering company to provide engineering design and training services for its new 1.5MW wind turbine development.

And in another recent announcement, UK researchers commissioned by the government are to work with their Indian counterparts to provide a detailed assessment of potential impacts of climate change in India and to undertake a pilot regional project to identify and develop adaptation strategies.

The project will seek to improve climate change scenarios for India up to 2050 through different modelling scenarios. It will also assess the impact of climate change nationally on water resources, agriculture and forestry, exploring linkages between the sectors.

It follows the successful completion of a major assessment of the impacts of climate change on India, carried out by the UK's Department for Environment, Food and Rural Affairs (Defra) and India's Ministry of Environment & Forests, covering water resources, agriculture, forests, industry, sea level and human health.

The results from this assessment found that India was likely to face significant adverse effects in a range of sectors, including agriculture, health, forestry and infrastructure. The study found that temperatures were likely to rise in the next few decades, leading to a reduction in wheat and rice yields.

Speaking at the launch of the second phase of the India/UK Partnership workshop in Delhi, UK Environment Secretary David Miliband said: "The UK has so far committed over 40 million pounds to help build developing countries' understanding of how climate change will affect them and to improve integration of climate risks within development plans."

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Hot topic: the problems arising from global warming are a challenge for business, government, and individuals alike. The UK government and various industry sectors are leading some major climate change schemes at home and are also behind scientific and energy research projects in developing countries such as China and India.