

Partners in low carbon, high growth development

China and the UK are working together to advance the prospects for low-carbon prosperity

Through the *Strategic Programme Fund* (SPF) (previously known as *Low Carbon High Growth SPF* and from April 2011 as *Prosperity SPF*) the UK has been working with the Chinese government and an array of Chinese and international partners to support China's transition to a stable, open and low-carbon economy. The programme consists of climate change, energy, financial reform, economic rebalancing and business environment policy areas.

The programme is funded by the UK Foreign and Commonwealth Office. Climate Change projects are supported by China's National Development and Reform Commission, and economic reform projects have been implemented in partnership with other key government partners including the People's Bank of China.

The programme's purpose is to support China in achieving its goals in areas such as low carbon development, energy efficiency, green financing, financial sector regulation and economic rebalancing. The programme is supported on the UK side by teams specialising in these policy areas at the British Embassy in Beijing and at the British Consulates General in Chongqing, Guangzhou, Hong Kong and Shanghai. The programme has greatly enhanced the opportunities for Chinese, UK and international policy experts and think tanks to work together on better understanding the policy options and tools available for low development. Many of the projects involve Chinese provinces or cities as partners.

Through joint working between Chinese, UK and international experts the programme is:

- Strengthening the evidence base for the development of low-carbon policies;
- Building capacity for implementing such policies at national, provincial and local government levels, in government, industry and business;
- Supporting China in meeting its existing energy efficiency targets and its carbon intensity target of 40-45% carbon reduction per unit of GDP by 2020 versus 2005 levels;
- Supporting China to achieve efficient, sustainable energy use for enhanced security of resources;
- Supporting China in opening up and rebalancing China's economy towards private consumption;
- Supporting China's integration into the global economy;

To date the projects have addressed several policy themes:

- **Low carbon tools for provinces and cities:** identifying roadmaps for planning and developing a low carbon economy at city and provincial levels, and building local capacity to mitigate climate change;
- **Low carbon tools for businesses:** supporting and incentivising businesses to measure emissions and develop and implement energy efficiency plans; and demonstrating the benefits to business of a low carbon transition;
- **Low-carbon tools for energy intensive sectors and heavy industry:** developing tools for measuring and managing emissions, identifying energy efficiency measures and recommending policy approaches to encourage industries to take up these tools;
- **Clean technology, clean coal:** researching opportunities for developing and implementing clean technology in China, including clean coal, and carbon capture and storage;
- **Economic and fiscal policies for low carbon economic growth:** exploring options for effective low-carbon economic mechanisms in China, such as Green Credit Schemes for the iron and steel sector, and domestic carbon trading;
- **Financial sector regulation and reform:** supporting China to bring its financial regulations and standards into line with international norms;
- **Policy frameworks to expand provision of public health care, education, pensions and social security:** creating a strong and reliable social safety net to increase domestic consumption and thereby a more stable economy.
- **Economic integration:** opening China's economy to increased levels of foreign trade and investment, and facilitating Chinese participation in the making of global economic and trade policy.

Policy Area 1: Low Carbon Tools for Provinces and Cities

China's provinces and cities have a critical role to play in enabling the country to meet its existing and future objectives on low-carbon development and energy efficiency. So this theme is critical to the programme's goal of supporting China to achieve its low-carbon objectives.

Projects in this policy area seek to complement and support China's central policy initiatives with activity focused on *implementation* of low carbon policies on the ground. Under the guidance of the National Development and Reform Commission, the projects' implementers are working in partnership with a number of provincial and city governments. Many of these projects involve leading Chinese research institutes and academic bodies, including the provincial subsidiaries of the China Academy of Sciences and the China Academy of Social Sciences.

A key goal of these projects is to identify the steps that particular cities or provinces can take to turn the theory of low carbon development into a practical reality. To this end, the projects draw on the results of projects developed under other policy areas and bring together best practice and policies and initiatives implemented by similar provinces.

Current projects in this policy area are:

- working with **Guangdong** to develop a policy roadmap that will enable it to become one of China's pilot low carbon provinces;
- developing policy plans for low-carbon development in **Chongqing** – Western China's economic growth hub;
- carrying out low-carbon city initiatives with municipal governments in **Jiangxi, Guizhou, Jilin, Guangdong** and **Shandong**
- formulating low carbon development plans and capacity building in **Shanxi** and **Inner Mongolia**, and using these to underpin NDRC-supported training for local DRC officials from all provinces

Case Study: Jilin Low Carbon Zone

The programme's *Low Carbon Development Roadmap* for Jilin City was published in early 2010. The project took 2 years and cost £218,000. It was a pioneering collaboration between top academics from Jilin University, renowned Beijing institutions such as the China Academy of Social Sciences and the Energy Research Institute of the NDRC, and UK-based NGOs Chatham House and E3G.

The roadmap outlines how Jilin city (pop. 4.5 million) can move to a low carbon economy. The document contains a needs assessment; energy scenario modelling; original work on defining a low carbon economy; and a list of recommended, practical, costed investments with associated carbon emission reductions. The NDRC and Jilin city government closely followed and participated in the project. The roadmap has been highlighted as an example for other cities to follow.

All those involved in the project continue to discuss with the Jilin government and international parties (such as the EU and international financial institutions) options for developing the international partnerships required to implement the roadmap's recommendations.

The full roadmap, as well as other related project material, is available at www.lowcarbonzones.org

Policy Area 2: Low Carbon Tools for Businesses

Industry in China is responsible for 70% of the country's energy consumption. As China's economy continues to grow it is increasingly important for the business community to play its role in the delivery of national policies for emissions reduction and energy saving. Through low-carbon investment, businesses can benefit from resources savings, increased competitiveness, new opportunities as suppliers of 'green' technologies and environmental and reputational gains.

Under the guidance of the National Development and Reform Commission, our bilateral programme is actively promoting deeper engagement by the business community, both in the delivery of greater energy efficiencies and emissions reduction and in the development of low carbon goods and services. Our programme aims to improve businesses' understanding of the benefits of low carbon investment and to equip them with practical tools, including management strategies, emissions data management, awareness of technological solutions and low carbon standards. The programme also works with government to develop policies to incentivise business engagement in these areas.

Collectively, these projects help leading Chinese companies in key energy-intensive sectors to pioneer and demonstrate the practicalities and commercial benefits of low carbon investment.

Current projects in this policy area include:

- Developing emissions standards/tools that can be used by businesses to measure emissions from their own organisation, and products and services including in the cement, oil, chemical, petro-chemical and solar photovoltaic sectors, and to identify mitigation options;
- Developing the institutional framework needed for SMEs to audit their energy use and implement energy savings plans;
- Bringing together top Chinese CEOs to explore the benefits of low carbon growth;
- Sharing best practice, and training more than 600 companies to improve their energy efficiency;
- Producing an-online energy reporting tool that the Guangdong Government has mandated for use by over 900 high energy consuming enterprises.

Case Study: Building the South China Energy Conservation Community

This is a three-year £250,000 project implemented by Business for Social Responsibility, a leading corporate social responsibility organisation, in partnership with the Guangdong Energy Conservation Centre. This project has produced an online energy management training toolkit and online reporting platform to build capacity of energy managers from 25 of China's Top 1000 Energy Consuming Enterprises in Guangdong to measure and report on their emissions. The energy managers are now producing action plans to drive energy efficiency in their companies and there is evidence that they are exceeding their performance targets. The reporting tool has been expanded beyond the 25 companies to all provincial, county and city level top consuming enterprises and the Guangdong government has mandated its use by 900 enterprises. Based on experience gained from the training, the project implementers will identify potential policy frameworks for achieving energy efficiency in Guangdong.

Policy Area 3: Low Carbon Tools for Reducing Emissions from Energy Intensive Sectors and Heavy Industry

Energy-intensive industries contribute a large share of China's total emissions. Finding efficient and cost-effective ways of managing emissions from sectors such as iron, steel and cement will therefore be important for China as it seeks to meet its 40-45% carbon intensity target. In partnership with the NDRC, we and a range of project implementers have developed projects covering energy efficiency and emissions reduction in the iron, steel, cement, power, and transport and agriculture sectors.

These projects are: supporting carbon intensive industry to measure energy consumption and emissions, and identify reduction opportunities; identifying comprehensive regional policy frameworks for enabling industry to reduce emissions, including by accessing and financing technology; and supporting the development of national mitigation plans and policy frameworks.

Projects in this policy area are building technical expertise in the use of market mechanisms to incentivise energy efficiency and emissions reductions. Activities include:

- Providing regional policy options for low-carbon electricity in China, to incentivise low-carbon investment in the power generation sector;
- Formulating a Power Sector Green Action Plan, based on a cost abatement curve study for clean coal technologies to reduce emissions (SO_x, NO_x and CO₂) from power generation, and a set of guidance notes and a timeline to support the implementation of key findings;
- Capacity building for greenhouse gas reductions in the iron and steel sector by exploring a wide range of innovative financial mechanisms;
- Building the capacity of Chinese partners to implement a comprehensive policy framework to reduce emissions from the cement, power and transport sectors;
- Proposing and promoting low carbon fuel standards from technical and policy perspective to mitigate greenhouse gas emissions from the transportation sector;
- Working with UK and Chinese agricultural experts to improve soil nutrient management and reduce greenhouse gas emissions from agriculture. Early findings suggest China has the potential to reduce its fertiliser use by 30% with no loss of food production, a move which could reduce China's total emissions by 2-3%.

Case Study – Capacity building for greenhouse gas emissions mitigation in the cement, power and transport sectors

This one-year project, with a value of £178,000, looked at the potential application of a comprehensive policy framework to reduce emissions from the cement, power and transport sectors. It was jointly implemented by international consultancy Ecofys and Chinese think tank the Energy Research Institute. Through a range of activities, (research, analysis, workshops and communications), the project has developed the technical know-how required to manage emissions in these sectors efficiently and cost-effectively, including by innovative market-based mechanisms.

Policy Area 4: Energy, Clean Technology, Clean Coal

Coal accounts for around 80% of China's total electricity production and is likely to account for at least two-thirds of China's electricity for many years to come. Developing and implementing clean coal technologies, including carbon capture and storage (CCS), will be a crucial opportunity for China both to reduce the carbon intensity of its economy and to compete for a slice of what could become a huge global market for clean coal technology.

In partnership with the National Development and Reform Commission, we have developed projects to: accelerate understanding of the factors involved in developing and deploying CCS, including provincial and industrial engagement; and build the evidence base for CCS feasibility including the identification of carbon storage sites, regulatory options and financing. Our projects support China to achieve its goal in identifying low-carbon technology assets, developing clean technology roadmaps, and addressing barriers to technology implementation. Our projects are also supporting China to achieve its goals on domestic energy data management systems and energy governance. Activities include:

- Bringing Chinese and international experts together to identify the technical policy options for cleaner use of coal and more efficient power production;
- Supporting the development of technology roadmaps to accelerate research, development, and deployment of advanced energy supply and efficiency technologies;
- Addressing barriers to clean technology deployment, through the study of three key technologies: including supercritical/ultra supercritical coal fired power generation, onshore wind power, and energy efficiency in the iron industry;
- Bringing Chinese and international experts together to identify the technical factors relevant to CCS deployment;
- Developing a CCS Readiness roadmap in Guangdong Province, based on assessment of CO₂ emission sources and potential of CO₂ storage and on-shore Enhanced Oil Recovery (EOR) capacity, as well as the costs and benefits of CCS-readiness.

Case Study: Establishing China's Technological and Policy Strategy towards CCS Deployment

This two-year project (value of £444,000) aims to generate stronger business and government interest around the deployment of Carbon Capture and Storage (CCS) in Chinese coal-fired power stations. Specifically, it will highlight the technical and economic feasibility of Carbon Capture and Storage in China.

The project is jointly implemented by Tsinghua University and the Climate Group, a UK-based NGO. Tsinghua University is providing a technological-economic analysis of CCS technologies, such as advanced power generation technology with and without CCS; coal to liquid (CTL) with CCS; and cost comparison with other new and renewable energy technologies.

The research will provide scientific evidence of the feasibility of CCS demonstration in China. Meanwhile, the Climate Group is building capacity and understanding among key Chinese government and academic departments and leading energy companies to highlight the commercial opportunities and regulatory challenges around deployment of CCS in China. As a result, Chinese industries and government are more positive about the potential deployment of CCS technology and therefore keener to engage internationally to develop China's CCS strategy.

Policy Area 5: Economic and Fiscal Policies for Low Carbon Economic Growth

China's current approach to controlling greenhouse gas emissions is a direct regulatory (command and control) system, through setting energy intensity targets and closing inefficient power plants and factories. Economic tools such as resource taxes, tax breaks and targeted subsidies and investment have so far played a limited secondary role. Nevertheless, Chinese policy-makers are increasingly interested in exploring these economic tools to create the conditions for China to achieve its energy efficiency and carbon targets at the lowest possible cost (both economic and social cost).

Projects in this policy area include: supporting China's reform of energy pricing and taxation systems, building capacity for developing market-based mechanisms; developing fiscal (tax) measures to promote greater energy efficiency and lower carbon intensity, and creating incentives for low-carbon financing. To achieve these objectives, the programme works in partnership with leading government think tanks and other organisations including institutes under the State Council, the National Development and Reform Commission; the Ministry of Environmental Protection and the Ministry of Finance, as well as other experienced organisations.

The projects share international best practice to increase policy makers' understanding of how economic tools can reduce carbon emissions cost-effectively. The projects identify possible policy frameworks for China and identify potential barriers to their implementation. Activities include:

- Working with banking regulators to develop guidelines which favour low-carbon investment in energy-intensive sectors, including iron and steel.
- Identifying green tax measures to encourage low-carbon economic activity, including models of emissions reduction potential.
- Improving fiscal measures to stimulate public funding in energy-saving, clean energy, low-carbon cities, including a pilot with suggested new measures.
- Building institutional capacity to implement market-based approaches.

Case study - Steel and Iron Sector Green Credit Project

This two year project, with a value of £250,000, is supporting the Chinese banking sector to develop a green credit scheme that favours energy-efficient companies businesses in the iron and steel sector. The implementer, SynTao, with technical support from the Policy Research Institute for Fiscal Sciences and the policy institute of Ministry of Environmental Protection, have produced draft guidelines for Sichuan Province, which recommend that environmental and energy efficiency standards are included in loan application from iron and steel companies. The project has delivered training sessions for policy makers, banking regulators, financial institutions and iron and steel businesses on sustainable financing, and training on how to implement the guideline. The provincial guidelines will be tested in Sichuan's steel and iron sector. Experience and best practice from this will be shared nation-wide. The project has resulted in the drafting of a national guideline by the Chinese Ministry of Environmental Protection and the national China banking regulator, the China Banking Regulatory Commission. For more information, visit the project webpage: http://www.syntao.com/new_theme4_E.asp?ThemeID=93

Policy Area 6: Financial Sector Reform and Regulation

China's financial sector weathered the global financial crisis better than many other countries' financial systems. But significant further reform and development of China's financial system is needed to sustain rapid levels of economic growth, and to achieve the authorities' ambition of boosting domestic consumption and moving China up the value chain.

The UK remains at the cutting edge of financial sector innovation and is home to the world's leading international financial centre, London. Financial sector collaboration – policy, technical, and commercial – therefore naturally lies at the heart of UK-China relations. Under the framework of the China-UK Economic and Financial Dialogue (EFD), technical and policy collaboration on financial sector issues has reached “unrivalled” levels - as stated by Vice Premier Wang Qishan and Chancellor George Osborne at the third round of the EFD, in November 2010. We have been running a series of collaboration projects on financial sector reform and regulation issues with the People's Bank of China (PBoC), China Banking Regulatory Commission (CBRC), Ministry of Finance (MoF), and the State Administration of Foreign Exchange (SAFE) on:

- Spurring reform, development, and opening up of the corporate bond market, with a number of significant reforms implemented, e.g. SME collective notes (a kind of high-yield bond), and China's first credit derivative product;
- Supporting the revision of the regulatory framework for non-bank lending (key parts of the revision of the National General Loan Provisions) - to increase the flow of finance to small and medium sized enterprises (SMEs), consumers, and rural areas, and to 'formalise' aspects of China's significant 'informal financial' sector;
- Establishing a more comprehensive and reliable credit assessment system, including credit collection, credit rating, and collateral innovation to help small and medium sized enterprises access bank finance;
- Developing China's first codes of conduct for banks on consumer education and protection – so far 20 large and medium sized banks (accounting for 95% of banking sector assets in total) have signed up to the new codes of conduct;
- Supporting capital account liberalisation, to boost cross-border capital flows;
- Developing a more unified, liquid, open government bond market.

Case Study: Development of China's Corporate Bond Market

This two-year project with a value of £90,000 is implemented by the Research Bureau of the People's Bank of China (PBoC). Activities in this project have included desk and field research, a study visit to London, and two high-level joint China-UK seminars jointly held with the PBoC on "Risk Management and Investor Protection for Corporate Bonds" and "Innovation in China's Corporate Bond Market".

The project team developed a set of policy recommendations to support the launch of innovative corporate bond products such as high-yield bonds (for SMEs) and credit derivatives. The policy recommendations have been submitted to the State Council.

A number of significant reforms have been implemented since the project began, for example: China's first credit derivative product has been launched; "high yield bond" collective notes have been launched for China's SMEs, amounting to 1.27 billion Yuan; and foreign banks are now allowed to trade and hold market maker status for corporate bonds.

Policy Area 7: Policy Frameworks to Expand Provision of Public Health Care, Education, Pensions and Social Security

Boosting domestic consumption in China is key to balancing and stabilising China domestic and global financial flows. Expanding provision of public health care, education, pensions and social security will create a reliable and strong social safety net and create the conditions for increasing private consumption.

Projects in this pillar complement and support Chinese governments' policies to expand provision of public health, education, pensions and social security; encourage private consumption through tax policies; design and evaluate national employment policies; reform state-owned enterprises and their financing; develop rural finance and land reform; and address rural-urban migrant worker issues. Many of these projects involve leading Chinese research institutes and academic bodies, such as the Chinese Academy of Labour and Social Security attached to Ministry of Human Resources and Social Security.

Current projects under this theme include:

- Providing policies for Chongqing Municipal government to reduce the inequality of labour welfare in the integrated urban-rural labour market;
- Developing a collective wage bargaining system, i.e. joint decision-making mechanism on wages at enterprise level, for employees and management to address wage rises through bargaining/negotiating.
- Improving the effectiveness of the reimbursement system under China's new health-care reform to realise universal access to basic health care and to reduce out-of-pocket health-care expenses.

Case study: Inequality of Labour Welfare in the Integrated Urban-Rural Labour Market in Chongqing

As the national pilot city for Urban-Rural Integration Reform, Chongqing local government was eager to improve the social security system for rural migrant workers. The project ideas came from Vice President of Chongqing University, who is also a social policy consultant to Chongqing municipal government. This was a two-year project implemented by Chongqing University with a value of £54,300.

To develop the policy proposal large scale research took place including 6 visits to rural areas and 4 visits to 2 large factories in Chongqing city with 2000 migrant workers. 600 questionnaires were sent to migrant workers in Chongqing and their families in rural areas, to gain an understanding of the unfair social security system. The policy proposal was co-produced by the project team and government officials, and includes an analysis of how to improve the social security system, and policy recommendations to the municipal government.

In terms of policy influence, this project won First Prize in Chongqing Development Research awards from Chongqing Government, to acknowledge the quality and impact of this project on policy making. Furthermore, in 2009 the Chongqing government raised the salary for rural teachers in primary and secondary schools, making their salary comparable to that of other public servants. The raising of the salaries has led to an increase in quality of education in rural areas.

Policy Area 8: China's Integration into the Global Economy

We are keen on new projects which open China to foreign trade and investment. This includes developing China's business environment through transparent and well-enforced regulation of intellectual property rights, and competition. It also includes facilitating China's involvement in international policy making in trade and economic issues, e.g. through the G20 and the World Trade Organisation.