Final Report for the Australia-China Joint-Action Program
Academy of the Social Sciences in Australia

Project Title
A Carbon Reduction Implementation Framework for Adoption by Energy Intensive Corporations in China

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Background
The purpose of this project is to investigate the role of energy management companies (EMCs) in reducing carbon emissions in large energy intensive corporations (EICs) in China. Through the preliminary investigation, the project identified a range of carbon reduction strategies that are currently in place to meet the government's climate change commitments, examined the effectiveness of these strategies and identified barriers to implementation.

The climate change policy mix involves a combination of market-based (e.g. emissions trading) and regulatory (e.g. legal limits on emissions) mechanisms. China's central government has developed a strategy that enables large EICs to reduce their emissions by working with newly created EMCs – a professional and for-profit commercial entity. The core business of EMCs is to develop carbon reduction initiatives and provide energy management services to large corporations through contractual arrangements with the aim of reducing carbon emissions. Services include identifying energy intensive production equipment and recommending alternatives, providing energy efficiency auditing, developing energy-saving work environments, and conducting training and educational programs. Government financial support is available for any carbon reduction project conducted by an accredited EMC.

Addressing carbon reduction through the provision of energy management services is still in its infancy and not much is known about the implementation problems that may arise. This project assessed the effectiveness of using EMCs to reduce carbon emissions by conducting a series of case studies that investigates current contractual agreements between EMCs and EICs.
Research Activity

Activities carried out under this joint-action program include discussions with a Chinese partner researcher from Tianjin University of Finance & Economics to determine further details of protocols and steps required for information sessions with various stakeholders of the project. The initial meeting with the partner researcher was held in Tianjin University of Finance & Economics in April 2012. During the initial meeting, a shared understanding of the aims and outcomes of the research project and the appropriate methodological approach were developed. A semi-official discussion is identified as the most suitable approach to gather information from various stakeholders involved in the project. Outcomes of the initial meeting also identified the following research questions:

1. What are the country-specific, industry-specific and firm-specific factors that influence corporate climate change responses in emerging economies of China?
2. What are the perceived issues of implementing the carbon reduction initiative by energy intensive corporations in China?
3. What is the range of market and non-market strategies used by corporations in China to address climate change?

The research was conducted in three stages. The first stage involved data gathering on the current climate change policy environment in China including the range of government regulations and initiatives in carbon reduction and carbon reduction strategies and policies of EICs. The energy management concept is still in its infancy in China, and the findings from this stage of the study will provide a solid foundation to conduct in-depth case studies on the role of EMCs in assisting EICs to reduce carbon emissions. Activities in this stage included discussion sessions with officials from two government agencies that are responsible for developing climate change policy in China such as the National Development and Reform Commission (NDRC) and the Development Research Centre of the State Council (DRCSC). In addition, discussions were held with senior managers of two EMCs in order to understand their organisational strategies to reduce emissions and the nature of their interactions with government agencies and EICs. At the end of this stage, the researchers were able to identify various factors (at industry and firm levels) that influence corporate climate change responses in China.

The second stage involved two selected EMC-EIC projects. The key activity in the second stage included consultations with two project managers and two operational and technical engineers who have direct engagement with the EMC-EIC projects. The aim of this stage is to understand the implementation process of the contractual agreement between the EIC and EMC and the barriers to implementation. The selected cases include EMCs that have been authorised by the government to provide energy saving solutions to EICs. One EMC that has been working in various technology and management innovation projects with this project’s Chinese partner – Tianjin University of Finance & Economics, has agreed to allow us to access its current projects. Two projects involving EICs recently signed up for energy management services with the selected EMC. These two EICs are in the power generation and chemical fertiliser industries – considered to be two of the highest energy consumption industries.

The third stage focused on understanding the contractual mechanism that will enable a sustainable business model for EMCs. Data gathered from this stage will be analysed to identify any gaps between carbon reduction strategies and their
implementation and the effectiveness of these strategies to meet stated deliverables, which will be the next phase of the research (will be a new project).

Activities conducted under this project are listed below.

23-27 April, 2012

Associate Professor Yi-Chen Lan visited Chinese research partner (Tianjin University of Finance & Economics) and conducted an initial discussion of the project. The initial discussion focused on identifying potential key stakeholders to participate in the proposed project, relevant protocols for communicating with the key stakeholders and preparation for the industry site visits in October 2013 and identifying research questions.

15-18 October, 2013

Activities of the visit included communicating with key Chinese stakeholders that will participate in the research, and identifying the sampling frame for Chinese industries and firms. Associate Professor Lan and Professor Zhang (Tianjin University of Finance & Economics) visited an energy intensive corporation, which is currently undergoing energy management project driven by the National Coordination Committee on Climate Change. This on-site visit significantly helped the researchers to gain insight into the challenges of making business operations more environmentally friendly.

Subsequent to the visits, Associate Professor Lan also worked with colleague researchers from UWS for an ARC Linkage proposal. Outcomes of this Australia-China Joint-Action Program formed the foundation of the ARC Linkage proposal, which is titled “Why corporate carbon management systems are ineffective and how to improve carbon control mechanism for Australian and Chinese Companies?”

China is the largest carbon emitter and Australia is one of the countries with the highest emissions per capita in the world. Thus, both Australian and Chinese firms need to reduce excessive emissions and mitigate air pollution using effective carbon management systems. Based on a theoretic model, the ARC Linkage project will investigate why corporate carbon management systems are ineffective and how to improve carbon control mechanisms in Australia and China using case studies, interviews and field studies. The findings will assist firms to achieve higher operating efficiency while reducing greenhouse gas emissions.

The funding outcomes of the ARC Linkage proposal will be announced in June 2014.

End of Report