Industry Capacity Building with Respect to Market-Based Approaches to Greenhouse Gas Reduction: U.S. and Australian Perspectives

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This thesis is presented for the degree of Doctor of Philosophy of Murdoch University.

I declare that this thesis is my own account of my research and contains as its main content work that has not previously been submitted for a degree at any tertiary education institution.

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Abstract

Fossil fuel–intensive companies are coming under increasing pressure to reduce their greenhouse gas emissions (GHGs). The political environment surrounding climate change and the evolution of the carbon market are complex and in a fluid state of play. Uncertainty exists with respect to government policy, greenhouse (GH) accounting standards, interaction with stakeholders and the capacity to 'commoditise' carbon emissions, making it difficult for companies to determine exactly how to build their internal capacity to deal with a shifting external situation.

In Australia and the United States in particular, companies are receiving mixed messages from government about the necessity of reducing GHGs and the role of emissions trading. While market-based approaches to GHG reduction are being promoted, the governments of both countries have refused to ratify the Kyoto Protocol and failed to establish domestic emissions trading schemes. Finally, few companies have substantial experience in managing GHGs or in market-based approaches to GHG abatement, such as emissions trading.

This research aims to provide guidance for industry capacity building with respect to market-based approaches to GHG reduction, recognising that generally this would require significant organisational learning and change to corporate systems. The proposed Framework facilitates organisational learning that goes beyond the detection and correction of errors to questioning and modifying existing norms and procedures and, further, to reflecting on past experience and creating new strategies.

The research included participants as integral to the study, giving their 'emic' (insider) viewpoints centrality while allowing 'etic' (outsider / researcher) interpretation. Within the organisational learning literature, the approach that best describes this research is that of Action Research and Appreciative Inquiry. The principles of environmental management, cleaner production, corporate social responsibility and sustainable development inform the research.

Surveys, focus groups and a literature review are employed as the data collection methods, which are compared and contrasted.

The data suggest that a ‘one size fits all’ approach to industry capacity building with respect to market-based approaches to GHG reduction is not optimal or possible. This is due to the differing strategic objectives, varying assessment of risk and disparate circumstances and starting points of the companies involved. Thus, rather than a prescriptive model, this research has identified and prioritised the key themes and issues that currently influence corporate capacity building. Precursors to action have been specified and a ‘menu’ of choices provided. Lastly, a step-by-step Framework has been proposed to build companies’ capacity to participate in GHG emissions trading. It was also observed that the majority of the key themes and issues that influence companies and the preparatory actions they need to take are the same, whether a market-based system or a command-and-control system of GHG reduction is introduced.

The thesis includes some suggestions for further research in the application and evaluation of this approach with companies in the field.

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List of Acronyms

AAUs	Assigned Amount Units
ACRE	Australian Cooperative Research Centre for Renewable Energy
AETF	Australian Emissions Trading Forum
AFAW	Australian Federation of University Women
AGO	Australian GH Office
AIGN	Australian Industry Greenhouse Network
APPEA	Australian Petroleum Production and Exploration Association Ltd
BCA	Business Council of Australia
BP	British Petroleum
BSR	Business for Social Responsibility
CAA	U.S. Clean Air Act
CAN	Climate Action Network
CCLA	Climate Change Levy Agreements
CDM	clean development mechanism
CDP	Carbon Disclosure Project
CER(s)	Certified Emissions Reduction unit(s)
CFCs	chlorofluorocarbons
CO_2	carbon dioxide
CO_2e	CO_2 equivalent
CRCGA	Cooperative Research Centre for GH Accounting (Australia)
CSR	corporate social responsibility
DICE	‘dynamic integrated climate economy’ model
DoE	U.S. Department of Energy
EMS	environmental management system
EPA	U.S. Environmental Protection Agency
ERC(s)	emission reduction credit(s)
ERU(s)	Emission Reductions Unit(s)

ET	emissions trading
ETS	emissions trading system
EU	European Union
GCC	Global Climate Coalition
GCM(s)	general circulation model(s)
GH	greenhouse
GHG(s)	greenhouse gas(s)
GM	General Motors
GRI	Global Reporting Initiative
HCFCs	hydro chlorofluorocarbons
HFCs	hydro fluorocarbons
IPCC	Intergovernmental Panel on Climate Change
IPEICA	International Petroleum Industry Environmental Conservation Association
JI	Joint Implementation
NGOs	nongovernmental organisations
NREL	National Renewable Energy Laboratory
NO_x	nitrogen oxides
PCA	Partnership for Climate Action
PFCs	perfluorocarbons
RECLAIM	Regional Clean Air Incentives Market
RMU	removal unit
SEDA	Sustainable Energy Development Authority
SF_6	sulfur hexafluoride
SO_2	sulphur dioxide
SSK	sociology of scientific knowledge
TNS	The Natural Step
UN	United Nations
UNCED	United Nations Conference on Environment and Development

UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VERs	verified emissions reductions

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