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Constructing greenhouse and energy auditing: an analysis of its translation process

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Constructing Greenhouse and Energy Auditing: An Analysis of its Translation Process

A thesis submitted in fulfilment of the requirements for the award

Of the degree

DOCTOR OF PHILOSOPHY

from

THE UNIVERSITY OF WOLLONGONG

By

Geyi (Shirley) Xu

School of Accounting, Economics and Finance

December 2014

CERTIFICATION

I, Geyi (Shirley) Xu, certify that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the School of Accounting, Economics and Finance at the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Geyi (Shirley) Xu

22 December 2014

DEDICATION

To my parents,
献给我的爸爸妈妈

ACKNOWLEDGEMENT

The completion of this thesis marks a new milestone in my life. Its process was also witnessed by the growth of a lecturer in accounting discipline. I am grateful to the school in giving me the opportunity to develop an academic career during this PhD project, which experience has also helped me to understand what I was exploring in this thesis.

There are many people I want to thank for their support and encouragement throughout the process. In the first instance, it has been a great honour and privilege to have been working with a list of supervisors during the 5.5-year period: Dr Andrew Tan (now at the University of Sydney), Associate Professor Jane Andrew (now at the University of Sydney), Dr Corinne Cortese, Associate Professor Mary Kaidonis, and Professor Brian Andrew. I have been enormously benefited from their expertise, guidance and support at different stages of this project. In particular, I want to express my sincerest appreciation and admiration for my current supervisors – my core supervisor Professor Brian Andrew and co-supervisor Dr Corinne Cortese, for their wisdom, knowledge and continuous support to stimulate my intellectual potential with freedom in developing a critical thinking. I am also grateful to my discussions and comments received from Professor Ed Arrington, Professor Michael Gaffikin, Professor Warwick Funnell and Dr Graham Bowrey at an earlier stage of this project.

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Thanks to Mr. Andrew Bray who was the Assistant Director of Renewable Energy and NGER Policy in the Australian Government Department of Climate Change and Energy Efficiency (DCCEE). Andrew provided me the submissions from stakeholders in September 2010. Thanks also go to Mr. Ratna Pulella and Mr. Nav Brah – two engineers who had submitted comment letters to the greenhouse and energy auditing consultation. My informal interview and email communications with them in 2012 strengthened my confidence in the validity of the data source, and were critical for me to conduct the most important part of the analysis. In completing the thesis, I am also obliged to the assistance received from other non-academics, such as the escorts received from the university security guards in many late nights in 2011, and the special companion by the possum family every time whenever I stayed late in my office. They just add more touching moments for this memorable journey.

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ABSTRACT

In approaching this interesting topic, the first step was to collect all public submissions and government documentation to the greenhouse and energy audit legislation and greenhouse gas assurance standards. The initial method used was discourse analysis particularly focused on the terms ‘audit’, ‘auditor’, ‘greenhouse and energy audit and auditor’. More than 71 submissions and documentations were examined from a diverse array of people and organisations, including the Government, three of the Big 4 audit firms, some second-tier auditing firms, a number of engineering firms, many large polluters, a range of professional bodies and other interested stakeholders, particularly the accounting and engineering professional bodies. The purpose of this thesis was to ascertain how the greenhouse and energy audit legislation was translated by a heterogeneous group of interested parties. The theoretical lens used for the analysis was actor-network-theory (ANT).

The term ‘audit’ has become increasingly inscribed on a wide variety of subjects. In Australia, the recent emergence of greenhouse and energy audits provides a rare opportunity to revisit auditing and auditing professionalisation in action. Problematised from an integral part of the projected Carbon Pollution Reduction Scheme (CPRS, which failed politically) and the National Greenhouse and Energy Reporting (NGER) Act 2007 in Australia, the construction of greenhouse and energy audits was subject to an extensive consultation process due to political, scientific and technical uncertainties. The longer than expected lobbying processes involved the Australian Government, and a group of stakeholders who represented the interests of large emitters, the accounting and engineering professions. The lobbying was surrounded by the boundary of greenhouse and energy audits and auditor expertise. Inspired by the theoretical and methodological underpinnings of ANT and its key analytical approach of ‘translation’, this thesis followed the processes of transferring and transforming greenhouse and energy audits from its attached terminology and vocabularies, to what finally is a ‘new’ type of audit that involves multidisciplinary ‘assurance practitioners’.

In comparison with extant ANT-inspired auditing and lobbying studies, this thesis provides additional and detailed empirical evidence of the controversies and contestations that occurred in the four moments of ‘translation’ from problematisation, to interessement, to enrolment, and finally to mobilisation. This thesis relates the way that greenhouse and energy audits were derived from Climate Change policies since the Rudd Labor Government took power in December 2007. It also shows how these policies were eventually interpreted as ‘clearly distinguishable from financial or environmental audits’ by the Department of Climate Change (DCC). The four moments of translation from ANT are used in the analysis of the process of lobbying and the eventual registration of Greenhouse and Energy Auditors.

This thesis reveals a wide resistance and challenge to the involvement of financial auditors in greenhouse and energy audits. Unlike previous ANT-inspired auditing studies, fewer non-accounting actors recognised the expertise of the financial auditors as a context-free ‘general’ knowledge. Rather, financial auditors were painted as specialists in verifying bad debts and value within the ‘financial’ boundary. However, the accounting actors were capable of aligning explicit interests with the DCC as well as the public, or making detours to bypass the obstacle of ‘technical’ and/or subordinate it, while the engineering actors and their supporters’ claim to technical expertise had to yield to the established black boxes and inscriptions of auditing terms, standards and notions.

In conclusion, through tracing back and following the controversies among the actors and actants in translating greenhouse and energy auditing from the existing types of financial audits, environmental audits and greenhouse gas verifications, this thesis contributes to our understanding of the trials of strength between the accounting and engineering professions in this new ‘turf battle’. The registration of the auditors up to July 2014 also shows the rising number of multidisciplinary ‘assurance

practitioners' from the emerging Big 8 greenhouse and energy auditing firms (including both accounting and engineering firms) in Australia. This thesis also argues that auditing is a knowledge boundary object attached to many established black boxes and inscriptions that mobilised the interests and goals of different actors in trials of strength, and contributed to the temporary settlement of hierarchical relations concerning auditor expertise.

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ABBREVIATIONS

ABC	activity-based costing
AIS	accounting information system
Alberta Scheme	Alberta's Climate Change and Emissions Management Act
APES110	<i>Code of Ethics for Professional Accountants</i>
APES 320	<i>Quality Control for Firms</i>
ASQC 1	<i>Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements.</i>
ASA 220	<i>Quality Control for Audits of Historical Financial Information</i>
ASAE	Australian Standard on Assurance Engagements
ASAE 3000	<i>Assurance Engagement Other than Audits or Reviews of Historical Financial Information</i>
ASAE 3100	<i>Compliance Engagements</i>
ASAE 3410	<i>Australian Standard Assurance Engagement on Greenhouse Gas Statement</i>
ASB	Accounting Standards Board
ASIC	Australian Security and Investment Committee
ASRS 4400	<i>Agreed-Upon Procedures Engagements to Report Factual Findings</i>
AUASB	Australian Auditing and Assurance Standard Board
AUS 904	<i>Engagement to Perform Agreed-Upon Procedures</i>
B2B	business to business
B2C	business to customer
BSC	balanced scorecard
CDP	Carbon Disclosure Project
CDSB	Climate Disclosures Standards Board
CER	Clean Energy Regulator
CES	Carbon Pricing Scheme
CER Act	Clean Energy Regulator Act
CFI Act	Carbon Credit (Carbon Farming Initiative) Act
CO _{2-e}	carbon dioxide equivalence
CPA	Certified Public Accountant
CPM	Carbon Pricing Mechanism
CPRS (or SCHEME)	Carbon Pollution Reduction Scheme
CSR	corporate social responsibility
ED	exposure draft
EITE	emissions-intensive trade exposed

EMS	environmental management system
EU ETS	European Union Emission Trading Scheme
DCC	Department of Climate Change
DCCEE	Department of Climate Change and Energy Efficiency
ERP	enterprise resource planning
GEDO	Greenhouse and Energy Data Officer
GHG	greenhouse gas
GRI	Global Reporting Initiative
IAABS	International Auditing and Assurance Standards Board
ICAA	Institute of Chartered Accountants in Australia
IFAC	International Federation of Accountants
IPCC	Intergovernmental Panel on Climate Change
ISAE	International Standard on Assurance Engagements
ISAE 3000	<i>Assurance Engagement Other than Audits or Reviews of Historical Financial Information</i>
ISAE 3410	<i>International Standard Assurance Engagement on Greenhouse Gas Statement</i>
ISAE 3100	<i>Compliance Engagements</i>
ISO	International Organisation for Standardisation
ISO 14064-1	<i>Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals</i>
ISO 14064-3	<i>Greenhouse gases – Part 3 Specification with guidance for the validation and verification of greenhouse gas assertions</i>
ISO 14065	<i>Greenhouse gases – requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition</i>
ISO 19011	<i>Guidelines for quality and/or environmental management systems auditing</i>
ISRS	<i>International Standard on Related Services</i>
ISRS 4400	<i>Engagements to perform agreed-upon procedures regarding financial information</i>
ISQC 1	<i>International Standard on Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements</i>
LEA	Lead Environmental Auditor
JAB	Joint Accounting Bodies
JV ETS	Japan Voluntary Emissions Trading Scheme
NGER Act	National Greenhouse and Energy Reporting Act
NGERS	National Greenhouse and Energy Reporting System
NIA	National Institute of Accountants
NSW GGAS	New South Wales Greenhouse Gas Reduction Scheme

NZ ETS	New Zealand Emissions Trading Scheme
OPP	obligatory passage point
RABQSA	Registrar Accreditation Board and the Quality Society of Australasia
RCA	Registered Company Auditor
RET	renewable energy target
RGEA	Registered Greenhouse and Energy Auditor
RGGI	North American Regional Greenhouse Gas Initiative
SSK	sociology of science knowledge
TEEII	trade-exposed emissions-intensive industries
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organisation
WRI	World Resource Institute
WBCSD	World Business Council for Sustainable Development

Chapter 1 Introduction

1.1 The research topic

The word ‘audit’ has become increasingly contextualised within a wide variety of efforts, activities and programs especially after the 1990s. Beyond traditional financial audits, auditing has been inscribed with other subject matters, such as performance audits, quality assurance, medical audits, brand audits and WebTrust assurance (Power 1996; Pentland 2000; Gendron & Barrett 2004; Gendron et al. 2007). Power (1997a) has suggested that we have entered into an ‘audit society’: one in which auditing has been problematised as an effective solution to incremental social and environmental problems. Particularly, with increasing concerns about climate change, environmental audits, sustainability assurance and greenhouse-gas verifications have grown more prominent (Power 1997b; Owen & O'Dwyer 2005; Simnett & Nugent 2007; Simnett et al. 2009; Simnett et al. 2009). In these new auditing fields, the roles of auditors are also attached to different titles, such as verifiers and assurers, who are from different professional backgrounds (Power 1997b; Owen & O'Dwyer 2005). With the rise of new types of audit, increasing interest has been paid to traditional financial auditors’ role in the emerging ‘new’ fields, and their interrelationships with auditors from other disciplines (e.g. Hillary 1991; Dezalay 1995; Power 1997a; Power 1997b; Pentland 2000; Gendron & Barrett 2004; Gendron et al. 2007). Such interests also drove accounting researchers to revisit the ‘black box’ of auditing expertise itself (Power 1996).

In Australia, the emerging greenhouse and energy audits provide a good opportunity to study the construction of auditing expertise and professionalisation in action. Stemming from the Australian Government’s climate change schemes, the construction of greenhouse and energy auditing under the National Greenhouse and Energy Reporting Act (NGER Act) 2007 and the

proposed Carbon Pollution Reduction Scheme (CPRS, which failed politically) has experienced “an extensive consultation process” (DCCEE website 2011). This process involved a range of actors including the Australian Government Department of Climate Change (DCC)¹; the International Assurance and Auditing Standard Board (IAASB) and Australian Assurance and Auditing Standard Board (AUASB); and lobbyists such as accounting bodies and firms, engineering and environmental bodies, firms and individual engineers, large industry emitters, accreditation bodies and standards, trainings and education organisations. The main debate among lobbyists was whether greenhouse and energy auditing was technical and scientific in nature or similar to financial audits. Whose existing expertise was more relevant: financial auditors from accounting firms or technical auditors from engineering and environmental consulting firms?

As inspired by actor-network-theory (ANT) and its key notion of ‘translation’ (Callon 1986; Latour 1987; Latour 1999a; Latour 2005a), this thesis begins to develop an analysis of ‘translation’; that is, how the two Australian climate change schemes - the NGER Act and the CPRS - were translated into the greenhouse and energy audit legislation, and how greenhouse and energy audits was transferred and transformed from “clearly distinguishable from financial or environmental audits, reviews and other procedures of an audit nature” (DCC 2008, p6) into a hybrid of *verification* and *assurance* engagements with common terms of ‘slightly different interpretation’ (DCCEE 2010, p19), and how external auditors were transformed from ‘technical experts’ and ‘lead auditors’ (DCC 2008) into three multidisciplinary categories of greenhouse and energy auditors (Australian Government Attorney-General's Department 2010). It is noteworthy that ‘translation’ accounts for any movement of an entity in space and/or time, which implies not only a linguistic but a

¹ Its name was changed from the Department of Climate Change (DCC) to the Department of Climate Change and Energy Efficiency (DCCEE) in January 2010.

geometric meaning (Latour 1987; 2005a), which differs to the most common understanding of the English meaning of the word. Accordingly, a question also arises regarding how the construction of greenhouse and energy auditing mediated and was mediated by the overlapping lobbying of ISAE 3410 *International Standard Assurance Engagement on Greenhouse Gas Statement* and its Australian equivalent ASAE 3410 from 2008 to 2012; in particular, how practitioners' titles evolved from 'auditors' to 'assurance professional' to 'practitioner' internationally (IAASB 2012), and finally being termed 'assurance practitioner' in Australia (AUASB 2012). In this long translation, by following the controversies surrounded by professional language and professional judgement embedded in the government documentation and stakeholders' submissions, this thesis provides a rich story of how greenhouse and energy auditing was constructed by humans and nonhumans within the trails of strength.

1.2 Research objective, significance and contributions

This section introduces the research objective, significance, and four main perspectives of contributions.

1.2.1 Research objective

The strength of ANT as a stream of sociology of science knowledge (SSK) studies is becoming increasingly recognised in studying accounting and auditing in action (Justesen & Mouritsen 2011). Greatly inspired by the constructivism programme of SSK research such as the many studies of Latour, Knorr-Cetina and Callon, and the related auditing research in studying the process of blackboxing auditing and auditing expertise (Power 1996; Power 1997a; Power 1997b; Gendron & Barrett 2004; Gendron et al. 2007), it is interesting to learn how greenhouse and energy auditing was 'translated' from what it is not to what it is by

heterogeneous actors in the lobbying process, and in turn, how this process mediated and was mediated by the overlapping processes of standardising ISAE/ASAE 3410.

By tracing back and following the controversies surrounded by professional language and professional judgement and trials of strength among actors through various types of documentations in the lobbying process, it is interesting to learn what strategies of negotiation were adopted by different actors in establishing claims to expertise and consolidating networks of support in different episodes of translation (Callon 1986; Latour 1987; Power 1997b; Gendron et al. 2007). In analysing the translation process, this thesis relies heavily on the model of translation proposed in Callon (1986) examining of the case of fishermen and scallops. Callon (1986) proposed four episodes of translation, including problemisation, interessement, enrolment and mobilisation (details to be presented in Section 2.5.2). These four episodes will direct the analysis from Chapters 5 to 8 of this thesis. By applying the model of scallops, the thesis provides more live examples of actors and actants in the new auditing fields. In this study, auditing is applied as a ‘knowledge boundary object’ that mobilises different actors through different concepts, terminologies and vocabularies. This application is an extension of Power’s (1996) application of auditing as a black box (Latour & Woolgar 1986), Knorr-Cetina’s (1997) view of knowledge as an object and Star & Griesemer’s (1989) view of boundary objects. Although previous ANT-inspired studies intended to assume non-humans such as boundary objects as actants without agency (e.g. Briers & Chua 2001), with respect to auditing, it is also part of the objectives of this study to exam non-humans as either actants or actors: according to Latour (2005a), an actor is anything, human or non-human, with a mediating role. In addition, this case study also has attempted to exemplify the meanings of translation in both the linguistic (relating versions of one professional language to versions in another one) and geometric (moving from one type

of auditing to another) senses (Latour 1987; 2005a), which have not been adequately explored by the previous ANT-inspired studies.

1.2.2 The significance of the research

The significance of this study lies in two main aspects. First of all, the emerging greenhouse and energy auditing in Australia concerns the imperative role of the accounting profession and its assurance expertise in non-financial audit areas. It also broadly relates to its role for climate change issues. Such a topic has been the interest for accounting researchers since 1990s and increasingly draws more attentions from social and environmental accounting and interdisciplinary perspectives accounting research. Given that accounting firms had already involved in environmental audits, sustainability audits and other types of non-financial audits in battle with environmental engineering profession (Power 1991; Power 1997b; Simnett & Nugent 2007; O'Dwyer et al. 2011), the role of the accounting profession and its expertise once again would “nevertheless be the subject of much debate” (Simnett & Nugent 2007, p43). The construction of greenhouse and energy auditing emerged in Australia is critically important for the accounting profession because one of its direct consequence was the first specific non-financial assurance standard - *International Standard Assurance Engagement on greenhouse gas statements* ISAE 3410 by the accounting profession. This study, thus, will add more empirical evidence to understanding the ISAE 3410 standard-setting process and accounting professionalisation in action.

Secondly and theoretically, it relates to how the important tenets of ANT and especially the model of translation (Callon 1986) are married with research method and data analysis. Different to most of the extant ANT-inspired accounting case studies which are based on field work and interviews, this thesis is relied solely on government documentation,

stakeholder submissions and other source of publicly available documents. However, the notions of actors, actants, boundary objects, attachments and translation allow this thesis to illustrate the controversies and complexities among heterogeneous actors and actants by following and tracking their attachments at distance without the author being personally engaged in the lobbying process. These ANT tenets are to be presented in more details in Chapter 2. The strength of using ANT in analysis presents an exemplar for how the notion of ANT and especially translation can be extended to historical studies which are largely relied on archives. It also extends the rich story of scallops and fishermen (Callon 1986) in the battle of constructing a new form of auditing.

Overall, this thesis is expected to contribute to the accounting and auditing literature in four main areas: ANT-inspired auditing research; ANT-inspired accounting and auditing standard lobbying research; understanding the standardisation of the ISAE 3410; and theoretically, understanding auditing itself as an actor of knowledge boundary objects. The following sections briefly introduce these four perspectives of contributions.

1.2.3 Contribution to ANT-inspired auditing research

The emerging greenhouse and energy auditing provides an opportunity to study the phenomenon of auditing changes in action. An exploring of the construction of greenhouse and energy auditing in the making before the controversies were settled in legislation addresses Power's (1997a) call for empirical evidence in understanding the black box of auditing and auditing expertise. As to be addressed in Chapter 3, previous literature has explored the fact-building process of constructing auditing expertise; for example, in environmental audits, WebTrust assurance and performance audits (see Power 1996; Power 1997b; Gendron & Barrett 2004; Gendron et al. 2007; Justesen & Skærbæk 2010). However,

there is still room to investigate a longitudinal process of how new auditing and auditor expertise can be transferred and transformed by realigning the existing portfolios with different interests and goals (Power 1997b). From this perspective, this study adds further empirical evidence to the ANT-inspired auditing research in terms of the process of translation.

Moreover, as influenced by the constructivist proposition, this study also aims to understand how the construction of new auditing expertise could mediate the auditing profession. Like previous ANT-inspired auditing studies (e.g. Power 1996; Gendron & Barrett 2004; Gendron et al. 2007), instead of asking why a profession was formed from jurisdictional struggles based on what Abbott (1988) called ‘elite status’ (e.g. Johnson 1972; Armstrong 1985; Sikka & Willmott 1995), ANT and its key notion of translation provides this study with an critical approach to investigate how contestations and controversies surrounded by claims to expertise can be translated through different strategies by stakeholder actors, especially when jurisdictional boundaries are not yet clear cut. The literature (Power 1996; Power 1997b; Gendron et al. 2007) has shown that compared to other professions, financial auditors are more capable of attaching relevance to their expertise, that positioning their claims to auditing expertise as a set of context-free ‘good practices’ has demonstrated stronger trials of strength in turning suspicions and resistance from auditee into a network of support, and subordinating specific expertise from non-accounting professionals. The studies also paid attention to the role of non-humans, including black box of auditing (Power 1996) and inscriptions of standards and reports produced in other jurisdictions (Gendron *et al.* 2007); however, the mediating roles of these non-humans were not as visible as those of the human actors. Moreover, there is still lack of empirical evidence about how auditing expertise is seen by many others (Roberts 1991). Given the variety of stakeholders involved in the lobbying

process, it is interesting to learn how the “hierarchical relations between different bodies of expertise” (Power 1997a, p82) have been contested, negotiated and settled temporarily among competing professions, and how this process has mediated the composition and orchestration of auditing practitioners in a multidisciplinary team. From this perspective, this case study will also contribute to the understanding of professionalisation.

1.2.4 Contribution to ANT-inspired accounting and auditing standard lobbying research

The other interesting feature of this study is that it was through lobbying that the greenhouse and energy auditing function were articulated by the NGER Audit legislations in Australia. As to be discussed in Chapter 3, the notion of translation has been used in analysing the discursive strategies of lobbying in accounting and auditing standard setting (although it has proven far from adequate for this task) (e.g. Robson 1991; Young 1995; Jupe 2000; Young 2003; Jeppesen 2010). These studies in particular disclosed how rhetorical strategies were used by standard-setters and lobbyists to problematise standard-setting, align explicit interests or deal with resistance so as to attract and engage other actors in lobbying. In applying the notion of translation, Jupe (2000) and Jeppesen (2010), for example, paid attention to the reciprocal and dialectical nature of enrolling others in lobbying and controlling them within an unbalanced power relationship. However, these studies were limited in that they considered actors as mainly being involved with the accounting profession and most of the studies covered only a single episode of translation. As opposed to the ANT-inspired auditing studies, these studies were constrained by focusing on rhetorical strategies while paying inadequate attention to non-human actors and actants.

Compared to accounting and auditing standard-setting, the lobbying of greenhouse and energy auditing involved more controversies and uncertainties in multiple translation

episodes. As to be discussed in Chapter 4, the first uncertainty was related to the rejection of the CPRS in December 2009 before the greenhouse and energy audit legislation took effect. The CPRS was an emission trading scheme which was proposed by the Rudd Labor Government in December 2007 as a response to Australian ratification of the Kyoto Protocol. The greenhouse and energy audit was initially problematised as a ‘key compliance measure’ to underpin both the NGER Act and the CPRS. The rejection of the CPRS did not only reflect that climate change is the most controversial issue of the 21st century (Hulme 2009), it also called into question the relevance of financial auditors’ expertise to greenhouse and energy audits’ financial implications. Second, greenhouse gas audits are subject to more scientific uncertainties in relation to emissions measurement. As acknowledged by the IFAC (2008), it is therefore impossible for greenhouse-gas audits to be complete, despite the fact that completeness is one of the major requirements for reasonable assurance. Thus, debates about whether greenhouse and energy auditing was technical and scientific or similar to financial auditing were thus more violent.

Moreover, the lobbying enrolled a variety of stakeholders, including many from outside the accounting field, such as engineering auditors, industry emitters, professional bodies and academics. Such complicated relations of networks could enrich lobbying studies dealing with diverse interests and goals. The strong resistance to the involvement of the accounting profession during the process provides a more dynamic platform to study the strategies of translation (Latour 1987) or negotiation (Power 1996; 1997b) in the trials of strength between accounting actors and engineering actors as well as their respective supporters. The focus of this study is less about whether the involvement of financial auditors in greenhouse and energy auditing is a good thing than about paying an attention to the process of ‘translation’, at the heart of which lies the discourse of claims to expertise prior to the controversies being

settled in the greenhouse and energy audit legislation. Translation bears particular implications for how power is established rather than who owns power (Callon & Latour 1981). In addition, this thesis concerns non-human actors such as the knowledge boundary object of auditing in mediating and mobilising the human actors in translation, which is expected to add more analytical strength to the extant lobbying studies.

1.2.5 Contribution to literature on the standardisation of ISAE 3410

This thesis is also relevant to understanding the standardisation of ISAE 3410 *International Standard Assurance Engagement on Greenhouse Gas Statement*, a new international standard of assurance on greenhouse gas (GHG) statement. ISAE 3410 was the first assurance standard on a specific non-financial subject developed by the accounting profession. A number of emissions trading schemes have arisen worldwide, including the EU Emissions Trading Scheme (EU ETS), the North American Regional Greenhouse Gas Initiative (RGGI), Alberta's Climate Change and Emissions Management Act (the Alberta Scheme), Japan's Voluntary Emissions Trading Scheme (JV-ETS) and the New South Wales Greenhouse Gas Reduction Scheme (NSW GGAS) (Nugent & Simnett 2008; Green et al. 2009). As with environmental auditing, there was a risk of 'putting the cart before the horse' (Power 1991) due to the absence of relevant specific standards at the time. Different emissions trading schemes required different level of audits as specified by either ISO 14063-3:2006 *Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions* or ISAE 3000 *Assurance engagement other than audits or reviews of historical financial information* (Simnett & Nugent 2007). However, neither of the standards could meet the requirement for reasonable assurance.

With the initiation of greenhouse and energy audits to underpin the CPRS, which was to be the second largest ETS outside Europe (Grubel 2009), Australia was expected to become the world leader in developing assurance on greenhouse gas (GHG) statements (IFAC 2008). As to be addressed in Chapter 4, the emerging greenhouse and energy auditing under the NGER Act and the standardisation of ISAE 3410 have been the subject of attempts by a few Australian authors (e.g. Simnett & Nugent 2007; Simnett et al. 2009; Green & Li 2012; Lodhia & Martin 2012; Martinov-Bennie & Hoffman 2012). Although these studies focused on one particular perspective, as expressed in the NGER Act, the NGER (Audit) Determination or ISAE/ASAE 3410, all mentioned stakeholders' concerns about auditing. These papers proposed the multidisciplinary nature of the audit team and predicted the possible contestation between the accounting and engineering professions. For instance, through content analysis based on surveys or interviews after the lobbying process, it was suggested that the accounting and engineering profession understood the expectation gap about greenhouse gas assurance differently (Green & Li 2012), although the views and methodologies of the accounting profession could be perceived as more relevant than those of the engineering profession (Martinov-Bennie & Hoffman 2012). However, none of the studies actually explored why there was an expectation gap, and how accounting expertise could be viewed as more relevant than other professionals. This gap further motivates this thesis to apply a detailed analytical approach to discourse and investigate how accounting and engineering actors articulated their respective claims to expertise through submissions to counter-enrol the regulator, and how this process mediated and was mediated by the lobbying for ISAE 3410 and ISAE 3410.

1.2.6 Contribution to understanding auditing as a knowledge boundary object

In this thesis, auditing is recognised as a knowledge boundary object. This is based on the transformative role of its attached terminology and vocabulary in mobilising different professional groups to construct a new type of audit. In an audit society, auditing becomes a powerful ally of different types of auditors. To some extent, it also can be claimed that we have entered into an object-oriented society in which human beings increasingly rely on the non-human beings they create, such as auditing (Latour 1993; Knorr-Cetina 1997; Lowe 2001a). Especially, in terms of auditing expertise, it is hard to tell the distinction between humans and non-humans because auditing expertise are embedded within auditors (Callon 1991). This assumption is based on three overlapping notions that auditing is a ‘black box’ (Latour & Woolgar 1986; Power 1996), ‘knowledge object’ (Knorr-Cetina 1997; Lowe 2001a) and a ‘boundary object’ (Star & Griesemer 1989; Briers & Chua 2001). According to Lowe (2001a), the three terms of black box, quasi-object and knowledge object have very similar meanings according to Latour (1993). Auditing knowledge is ‘black boxed’ because it has been taken-for-granted without widespread knowledge of its internal workings (Power 1996, p308). Moreover, the notion of knowledge objects matches the loosely coupled and unfolding characteristics of auditing expertise (Knorr-Cetina 1997; Power 1997a; 1997b). Boundary objects have been characterised as “weakly structured in common use while strongly structured in individual site use” (Star & Griesemer 1989, p393). According to Star & Griesemer (1989, p411), one form of boundary objects is “methods of common communication across dispersed work groups”. Briers & Chua (2001, p241) further developed this notion as something that “ties together actors with diverse goals because it is common to multiple groups but is capable of taking on different meanings within each of them”. This definition also matches the increasingly loose term of auditing.

The overlapping use of knowledge objects and boundary objects has been witnessed within the study of accounting techniques and information systems. For instance, while some ANT-inspired researchers (e.g. Briers & Chua 2001; Dechow & Mouritsen 2005) viewed accounting information systems (AIS) and enterprise resource management (ERP) system as boundary objects, others (e.g. Lowe 2001a) also viewed AIS as a knowledge object. These overlaps further justify the concept of a ‘knowledge boundary object’. As to be discussed in Section 2.3.2, although ANT-inspired researchers have paid attention to non-humans, their roles as actors or actants are still controversial (Justesen & Mouritsen 2011). Therefore, it is interesting to follow the ways in which auditing and its attached terminologies and vocabularies came to play a part in influencing the behaviours of stakeholders, especially regulator, and financial and technical auditors. In brief, the application of auditing as a knowledge boundary object in the analysis is a significant character of this thesis.

1.3 Actor-network-theory and Oriental philosophy

As described above, this thesis is inspired by ANT and its methodological approach. The distinction of ANT is that it is rooted in constructivist ontology, not social constructivist. The difference between constructionism and social constructionism will be addressed in Chapter 2. In this section I would like to explain why I was inspired to use ANT in this thesis. While I have rational reasons as well, the more relevant reason may be less rational, or even irrational (Latour 1987). Therefore, rather than justifying the interrelationship between accounting research and the study of science of sociology, and how the former has in the past been influenced by the methodology of the latter (e.g. Lowe 2004a; Justesen & Mouritsen 2011), I will compare ANT and the Oriental system of thinking, which is more relevant to my engagement with ANT. This section also helps in understanding ANT’s more recent proposition: ‘attachment first, actor second’ (Latour 2005a).

ANT's constructivist's stand was criticised for being 'epistemological chicken' in its earlier days (Collins & Yearley 1992) because it discarded the dualisms of Nature and Society, object and subject. However, the critiques of ANT were based on Occidental modes of knowledge and being. Western philosophy and religion are grounded on dualism, that is, the split between body and mind, heaven and hell, cause and effect, subject and object (Hines 1992; Gao & Handley-Schachler 2003). The impasse confronted by realism or social constructionism is that none of them can break the boundary between subjectivity and objectivity. As Searle (1995, p150) suggested, "a formal feature of our world view is the distinction between objectivity and subjectivity". The following titles of works or questions may interestingly suggest the incompatibility of the two poles: *The Construction of Social Reality* (Searle 1995); "Do you believe in reality?" (Latour 1999a, p1); and *Why Should You Believe It ?* (Searle 2009).

On the other hand, subjectivity and objectivity are not treated as opposites in Oriental belief systems, but as two sides of one thing. Influenced by Buddhism, Galtung (1996) argued:

But who decides, according to what criteria [about ill-ness and well-ness]? Do we lean towards 'subjectivism' (people themselves decide whether they are suffering or not), or toward 'objectivism' (others decide, according to their criteria, that they must be suffering)? My inclination is both/and a dialogue, the only possible conclusion from a yin/yang perspective (there is suffering in bliss and bliss in suffering) (Galtung 1996, p8).

There have been increasing efforts from western researchers, including those in accounting, to diagnose their social problems from an Oriental perspective (e.g. Watts 1979; Hines 1992; Bhaskar 2000). It has been argued that in fact many Oriental positions have Occidental counterparts (Patomaki 2002), for example, it was argued that there are links between Nietzsche's will to power and Buddhism, Derrida's neither/nor deconstruction and

Mādhyamika Buddhism, Galtung and yin/yang as well as Mahayama Buddhism (Patomaki 2002). The rise of ANT seems to offer another opportunity to explore the overlap between the philosophical origins of constructivism and Oriental thinking. In an interview with a Chinese scholar (Cheng 2006), Latour admitted that the philosophy of science has subjected it to an incorrigible dilemma within the western paradigm. Although not indicating any direct influence from the East in his works, he acknowledged his preference for Chinese dialectic and pragmatism. Therefore this section will explore how ANT resembles the Chinese belief of yin/yang as well as aspects of Buddhist philosophy.

Contrary to Occidental belief, Oriental dialectic believes in the unity of human beings and nature, heaven, death and life, and right and wrong, in an interactive balance. It believes in a “perpetual change, flux and motions” (Gao & Handley-Schachler 2003, p46), considering that “time is non-linear and tendentiously repetitive” (Patomaki 2002, p104). For instance, yin (feminine, represented by the moon) and yang (masculine, represented by the sun) are not a dualism, they are interconnected like different but inseparable and indispensable sides of a coin (Hines 1992; Gao & Handley-Schachler 2003). More precisely, yin and yang are not decided by a person’s sex, which also explains why there was traditionally no word for ‘homosexual’ in Chinese culture, because men and women can have both yin and yang characteristics. What matters is which side outweighs the other in a given circumstance. It is believed that only through yin and yang as opposite in a continual state of flux and tension can life be produced (Gao & Handley-Schachler 2003). Further, Taoism advocates that human instincts and natural laws are interrelated, and that these interrelations affect the mind. This dialectic can be summarised by Buddhism as “one is all, and all is one” (Hines 1992, p317). Such beliefs have been applied in the Chinese traditional medical system, which treats the body, spirit and nature as one. In such a system of knowledge, the seasons of nature are

applied to the system of the body for diagnosis and treatment. This is a very distinct approach from that of western empiricism. In recent years, Chinese medicine and fengshui (core of yin/yang) have also become popular in Western countries such as the USA, the UK and Australia, indicating a growing Western interest in the East (Gao & Handley-Schachler 2003).

In a similar manner, ANT denies the dichotomy between subject and object and argues for an interdependent relationship in an actor-network:

That, *by themselves*, things don't act. Indeed, that there are no things "by themselves". That, instead, there are relations, relations which (sometimes) make things (Callon & Law 1995).

Moreover, Latour (1999a, p123, p179) claims that "essence is existence and existence is action". A hypothetical gunshot could exemplify the similarities between Oriental and ANT thinking about the relationship between object and subject. Latour (1999a) asked, "What kills people"? The answer could be, "Guns kill people" or "People kill people". However, in Latour's (1999a, p180) view, it is neither people nor guns that kill, but the 'hybrid actor' of gun and gunman. Because the two form a collective, the goals for both the gunman and gun are mediated into a 'new proposition' that "you are a different person with the gun in your hand" (Latour 1999a, pp179-180). This new proposition challenges traditional thinking that gun only does harm when it is in the wrong hands. Therefore, both of them have an agent; the agent of the gun is the gunman and *verse versa*. The gunman is not simply a subject but also an actor; the gun is not simply an object but an actant². This example has critical implications for gun regulations, especially in view of the increasing number of tragedies in the USA and elsewhere in recent years. Such an analytical symmetry about human and non-human fits into Eastern philosophy, which views the perpetual change, flux and motions (Gao & Handley-

² The most controversial side of ANT is that it "gives" the role of agency to non-humans (Sayes 2014, p134). In accounting studies, for example, Chua (1995) clearly denies the agency of non-humans. The actor/actant relationship will be discussed further in Section 2.3.2.

Schachler 2003) as proper, because one is all and all is one (Hines 1992). As Latour (1999a) argued:

These examples of actor-actant symmetry force us to abandon the subject-object dichotomy, a distinction that prevents the understanding of collectives (Latour 1999a, p190).

Hence, the recognition of actor/actant instead of subject/object bears critical implications for practice, especially relevant to the relationship between auditing and auditors in this thesis. Hines (1992, p313) wrote that “reduction of the interdependent Yin and Yang leaves the source of many environmental and social problems invisible and unaddressed”. What is worth noting is that Hines is also the first accounting researcher who cited the work of Latour (Justesen & Mouritsen 2011).

In summary, I argue that recognising the inherent linkage between ANT and Eastern philosophy could provide more angles to understand the essence of ANT as a ‘second empiricism’ (Latour 2005a). Hines (1992) also had insight to suggest that quantitative and qualitative research can be viewed as yang and yin. There is also an increasing acknowledgement of the strength of ANT that could be offered in qualitative research (Ahrens 2008; Kakkuri-Knuuttila et al. 2008; Parker 2012). However, the potential of yin and yang and Eastern philosophy that could be offered as attachments of ANT in accounting research have so far been in hibernation; it is time wake them up.

1.4 Thesis structure

The rest of the thesis is organised as follows. Chapter 2 introduces the main tenets of ANT. It presents ANT from four aspects: the historical development of ANT and its rise in accounting research; the ontological and epistemological underpinnings of ANT and its unique view of

actor/actant as a replacement to the traditional divide of Nature/Social, objectivity/subjectivity; the methodological underpinnings of ANT as based on the notion of network and the role of a researcher; and the key notion of ‘translation’ as a symmetrical approach of power analysis, particularly, its differences with diffusion, rhetoric and interpretation, which have caused confusion for non-ANT researchers.

Chapter 3 reviews ANT-inspired auditing and lobbying research. There are two aims in this chapter: one is to review the ANT-inspired auditing studies, reopening the black box of auditing and auditing expertise through studies of constructing new types of auditing; the other is to review ANT-inspired lobbying studies in visualising the dialectical process of standardisation. To exemplify the strengths of translation, the ANT-inspired lobbying studies will also be compared with other studies inspired by the diffusion approach.

Chapter 4 covers the research questions and method. The research questions are defined from three main sources of controversy regarding the NGER Audit Instruments, standardisation of ISAE 3410 and the extant literature. The process of forming research questions also demonstrates a process of problematisation. In the section on research method and design, it sets the stage and timeline for the study, specifies the nature of the translation process and the source of data, and exemplifies the framework for analysis based on the translation model.

Chapter 5 deals with the episode of problematisation. It presents the problematisation of assurance for the CPRS, which was described as part of the first translation process in this thesis. It covers two perspectives: first, how the CPRS was problematised with scientific, economic and political controversies; and second, how assurance was problematised by the DCC and lobbied by three main groups of stakeholder actors: large emitters, environmental-

engineering actors and accounting actors. Although only a few actors enrolled in this first episode of translation, it is vital to understand the uncertainties regarding the implementation of the CPRS and the potential triangular relationships among the three representational actor groups.

Chapter 6 deals with the episode of *interessement*. It traces the translation of greenhouse and energy auditing in a second lobbying episode. It articulates the problematisation of the ‘external audits’ for both the CPRS and NGER Act by the DCC and the trials of strength between the accounting and engineering actors and their respective alliances in establishing the ‘technical’ and/or ‘financial’ as an obligatory passage point and their different strategies to attract the DCC. This process evidenced the displacements from what is ‘not financial or environmental audits’ by the DCC to four types of translations by the stakeholder actors through different strategies and devices of *interessement*: ‘technical rather than financial’, ‘more technical than financial’, ‘both technical and financial’, and ‘more financial than technical’. By following these four types of displacement, the accounting and engineering actors and their respective supporters are reshuffled and consolidated into a *technical-actor-network* and a *financial-actor-network*. This episode of translation exemplifies the geometric meaning of translation (Latour 1987) embedded in the movements of *interessement*. It also illustrates the characteristic of the knowledge boundary object of ‘external audits’.

Chapter 7 concerns the episode of enrolment. It follows the transformation from ‘external audits’ to greenhouse and energy audits and from lead auditors to three categories of greenhouse and energy auditors. The most distinctive translation in this third episode of lobbying concerns *enrolment*; that is, how the DCC attempted to provisionally lock the roles of the accounting and engineering professions in different categories of auditors. In

competing for leadership while being unlocked, the stakeholders, especially the engineering and accounting actors, moved from previous ‘technical’ vs. ‘financial’ conflicts to ‘technical’ vs. ‘auditing’. This particularly demonstrates the different interests of Registered Corporate Auditors (RCAs), Lead Environmental Auditors (LEA) and greenhouse gas (GHG) verifiers. In lobbying for or against relevant audit experience, auditing terminology and professional judgement, this episode of lobbying presents the linguistic meaning of translation (Latour 1987), through movement from one professional language to another.

Chapter 8 relates to the episode of mobilisation. It presents the final translation of mobilisation which covers three sub-moments. First, it follows the final adaptations made by the DCCEE in terms of greenhouse and energy in the NGER audit legislations in 2010. It then follows the mobilisation of accounting and engineering actors as well as their represented respective professions in the registration of three categories of auditors from 2010-2014. It follows the adaptations and modifications as lobbied by the AUASB and accounting actors in constructing ISAE 3410/ASAE 3410. Distinctively, the emphasis of auditor expertise is displaced from ‘relevant audit experience’ to ‘professional judgement’ in this episode. With the registration of greenhouse and energy auditors, it is interesting to note the rise of the Big 8 greenhouse and energy auditing firms as well as a new identity of ‘assurance practitioner’ as transformed from ‘assurance professional’ by the AUASB.

Chapter 9 gives the concluding remarks and my reflections on applying ANT. In this chapter, I revisit my research purpose, overview of the thesis and revisit research questions and findings. Moreover, I present my reflections on ANT from four perspectives: 1) using ‘network’ as the methodology; 2) understanding actors and actants by applying the fishermen and scallops analogy (Callon 1986) to their roles; 3) understanding the meaning of translation

and; 4) applying translation as the analysis approach. These reflections on ANT are also expected to assist other ANT-inspired researchers in applying ANT especially the translation model in similar studies. Then I review the limitations of this study and propose plans for future research.

Chapter 2 Actor-Network-Theory - Theory and Methodology

2.1 Introduction

The distinctive feature of this study is that it relies heavily on the notions of ANT. ANT is critical because it bypasses realism and social constructivism to offer a third choice: constructionism (Latour 2005a). However, it is also controversial given it is still in action that different researchers have translated it in different ways to meet different research interests (Chua 2004; Justesen & Mouritsen 2011). In particular, who is an ‘actor’ and how can an actor be identified? What does ‘network’ mean? Is ANT a theory or a methodology? To clarify the misunderstandings as well as serving this thesis in a better way, this chapter critically reviews the development of ANT and its attached constructionist underpinnings.

The chapter is organised as follows. Section 2.2 presents the historical background of ANT and its earlier applications in accounting studies. Section 2.3 gives its epistemological evolution from the Great Divide between Nature and Society, object(ivity) and subject(ivity), to the new symmetry of actor and actant. Section 2.4 centres on ANT’s methodological features, with an emphasis on the notion of ‘network’. Section 2.5 introduces the key notion of ‘translation’ and its four moments: problematisation, interessement, enrolment and mobilisation (Callon 1986; Latour 1987). Given the importance of translation as the analytical approach in this thesis, this section also attempts to clarify it with diffusion and rhetoric. The last section is a brief summary of ANT and an additional note.

Many of the important terms attached to ANT will be presented during the review, such as construction, actor, actant, attachment, inscription, network, slowciology, proposition,

translation, and diffusion (Callon 1986; Latour 1987; 1999a; 2005a). These terms have particular meanings in ANT and give ANT its identity as a construction rather than a social construction (Latour 2005).

2.2 The historical development of ANT and its rise in accounting research

It is widely acknowledged that ANT was developed largely from a series of works by Bruno Latour and Michel Callon, as well as works by John Law (Robson 1991; Briers & Chua 2001; Justesen & Mouritsen 2011). It initially developed from studies of the SSK³ that began in the late 1970s, and has since become increasingly popular in social-science studies (Justesen & Mouritsen 2011). According to Pickering (1992), the key landmark of the emergence of ANT is normally considered to be the publication of *Laboratory Life: The Social Construction of Scientific Facts*⁴. In this work, Latour and Woolgar (1979) deconstructed how scientific claims were fabricated into a matter of fact by alliances of scientists, instruments and objects. However, because they did not clearly specify the meaning of ‘construction’ in the title of ‘social construction’, the concept became confused with other social construction theories. This was also the reason why Latour and Woolgar (1986) intentionally changed the title to exclude the word ‘social’ in the second version of their book.

The progress of ANT was largely attributed to its key notion: translation (Callon 1986; Latour 1987). As Latour (1987; 1999b; 2005a) claimed, translation is the cornerstone that

³ ANT was understood as a stream of the sociology of scientific knowledge (SSK) (Lowe 2004a). However, with its proposition of a new symmetry of actor and actant, rather than a polarity of Nature and Society, Latour and his Paris school have distinguished themselves from the other two SSK schools – the theory of social interests (Edinburgh school, represented by David Bloor) and the empirical relativist (Bath school, represented by Harry Collins). For instance, in the *Anti-Latour*, Bloor (1999, p81) disagreed that SSK and Latour’s approach are “classed together under the label of ‘social constructivism’”; he proposed instead that “in reality, the two approaches are opposed”. Collins and Yearley (1992) also critiqued ANT as ‘epistemological chicken’ given its new symmetry. Indeed, the work of Latour and his colleagues have made ANT’s own identity closer to ‘constructivism’ than ‘social constructivism’.

⁴ By adopting an anthropological approach, Latour and Woolgar followed the scientists in Roger Guillemin’s laboratory at the Salk Institute from 1975 to 1977, whose discovery of thyrotropin-releasing factor (TRF) won the Nobel Prize in 1977.

gives birth to ANT. While Callon (1986) proposed the model of translation by innovatively applying the same analytical approach to human and non-human actors in a research project that was searching for new knowledge about scallops, Latour (1987) exposed how scientists in society could use different strategies to translate a knowledge claim into a black box. From these two works, ANT started to form its identity, providing an important link between actors and actants as a ‘sociology of translation’ (Callon 1986).

The first application of ANT to accounting studies, according to Justesen and Mouritsen (2011), can be traced to Ruth Hines’s paper: *Financial Accounting: In Communicating Reality, We Construct Reality*. Although Hines’ (1988) is widely referenced, it was commonly considered to be a representative work of social construction largely because it was based on Latour and Woolgar (1979) (Justesen & Mouritsen 2011). The notions of ‘laboratory’, ‘black box’, ‘inscription’ and ‘translation’ from Callon (1986) and Latour (1987) started to extend their influence beyond the techno-scientific studies and drew more interests from accounting researchers, according to the literature review on ANT in a number of accounting studies (Lodh & Gaffikin 1997; Lowe 2001b; Justesen & Mouritsen 2011; Parker 2012). With respect to auditing studies, Michael Power was the first influential researcher to apply ‘black box’ and ‘laboratory’ to auditing and auditing expertise; and his work was also recognised by Latour (Justesen & Mouritsen 2011). For instance, Latour wrote the foreword for Power’s (1995a) work *Accounting and Science*, indicating the value of Power’s research and the potential similarities between science and accounting, particularly auditing (Justesen & Mouritsen 2011). In Latour (1999b), *Accounting and Science* was also cited as an example of the relevance of ANT to accounting. With the rise of new types of audit such as performance audits and e-commerce assurance, the analytical approach of ‘translation’ has

been adopted to explore the construction process of new auditing expertise (e.g. Gendron & Barrett 2004; Gendron et al. 2007).

In his more recent works, Latour (e.g. 1993; 1999a; 2005a) made more efforts to distinguish ANT from other interpretative and critical studies influenced by social construction. In particular, by referring to a set of vocabularies, Latour (2005a) discussed the relationships between the terms ‘social’ and ‘construction’, ‘actor’ and ‘actant’, ‘network’ and ‘worknet’, ‘interpretation’ and ‘proposition’, and ‘translation’ and ‘diffusion’. Essentially, Latour (2005a) proposed a new methodological approach of ‘keeping the social flat’, ‘from a matter of fact to a matter of concern’ and ‘attachment first, actor second’ to construct ANT as a second empiricism (as compared to the first empiricism of positivism), and what can be called as a ‘sociology of association’ in contrast to the traditional ‘sociology of social’ (Latour 2005a). However, according to Justesen and Mouritsen (2011, p183), this so-called ‘new critical approach’ has not drawn adequate attention from accounting researchers; most of the ANT-inspired accounting studies were influenced by Latour (1987) with an emphasis on deconstruction. Such a gap therefore leaves an unexplored potential for accounting research.

2.3 The epistemological underpinnings of ANT

If ANT can be credited with something, it is to have developed a science study that entirely bypasses the question of ‘social construction’ and ‘realist/relativist debate’ (Latour 1999b, p22).

An important question raised by ANT relates to the notion of world view: are there two worlds where one is made of natural objects and the other is constructed by social subjects (Latour 1999a)? The ontological debate between realism and relativism in regard to this

question has troubled scholars for a long time and divided them into two opposing realms. It is important to bear in mind that ANT is underpinned by constructionism, but not social constructionism or realism. In contrast to the latter two, it discards the division of Society and Nature, and object and subject, and instead applies a new symmetry between actor and actant. ANT maintains agnosticism toward actors/actants and views subjectivity and objectivity as fluid to trials of strength between the two (Latour 1999). It is expected to give accounting researchers a better way to forge the context and content in accounting practice (Justesen & Mouritsen 2011). This section therefore reviews how the new symmetry of actor and actant is proposed to replace the dualisms of Social and Nature, subject and object.

2.3.1 ANT's view on Social and Nature, subject and object

Adding the adjective 'social' to 'constructivism' completely perverts its meaning. 'constructivism' should not be confused with 'social constructivism'. When we say that a fact is constructed, we simply mean that we account for the solid objective reality by mobilizing various entities whose assemblage could fail: 'social constructivism' means, on the other hand, that we *replace* what this reality is made of with some *other stuff*, the social in which it is 'really' built (Latour 2005a, p91).

To begin with, as indicated in the above quotation, more attention needs to be paid to the word 'construction' in ANT because it bears little resemblance to how it is interpreted by social constructivists (Latour 2005a; Justesen & Mouritsen 2011). The English word 'construction' is confusing in Latour's view. In social constructivism, 'construction' is used to mean "against reality and truth" which implies that "if something is fabricated it is false; likewise, if it is constructed it must be deconstructible" (Latour 1999a, p115). For ANT, however, construction is understood to "account for the solid objective reality by mobilizing various entities whose assemblage could fail" (Latour 2005a, p91), which is against neither

truth nor reality. To say that something has been constructed is not to say that it comes from nowhere; instead, it is historical in that it depends on time and space (Cheng 2006). Hence, construction is associated with association and composition (Latour 2005a). This new understanding of ‘construction’ makes ANT become the ‘sociology of association’ in comparison with the ‘sociology of the social’ of ‘social construction’ (Latour 2005a).

Second, to understand ‘construction’ also requires a different approach towards ‘social’ which is the element of society. ANT’s view of Society is a critique to social constructivism. For social constructivism, Society is a fixed state that can be used to explain something that cannot be explained by Nature (Latour 1987). ANT clearly proposes that it does not aim at designating a ‘Society’, instead, “it is the *summing up* of interactions through various kinds of devices, inscriptions, forms and formulae, into a very local, very practical, very tiny locus” (Latour 1999b, p17). For constructionism, the social is merely a temporary or momentary association of *collective* of humans and non-humans within a long history (Latour 1999a; 2005a).

The term ‘social’ has been restricted by some extent to humans only, so the goal of ANT is to discover what has been left suspended (Latour 2005a). It is worthwhile noting that Latour’s proposition towards the ‘social’ has also been subjected to different views⁵ among ANT-inspired researchers. However, Latour (2005a) sees a greater negative impact to keeping the word ‘social’ before ‘construction’. Latour (2005a, p91) critiqued that ‘social’ has become a special ‘stuff’ for social constructivists that is used to substitute the controversies which cannot be explained otherwise, which he also called tautology (Latour 1987; 2005a). To

⁵ For example, though not agreeing with traditional social constructionism, Czarniawska (2003) on the other hand, argued to keep the adjective ‘social’ because she believes that relationships create individuals and not *vice versa*. Furthermore, she also argued that keeping ‘social’ may also incorporate Foucault’s insights about the social production and distribution of knowledge (Czarniawska 2003).

avoid a tautology, Latour (1987) suggested that “we should consider symmetrically the efforts to enrol human and non-human resources” (1987, p141; p258). In regard to social constructivism, Latour (2004) believes that its mistake was to believe there was no way to efficiently criticise matters of fact except by moving away from them and directing one’s attention toward the conditions that made them possible.

On the other hand, ANT is also different to the first empiricism of realism. The distinction between construction and realism derives from two main aspects. One is the view of Nature (Latour 1987), the other is about matters of fact (Latour 2005a). Firstly, ANT’s view of Nature is a critique to realism that ignore “other allies besides Nature” in a controversy (Latour 1987, p98). For realism, Nature is viewed as the cause of a settlement for a knowledge claim, while for constructivism it is the final consequence and part of the mobilisation when a claim to knowledge could succeed. As Latour (1987) claimed:

Since the settlement of a controversy is the cause of Nature’s representation, not its consequence, we can never use this consequence, Nature, to explain how and why a controversy has been settled (Latour 1987, p99; p258).

Therefore, Latour’s (1987) proposition of Nature distinguishes it from realism. Moreover, ANT’s second empiricism is about matters of concern rather than matters of fact (Latour 2005a). From this perspective, ANT sees no better positivism than social constructionism, because both ignore the role of non-humans (Latour 2005a).

To discard the polarity of Nature and Society also entails a rejection of the dualism of object and subject (Justesen & Mouritsen 2011). Redefining the relationship of objectivity and subjectivity is also a critical part of Latour’s series of works. To Latour (1987), objectivity

and subjectivity are not decided by Nature and Society but with reference to the strength of their representations. Latour (1987) claimed that:

Depending on the trials of strength, spokespersons are turned into subjective individuals or into objective representatives. Being objective means that no matter how great the efforts of the disbelievers to serve the links between you and what you speak for, the links resist. Being subjective means that when you talk in the name of people or things, the listeners understand that you represent only yourself. From Mr Manybodies you are back to being Mr. Anybody (Latour 1987, p78).

As noted in the above quotation, objectivity and subjectivity can shift from one to the other - the more we have 'socialised' 'outside' Nature so to speak, the more 'outside' objectivity the content of our subjectivity can gain (Latour 1987, p79; 1999b, p23). Instead of adopting the symmetries between Nature and Society, object(ivity) and subject(ivity), ANT considers a new generalised symmetry between actors and actants (Callon 1986; Latour 1987).

2.3.2 A new symmetry between actors and actants

ANT discards the Great Divide of Society and Nature, subjects and objects; instead, it establishes a new symmetry between actors and actants. This symmetry is critical to understanding the knowledge base of ANT. As Latour (1999a) claimed:

The name of the game is not to extend subjectivity to things, to treat humans like objects, to take machines for social actors, but *to avoid using* subject-object distinctions *at all* in order to talk about the folding of humans and nonhumans (Latour 1999a, pp193-194).

The development of ANT is indispensable to developing the meaning of actors and actants. In Callon and Latour (1981, p286), an actor is referred to as "any element which bends space around itself, which makes other elements dependent upon itself and translates their will into

a *language* of its own”. In terms of actant, Latour (1987, p84) proposed “to call whoever and whatever is represented **actant**”. As shown in Section 1.3, the relationship between an actor and actant was exemplified by a gunman and a gun in a gunshot (Latour 1999a). The reason an actor is called an actor is because of the existence of those who are called actants, but these definitions were difficult to comprehend, especially given the restrictions of language. As shown in Fig. 2.1, people tended to relate humans to actors and non-humans to actants on the grounds that nonhumans have no agency (Sayes 2014). Indeed, distinguishing a nonhuman as an actor probably is the most controversial side of ANT (Sayes 2014). For example, Chua (1995) explicitly denied that non-humans have agency; therefore they are actants. However, not every subject (human resource) can be called an actor, nor can every object (non-human resource) be called an actant⁶. In this regard, Callon (1986) provided us with a good example of a non-human actor: scallops. To minimise the confusions, Latour (2005a, p71) modified the term actor to mean “*anything* that does modify a state of affairs by making a difference”. This definition emphasises the mediating role of an actor which can transform, translate, distort, or modify what others do that goes beyond the limitations of language. Comparatively, actants are intermediaries and placeholders that transport inputs to outputs without transformations (Callon 1991; Latour 2005a).

⁶ As commented by Sayes (2014, p139), “These nonhumans are not merely conceived as a transcendental condition for our collective, nor are they merely a black box that lines up other actors, nor are they merely placeholders for a human actor. At the same time, they are considered something ‘more’ than mere causal actors”.

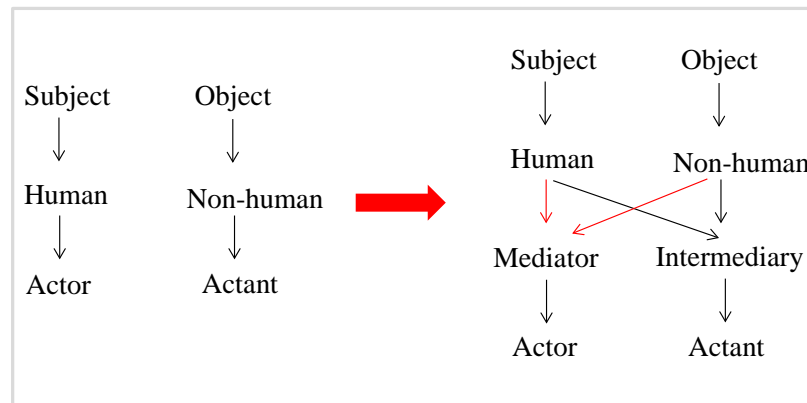


Figure 2.1: The developing ideas of actor and actant

Black boxes and inscriptions (Latour 1987; Callon 1991) can be viewed as actants of intermediaries. In terms of inscription, Latour (1987, p68) referred to an instrument in a laboratory that “provides a visual display of any sort in a scientific text”, regardless of its size, nature and cost. In particular, literary inscriptions are viewed as important object intermediary that link the distant actors in time and space together through displacements (Callon 1991). Inscription was the first notions of ANT that caught the attention of accounting researchers. The three main characteristics of inscriptions as analysed by Robson (1992), include mobility, stability and combinability. In accounting research, efforts have been made to examine “processes of choice and production of inscriptions because of their role in the development of knowledge” (Robson 1992; Qu & Cooper 2011, p344). It has referred to accounting numbers and costing systems because of their role as centres of calculation that enables action at distance (e.g. Miller 1990; Miller 1991; Robson 1991; Robson 1992; Chua 1995; Briers & Chua 2001; Dechow & Mouritsen 2005); auditor documents, reports, standards in other jurisdictions because of their role in legitimising local auditors’ practice for performance measurement (Gendron et al. 2007); and budget, performance measurement and even PowerPoint presentations made by management

consultants due to their role in mobilising people in establishing a balanced scorecard (Qu & Cooper 2011).

In terms of black box, Latour (1987) described it:

The word **black box** is used by cyberneticians whenever a piece of machinery or a set of commands is too complex. In its place they draw a little box about which they need to know nothing but its input and output (Latour 1987, p2).

For Latour (1987), the more complex its internal working, the more black the box is to its external users. As presented previously, the concept of the black box was used by Power (1996) to refer to auditing expertise. Black box can also be referred to humans, for example, management consultants were commonly treated as black boxes in implementing balance scorecard (BSC) (Qu & Cooper 2011). However, it is more precisely the expertise (knowledge and know-how) embedded within the management consultants that should be viewed as black box (Callon 1991). Nevertheless, the role of black box (e.g. management consultants) can also change into mediators when its activities are no longer kept ‘in the dark’ (Dechow & Mouritsen 2005; Qu & Cooper 2011). Reopen the black box is therefore one of the important tasks for ANT-inspired studies, especially for auditing research (e.g. Power 1996; Power 1997b; Gendron & Barrett 2004; Gendron et al. 2007).

Moreover, as introduced in Chapter 1, the notion of the ‘boundary object’ (Star & Griesemer 1989) was another important contribution to enrich the corpus of non-human actants. A more detailed explanation of boundary object was given by Star and Griesemer (1989):

Boundary objects are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common

identity across sites. They are weakly structured in common use, and become strongly structured in individual site use. These objects may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation (Star & Griesemer 1989, p393).

Star and Griesemer (1989) identified four types of physical boundary objects: repositories of things, ideal types, coincident boundaries and standardised forms/work methods. In addition, Briers and Chua (2001) developed a fifth type of conceptual boundary object: visionary objects. The notion of 'boundary object' has drawn an increasing interest from accounting researchers who seek to understand the roles of enterprise information systems such as enterprise resource planning (ERP) system and accounting information system (AIS) (Lowe 2001a; Dechow & Mouritsen 2005) and accounting techniques such as activity-based costing (ABC) (Briers & Chua 2001). In this thesis, auditing and auditing expertise are assumed as the sixth type of boundary object: knowledge boundary objects. However, its role as an actor or actant can only be confirmed in the translation.

2.4 The methodological features of ANT

As claimed by Callon (1999), it is better to view ANT as a radical methodological approach than as a theory. It is commented that Latour's view of ANT is more like a shoebox: an 'empty concept' to be filled with contents until it is clear what label might be put onto it (Czarniawska 2004). ANT is based on what Latour (2005a, p190) called 'slowciology' in contrast to the reductionism of positivism and the contextualisation of relativism. A better understanding of the methodological features of ANT requires a clarification of the term 'network' in an actor-network in comparison with the common understanding of physical and social networks. To minimise the confusion in understanding 'actor-network', Latour (2005a, p217) has emphasised the notion of 'attachment' to propose a new methodological stand:

“attachments are first, actors are second”. These features also provide methodological direction to a researcher on how to follow actors and actants (Latour 2005a).

2.4.1 The meaning of network

It is important to emphasise actors as “network effects” (Law 1999, p5) because “an actor is what is made to act by many others” (Latour 2005a, pp46-50). For this reason actors cannot be studied without at the same time paying attention to the network through which their identities are defined (Law 1999). By focusing on connections or relations within a network, the notion of a network circumvents the traditional distinctions between technical and social factors/drivers (Latour 1987; Callon & Latour 1992).

‘Network’ was an innovative word when it was first applied (e.g. Latour & Woolgar 1979; Latour 1987), but it was subject to multiple interpretations given ever-expanding computer and social networks (Latour 1999b). Latour (1997) clarified that ‘network’ in actor-network-theory bears no resemblance to a computer network or train, subway or telephone network; these are “only one of the possible final and stabilized states of an actor-network” (Latour 1997). The network also has very little to do with social networks because its focus is not only on human beings but also non-human beings (Latour 1997). Essentially, a network is “a concept, not a thing out there, it is a tool to help describe something, not what is being described”⁷ (Latour 2005a, p131).

The network in ANT seems more prone to be misinterpreted as a social network than as a computer network. Noticeably in the extant ANT-inspired studies, a distinctive phenomenon was to show how proponents attempted to establish a network of support to enrol other actors

⁷ Using a metaphor to describe drawing networks with a pencil, it is the pencil that can be called the network rather than the drawings (Latour 2005a, p142).

(e.g. Young 1995; Gendron & Barrett 2004; Gendron et al. 2007). Given that the concept of ‘network’ was not explicitly articulated in these papers, readers (especially non-ANT readers) may have been misled to construe that social networks of support are what is meant by the ‘actor-network’ in ANT, even though this may not have been the intention of the author or authors. It needs to be noted that these networks of supports were only the temporary stable state of network-effects. To eliminate the confusion, Latour (2005a, p132) suggested that it would be more appropriate to call the network a “*worknet* or *action net*”. Action nets further emphasise the importance of paying analytical attention not only to the structure of the network (for example, the identity and number of actors and the strength of their ties), but also to the forms of activity or action that occur within the nets (Czarniawska 1997). It is also worthwhile noting that the hyphen between actor and network is important because actor-network indicates a tension that lies between the centred ‘actor’ on the one hand and the de-centred ‘network’ on the other (Law 1999, pp4-5). Such a tension implies trials of strength among the actors. Hence Latour (1999, p122) claimed that:

Why is an actor defined through its trials? Because there is no other way to define an actor but through its action, and there is no other way to define an action but by asking what other actors are modified, transformed, perturbed, or created by the character that is the focus of attention (Latour 1999, p122).

In following actors in the trials, Latour (2005a) also proposed another important notion – attachment. Latour (2005a) claimed that:

An actor-network is what is made to act by a large star-shaped web of mediators flowing in and out of it. It is made to exist by its many ties: *attachments are first, actors are second* [...] From now on, when we speak of actor we should always add the large network of *attachments* making it act. As to emancipation, it does not mean ‘free from bonds’ but well-*attached* (Latour 2005a, p217, emphasis added).

As indicated by Latour (2005a), the term ‘attachment’ is used to highlight that by means of a network, the identity of an actor is construed by its attachments with other actors rather than being innate from birth. As suggested by Justesen and Mouritsen (2011), the emphasis displaced from an actor to its attachments is a challenging new set of concepts or metaphors for ANT-inspired studies because it implies a methodological requirement that the researcher should follow the actors in whatever direction they may lead. The notion of attachment has been used to understand the actant of a hotel door key (Latour 1991), music amateurs and drug users (Gomart & Hennion 1999) and the foreign-exchange market (Knorr-Cetina & Bruegger 2002), but it is still a relatively empty space for accounting studies (Justesen & Mouritsen 2011). In this respect, this study will use the notion of attachment to understand the knowledge boundary object of auditing expertise that is attached to different vocabularies and terminologies, and to follow these attachments to whatever they lead to.

2.4.2 The researcher’s role in ANT

ANT is not based on presumption; what matters is involved in translation. This feature characterises ANT as commensurability and indeterminacy (Latour 1993). Commensurability can be viewed as the linking of incommensurable elements such as human actors, human actants, non-human actors and non-human actants (Callon 1991; MacKenzie 2009). Indeterminacy can be related to translation, in which success or failure is not linear (Callon 1986; Briers & Chua 2001).

Latour (2005a) argues that the methodological approach that ANT adopts is a ‘slowciology’, based on three methodological slogans, ‘go slow’, ‘don’t jump’ and ‘keep everything flat’ (p190). Latour (2005a) suggests that the researcher’s role is to follow the actors and only apply infra-language rather than meta-language. Therefore, a researcher being agnostic to

actants and success is also surpassing the limitation of a paradigm (Cheng 2006). ANT attempts to analyse every setting as a flat space where empirical observations help identify the boundaries of the setting (Latour 2005a). This methodological feature is a further development of what Latour (1987, p4) meant to deny the “clean distinction between a context and a content”.

Justesen and Mouritsen (2011) commented that Latour can easily be seen as a supplement to Foucault because both are anti-essentialist and both challenge the belief that the existence of present-day phenomena can be traced back to a single cause (Justesen & Mouritsen 2011). For ANT, change is not the result of linear, rational improvements or functional adaptations to new demands; instead, it is analysed by a process of translation where heterogeneous elements, different vocabularies and various technologies are temporarily linked together at a particular moment of time (Justesen & Mouritsen 2011). ANT-inspired studies seek to explore how conflicts and controversies are resolved or managed, albeit temporarily in many cases. This was suggested by Latour (1987) as the ‘first rule of method’. Latour (1987) claimed that:

We study science in action and not ready made science or technology; to do so, we *either arrive before the facts and machines are black boxed or we follow the controversies that reopen them* (Latour 1987, p258, emphasis added).

The first rule of method provides ANT-inspired auditing researchers a particular starting point to conduct research, that is, a new form of auditing ‘in the making’ rather than a ‘ready-made’ auditing (e.g. Gendron & Barrett 2004; Gendron et al. 2007). This rule of method is also relevant to conducting research on greenhouse and energy auditing given the striking

controversies and conflicts in constructing greenhouse and energy auditing legislation by heterogeneous actors during the lobbying process.

2.5 The analytical approach of ANT

As a concept, the notion of ‘network’ in an actor-network implies an innovative methodological approach. In this respect, another important concept - translation - has been used several times in the previous sections. The notion of translation is especially useful in studying accounting and auditing change (Justesen & Mouritsen 2011). This notion was initiated by Michel Serres and further developed by Latour and Callon (Brown 2002). Latour (2005a) claimed that translation makes ANT into what can be called a ‘sociology of association’, compared to the traditional methodology of the ‘sociology of social’. The purpose of this section therefore is to present the meaning of translation in ANT, particularly referring to the two cornerstone works - Callon (1986) and Latour (1987). While Callon (1986) innovatively proposed the model of translation based on four moments - problematisation, interessement, enrolment and mobilisation, Latour’s (1987) work discussed different strategies of translation with an emphasis on interessement and enrolment. In the following subsections, the evolving definition of translation is presented and accompanied by a discussion about the differences between proposition and interpretation. It then makes an effort to introduce the four ‘moments’ of translation including the strategies of translating interests and device of interessement. This is an important section of this thesis because the analysis flowed from Chapter 5 to 8 will be heavily relied on the model of translation. To minimise confusion and misunderstandings of the concept of translation, the relationship between translation and rhetoric, and between translation and diffusion, will be elaborated as well.

2.5.1 The meaning of translation

The term ‘translation’ in ANT means more than the English word ‘translation’. As Justesen and Mouritsen (2011) commented, the meaning of translation is not easy to grasp. Although the concept was central to Callon (1986) and Latour (1987), it was described by the examples rather than explicitly defined. In Latour (1999a, p179), it was loosely defined as “displacement, drift, invention, mediation, the creation a link that did not exist before and through which things that were previously different are made equivalent”. Latour (1999b, p15) also referred it to “transformations and transductions – which could not be captured by any of the traditional terms of social theory”. Referring to Latour (1987), it should be emphasised that translation as it is employed in ANT retains not only a *semiotic* meaning from one context to another, e.g. from one language to another, it also bears a *geometric* meaning of the movement of an actor from one place to another. If translation in Latour (1987) concerns discourse and rhetoric in translating interest and enrolment, then Latour (1999a) also attempted to draw attention from discourses to actions. In Latour (2005), translation was simplified to account for any movement of an actor in space and/or time, and this movement is seen by the attachments that lead an actor to whatever direction.

To demonstrate the notion of translation is not an easy task, especially given its focus on proposition (Latour 2005a) rather than interpretation (Callon 1986; Latour 1987). Proposition rests on articulation, not interpretation. For ANT, interpretation is related to the adjective ‘social’, which is narrowed down to concern only humans, or language (as something that only human beings use) (Czarniawska 2003), whereas articulation is “in no way limited to language and may be applied not only to words but also to gestures, papers, settings, instruments, sites, trials” (Latour 1999a, p142). The proposal for proposition rather than interpretation also reflects ANT’s second empiricism to get closer to matters rather than away

from them by directing one's attention towards the conditions that made them possible (Latour 2004). Therefore, while drawing on Latour (1987) and Callon (1986) as the main analytical tools, this thesis also injects the new ideas proposed by Latour (2005).

So far, ANT-inspired studies have translated the works of Latour and Callon in varied ways because of different transformations in combining accounting phenomenon and notions of ANT, such as translation (e.g. Robson 1991; Gendron et al. 2007; Mouritsen et al. 2009), network (e.g. Chua 1995; Gendron & Barrett 2004; Gendron et al. 2007), inscription (e.g. Robson 1992; Gendron et al. 2007; Qu & Cooper 2011), black box (e.g. Power 1996; Gendron et al. 2007), and boundary object (e.g. Briers & Chua 2001; Lowe 2001a; Dechow & Mouritsen 2005). In particular, the notion of translation is useful for studying accounting change (Justesen & Mouritsen 2011). In terms of translation, Robson (1991) suggested:

For present purposes, translation will refer to the process through which often pre-existing accounting techniques, and their associated roles, are articulated discursively, in ways that construct the individuals' and groups' "interest" in those techniques, and may subsequently provide motives for producing accounting change (Robson 1991, p550).

Following Robson (1991), translation has been used in studying the construction of new audit expertise (e.g. Gendron & Barrett 2004; Gendron et al. 2007) and lobbying the accounting and auditing standards (Young 1995; Jupe 2000; Jeppesen 2010)⁸. The translation process can be a longitudinal one that covers either multiple translations or a single one (Mouritsen et al. 2009). Moreover, although Power (1996) did not explicitly use the term, 'making things auditable' was indeed a translation in reopening the black box of auditing expertise. So far these two streams of ANT-inspired auditing and standard lobbying literature are critical references for this thesis to establish a network of support.

⁸ These papers will be reviewed in Chapter 3.

2.5.2 The four moments of translation

Essentially, translation entails a new analytical approach of studying power relations: to treat every actor equally without any *a priori* assumptions (Callon & Latour 1981; Callon 1986). The most representative work on translation is the case of scallops and fishermen by Callon (1986). The story happened at St Brieuc Bay in France where local people liked to have scallops in their dining table especially during Christmas, however, the population of natural scallops decreased dramatically in a few years. The problem was learned by three emerging researchers who wanted to solve it by importing a technique of collectors from Japan. Although the representatives of fishermen group and the research communities were interested in their research and engaged in the project, the project was finally failed not only due to the betrayal of the fishermen communities, but also due to the fact that pecten maximus did not anchor themselves in the collectors as assumed by the three researchers (see Fig. 2.2). This failed research project thus challenged the normal distinction of humans and non-humans as well as the interpretative understanding of the process of producing a new knowledge.

By applying the same analytical approach to the heterogeneous actors, including the three researchers, fishermen, researchers' scientific colleagues and scallops in searching for new knowledge about reproducing scallops, Callon (1986) proposed the notion of translation and four moments of translation, including problematisation, interessement, enrolment, and mobilisation (see Fig. 2.2). In Callon's (1986) analysis, the scallops were treated as actors and studied in the same manner as other human actors. This analytical approach was innovative because Callon (1986) established a new symmetry between actors and actants, instead of humans and non-humans (Section 2.3.2).

With respect to the four moments of translation, Callon (1986) also acknowledged that in reality these four moments can overlap. Recent ANT studies have also found that the four moments can be more fluid and interrelated than Callon's translation might suggest (Mahring et al. 2004). It also should be noted that not all actor-networks go through all four moments and that the translation process may fail or end at any stage (Alcouffe et al. 2008). Given the weight the case of scallops and fishermen and the four moments of translation to the subsequent analysis chapters from Chapter 5 to 8, the following subsections will discuss the four moments respectively with reference to the case of fishermen and scallops, as well as the extant ANT-inspired accounting literature.

Case of Scallops and Fishermen (Callon 1986)				
Actors/actants	three researchers	scallops	fishermen	scientific colleagues
Objective	increase population of scallops at St Brieuc Bay			
Program	apply technology of collectors learned from Japan			
Analysis: Four moments of translation				
moment 1: Proplematisation	three researchers identify the nature and problems of other actants/actors and propose a solution to be negotiated with the obligatory passage point of the researcher's programme			
	OPP (obligatory passage point): pecten masimus attach itself			
moment 2: Interessment: by devices/inscriptions	primary actor	towline and collectors	texts and conversations: decline curves and results in Japan	texts and conversations: blank literature
moment 3: Enrolment	primary actor	negotiation: a series of transactions	no resistance	negotiation the proposition: pecten maximus anchors itself
moment 4: Mobilisation	primary actor	became the representatives of the population	became spokesmen for the actants	became spokesmen for the actants
Translation result	translation failed	pecten masimus did not achor	betrayed	became sceptical

Figure 2.2: Some elements of scallops and fishermen (Callon 1986)

2.5.2.1 *Problematization*

Problematization is the process by which the three researchers seek to portray themselves as indispensable to other actors by defining their nature and problems, and then suggesting solutions to their problems (Callon 1986). To achieve each of the particular goals, other actors must negotiate the obligatory passage point (OPP) of the primary actor – the three researchers’ program of investigation (Callon 1986). Hence, Callon (1986) argued that problematization requires a system of associations or alliances between different actors that defines their identities and what they desire. The OPP is a critical network channel designed by the stronger or more influential actors who occupy convergent nodes through which all information must pass (Latour 1987; Callon 2009). In the case of scallops and fishermen (Callon 1986), the three researchers identified the nature of the identities and the problems with the scallops, the fishermen, and their scientific colleagues, and then used the technology learned from Japanese collectors to solve their individual problems, provided they joined in their program of technology (see Fig. 2.2.).

It is worthwhile noting that problematization is a “due process of construction and deconstruction” of problems (Callon 1981, p209) that refers to a chain of inclusion that “carves out a territory from the outside, forming a closed domain with its own coherence and logic” (Callon 1981, p206). Using a metaphor, “problematizations are enclosed within each other like Russian dolls” (Callon 1981, p208). In the case of fishermen and scallops, to problematize the researchers’ program for the scallops meant going through a chain of hypotheses: 1) the defenceless larvae are constantly threatened by predators, 2) the larvae can anchor, 3) the Japanese experience can be transposed to France because the scallops in Japan and France are of one family (Callon 1986). However, choosing to enrol in the three researchers’ program also involves a process of objectification (Callon 1981), because it

means making a choice and leaving empty spaces for negotiations (Callon 1981, p207). For example, to have collectors is to prevent the predators from catching the scallop larvae (Callon 1986). Furthermore, since problematisation is a chain of inclusions and exclusions, it is also contingent on the interdependence of problems. The solution to a problem always depends on the prior solution of a series of other problems (Callon 1981, pp211-212). In Callon (1986), the problematisation of collector technology was only possible because it had worked for the scallops in Japan. Thus translation involves a geometric movement (Latour 1987).

Problematisation has drawn interest from accounting researchers. In particular, Robson (1991) translated problematisation as:

the outcome of the process through which the aims, interests and objectives of the discourses are translated into the procedures and objectives of accounting techniques and calculations (Robson 1991, p551).

Robson's (1991) study considered the historical initiation of the Accounting Standard Steering Committee in the UK and how it was problematised as a solution to problems such as the failure of profit-forecast reviews, the consequences of the rise of investment calculations and the failure of accounting and auditing practices. Moreover, Gendron and Barrett's (2004) case study paid attention to how problematisation could lead to professionalisation by continuously testing claims to expertise surrounded by establishing a network of support. These studies focused on the discursive and rhetorical perspectives of translation. It is argued that problematisation is essentially a rhetorical process to convince and subscribe other actors by showing one has the correct solutions (Alcouffe et al. 2008). The notion of problematisation is important to this thesis because it has enabled greenhouse

and energy auditing to be proposed as a solution to Australian climate change policies, and it has been used as the justification for different professional auditors to establish their expertise as an OPP. In this study, the notion of problematisation will be used in Chapters 5 and 6 to illustrate a series of translations, they are, how greenhouse and energy audits were problematised by the Australian climate change policies, and how they were problematised by what were not environmental audits or financial audits.

The success or failure of problematisation ultimately depends on other actors' consent or resistance. A successful problematisation is one that "succeeds in incorporating interests" – that is, *interessement* (Callon 1981, p213; 1986).

2.5.2.2 *Interessement*

Interessement is the second moment of translation. It is defined by Callon (1986) as a series of processes by which the primary actors – the three researchers sought to lock other actors into the roles proposed for them in that program (see Fig. 2.2). As the term 'inter-esse' indicates, to be interested is to be between actors and their goals, thus creating a tension that will make actors select only that which in their eyes helps them reach these goals amongst many possibilities (Callon 1986; Latour 1987). Therefore *interessement* devices and inscriptions are used to attract actors from being seduced by alternative options. Changing from 'interest' to 'interesse' indicates two different treatments towards interests. While traditional social theories view interests as an explanatory end (Robson 1991), ANT views it as merely a "temporarily stabilised outcome of previous processes of enrolment" (Callon & Law 1982, p622). This also exemplifies the way 'social' is treated between social constructivism and constructivism.

Latour (1987) provided supplementary ideas to *interessement*. Because *interessement* is related to “translating interests” (Latour 1987, p108), it can be achieved by different strategies depending on whether the interests and goals of actors match each other and the trials of strength between the competing actors. Latour (1987, pp108-121) depicted five scenarios in translating interests, including 1) “I want what you want”; 2) “I want it, why don’t you?”; 3) “If you just make a short detour”; 4) “reshuffling interests and goals”; and 5) “becoming indispensable”. Apart from the fifth scenario where negotiation and displacement are not needed, the other four scenarios have to deal with resistance and competition. These strategies, which will be discussed in the following paragraphs, also bears particular relevance to the lobbying of greenhouse and energy auditing in this thesis.

The first and easiest form of translation is to meet the explicit interests of other actors: “I want what you want” (Latour 1987, p108). It is the easiest way because catering to the interests of others is letting oneself be enrolled by others (Latour 1987). In the example of scallops and fishermen (Callon 1986), the three researchers’ interest aligned with the interests of the fishermen, the scallops and their colleagues, so this situation can also be referred to as an ‘alignment of interest’ (Jeppesen 2010). This scenario has been elaborated in a case study examining the constructing of new auditing expertise when the Office of Auditor General aligned performance measurement with the goal of managing the government deficit (Gendron et al. 2007), or when a small number of lobbyists used self-referential rhetoric to enrol the Accounting Standards Board (ASB) into amending Financial Reporting Standard No.1 (Jupe 2000).

The second scenario is what Latour (1987) depicted as “I want it, why don’t you?” (p111). This occurs when the program designer is small and powerless while other actors are strong

and powerful (Latour 1987). It only succeeds when larger actors have no other choice but to follow the smaller actors (Latour 1987). To some extent, this is similar to the interrelationship between the researchers and their scientific colleagues in the Callon's (1986) case of scallops and fishermen. If the research community wanted to advance its knowledge of scallops, it must follow the three researchers despite the fact that the three researchers are unknown to anybody while the research community consists of well-known professors.

In this scenario, the 'devices of interessement' are critical in dealing with resistance, and especially in persuading and convincing powerful actors. As shown in Fig. 2.2, such devices of interessement used by the three unknown researchers can be the towline and collectors to the scallops, conversations and texts with the fishermen, or research papers and presentations to the research community (Callon 1986), or more rhetorical devices such as soft texts, numbers or adjectives, through which scientists link to many allies and black boxes as they claim knowledge in society (Latour 1987). This rhetorical devices – specifically, due process and soft texts used by the Danish Auditing Standard-setting Board was especially applied in auditing standard-setting in the lobbying process that never successfully established itself as a point of obligatory passage (Jeppesen 2010). However, due to a focus on the discursive perspective of translation in Latour (1987), a confusion may arise regarding the relationship between translation and rhetoric (Arrington 2004; Chua 2004; Lowe 2004a; Lowe 2004b). Hence, Section 2.5.3 will especially focus on a discussion of the relationship between translation and rhetoric, which also bears particular relevance to accounting studies.

According to Latour (1987), because this second scenario is rarely achievable, a detour is required, which leads to the third scenario. Sometimes a series of interpretations of interest may be required to seduce or solicit others (Latour 1987). In the case of the fishermen and

scallops (Callon 1986), a detour did not appear to be apparent apart from problematising the interest of scallops. The main shortcomings of this scenario are related to the unknown length of detour and alternative ways of attracting the actors (Latour 1987). Efforts to overcome the shortcomings, lead to the fourth scenario, ‘reshuffling interests and goals’ (Latour 1987). For the primary actor this scenario is critical if they want to dissolve the explicit interests of those whom they want to enrol, and also increase the margin of manoeuvre (Latour 1987). The primary actor may displace goals, invent new goals, invent new groups, or make the detour invisible to the actors while winning trials of attribution (Latour 1987). Rendering a detour invisible means “at once offering new interpretations of these interests and channelling people in different directions” (Latour 1987, p117). This translation is a slow movement that tightly ties particular issues to much larger ones (Latour 1987). For this scenario, Gendron and Barrett’s (2004) case of e-commerce assurance to some extent presented a rather detoured translation of interests during the process of problematisation, while accounts had to make a detour in their claims to auditing expertise from business to consumer (B2C) to business to business (B2B), and thus regain an obligatory passage point and establish a network of support.

The last scenario is to become indispensable to others (Latour 1987). In fact, all the previous strategies lead to this fifth translation, which literally sums them up (Latour 1987). This happens when the fact-builder is so strong that all the others must pass it if they want to spread their claims. This is a situation which Latour (1987, p120) depicted as a sort of hegemony: “whatever you want, you want this as well”. Therefore “no negotiation, no displacement would be necessary since the others would do the moving, the begging, the compromising and the negotiation” (Latour 1987, p120).

In view of the five scenarios, this thesis that study translating greenhouse and energy auditing from lobbying processes is expected to present multiple strategies of translating interests and different devices of intersement given the complexity of the actors during the longitudinal stages of lobbying.

2.5.2.3 *Enrolment*

Intersement leads to enrolment if the device of intersement is successful (Callon 1986). In the case of scallops and fishermen, enrolment was a set of strategies where the three researchers sought to define and ensure the various roles they had allocated to others (Callon 1986). From Callon's (1986) viewpoint, enrolment does not imply or exclude the actors' pre-established roles. For example, to enrol the scallop larvae to the collectors, the researchers had to battle against currents and starfish (Callon 1986). For enrolment, there exists a triangular relationship of A-B-C, where if A (the researchers) wants to enrol B (the larvae), then C (whether it is called currents or starfish) must be excluded. Hence, to talk about enrolment is to talk about "multi-lateral negotiations, trials of strength, and devices of intersement which enable them to succeed" (Callon 1986, p211).

Latour (1987) views enrolment as a dialectical process that is central to translation, and it may involve a chain of translations that are especially related to intersement. It is dialectical because on the one hand, as Latour (1987) claimed,

to enrol others so that they participate in the construction of the fact;
to control their behaviour in order to make their actions predictable
(Latour 1987, p108)

On the other hand, it also involves a counter-enrolment (Callon & Law 1982). This contradiction, however, can only be achieved through a translation of interests, as shown by the five scenarios discussed in the previous section.

For the lobbying studies, Jupe (2000) and Jeppesen (2010) paid attention to the reciprocal and dialectical nature of enrolling and controlling others within an imbalanced power relationship in lobbying between the standard-setting board and the lobbyists (Latour 1987). This thesis also aims to reveal more features of the dialectical process of enrolment, given the triangular relationships between the Australian Labor Government, the financial auditors and the technical auditors.

2.5.2.4 *Mobilisation*

The final moment of translation, according to Callon (1986), is mobilisation. This refers to a set of methods used by proponents to ensure that the supposed spokesmen for various relevant collectives can properly represent them, and will not betray them (Callon 1986). It also suggests that mobilisation deals with the representation of the represented (Jeppesen 2010). If we refer back to the relationship between actors and actants, then mobilisation deals with how actors become the spokesmen and representatives of the actants.

As shown in Fig. 2.2, in the case of scallops and fishermen, the translation finally failed not only because of the fishermen's betrayal of those they represented, but also because of the action of the non-human actant - the wide population of scallops - because they did not anchor themselves as the sample scallops did (Callon 1986). This case provided an evidence of how success and failure can be indeterminate (Briers & Chua 2001; Hinchliffe 2001;

Alcouffe et al. 2008). For this reason, Callon (1986) emphasised that “translation is a process, never a completed accomplishment, and it may fail” (p196).

Moreover, it also needs to be highlighted that success does not mean that once a program works people will be convinced. Rather, quite the opposite; a program will work only when all the relevant actors are convinced (Latour 1987). This is also the distinction between the sociology of translation and the sociology of the social (Latour 2005). Hence, for ANT-inspired studies, it is more interesting to find out how the actors are assembled in a network for transformation. In this respect, Jeppesen (2010) in particular discussed how representation strategies were adopted by the standard-setter to deal with resistance.

So far the four moments of translation are discussed with reference to Callon (1986), Latour (1987) and their application in some accounting and auditing literature. It needs to be reemphasised that the four moments of translation are fluid and can overlap, while different strategies can be applicable in each moment. The model of translation bears particular relevance to the translations of greenhouse and energy auditing to be presented in the following chapters 5 to 8. In constructing greenhouse and energy auditing, these four moments led the translations during the lobbying process, while the heterogeneous actors and actants demonstrated similar characteristics to the three researchers, scallops, fishermen and research colleagues. These seminars will be presented in Chapter 9.

2.5.3 Translation and rhetoric

To enhance the understanding of translation, the relationship between translation and rhetoric must be considered. As Chua (2004, p257) commented, “Latour is centrally concerned with rhetoric”. In following scientists and engineers from texts to laboratories, from machines to

networks, Latour (1987) argued for the persuasive strength of rhetorical devices in defining shared problems, forming alliances with human and non-human actors and, mobilising texts and numbers that translate the interests of other actors and enrol them towards a common interest (pp109-121). In defining rhetoric, Latour (1987) argued:

Rhetoric is the name of the discipline that has, for millennia, studied how people are made to believe and behave and taught people how to persuade others. Rhetoric is a fascinating albeit despised discipline, but it becomes still more important when debates are so exacerbated that they become scientific and technical (1987, p30).

Different rhetorical devices have been discussed by Latour (1987), including using soft texts, numbers, adjectives, linking to many allies and black boxes, and so on. For example, Latour (1987) viewed soft texts as a device of *interessement*. He stated:

The simplest way to spread a statement is to leave a margin of negotiation to each of the actors to transform it as he or she sees it fit to adapt to it to local circumstance. Then it will be easier to interest more people in the claim since less control is exercised to them (Latour 1987, p208).

According to Chua (2004, p257), “Latour argues that the practice of science, whether of the natural or social variety, is intrinsically rhetorical and the scientific article is always a rhetorical vehicle”. Indeed, rhetoric is also important to theorising ANT itself, as seen from a set of specialised vocabularies by which its followers are attracted and enrolled. For example, in defending its epistemological proposition, Callon and Latour (1992) once argued:

All the shifts in vocabulary like “actant” instead of “actor,” “actor network” instead of “social relations,” “translation” instead of “interaction,” “negotiation” instead of “discovery,” “immutable mobiles” and “inscriptions” instead of “proof” and “data,” “delegation” instead of “social roles,” are derided because they are hybrid terms that blur the distinction between the

really social and human-centered terms and the *really natural and object-centered repertoires* (1992, p347, emphasis added).

However, rhetoric seems a rather paradoxical term for people who are trying to translate it into their works, for example, the debate between Lowe (Lowe 2004a; Lowe 2004b), Arrington (2004) and Chua (2004) in the special issue of *Critical Perspectives on Accounting* demonstrated such controversies in their different understanding of rhetoric and translation. The central argument was associated with the appropriateness of “Lowe’s Latourian-inspired reading of Laughlin’s translation of German critical theory” (Chua 2004, p256). While Lowe (2004a) argued that Laughlin’s middle-range theory was a rhetorical persuasion via allies of academics and non-human resources such as diagrams, his application of translation and rhetoric was critiqued by Arrington and Chua. Arrington (2004) disagreed with Lowe (2004a) because “enduring rhetoric is the only methodological principle that every scholar must by necessity accept” (Arrington 2004, p251). According to Arrington (2004), Latour (1987) also used many rhetorical devices, such as diagrams, in *Science in Action*. Chua (2004) seconded Arrington’s argument and questioned how the irony of “a writer who embraces Latour can, at the same time, express a desire for Scientific rationality” (p257). More sharply, Chua (2004) asked, “now that Lowe, Laughlin and I all agree that Laughlin’s paper is rhetorical – what next?” (p257).

The statements from Lowe, Chua and Arrington appeared to be all acceptable; indeed, the example could illustrate a controversial understanding about rhetoric even among accounting researchers of the highest profile. It is not inappropriate to apply the notion of translation to analyse a particular theorisation that has been transformed from existing theories, nor is it possible for any theorisation to be immune from rhetorical devices, even for ANT itself; but yes, the question is “what next”? These controversies may partly result from Latour’s rather

blurred attitude towards rhetoric in his early works. While Chua and Arrington solely referred to Latour's work published in 1987, Lowe's argument was also based on Latour (1993; 1999a). Actually, Latour (1987, pp190-191) was concerned that rhetorical tricks were deployed to displace a problem, belief and knowledge, to the advantage of the story teller. In Latour (1993), his concern about rhetoric became clearer; for example, he argued:

Do we have to pretend that everything is rhetorical, or that everything is natural, or that everything is socially constructed, or that everything is stamped and stocked? Do we have to suppose that the same pump is in its essence sometimes an object, sometimes a social bond, and sometimes discourse? Or that it is a bit of each? That sometimes it is a mere being, and sometimes it is marked by the ontological difference between Being and beings? (Latour 1993, p89).

Latour (1999a) perhaps made explicit even his critiques towards the dark side of being rhetorical:

Rhetoric is an agent of the kind of persuasion which is designed to produce conviction, but not to educate the people, about matters of right and wrong... A rhetorician, then, isn't concerned to educate the people assembled in lawcourts and so on about right and wrong; all he wants to do is to *persuade* them (Latour 1999a, p241).

Moreover, a critical part was missing from their debates – the non-humans. The success of a claim to knowledge is not only decided by social actors who can apply rhetorical schemes, but also dependent on the non-human actors such as scallops' (see Callon 1986) enrolment. As discussed above, Latour (2005a) intended to distinguish ANT from other social theories by applying the notions of proposition in comparison with interpretation. As Latour (2005a) claimed, proposition is based on articulation which does not stop at interpretation. Hence actions (including those of the non-human actors) should be paid attention to while following

the interpretations (Justesen & Mouritsen 2011). This could perhaps explain why Chua asked Lowe, “what next”?

In applying the translation approach, rhetoric was important in understanding the accounting and auditing standard-setting process (e.g. Young 1995; Jupe 2000; Jeppesen 2010). Clarifying the relationship between translation and rhetoric is important for the purpose of this thesis because it is critical to the identification and choice of appropriate research questions. If a research question ends up being rhetorical, it cannot be suitable for ANT-inspired research (Justesen & Mouritsen 2011). This is also the aim of this thesis that is to inject the new ideas of ANT to follow the actors wherever they lead, as suggested by Latour (2005), including those non-humans who are outside of the boundary of rhetoric.

2.5.4 Translation and diffusion

To expand the understanding of the concept of translation, it is also worthwhile to distinguish it from the traditional diffusion model. The reason or problematisation for this discussion is particularly due to their distinctive treatments of power. The translation model highlights the role of heterogeneous actors by avoiding the presumption that the powerful are always powerful and somehow very different from the weak (Law 1991). Contrary to the diffusion model, the translation model views power as dynamic and embedded in establishing the OPP in problematisation, trials of strength in intersement and enrolment.

The diffusion model concerns intermediaries who transport inputs into outputs through a black box without making a difference (Latour 1986a; 1987; 1999a; 2005a). This is distinguishable from the translation model, where attention is paid to mediators who transform the inputs to the outputs. As Justesen and Mouritsen (2011, p172) commented,

“when they travel they are translated rather than diffused”. For example, in the diffusion model, knowledge claims are viewed as unchanged when they diffuse into society. In contrast, for ANT’s translation model, claims to expertise imply a process of *adaptation and transformation* in time and space, which is termed as translation (Gendron & Barrett 2004). When it comes to power relationships, the diffusion model focuses on illustrating who owns the power, following an inertia principle, whereas the translation model is interested in investigating how power is exerted over others, because power is viewed as a consequence rather than a cause (Latour 1986a). As Latour (1986a) claimed:

In the translation model, power is composed here and now by enrolling many actors in a given political and social scheme, and is not something that can be stored up and given to the powerful by a pre-existing ‘Society’ (Latour 1986a, p264).

In brief, in the translation model, power is performative in that it is “negotiable, a practical and revisable matter”, but in the diffusion model, power is ostensibly what can be “determined once and for all” (Latour 1986a, p264). As Czarniawska (2003, p130) commented, translation as the “power of associations” is central to Latour’s thought. It is also suggested that this model of translation is a further development of Nietzsche’s will to power/knowledge (Justesen & Mouritsen 2011). To exemplify the differences between translation and diffusion used in an analysis, the commonalities and differences of some representative literature of the diffusion model, especially the black-box approach (e.g. Hodges & Mellett 2012) and neo-institutionalisation (e.g. Archel et al. 2011) are discussed in Section 3.3.2.

2.6 A brief summary and an additional note

ANT is a broad idea. So far, this chapter has reviewed and discussed ANT from four main aspects: 1) its historical development as contributed to Latour and Callon; 2) how it is different epistemologically to social construction and realism in terms of establishing a new symmetry between actors and actants as a rejection to the traditional dualism of Nature and Society, object(ivity) and subject(ivity); 3) what does ‘network’ mean and how to understand ‘attachments first, actors second’ methodologically in following actors/actants in a network; and 4) the model of translation including problematisation, interessement, enrolment and mobilisation, and how they have been applied in accounting and auditing studies, in particular, how to differentiate translation from rhetoric and diffusion.

However, there is still a need to discuss a little bit more about ANT, especially why it is becoming more prevalent in accounting studies, from the methodological perspective. Hence, in the following two sub-sections, in addition to summarising the important terms of ANT, I will provide an additional note to ANT’s methodological development in accounting and auditing studies.

2.6.1 A summary of the important terms of ANT

In elaborating the above mentioned four perspectives, I have referred to a reservoir of ANT-attached terms and concepts, including actors, actants, knowledge boundary objects, inscriptions, black box, network, translation, and linked them to the extant ANT-inspired accounting and auditing literature. These terms bear particular meaning to ANT and will be used throughout the analysis chapters from 5 to 8. The following notes are brief summary of these terms and concepts.

- ANT concerns the actions of actors and they are mediators that make a change (Latour 2005). Actors can be either humans or nonhumans. Nonhuman actors can be natural beings such as scallops (Callon 1986), or technical objects such as accounting information systems (Lowe 2001a; Dechow & Mouritsen 2005). This thesis suggests that auditing expertise as a knowledge boundary object is also an actor in constructing greenhouse and energy auditing.
- Actants, on the other hand, are those who are represented by actors. They are the intermediaries between actors. Similarly, they can be either humans, such as the fishermen groups that were represented by a few fishermen representatives (Callon 1986), or nonhumans such as black boxes and inscriptions (Callon 1991). The role of actors/actants can only be decided through translation but not through any *a priori* (Callon & Latour 1981; Callon 1986).
- Network in ANT is a methodological concept rather than a physical or social network. A physical or social network is only a temporary stabilised state (Latour 2005). Network relates to the approach of how to follow actors, that is, “attachments first, actors second” (Latour 2005). A researcher needs to follow the actors to wherever they lead to (Latour 2005).
- Translation can be simplified as any movement in time and space (Latour 2005). It does not only bear a linguistic but also a geometric meaning (Latour 1987). The scallops and fishermen model indicates four moments of translation, including problematisation, interessement, enrolment and mobilisation (Callon 1986). This model is going to be used in analysing the translation of greenhouse and energy auditing in the lobbying process.

2.6.2 An additional note on ANT

Before moving on in Chapter 3 to a review of ANT-inspired auditing and lobbying studies, additional discussion of the problematisation of ANT in accounting research, which is more related to its methodological values for qualitative research, is necessary.

The growth of ANT in accounting and auditing studies has been inextricable from the methodological issues that accounting researchers have historically encountered (Lodh & Gaffikin 1997; Justesen & Mouritsen 2011). With the rise of sociology studies and their influence on accounting researchers, Burrell and Morgan's (1979) sociological paradigm became popular in radical accounting methodology during the 1980s (Lowe 2004a; Justesen & Mouritsen 2011). For example, Morgan (1988) argued that accounting is metaphorical in nature and only represents a partial reality that accountants can - and wish to - account for.

However, the interpretative and metaphorical perspectives of accounting research gradually lost their attractiveness and became subjected to increasing criticism. For example, Robson (1992, p685 & p703) critiqued that this approach was 'incomplete' because it ignored the actions that accounting calculation possesses at a distance; Armstrong (2002, p281) commented that it became 'uninteresting' because there was no further exploration of how, why and with what consequences accounting was socially constructed. By the same token, Knuuttila *et al.* (2008, p287) raised the point that "an interpretive study without the mobilisation of the objectivist dimension is bound to be viewed as a relatively uninteresting descriptive summation of interpretations developed by the examined actors". Armstrong (2008) argued that the seemingly persuasive interpretations would lose their resonance over time and were subject to be bound with personal realisation. To summarise, concentrating on interpretation and reflectivity alone makes an interpretive study gradually lose its impetus.

The inherent problem of the interpretative research, in contrast to ANT, is that very little action follows interpretation (Justesen & Mouritsen 2011).

Accounting researchers are becoming more interested in ANT because of its potential for addressing the theoretical and methodological problems faced by qualitative researchers (Ahrens 2008; Kakkuri-Knuuttila et al. 2008; Justesen & Mouritsen 2011; Parker 2012). Due to its focus on studying accounting change in action, ANT was suggested as a ‘critical approach’ (Lodh & Gaffikin 1997; Justesen & Mouritsen 2011). Critical accounting, as defined by Cooper and Hopper (1990), involves:

fresh, typically nonfunctionalist, theoretical insights into the effects of accounting within organisations and Society (Cooper & Hopper 1990, p1).

ANT is ‘critical’ because it rejects the positivist’s reduction and the social constructivist’s interpretation. In response to the former, it tends to break the correlations down to a set of activities, while for the latter it adopts propositions that are rooted in articulation rather than interpretation. Therefore, as a second empiricism (Latour 2005a), the gradually developed constructivist’s epistemology makes it possible to travel beyond the debates between qualitative and quantitative research methods (Richardson 2012). Theoretically, laboratory, network and translation grant accounting researchers apply an innovative analytical inscription to deconstruct the concurrent accounting phenomena. In the next chapter, the review of ANT-inspired auditing and lobbying studies will further exemplify the strengths of ANT as a critical methodology and theory.

Chapter 3 ANT in Auditing and Lobbying Research

3.1 Introduction

After explicating the key notions of ANT including actor, actant, network and translation in Chapter 2, this chapter serves to critically review how these vocabularies have been translated and used in studying the construction of new forms of auditing, and accounting and auditing standard-setting processes. Justesen and Mouritsen (2011) have extensively reviewed the effects of ANT in accounting research and summarised six main streams of ANT-inspired accounting literature with one of them as reopening the black box of auditing expertise through constructing new forms of audit. Section 3.2 contributes to extending their review of ANT-inspired auditing literature to a more detailed analytical and methodological level as related to translation (e.g. Power 1996; 1997b; Gendron & Barrett 2004; Gendron et al. 2007). In addition to a review of what has been achieved by the extant ANT-inspired auditing studies, Section 3.2.5 also aims to unfold the characteristics of auditing itself as a knowledge boundary object as derived from a broader auditing literature in terms of the relationship between auditing boundary and terminology.

The second stream of literature to be presented in Section 3.3 is related to ANT-inspired lobbying studies, particularly in terms of the accounting and auditing standard-setting process. This section serves two objectives. First, it aims to present how the translation approach (Callon 1986; Latour 1987) can add more layers to different researchers' (e.g. Robson 1991; Young 1995; Jupe 2000; Young 2003; Jeppesen 2010) investigation of complicated lobbying behaviours, especially in terms of interessement and enrolment. This is also expected to become the seventh stream of ANT-inspired literature in addition to the six streams summarised by Justesen and Mouritsen (2011). Second, as presented in Section 2.5.4, Latour

(1987; 1999a; 2005a) suggests that it is vital to differentiate translation from the diffusion model, whose proposition has been echoed by ANT-inspired accounting researchers (e.g. Briers & Chua 2001; Justesen & Mouritsen 2011). In this regard, some representative lobbying studies based on the diffusion model including the neo-institutional model (e.g. Archel et al. 2011) and black-box model (e.g. Hodges & Mellett 2012), are therefore selected to exemplify the differences between translation and diffusion. Such a comparison not only is necessary to “crystallize the specificity and originality” of the translation approach (Justesen & Mouritsen 2011, p177), but is also beneficial for the research design, which is presented in Chapter 4.

3.2 Review of the construction of new forms of audit

ANT-inspired auditing research examines the construction of new forms of auditing expertise (e.g. Power 1996; 1997b; Gendron & Barrett 2004; Gendron et al. 2007). In this section, particular attention is paid to different translations and applications of the key notions of ANT by researchers in regard to reopening the black box of auditing knowledge. It also concerns the accounting profession’s strategies in claiming relevance of expertise and establishing a network of support in the emerging non-financial audit fields.

This section looks at five aspects. Section 3.2.1 briefly reviews the evolution of auditing research from interpretation to translation, with an aim to present what new angles the constructionist view can provide to auditing studies. Section 3.2.2 concerns the rise of new forms of audit and the new dimensional turf battle between financial auditors and engineers. Section 3.2.3 attempts to present the nature of auditing expertise from the constructionist point of view; Section 3.2.4 elaborates the accounting profession’s strategies of negotiating and legitimatising auditing expertise in new fields according to the notion of ‘translation’.

The discussions in Section 3.2.3 and 3.2.4 endeavour to explore the aspects of translation that have been articulated by ANT-inspired research. Finally, Section 3.2.5 fills a gap in the extant ANT-inspired literature, which is to justify auditing as a knowledge boundary object by a review of the relationship between auditing terminology and boundary in the extant auditing literature.

As Power was recognised by Latour (1999b) as the pioneer accounting researcher in importing the notion of ‘laboratory’ and ‘black box’ to auditing studies, his series of works deserves more attention here. Especially, Power’s (1991; 1997b) studies on environmental auditing are important references to this thesis, given the inherent relationships between greenhouse and energy audits and environmental audits (Power 1997b; Gray & Bebbington 2001; DCC 2008). In addition to Power’s works, the case studies of Gendron and his colleagues (e.g. Gendron & Barrett 2004; Gendron et al. 2007) further enhance and develop the theoretical understanding of constructing new auditing expertise and professionalisation by importing more concepts from ANT, especially in terms of translation.

3.2.1 Auditing studies: from interpretation to translation

As discussed in Section 2.6, along with the development of interpretative accounting studies as influenced by social construction, researchers started to consider auditing knowledge to be far from technical, neutral and objective; rather, auditing began to be seen as an impression-building and rhetorical exercise (Pentland & Carllie 1996). A number of researchers challenged samples, tests, records, independence as well as the newly emerged term ‘multidisciplinary’ in an audit as being highly contextualised and only bearing superficial similarities to science, constituting what could be called a quasi-science (Power 1992; 1996; 1997b; Pentland 2000). For example, it was argued that there was no sharp distinction

between “doing an audit and writing up an audit” (Francis 1994; Van Maanen & Pentland 1994). Moreover, the nature of an audit was described as dialectical, in which constant reconciliation and cognitive reinvention are required between structure and judgement, auditor and auditee (Pentland 1993; Francis 1994; Fischer 1996). Consequently, it was contended, the auditing process produced comfort and documentation rather than accountability (Pentland 1993). In contrast to positivist auditing research, interpretative-inspired auditing research tended to draw attention to the rhetorical perspectives of auditing as related to the specific outcome of accountability (Pentland 1993; Francis 1994; Fischer 1996). However, a question troubling auditing researchers remains: what is the nature of auditing knowledge? To this end, the notion of the ‘laboratory’ derived from ANT (Latour & Woolgar 1986; Latour 1987; Knorr-Cetina 1992) provided researchers with a new angle.

Being characterised by trial and error, auditing has been recognised as an important laboratory for knowledge and expertise, especially in emerging new forms of audit (e.g. Power 1996; Gendron et al. 2007). In reopening the black box of auditing, more attention has been paid to the process of fabricating claims to expertise (Power 1997b; Gendron & Barrett 2004; Gendron et al. 2007). Compared to interpretative auditing research which is focused on rhetorical perspectives of auditing outcome, ANT-inspired studies have also examined the black box of auditing knowledge itself via the accounting actors’ process of constructing new forms of auditing (Power 1997b; Gendron & Barrett 2004; Gendron et al. 2007). This has been achieved by either following or tracing back both human and non-human actors before the controversies are settled, according to the first rule of Latour’s (1987) method (e.g. Gendron & Barrett 2004; Gendron et al. 2007). Through investigating the processes by which financial auditors established and maintained their relevance of expertise when jurisdictional boundaries were unclear, ANT-inspired auditing studies have also significantly contributed to

knowledge about auditing and accounting professionalisation (e.g. Power 1996; Power 1997b; Gendron & Barrett 2004).

3.2.2 Background: the explosion of new forms of audit and the new turf battle

The “explosion” (Power 1994) of a variety of non-financial audits caught the interests of many researchers beginning in the 1990s; for example, environmental audits (Hillary 1991; Power 1991; Gray 1992; Hillary 1992; Huizing & Carel Dekker 1992; Gray et al. 1993; Hillary 1993; Hillary 1995; Power 1996; Power 1997b; Hillary 1998; Bebbington & Gray 2001; Gray & Bebbington 2001; Power 2003), quality audits (Power 1996; Gendron et al. 2007), sustainability audits (Owen & O'Dwyer 2005; Simnett et al. 2009; O'Dwyer et al. 2011), e-commerce assurances (Gendron & Barrett 2004) and brand audits (Power 1996). Despite different research concerns, these studies all encountered controversy regarding the role of financial auditors in these new fields and their contestation and cooperation with technical auditors from the engineering profession. Although earlier studies have critiqued the impact of the accounting profession in new fields such as environmental auditing as ‘not innovative’ or ‘a dead end of accountability’ (Power 1991; Hillary 1998; Bebbington & Gray 2001), the accounting profession has permeated these new forms of auditing and played increasingly important roles in environmental audits, sustainability audits and performance audits (Power 1997b; Gendron et al. 2007; Simnett et al. 2009).

A stream of critical literature has attributed the relative success of accountants’ market capacity to their economic capital (e.g. Sikka & Willmott 1995). However, Power (1997b) held a different viewpoint, stating that “an economic interest in a new area of work is not even a sufficient condition for establishing credible and legitimate claims to work in that area (Power 1997b, p124). Instead, Power (1997b) suggested that market competition must be

sustained “by a form of interpretative competition in the form of claims to expertise” (Power 1997b, p124). According to Power (1997b), the main problem confronted in inter-professional competition in an ‘audit society’ (Power 1997a) is not so much about exclusivity of knowledge know-how as the capacity of orchestration in a multidisciplinary audit team. His argument further enhanced Abbott’s (1988, p125) suggestion that “the success of accounting in professionalisation terms has much to do with the subordination of routine expertise”. Power’s claim also supported the argument of the ‘new dimensional turf battle’ proposed by a few other researchers depicting the competitive and cooperative relationship between financial and technical auditors (Dezalay 1995; Power 1997a; Pentland 2000; Cooper & Robson 2006). In developing new forms of auditing, ANT-inspired case studies (e.g. Gendron & Barrett 2004; Gendron et al. 2007) reinforced that the inter-occupational competition in a new field is indispensable from inter-occupational cooperation.

The emergence of environmental audits, quality audits and other types of non-financial audits has therefore provided accounting researchers an opportunity to reopen the black box of auditing expertise via studying the phenomenon of auditing change in action (Power 1995b; 1996; 1997b; Gendron & Barrett 2004; Gendron et al. 2007; Justesen & Skærbæk 2010). The success of the accounting profession in the new fields, according to the ANT-inspired auditing studies, was inevitably associated with their strength in legitimising their new expertise through translation of claims to existing expertise (Power 1996; 1997b; 2003; Gendron & Barrett 2004; Gendron et al. 2007). It has been found that financial auditors’ claims to expertise as a set of portable, abstract and generalised ‘good practices’ demonstrates a stronger trial of strength than their competitors in dealing with resistance and enrolling other actors especially the auditee (Power 1996; Power 1997b; Gendron et al. 2007).

3.2.3 The nature of auditing expertise – under the lens of construction

Audit expertise in general is a peculiar mixture of internal (epistemic) and external (institutional) validity in which the ‘how’ and the ‘who’ of that expertise are deeply interrelated (Power 1996, p307).

As this quotation implies, auditing expertise is only partly knowledge-based; it also relies on auditors’ professional judgement (Power 1992; 1996). Power (1992; 1995b) also argued that in gaining recognition as an expert, an auditor’s professional judgement is less important than the auditor justifies that judgement. Power’s argument suggested that the legitimacy of an auditor’s claim to expertise largely depends on the mobilisation of networks of support from Latour’s (1987) perspective. While Latour (1987) asserts that claiming knowledge is a process of fabrication by scientists in society, it also bears particular relevance to auditors’ claim to expertise in an ‘audit society’ (Power 1997a; Gendron & Barrett 2004). As Justesen and Moritsen (2011, p172) commented, “the theoretical point is that expertise is a construction that does not develop naturally from a profession”.

The insight that the auditing process imports and exports legitimacy has been increasingly articulated in the non-financial auditing fields such as environmental audits, performance audits and sustainability assurance (Power 2003; Gendron et al. 2007; O'Dwyer et al. 2011). According to Power (1997b), a new type of audit is never created as something completely new; rather, it is a continuous configuration and transformation accomplished by realigning a particular portfolio of competences from existing auditing professionals.

To construct this double-edged legitimacy, Power (1996) proposed two interrelated components: to internally negotiate a legitimate and institutionally acceptable knowledge

base; and to externally create environments that are receptive to this knowledge base. In particular, the latter - creation of external organisation environment - challenges the assumptions of the relationship between the audit process and the system within which it operates (Power 1996). The crucial question raised is “whether measurement systems and audit procedures pre-exist the audit process or have been created with a view to making the organisation auditable” (Power 1996, p295).

Comparatively, the first component of negotiating the internal knowledge base is more relevant to translating interests from Latour’s (1987) perspective. It is also more relevant to this thesis. Power (1996) argued that it renders auditing knowledge as ‘acceptable and stable’, however, ‘temporary’ (pp294-387). Power’s theoretical point of view was consistent with Latour’s (1987) proposition that any stability achieved would be, “in principle, temporary and fragile” (Justesen & Mouritsen 2011, p165). Power (1995b; 1996; 2003) also pointed out that the process of negotiation cannot be free from contestation and resistance from different levels of allies and opponents with different interests.

Power’s (1996) theoretical claim of negotiation was also developed by other ANT-inspired researchers (Gendron & Barrett 2004; Gendron et al. 2007). It was suggested that the closure of negotiation regarding what counts as auditing knowledge depends not so much on solving problems in the common sense but whether the recipient sees the problem as being solved (Power 1996; Gendron et al. 2007). A successful example of the accounting profession’s claim to expertise in e-commerce assurance was seen by a suitable fit established between the accounting profession’s claim to expertise and the interests of the target audiences (Gendron & Barrett 2004). Gendron and Barrett (2004, p572) also argued that the success of accounting

in inter-occupational competition around work jurisdictions is largely associated with its ability to establish “networks of support around claims to expertise”.

Gendron *et al.*'s (2007) case study on constructing expertise in performance auditing further reinforced that trials of strength and networks of support are central to the legitimisation of claims to audit expertise. Gendron *et al.* (2007) explicitly proposed that networks of support involved both social and material actors, while the latter also included inscriptions such as standards and reports in other jurisdictions. Moreover, Gendron *et al.* (2007) provided useful insights in tracing the trials of strength of the competing professionals in attaching relevance to expertise. In particular, by applying the concept of translation, Gendron *et al.* (2007) suggested that the accounting profession imported legitimacy from the reviewing practices of governments and statement auditors and extended inscriptions such as audit reports and conference papers elsewhere, exporting legitimacy through its support for the performance measurement project.

Overall, in further developing Power (1996) and applying the ideas of Latour (1987, 1999a), the two case studies conducted by Gendron and Barret (2004) and Gendron *et al.* (2007) visualised the process of translation of auditing expertise as an effect of actor-networks, that is, the transformation of claims to expertise rests in others' hand, who may accept, reject, or modify the claim depending on their own interests. This process may involve a series of translations before a new form of audit is black-boxed.

3.2.4 Translation: interessement and strategies of negotiation by the accounting profession

[W]e should not be blind to the *strategic and rhetorical potential* of the category of ‘accountant’ and related terms in articulating and promoting claims of competence in new area of work (Power 1997b, p124, emphasis added).

In deconstructing claims to new auditing expertise, Power (1996; 1997b) proposed three representative rhetorical strategies of negotiation. The first is to establish relevance by attaching *similarity* of one’s own existing expertise as well as articulating and promoting claims of competence to perceived problems; the second is to subordinate competing claims to relevance by attaching *difference* of their competitors. As an example of these two interrelated strategies, accountants represented “‘science’ as ‘other expertise’ in the field of accounting” in environmental audits (Power 1997b, p140). And third, underlining the attachments of similarities and differences is a critical representational strategy in that auditing knowledge is negotiated as a discrete set of abstract knowledge that is more transferable to a new domain while scientific and technical knowledge is credited with a more contextualised background (Power 1996; 1997b). As a consequence of such representational strategies, engineers’ scientific and technical knowledge becomes less legitimate and is placed at the lower level of orchestration (Power 1996; 1997b). To the contrary, financial auditor’s expertise becomes more legitimised and is placed at the top level of the orchestration (Power 1996; 1997b).

It is not difficult to realise that the accountants’ representational strategies (Power 1997b) relate to ‘interessement’ (Callon 1986; Latour 1987), given that their aim is to enrol others while dealing with resistance. Gendron *et al.*’s (2007) study based on the notion of translation reinforced Power’s (1997b) proposal. It was found that *undermining* the legitimacy of the expertise of alternative providers was the strategy used by the Auditor General in performance audits (Gendron et al. 2007). Moreover, the audience of accountants was more

enticed than their two competitors by their established discourse of ‘objectivity’ and ‘universality’ including the tailored performance measurement of the performance evaluators and the tacit and managers’ unformalised claims to specialised knowledge (Gendron et al. 2007).

The ANT-inspired auditing studies also revealed some different scenarios for the translation of interests. A critical question within these studies was how the accounting profession established and maintained itself as the OPP for its target audiences. For example, the Office of Auditor General followed by Gendron *et al.* (2007) was found to establish itself as an OPP by successfully defining the problem confronted by the government deficit and debt. This was an example of ‘I want what you want’ – the first scenario of translation (Latour 1987). In addition, the Office of Auditor General attempted to promote an indirect assessment model rather than direct measurement to maintain its legitimacy in non-financial measurement (Gendron et al. 2007). This can be viewed as an example of displacing interest with a detour (Latour 1987). In addition, Gendron and Barrett (2004) presented a strategy of detour in regaining an OPP where accountants displaced their claims to expertise from B2C assurance to B2B assurance. The former was to provide a WebTrust seal to comfort consumers while the latter was to provide tailored criteria and adversarial services for business organisations. This strategy can also be associated with reshuffling interests and goals – the forth scenario of translating interests (Latour 1987).

‘Devices of interessement’ (Callon 1986; Latour 1987; Latour 1999a) in negotiating audit expertise were also identified and discussed by ANT-inspired auditing studies, including rhetorical strategies such as attaching relevance to more-established black boxes, particularly, the notion of independence (Power 1996; 1997b; Gendron & Barrett 2004; Gendron et al.

2007), standards, literatures and research (Gendron & Barrett 2004; Gendron et al. 2007) and the term of ‘multidisciplinary’ (Power 1996; 1997b). Moreover, different strategies were adopted in different contexts; for example, relating assurance to financial terms, privacy and security in WebTrust assurance (Gendron & Barrett 2004); and making recommendations, working together with related parties and being involved with the client (Gendron et al. 2007).

3.2.5 A gap: Auditing as a knowledge boundary object

In identifying the non-human actors/actants in constructing new forms of auditing expertise, ANT-inspired research has paid attention to inscriptions such as standards and reports produced by auditors in other jurisdictions (Gendron et al. 2007). However, there is an important actor that has not been paid adequate attention: auditing itself. As introduced in Chapter 1, this thesis applies auditing expertise as an important knowledge boundary object to which are attached different terminologies and vocabularies that mobilise actors from different professions. To strengthen this hypothesis, this section provides a review of the relationship between auditing terminology and boundaries.

The ongoing penetration of financial auditors into new domains drives researchers to revisit the concept of auditing and ask questions about its boundaries. The boundaries of auditing are distinct from those of other professions. It is suggested that auditing is demanded wherever a relationship of accountability exists (Pentland 2000), which allows auditing to permeate every corner of society. In comparison to other professions, which are bounded by expertise in a particular subject matter, auditing can fit into any situation where there is a relationship of accountability (Pentland 2000). Power (1997b, p124) wrote that the boundaries between “what is and what is not auditing are no longer, if they ever were, fixed”. Francis (2011) seconded Power (1997b) and Pentland (2000), suggesting that auditing is without borders, as

it is a type of third-party certification by an expert. As Power (2003) argued, auditing is a loosely coupled discipline that is multidisciplinary in nature.

Terminology and vocabulary have played important roles in extending the boundaries of auditing. Mills (1989, p21) argued that “accounting in both its theory and practice is, and has been throughout most of its recorded history, peculiarly dependent on a specialised vocabulary or terminology, both to transact its business as expeditiously as possible and to differentiate it from other disciplines”. Distinctively, the expanding of auditing boundaries is reflected by importing and exporting terminologies and vocabularies. As Jasanoff (1987, p199) put it, ‘boundary defining language’ and ‘new conceptual categories’ make possible the extension of interests into new or enlarged fields of work. Studies have also shown that the legitimacy of auditing expertise in new fields is accompanied by reassembling and mobilising with different vocabularies, such as in environmental audits (Power 2003) and performance audits (Gendron et al. 2007). Moreover, the accounting auditor’s role in performance audits was secured by increasing numbers of auditees integrating auditing vocabularies into their language (Gendron et al. 2007).

While financial auditing imports vocabularies such as statistical sampling, modelling, working papers and information systems from other disciplines, it transforms auditing far from its original task of fraud inspection, to accounts verification, and increasingly towards process auditing⁹ (Brown 1988; Power 1992; 1997b). When auditing is orientated towards systems, there is not much distinction between auditing process and auditing substance (Power 1996; Pentland 2000). This feature allows financial auditors who are non-experts to form an opinion on subject matter such as emissions or performance audits by inspecting the

⁹ Power (1992) particularly reviewed the methodological evolution of auditing in terms of sampling and its impact on auditing expertise.

system to verify emissions or performance levels works adequately (Power 1994; Gendron et al. 2007). Moreover, the use of experts such as scientists, engineers and lawyers in environmental audits also moves auditing towards functioning as a multidisciplinary activity (Power 1997b). To a certain extent, the use of auditing vocabularies in communicating a fact also constructs that fact (Hines 1988; Mills 1989; Potter 1999).

Since the rise of environmental audit, the term ‘audit’ has become a loosely coupled concept with review, surveillance, survey, appraisal, evaluation and assessment (ICC 1991). Accountants, however, are sensitive to the term ‘audit’ especially when it is related to the level of assurance. For instance, it was found that accounting firms deliberately chose not to use the word ‘audit’ due to legal concerns (Robson 1991; ICC 1991 in Power 1997b). On the other hand, others use ‘audit’ specifically to lend credibility to their programmes (ICC, 1991 p4 in Power 1997, p137).

Although the emphasis on verifiability has been an important attempt to develop the philosophies of auditing (Power 1996), ‘verification’ is a highly controversial word, as shown by the increasing changes from environmental auditing to sustainability auditing. It has been argued that auditing appears to be more of an *ex post* and independent function than verification because the latter seems closer to a kind of self-checking (Power 1996). Power (1996) also acknowledged that verification may be more robust than inspection. Power (1997b) claimed that “accountants can stake a claim for a lead position in verificatory work” (p138). However, financial auditors are becoming more sensitive to the word ‘verification’, as shown in a more recent study on sustainability assurance (Owen & O'Dwyer 2005) despite the fact that auditors provide an equivalent service to verification, which is called ‘agreed-upon procedures’. Compared to engineering professionals, who tend to use the terms ‘audit’

and ‘verification’ interchangeably, accounting professionals, have been shown to be much less likely to employ the term ‘verification’ (Owen & O’Dwyer 2005). In a comparison of the use of the terms audit, assurance and verification, O’Dwyer and Owen (2005) suggested that the accounting professionals favour the term assurance. However, little is known about how these terms were claimed by different auditor practitioners, especially financial auditors and technical auditors, in previous ANT-inspired studies. This gap therefore drives this study to explore the transformative role of auditing terminology in the emerging field of greenhouse and energy auditing.

3.3 Review of the standard-setting process

The literature on accounting regulation is vast, using a number of different theoretical approaches and focusing on a variety of different dimensions of regulations (Cooper & Robson 2006). Studies of the accounting standard-setting process have recognised that it is a political process and have concentrated on studies of key decisions (Cooper & Robson 2006). An increasing literature on lobbying has illustrated that a branch of methods of investigation explores the constituents’ power and influence exerted on accounting standard-setting activities (e.g. Sutton 1984; McLeay et al. 2000; Cortese et al. 2007; Hodges & Mellett 2012). Lobbyists’ influence was normally assessed by filtering the successful (adopted) proposals from unsuccessful (rejected) ones and comparing them with the final outcomes (McLeay et al. 2000). Because lobbying studies rely on final outcomes while reducing the lobbyists’ proposals to countable ‘successes’ or ‘rejections’, the major problem of this branch of research is that researchers care little about the discourse that includes strategic lobbying behaviours, nor does it allow an extensive investigation for multi-period lobbying (McLeay et al. 2000). In this regard, the rise of ANT provides an opportunity to develop lobbying studies, drawing attention to the translation process from input to output.

This section covers two aspects. Section 3.3.1 reviews the scant ANT-inspired lobbying studies (e.g. Robson 1991; Young 1995; Jupe 2000; Young 2003; Jeppesen 2010). The significance of this stream of literature is also embedded in the insight that “ways of talking about a practice are an important feature of the practice itself (Power 1997b, p124). Particular attention is paid to the application of the notion of ‘translation’ in the ANT-inspired lobbying studies. It is important to understand the dialectical nature of enrolment within the standard-setting process and how rhetorical strategies have been used by standard setters or lobbyists in dealing with resistance and enrolling other actors in a single lobbying period or a process of lobbying with different trials of strength (e.g. Robson 1991; Young 1995; Jupe 2000; Young 2003; Jeppesen 2010).

Section 3.3.2 further enhances the understanding of the strength of the translation approach in conducting the lobbying process as compared to other approaches; for example, the black-box model (e.g. Hodges & Mellett 2012) and neo-institutionalisation (e.g. Archel et al. 2011) which are more influenced by the diffusion model. Critically, translation and diffusion hold distinctive views on power: while the latter pays attention to who owns power, based on the assumption that power can be stored and accumulated in a static mode, the former’s interest in power is how it is exercised on others (Latour 1986a). As emphasised by Callon (1986, p196), translation is “a new approach to the study of power”.

3.3.1 Review of ANT-inspired lobbying studies in accounting

Although far from adequate, the notion of translation has started to be used as an analytical approach in investigating the accounting and the auditing standard-setting process (Robson 1991; Young 1995; Jupe 2000; Young 2003; Jeppesen 2010). The translation approach especially allows these studies to reveal in detail how rhetorical strategies could be used to

problematise the genesis for standard-setting (e.g. Robson 1991), aligning explicit interests or dealing with resistance between the standard-setter and lobbyists to enrol each other in the process of standardisation (Young 1995; Jupe 2000; Jeppesen 2010). In particular, Young (1995, p196) argued that employing the Latourian framework “requires that close attention be paid to the rhetorical and other strategies used to argue for and justify accounting change”.

As noted from Chapter 2, Robson (1991) was a pioneer in adopting the concept of translation to study accounting change. Robson (1991) innovatively explained accounting techniques and calculations through the lens of problematisation. In Robson’s (1991) definition, the discourse of accounting techniques and calculations is the outcome of translating different aims, interests and objectives. With reference to Callon’s works including Callon (1981) and Callon and Law (1982), Robson (1991) disclosed how accounting standard-setting was problematised as a solution by the failure of profit-forecast reviews, the consequences of the rise of investment calculations and the failure of accounting and auditing practices to meet the investment-decision roles of accounting statements in the UK during the 1960s (Robson 1991). It was argued by Robson (1991) that the discursive translation of problems in the above-mentioned three arenas problematised the genesis of accounting standard-setting programs. By doing so, Robson’s (1991) study was a critical attempt to connect the social context with accounting change, rather than divide the two and push non-accounting rationales into the background analysis. As noted, Robson’s (1991) study is considered a watershed work that “set the scene for the development of ANT-inspired accounting research” (Justesen & Mouritsen 2011, p166).

Robson’s (1991) study is important to this thesis because the emergence of auditing firms’ profit-forecast review also makes strong reference to the context of the emergence of

greenhouse and energy audits. Robson (1991) noted that the booming of state-supported mergers and takeovers in the name of growth gave rise to profit-forecast reviews. A rationalised government programme and willing clients problematised the need and established the alliance of interests for auditing firms to get involved in the new field without being questioned about their adequacy of expertise. Auditing firms, however, preferred not to use the term 'audit', but instead to use the term 'review' for two reasons: first, not to offend (and risk losing) a client in a case of profit-forecast failure; second, to avoid the implication that they lacked expertise in the new field (Robson 1991).

Young (1995) traced the emergence of cash earnings and cash flows in the US from the 1960s to the 1980s, and the subsequent strategies employed by accountants and accounting standard-setters. This historical study elaborated a translation process of how cash flow was interpreted from being 'dangerous' and 'misleading' to being incorporated into the financial statements as a supplement to 'proper' and 'good' accounting measurement. Young (1995) highlighted the role of rhetoric and other strategies employed by the accounting profession to enrol allies and to be enrolled by other participants. To defend its jurisdiction, accountants and accounting standard-setters initially attempted to establish allies by discrediting cash earnings. However, when making such a claim did little to keep allies, given that from the 1970s accounting income was inadequate in practice in an inflationary economy and for assessing corporate liquidity, accounting standard-setters turned to a capitulation strategy and incorporated it as a supplement to accounting measurements of income in financial statements. By subjugating and incorporating, accounting standard-setters still successfully maintained their role as an OPP even though they themselves were enrolled in the cash flow episode by other participants. Young (2003) further highlighted that 'good' accounting standard-setting is essentially a pervasive social and political process rather than a neutral and

technical one. The rhetorical strategies that accounting standard-setters adopted is critical to the construction, persuasion and silence of alternatives (Young 2003). Even though not explicitly, Young (2003) also noted that the use of terminology and reference to extant generally accepted accounting principles are indispensable to the endless standardisation process.

Young's (1995) study is significant in accounting standardisation because it visualises how enrolment involves a series of translations which in turn depend on the trials of strength of the actors' network of alliance (Latour 1987). Young's (1995) rhetorical study was extended by Jupe (2000) in a single case of lobbying for cash equivalent. By combining content analysis with the notion of translation, Jupe (2000) disclosed how self-referential rhetoric was employed successfully by a small number of large companies and auditing firms to enrol the ASB into accepting their definition of 'cash', thus amending the cash flow standard. In terms of the translating interest, the studies of Young (1995) and Jupe (2000) demonstrated how the standard-setter translated the interests of the actors affected by the particular standards (e.g. cash flow) to allow them to interpret the standard as being a solution to their own problems. This strategy conforms to what Latour (1987) has called "I want what you want" – the first scenario of translating interests (pp108-111). Their studies of the standard-setting process also proved that interessement and enrolment are reciprocal processes between the obligatory passage point and other actors, as that these episodes depend on how strong they are to establish allies.

In terms of auditing standard-setting, Jeppsen's (2010) longitudinal study investigated the historical evolution of financial auditing from complete audits to audit sampling, and again from sampling to systems audits in Denmark. Jeppsen (2010) paid attention to how discursive

‘devices of interessement’ were used by the auditing standard-setters to deal with the changing patterns of resistance from 1970 to 1978. This study is another significant contribution to understanding translation of interest where alignment of interest – or “I want what you want” – is not an obvious pattern (Jeppesen 2010). The distinctive characteristic of the standard-setters in this case never successfully established themselves as an OPP (Jeppesen 2010). Hence, according to Latourian’s second translation strategy, “something else is needed to make it practical” (Latour 1987, p111). These rhetorical strategies as analysed by Jeppesen (2010) include representation, due process, soft texts, and reference to ideology. They are used when the standard-setters are small and weak while the lobbyists are strong and powerful, besides, the lobbyists usual way is not cut off (Latour 1987). Moreover, Jeppesen’s (2010) study has demonstrated the dialectical nature of translation: on the one hand, the standard-setters attempted to “enrol others so that they participate in the construction of the fact”; on the other hand, they had to “control their behaviour in order to make their actions predictable” (Latour 1987, p108).

In summary, the previous ANT-inspired historical lobbying studies on accounting and auditing standard-setting process have attempted to reveal the dialectic nature of lobbying through the mode of translation, especially in regard to one of the four moments of translation, either problematisation, interessement, enrolment or mobilisation. Each moment also involves a series of translations. In regard to problematisation, it could be a discursive output of interessement and enrolment (Robson 1991). In terms of interessement, it is fragile and mobile depending on the tensions among the actors (Young 1995; Jeppesen 2010). And when referring to enrolment, it involves both enrolment and counter-enrolment which depends on the trail of strength of the alliances (Young 1995). Mobilisation for representation, however, could be used as part of the strategy for aligning interest (Jeppesen 2010). The translation

approach enables studies on lobbying and standardisation to dive into the political and rhetorical nature of lobbying, rather than seeing it as a technical process.

However, the controversies in these studies were between the primary actors – the standard-setter and the lobbyists which made the translation process less complicated by the simplicity of actors. In particular, the competitions among the lobbyists were still within the accounting profession, such as between the small local auditing firms and the Copenhagen-based large firms (Jeppesen 2010). Comparatively, the case of constructing greenhouse and energy auditing (to be analysed in the following chapters) occurred in more controversial arenas because of the tensions and contestations among heterogeneous actors, including the competing professional groups (financial auditors, environmental engineers, greenhouse gas verifiers), large emitters and other interested stakeholders such as accreditation bodies, standard bodies, lawyers, academics and others. Moreover, the translation process for constructing greenhouse and energy auditing involved all the four moments with different trials of strength among actors and networks of support. Hence, the current study is expected to add more variety to the literature of lobbying and auditing standard-setting especially in terms of strategy of translation and devices of interessement.

3.3.2 Comparing translation and diffusion in studying lobbying process in accounting

As emphasised in Section 2.5.4, to better understand the concept of translation, Latour (1986a; 1987; 1999a; 2005a) wrote that it is vital to differentiate it from the traditional diffusion approach. In the diffusion model, an actor is an intermediary that transports an input to an output (Latour 2005a). In contrast, for the translation model, an actor is a mediator that transcend an input and transforms it into an output (Latour 2005a). The phenomenon of translation rather than diffusion has been addressed in management accounting studies in

such areas as budgeting systems (Preston et al. 1992), ABC systems (Briers & Chua 2001), ERP systems (Quattrone & Hopper 2005), and other management accounting innovations (Alcouffe et al. 2008).

This section aims to exemplify and extend the understanding of diffusion and translation into another context: lobbying studies in accounting and auditing standard-setting process. Such a comparison is not aimed to argue which approach is superior, because, as suggested by Justesen and Mouritsen (2011, p241), different approaches can be relevant for different phenomena. Rather, the comparison is to ‘crystallize the specificity’ of translation model and its ‘origination’ in relation to accounting and auditing studies. Justesen and Morritsen (2011) have compared the theory underlying ANT-inspired studies with other theories in accounting studies, such as contingency theory, institutional theory and agency theory, regarding how contexts are treated in an analysis. This section, therefore, contributes to this stream of literature by extending the comparison to more detailed methodological and analytical levels especially in regard to the treatment of power.

The four representative papers to be discussed in this section are selected carefully based on two considerations in terms of relevance and significance (Fig. 3.1). First, given the specific context of the consultation process of greenhouse and energy auditing regulation and standard-setting to be explored in this thesis, a black-box method proposed by Hodges and Mellett (2012) for lobbying studies is worthwhile to be compared with Jupe (2000) – an ANT-inspired lobbying study. These two studies are comparable because both of the studies focused on a singular case study with a limited time span. As addressed previously, ‘black box’ is a critical term in the diffusion approach, proposed by Latour (1987; 1999a; 2005a) to distinguish it from translation (Section 2.5.4). Second, a critical diffusion approach proposed

for the institutionalisation process by Archel *et al.* (2011) based on critical institutional theory (Cooper *et al.* 2008) is also related significantly to this thesis. It is a longitudinal study and, interestingly, has some characteristics in common with ANT. This is not surprising because ANT has the strength to merge flexibly with other theoretical approaches (Justesen & Mouritsen 2011). Correspondingly, an ANT-inspired longitudinal lobbying case study by Jeppesen (2010) is suitable for comparison with. Remarkably, all the selected papers attempt to depict the controversies before a certain accounting regulation (e.g. the Private Fund Initiative (PFI); cash equivalent; Corporate Social Reporting (CSR)) or auditing techniques (audit sampling, performance audit) is settled. This adds comparability between ANT's translation approach and others' diffusion approach.

Approach	Black Box	Translation	Diffusion	Translation
Theory	Cybernetics	ANT	Neo-Institutional theory	ANT
Literature	Hodges & Mellett 2012	Jupe 2000	Archel <i>et al.</i> 2011	Jeppesen 2010
Investigation Context	lobbying of accounting standard setting; Private Fund Initiative (PFI)	lobbying of cash equivalent	stakeholder consultation for institutionalisation of CSR	lobbying of auditing techniques: audit sampling
Time/Space	singular standards with limited time span	singular standards with limited time span	longitudinal case study	longitudinal case study

Figure 3.1: Representative literature selected to compare translation and diffusion

It is worthwhile noting that the terms 'black box', 'diffusion' and 'translation' are sometimes used interchangeably by multiple theories in accounting and auditing research. For example, even though Power is recognised as the first researcher to translate the concept of 'black box' into the auditing process, his works (Power 1995b; 1996) are also relevant to institutional theory with a focus on the discursive features of negotiation of auditing knowledge and

creation of audit environments. In contrast, the ‘black box’ in the black-box model itself can also be a metaphor of invisible power trade-off (Cortese & Irvine 2010; Hodges & Mellett 2012). Some researchers choose not to distinguish ‘diffusion’ and ‘translation’, for instance, Alcouffe *et al.* (2008) used the four moments of translation (Callon 1986) to explore the diffusion process for management accounting innovations. Given that ANT itself is still in action and that its history in accounting research is relatively short (Justesen & Mouritsen 2011), this thesis aims to clarify any misinterpretations of ANT.

3.3.2.1 The black-box approach in studying the standard-setting process

As noted by Cooper & Robson (2006), much of the important work of standard-setting takes place outside the formal process of lobbying (Stamp 1985). The black-box model aims to identify invisible power influence outside the lobbying process (Hodges & Mellett 2012, p244). In view of the standard-setting process of the PFI in UK, Hodges & Mellett (2008; 2010; 2012) believed it to be shaped by ‘unseen influences’. Hence, a black box represents the process that leads from an exposure draft (ED) to an approved accounting standard, whereas stakeholders’ written submissions and media publications are viewed as two modes of visible influence (Fig.3.2).

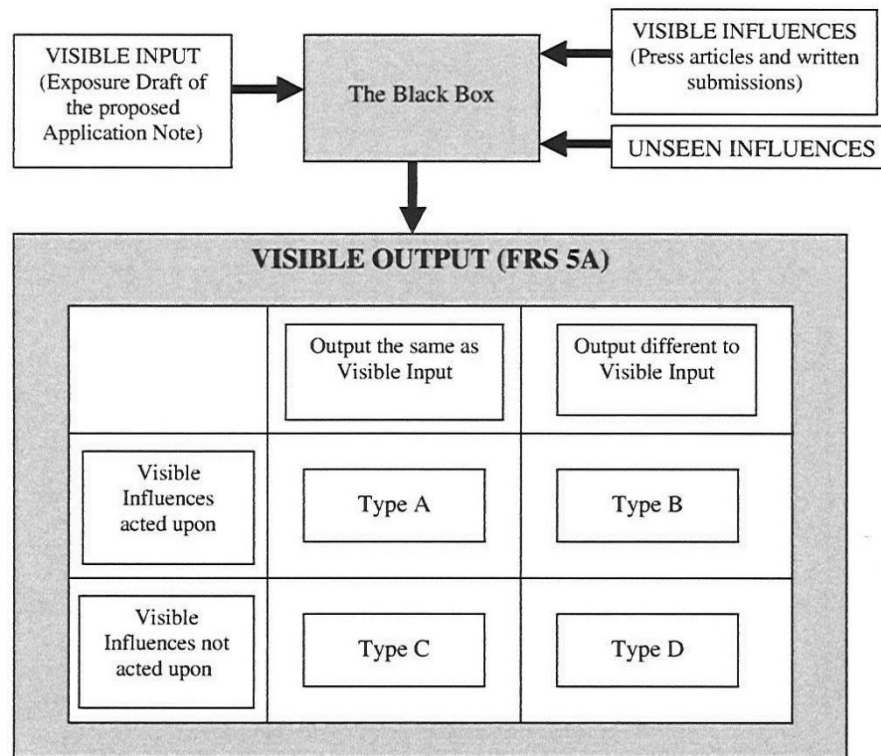


Figure 3.2: The black-box approach. Source: Hodges & Mellett (2012, p238)

As shown in Fig. 3.2, the black-box model adopts a triangulation approach for analysis. Comparing the visible inputs, visible influences and outputs yield four types of change: A) no change made and this coincides with submissions; B) suggested changes in the submissions that are enacted; C) suggested changes in submissions that do not result in amendments and; D) amendments made that are not suggested in the submissions. The invisible influences are inferred by the inconsistencies among the three, as shown by types C and D in Fig. 3.2.

The black-box model is an innovative analytical method. Hodges and Mellett (2008; 2010; 2012)¹⁰ argued that the black-box method is practical because it gives researchers an

¹⁰ This approach could provide some useful insights due to the similar challenge I faced with the data sources in this study; that is, I was not able to participate in the process of lobbying the greenhouse and energy auditing myself, nor (despite my efforts) was I able to obtain data other than publicly available documentation. Hence the

approach with which to investigate the complicated process of accounting standard-setting lobbying without themselves participating in the process. This is primarily because its data source is solely from input and output sources of documentation and submissions from lobbyists. This is particularly relevant to studying the lobbying process of constructing NGER audit legislation without being personally involved in the process. However, the black-box model is unable to explain why the standard was initiated or how it arrived at its solution, as acknowledged by the authors themselves (Hodges & Mellett 2012). This was largely due to its limitation of focusing on two points - inputs and outputs - in a single period of lobbying, while ignoring the dynamic controversies in the process that were embedded in the discourses. There was also little attention paid to time and space and the various interests of the human actors, while the non-human actors/actants were completely ignored.

Comparatively, an ANT-inspired study of a singular standard lobbying of cash equivalence (Jupe 2000) demonstrated a different angle for studying the lobbying process. As discussed previously, Jupe (2000) was interested in how the self-referential rhetoric of key actors was used to enrol the ASB to amend its standard in line with the transformative practices of some large companies. In this process, Jupe (2000) explained how the ASB established itself successfully as an OPP that all the other actors had to pass through. In the power relationships, Jupe (2000) also indicated that enrolment is a reciprocal process between the OPP and other actors. In contrast, Hodges and Mellett (2012) assumed a rational account of economic capital to explain the success or failure of the lobbying process, which eschews questions of how power became powerful.

black-box model interested me not only because of the term 'black box', but also because I am interested to learn how the submissions were organised and analysed.

If the black-box approach is deconstructed, it can be viewed as a type of diffusion model rather than translation. It fundamentally assumes that the transmutation from exposure draft to accounting standard is the result of external forces, which can simply be summarised as assessing the equation of inputs + external forces = outputs. If inputs and external forces are not equal to outputs, then an invisible influence is inferred. This makes sense at first sight; however, the transmutation and transformation can take many forms and detours. Fundamentally, although the black-box model focuses on power, power as a black box itself is not questioned in terms of how it is formed and exercised; rather, it simply assumes that power is owned by the powerful invisible social actors. Hence, not surprisingly, the lobbying process of accounting standard-setting reflects that it is an empty legitimate device as shown by the disappointing outcomes (Justesen & Mouritsen 2011; Hodges & Mellett 2012).

3.3.2.2 The neo-institutionalisation in investigating the consultation process

The diffusion model is assumed to lead to institutionalisation for institutional theory (Boxenbaum & Jonsson 2008). As analysed by Justesen & Mouritsen (2011), institutional theory focuses on social norms and discourses which pushes accounting entities toward normalisation and homogenisation. Because of an emphasis on an outcome rather than a process, institutional theory was critiqued for neglecting the performativity of power, interests and agency (Dillard et al. 2004; Cooper et al. 2008; Irvine 2008; Archel et al. 2011). The important notions derived from institutional studies are loose coupling and decoupling such as between the formal structure and actual practice (Power 1996; Dillard et al. 2004; Irvine 2008; Archel et al. 2011). For instance, Power (1996) argued that auditing education and practice are loosely coupled, while auditing performance and visibility are tightly coupled. From the institutional perspective, given that social actors in institutional studies

only passively react on external pressures, it is unsurprising that auditing phenomena are merely empty legitimating devices (Pentland 1993; Power 1996; Pentland 2000; Power 2003).

Recent institutional studies have begun to pay more attention to the process of change; that is, to institutionalisation rather than to a static mode (e.g. Cooper et al. 2008; Irvine 2008; Phillips & Malhotra 2008; Archel et al. 2011). This makes them similar in their interests to ANT. Discourse, which institutional theory considers to be the most important means to study socially constructed realms, is only meaningful in explaining the process of institutionalisation when it is linked to actions (Phillips et al. 2004). Fig. 3.3 is an approach summarised by Phillips *et al.* (2004) in terms of the relationships between discourses and actions in studying institutionalisation. In this model, the discursive reality is treated as the background (context) against which current actions by social actors occur, enabling adaptations (Phillips & Malhotra 2008). However, ANT adopts a background/foreground reversal, where context is merged with the content, which can be considered a translation approach (Latour 1997).

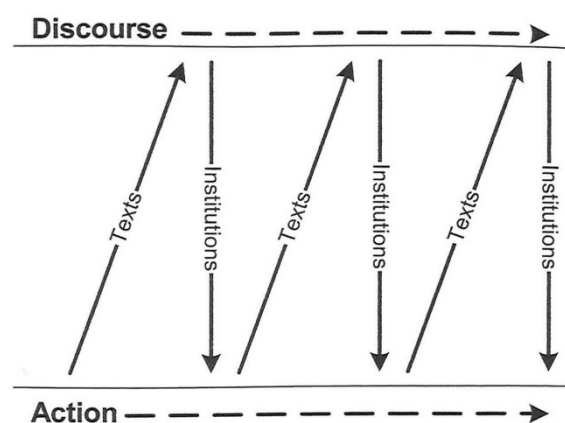


Figure 3.3: Discourse and action in institutional theory. Source: Phillips *et al.* (2004)

Different to the black-box model, the neo-institutional approach of diffusion recognises the role of social actors and their changing character of interests in a stakeholder dialogue. A longitudinal case study of the stakeholder consultation process for institutionalising CSR discourse in Spain (Archel et al. 2011) can demonstrate the diffusion approach. In this case study, stakeholder groups (actors) were classified as either the dominant group (stronger ties) or the heretical group (weaker ties) based on their economic capital (Archel et al. 2011). Archel *et al.* (2011) demonstrated three layers of discursive analysis: government documentation inputs, stakeholder dialogue outputs and legislative outcome. Discourse was analysed from the input texts to output texts until an outcome was reached, following the timeline of the process from 2007 to 2010. By linking the discursive dominance and heresy with the outcome of the final legislation, Archel *et al.* (2011) concluded that the democratic dialogue was loosely coupled with the institutional outcome; at the same time, the success of institutionalising CSR disclosure was tightly coupled with the dominant discourse. During the process of institutionalisation, the discursive decoupling was particularly shown by the heretical groups, who finally began to advocate for the dominant group's proposal of voluntary CSR. Their findings reinforce that institutionalisation is merely an empty legitimating device (Justesen & Mouritsen 2011).

In contrast, in a longitudinal case study of lobbying auditing techniques based on the translation model (Jeppesen 2010), heterogeneous actors including social and material actors, were followed and analysed. In the translation approach, the texts are treated as a material actor rather than background. Through analysis of different approaches in dealing with resistance, especially when the standard-setter was seldom strong enough to establish itself as an OPP, Jeppesen's (2010) lobbying study based on ANT's translation model, highlights the dialectic nature of standardisation in which interessement and enrolment are two-way

between the standard-setters and the other actors. Furthermore, the final standardisation is a result of the mobilisation of both social and material actors. Jeppesen (2010) presented a more dynamic power relationship.

To deconstruct Archel *et al.*'s (2011) study through the lens of the diffusion model, although the analysis is only focused on the social actors whose economic interest is set as the criteria to identify the discursive dominance and heresy, this approach actually demonstrates some features similar to the translation approach. For example, both pay attention to 'change' and 'problemitisation'. This can be attributed to the adoption of a critical institutionalisation approach as advocated by Cooper *et al.* (2008). As claimed by Archel *et al.* (2011),

[s]uch an approach is driven by the "conviction that the principal import of knowledge resides in problematizing conventional wisdoms and de-legitimising institutions so as to foster and facilitate emancipatory change (Cooper *et al.* 2008, p679 in Archel *et al.* 2011, p328).

Comparatively, the black-box model more closely resembles the traditional diffusion model because it does not try to open the black box of power and because of its presence in the accounting standard. This may be attributed to its lack of interest in the discourse, compared to institutionalisation which values discursive actions. To mitigate this limitation, Hodges and Mellett (2012) conducted interviews with some of the key submitters; however, this could not replace the richness embedded in the submissions. If the diffusion model used in institutional theory focuses more on the outcome and less on power, then the black-box approach places more attention on the influence of external forces in searching for hidden powers. However, despite their respective limitations, both approaches could still shed useful light on this thesis, especially for its research design (to be addressed in Section 4.3).

3.4 Summary

ANT can be argued to hold an increasingly stronger trial of strength in accounting and auditing studies. In terms of time and space, ANT-inspired accounting research focus on a process, discarding what Robson (1991, p547) called the 'static mode' study, where the linkages between context and accounting could hardly be explained (Justesen & Mouritsen 2011). In ANT-inspired studies, context is not treated as a constituent element but rather as a source of explanation (Alcouffe et al. 2008). Because ANT adopts a method of background/foreground reversal (Latour 1997), it attempts to deal with a new situation by either following the process in the making or tracing back before the black box was taken for granted. In particular, the notion of translation (Callon 1986; Latour 1987; Latour 1999a) provides ANT-inspired researchers (Robson 1991; Young 1995; Power 1996; 1997b; Jupe 2000; Gendron & Barrett 2004; Gendron et al. 2007; Jeppesen 2010) a unique analytical approach as a generalised symmetry to reopen a black box before the controversies are closed in accounting and auditing standards and auditing expertise.

This chapter has shown that there are many inherent overlaps in the ANT-inspired auditing and lobbying literature, being entangled with dynamic controversies related to either auditing expertise or a particular standard among actors. These actors include the standard regulator, the accounting profession, the competitors of accounting profession, auditees and accounting lobbying groups as well as the inscriptions of documentations. The overlaps in the literature were explicitly and implicitly witnessed by the success or failure of problematisation in establishing an obligatory passage point (e.g. Gendron & Barrett 2004; Gendron et al. 2007; Jeppesen 2010), translation of interests and dealing with various resistances by mobilising a variety of strategies (e.g. Young 1995; Gendron et al. 2007; Jeppesen 2010), and the dialectic perspective of enrolling and being enrolled (e.g. Jupe 2000; Gendron et al. 2007; Jeppesen

2010). Compared to the ANT-inspired lobbying research that has evolved from a single to multiple translation processes, the ANT-inspired auditing research has presented more layers of the constructivist viewpoint through studying the translations of new forms of audit.

Consistent with Justesen and Mouritsen (2011), most of the ANT-inspired auditing and lobbying studies referred to Latour (1987) and Callon (1986) by adopting the approach of deconstruction. From one side this indicates the value of these two works; on the other hand, it also implies a huge potential to explore the more recent works of Latour (for example, *We Have Never Been Modern* (1993); *Pandora's Hope* (1999a); and *Reassembling the Social* (2005a)). As presented in Chapter 2, a 'new critical approach' as raised by Latour (2005) is to shift the attention from actors to attachments and from network to worknet (Justesen & Mouritsen 2011). However, this new critical thinking is still far from being adequately explored. For instance, even though Gendron *et al.*'s (2007) case study has set up a useful exemplar of translating ANT in auditing studies, the distinction of 'network' as a methodological approach is unclear due to the limited space allowed in a journal paper. This current, longer study, also gives an opportunity to exemplify the notions of ANT more clearly. Based on the review of ANT-inspired auditing and lobbying literature, the next chapter presents the research questions and approach to analysis.

Chapter 4 Research Questions and Method

4.1 Introduction

After elaborating in Chapter 2 on the theoretical and methodological strengths of ANT, including its key notion of translation, and reviewing the ANT-inspired auditing and lobbying studies in Chapter 3, this chapter introduces the background of the research, states the ANT-inspired research question and proposes the appropriate research method for a longitudinal case study of greenhouse and energy auditing - another emerging form of auditing initiated in response to Australia's climate change policies.

The chapter is organised as follows. Section 4.2 demonstrates the logical process in defining the significant research questions from three sources of controversies derived from both the data and the literature. As inspired by ANT, good research questions never try to eschew controversies, which fundamentally distinguishes ANT-inspired research from those influenced by the diffusion model under the social construction (Justesen & Mouritsen 2011). Hence, the way of forming research questions is also important for a researcher to understand the meaning of problematisation (Justesen & Mouritsen 2011).

Section 4.3 discusses this study's data source, research method and analytical approach as influenced by the methodological approach of ANT. It is important to set the timing and arenas, as these two elements are important to trace or follow the translations in time and space (Latour 2005). It is also necessary to specify the nature of the extensive consultation process and data source to understand how ANT can be used other than field studies. To visualise the analytical approach, this section also exemplifies how to follow the actors and

controversies through the milestone documentation and events identified from the longitudinal translation processes.

4.2 Defining the research questions from three controversies

Unfolding the controversies with regard to the construction of greenhouse and energy auditing concerns sources from at least three aspects. The first aspect to be addressed in Section 4.2.1 is derived from the issues in developing NGER External Audit Instruments in Australia. It forms the major source of controversy. The second aspect to be addressed in Section 4.2.2 concerns the absence of international and national assurance standards on greenhouse gas statements from the accounting profession when the two NGER External Audit Instruments were first published. The third aspect to be addressed in Section 4.2.3 relates to the emerging studies on greenhouse and energy auditing and a gap for this thesis to fill in by applying the theoretical and methodological notions of ANT. These three aspects form the research questions of this thesis, which is presented in Section 4.2.4.

4.2.1 Controversies in constructing External Audit Instruments under the NGER Act and CPRS

The construction of greenhouse and energy auditing was indispensable to two interrelated climate change schemes in Australia proposed by the former Rudd Labor Government. One is the NGER Act 2007, which was passed in September 2007 when the Howard Government was still in power, but was not published and implemented until September 2008 after the Rudd Government won the election (Australian Government ComLaw 2008). Between then and July 2012, the NGER Act was updated 10 times, with significant changes made to measurement, external audits and compliance. The other, the CPRS (or Scheme), was an emissions trading scheme proposed by the Labor Government after Kevin Rudd won the election on 3 December 2007; it also ratified the Kyoto Protocol (SMH 2007). However, the

ratification of the CPRS has since been the subject of much debate (Chapter 5). Nevertheless, it should be noted that external audits were proposed to underpin both of the schemes through the NGER External Audit Instruments (DCC 2008). Significantly, the development of the External Audit Instruments was subjected to ‘an extensive consultation process’ (DCCEE website 2011) and was not published until the end of 2009. This section introduces the significance of the two schemes to Australia and the importance of external audits under both, and the difficulties in measuring emissions and finalising the NGER External Audit Instruments. The information also provides a background for this case study.

4.2.1.1 Significance of external audits under two climate- change schemes in Australia

Under the NGER Act, a national reporting system - the NGERS - is the single framework for reporting and disseminating information related to greenhouse gas emissions, greenhouse gas projects, and corporation’s energy consumption and production (*Attorney-General’s Department 2007*). The establishment of the NGERS was significant because it would replace all the duplication of similar reporting requirements in the states and territories (Australian Government ComLaw 2008). Several overlapping systems were implemented before the NGER Act, for instance, Greenhouse Challenge Plus, Greenhouse FriendlyTM, NSW Greenhouse Gas Reduction Scheme (GGRS) domestically, and voluntary corporate GHG disclosure such as Carbon Disclosure Project (CDP) and the Global Reporting Initiative (GRI) internationally (Rankin et al. 2011)¹¹. The implementation of the NGERS was therefore expected to reduce the compliance cost for liable entities that used to report to multiple systems.

¹¹ All these programs have also been addressed by the IAASB in their first roundtable conference in Australian in May 2008 (IFAC 2008).

Under the NGER Act, the first annual reporting period commenced on 1 July 2008. Corporations that met the NGER threshold of a total of 125,000 tonnes of Scope 1 and Scope 2 emissions¹² were required to register with the Greenhouse and Energy Data Officer (GEDO), a new position introduced by the NGER Act (Australian Government ComLaw 2008) within the DCC, by 31 August 2009 and report emissions data by 31 October 2009. The corporate threshold decreased each year to meet international obligations (Appendix 1). The Labor Government claimed that the NGERs legislation would cover around 700 medium to large corporations by the 2010-11 reporting period, of which around 300 would be reporting for the first time (DCC 2008). According to the data released by the Government (DCCEE website 2012), over 800 corporations were registered for reporting for 2010-11; of them, around 430 entities reached the threshold of 50,000 tonnes of Scope 1 and Scope 2 emissions, showing an even stronger impact than the Government's initial expectation. As planned by the DCC, "the NGER Act will likely be amended to cover all entities required to report, while expanding its coverage from 'constitutional corporations'" (DCC 2008, p3).

The CPRS had significant implications for the Australian economy. The DCC claimed in the *CPRS White Paper* that the Scheme would present the first opportunity to formally recognise the costs of climate change (pollution generally) in economic decision-making, and that this was the foundation of the Australian Government's whole-of-economy strategy to tackle climate change (DCC 2008). Under the Scheme, an entity with a facility that emits 25,000 tonnes or more Scope 1 emissions annually will reach the threshold. As addressed in the *CPRS White Paper*, the Scheme was predicted to cover 1,000 entities and 75 percent of Australia's emissions (DCC 2008). Hence, once it is implemented it will become the second-largest domestic cap-and-trade emissions trading platform outside Europe (Grubel 2009).

¹² The three scopes of emissions are to be discussed in the next section.

However, the proposal of the CPRS was rejected in late 2009 when the NGER External Audit Instruments were to be published (Chapter 5). Nevertheless, despite the failure of the CPRS, its proposal of assurance was an indispensable and critical part in constructing greenhouse and energy auditing that should not be ignored.

The characteristics of external audits also vary between the CPRS and the NGERS. Under the CPRS, all liable entities must have their report independently audited prior to submission (DCC 2009). In contrast, external audit before submission is not required for an entity to report under the NGERS. Instead, the GEDO will only require an audit for a non-compliance or other monitoring purpose, while the audit type and audit fees may be decided on a case-by-case basis (DCC 2009). However, due to the failure of the CPRS in late 2009, greenhouse and energy audits were only conducted for the NGERS purpose. According to the 2011-12 NGERS audit program, which was conducted by the Auditor General (CER 2012), 65 compliance audits of the 430 reports were conducted by 11 auditing firms. Given that the NGER Amendment Bill restricts which audited data can be published (DCC 2009), there was hardly any information about those 11 firms and who the auditors were. However, clues can be found from the Category III greenhouse and energy auditors, because their registrations are based on at least two greenhouse and energy audits (Australian Government Attorney-General's Department 2010). Moreover, given that the team leaders for compliance audits must be appointed by the GEDO (DCC 2009), it is also interesting to know the professional background of these auditors. Therefore, it is not only necessary but also important to follow the registration status of greenhouse and energy auditors.

4.2.1.2 *Difficulties in measuring emissions under the NGER Act*

The greatest difficulty regarding emissions reporting and auditing has been related to the measurement of Scope 1 emissions. Similar to the EU ETS, all greenhouse gases listed by the Kyoto Protocol are covered in the NGERS and the proposed CPRS (DCC 2008). Furthermore, these emissions are categorised in three scopes, consistent with the international classifications defined by the World Resource Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) in the *Greenhouse Gas Protocol: a corporate accounting and reporting standard* (known simply as the Greenhouse Gas Protocol) and the ISO 14064-1 International Organisation for Standardisation's Standard for *Greenhouse Gases - Part 1: Specification with guidance at the organisational level for quantification and reporting of greenhouse gas emissions and removals* (DCC 2008; Simnett et al. 2009). Scope 1 refers to direct emissions from sources owned or controlled by the company; Scope 2 refers to indirect emissions such as consumption of purchased electricity, heat or steam. Scope 3 emissions are indirect emissions other than Scope 2 that are generated in the wider economy. An example is business traveling of an employee from a facility on a commercial airline (DCC 2008; Simnett et al. 2009).

Due to estimation problem with assertions of completeness, Scope 3 is not required for NGERS or CPRS reporting in Australia (DCC 2008; Simnett et al. 2009). Scope 1 emissions are subject to greater uncertainty in terms of continuous or accurate measurement, while Scope 2 emissions have to deal with inherent uncertainties regarding emissions factors¹³ (Green & Li 2012). As has been indicated, Scope 1 emissions are covered by both the NGER Act 2007 and the proposed CPRS. In addition, Scope 2 and energy consumption are also included under the NGER Act.

¹³ See also Section 5.2.1.

The NGER (Measurement) Determination defines four methods of estimation of emissions (DCC 2008, np):

- Method 1 is called the National Greenhouse Accounts default method. This is a method that provides a class of estimation procedures derived directly from the UNFCC.
- Method 2 calls for a facility-specific method using industry sampling and listed Australian or international standards or equivalent for analysing fuels and raw materials. Compared to method 1, method 2 enables entities to undertake additional measurements - for example, the qualities of fuels consumed at a particular facility - in order to gain more accurate estimates for emissions for that particular facility.
- Method 3 is very similar to method 2, except that it requires reporters to comply with Australian or equivalent documentary standards for sampling (of fuels or raw materials) and documentary standards for analysing fuels.
- Method 4 is a direct monitoring of emission systems, on either a continuous or periodic basis.

However, no single method could completely measure emissions data. In particular, except for Method 4, all the other three methods are based on formulae and calculations. As addressed by the Government in the NGER (Measurement) Determination 2008 (Australian Government ComLaw 2012), the advantage of Method 1 is its simplicity but it is also the least accurate. Method 2 and Method 3 are more accurate but require sophisticated analytical procedures. Method 4 can provide the highest level of accuracy depending on the type of emission process; however, it is more data-intensive than the other three approaches. The Government proposed that all four methods can be adopted by the NGERS; however,

Methods 2, 3 and 4 are preferable for the CPRS. In addition, one method for each source must be used for up to four reporting years unless another higher method is used¹⁴.

After a round of public consultations, the NGER (Measurement) Determination 2008 was amended four times before 2012. On average, every year saw a new version. The increasingly detailed measurement procedures could be reflected by the thickness of the documentation itself. For example, it was 238 pages in 2009, 266 pages in 2010, 282 pages in 2011, and 325 pages in 2012, suggesting that greenhouse and energy measurement is still in its trial-and-error stage. Given that making emissions auditable is based on visibility and measurability (Power 1996), the scientific and technical uncertainties over emissions measurement inevitably add more controversies over its auditability.

4.2.1.3 *'Extensive consultation process' in constructing NGER External Audit Instruments*

In the *NGER Guideline Paper* (DCC 2008), the DCC defined three sub-legislations under the NGER Act 2007: the NGER Regulations 2008, the NGER (Measurement) Determination 2008 and External Audit Instruments. The NGER Regulations 2008 set out the details that allow compliance with, and administration of, the NGER Act (CER 2012). The NGER (Measurement) Determination 2008 described the methods that reporting entities must use to estimate their greenhouse gas emissions (see the previous section), energy production and energy consumption. Both the NGER Regulations and NGER (Measurement) Determination 2008 commenced on 1 July 2008 (CER 2012). The DCC included the following assertion:

Regulations specifying the *necessary expertise and qualifications of external auditors* are also being developed. The external auditor Regulations, the external audit legislative instrument and associated guidelines will comprise an external audit 'legislative package'

¹⁴ Higher method in relation to the original method is the one with a higher number than the number of the original method.

that is planned to be finalised *during the second half of 2008, after stakeholder consultation* (DCC 2008, p35, emphasis added).

However, the two NGER External Audit Instruments, including the NGER (Audit) Determination and NGER Auditor Registration Instrument were not released as planned during the second half of 2008; instead, they were released in December 2009 and January 2010 respectively, due to '**an extensive consultation process**' (DCCEE website 2011, emphasis added). In one of its most important consultation papers, the Government defined the external audits under the NGER Act and CPRS as "clearly distinguishable from financial audits or environmental audits, reviews and other procedures of an audit Nature" (DCC 2008, p6). Finally, the NGER (Audit) Determination 2009 and its associated guidelines specified two types of *greenhouse and energy audit* engagement as *assurance* (including reasonable assurance and limited assurance) and *verification*. The Auditor Registration Instrument 2010 defined three categories of greenhouse and energy auditors: *Category I (including technical and non-technical)*, *Category II* and *Category III*.

The longer-than-expected consultation process deserves an examination. The initial definition of the 'external audits' under the NGER Act and the CPRS significantly problematised the controversial relationships among greenhouse and energy audits, financial audits and environmental audits (Knorr-Cetina 1997). Also worth noting is terminologies such as 'audit', 'assurance' and 'verification' in the NGER External Audit Instruments, where they are used differently to how they are applied in financial auditing; for example, the relationship between audit and assurance seems to be subverted. Moreover, these terminologies are attached to different categories of external auditors. Given the increasing sensitivity that the accounting profession has to terminology (Robson 1991; Power 1996; Owen & O'Dwyer 2005; Gendron et al. 2007), especially to the term 'verification' which is common among

engineering consultants (Owen & O'Dwyer 2005), it may be interesting to investigate how the terms from different professions, such as audit, assurance and verification, were reshuffled through the 'extensive consultation process' and its implication for auditing professionalisation. In particular, the three categories of greenhouse and energy auditors including the technical and non-technical auditors, may also reveal the hidden jurisdictional contestation between the accounting and non-accounting professions when the boundary of greenhouse and energy audit was not clear-cut yet. These controversies thus enhance the need to investigate the trials of strength especially between the accounting and non-accounting professions in the 'extensive consultation process'.

4.2.2 Controversies in constructing ISEA/ASAE 3410

The controversies in constructing greenhouse and energy audit were exacerbated by the absence of ISAE 3410 *International Standard Assurance Engagement on Greenhouse Gas Statement* when the NGER External Audit Instruments were first published. Before commencing the project of developing ISAE 3410, the IAASB proposed to align ISAE 3000 with the sustainability assurance standards such as the Global Reporting Initiative (GRI G3), AccountAbility AA1000 Assurance Standard (AA1000 AS) and the greenhouse gas verification standard ISO 14064:3 in practice (Simnett & Nugent 2007). However, no standard was suitable for a reasonable assurance on greenhouse gases, for instance, ISAE 3000 was critiqued as a very general standard that gave no specific guidance (Simnett & Nugent 2007; Simnett et al. 2009; O'Dwyer et al. 2011). Practitioners also critiqued that it was 'vague' and 'limiting' because it merely cut and pasted from financial auditing (O'Dwyer et al. 2011, p44). On the other hand, ISO 14064: 3 was only applicable to verifications not assurances and was also criticised for borrowing the similar language of ISAE 3000 (Simnett & Nugent 2007).

Along with the development of *NGER External Audit Instruments*, to address professional accountants' responsibility in the carbon reduction schemes, the International Federation of Accountants (IFAC) approved a project to develop the International Standard on Carbon Emissions Information in December 2007 (IAASB 2008). It is worth noting that the Australian Government had just ratified the Kyoto Protocol at that time. However, the completion of the project was deferred to 2012, owing to the complicated lobbying process (IFAC 2012). During this process, the subject matter was changed from 'carbon emissions information' (IAASB 2009) to 'greenhouse gas statement' in 2009 (IAASB 2009), reflecting a growing emphasis on a more-specific assurance requirements. Finally, ISAE 3410 was approved in March 2012 after a long lobbying process (IFAC 2012) and its Australian equivalent ASAE 3410 was applied starting from July 2012 (AUASB 2012). The standardisation of ISAE 3410 is especially significant because it was, and to date remains, the first standard developed by the accounting profession on a specific subject matter other than financial statements.

In the process of constructing ISAE 3410, Australia was expected by the IFAC to become the world leader (IFAC 2008). This was largely due to the fact that the NGERs would commence in July 2008 (IFAC 2008). In May 2008, the first IFAC project, a carbon-emission information Roundtable, was held in Australia (IFAC 2008), indicating the critical importance of external audits under the two Australian climate change schemes to standardisation. Australia's prominent position in climate change discourse was also witnessed by the composition of the Task Force established in early 2009 (IAASB 2009), in which two chairs were from Australia, including the formal member Professor Roger Simnett (IAASB 2009). Between releasing the draft ISAE 3410 in 2009 and the final ASAE 3410 in 2012, the IAASB changed the term 'auditor' to 'practitioner', and the AUASB changed it to

‘assurance practitioner’. ASAE 3410 coming into effect in July 2012 was adopted by the NGER External Audit Instruments in Australia (AUASB 2012). From the perspective of interrelationship between the NGER External Audit Instruments and ISAE 3410/ASAE 3410, it is therefore necessary not to limit the scope of this study to the ‘extensive consultation process’ in Australia, but also to pay attention to standardisation within the IAASB and AUASB.

4.2.3 Controversies identified from the relevant emerging studies

In an attempt to understand the NGER Act and its associated audit issues, a few Australian authors have proposed the possible contestation between financial auditors and engineering consultants (e.g. Simnett & Nugent 2007; Green & Li 2012; Lodhia & Martin 2012; Martinov-Bennie & Hoffman 2012). Although these studies focused on one particular perspective, whether the NGER Act, the NGER (Audit) Determination, EITE auditors¹⁵ or ISAE 3410, all raised the importance of greenhouse and energy audits and the varied interpretations among different stakeholders, especially between the accounting and non-accounting professions.

Lodhia and Martin’s (2012) study can be viewed as a prelude to this thesis. They explored 106 submissions to the NGER Act 2007 by corporations, environmental groups, professional and business service providers, government departments and other stakeholders. Based on an agenda-setting framework, and facilitated by concept analysis and concept mapping, their empirical findings suggested that different actors had different concerns over the NGER policy, with business groups being more policy-orientated and green groups being more politically orientated. Particularly, Lodhia and Martin (2012) called for future research on

¹⁵ EITE auditors initially only included registered company auditors (RCAs), but then expanded to Category II and III greenhouse and energy auditors (DCC 2009).

NGER assurance because the submissions to the NGER Act 2007 revealed that the business community was very concerned with this issue.

Green and Li (2012) paid attention to audit issues under the proposed IASE 3410 and CPRS in Australia. They investigated the expectation gaps existing between GHG emission statement preparers, assurers and non-institutional shareholders. Their surveys indicated that there were variations in understanding the gaps between assurers with accounting and those with environmental backgrounds. Green and Li (2012) especially promoted the relevance of the accounting profession in the emerging field in consideration of ‘a uniform set of professional and ethical rules’ (Green & Li 2012, p170). Their suggestion is an important reference to exploring the trials of strength in lobbying the relevance of expertise from different professional backgrounds in the ‘extensive consultation process’. What is also noteworthy, however, is that the assurers studied in Green and Li (2012) were limited to the EITE assistance program, which was developed separately prior to the NGER audit legislation (DCC 2008).

Moreover, Martino-Bennie and Hoffman’s (2012) study concerned the partiality of the Government in designing the NGER (Audit) Determination 2009. By conducting interviews after the document’s publication, both the accounting and non-accounting assurance providers in their study agreed that the Government intended “not to be seen as being beholden to the accounting profession” (Martinov-Bennie & Hoffman 2012, p200). Although the authors raised the point that the accounting profession’s views and methodologies could be perceived as more relevant, their study left untouched the question of how and why the accounting profession’s ‘views and methodologies’ could be perceived as more relevant’.

In addition, Simnett and Nugent (2007) comprehensively analysed the urgency for the accounting body to develop a specific assurance standard on carbon disclosure based on their personal engagement in the ISAE 3410 project as chairman and member, respectively. This urgency in their view was attributed to the growing market for sustainability reporting and emissions trading schemes worldwide, especially the CPRS in Australia. Simnett and Nugent (2007) believed that the accounting profession had already fallen behind its engineering competitors because the latter had already implemented ISO 14063-3:2006. Given that accounting firms had already involved in assurance services on subjects other than historical financial information, Nugent and Simnett (2007) predicted that “the appropriateness of the accounting profession’s role in the provision of such services will nevertheless be the subject of much debate” (p43).

In summary, based on surveys, interviews or personal engagements, the extant literature on developing greenhouse and energy audits in Australia and ISAE 3410 in the IAASB have highlighted the tensions between the accounting and non-accounting professions as well as the role of the Australian Government and the IAASB. However, these studies only provided parts of the construction process while ignored the ‘extensive consultation process’. Moreover, an additional theoretical grounding would add value to studying the development of this new type of greenhouse and energy auditing. Such gaps further justify the necessity of expanding the timeline and scope of investigating the translation process by the heterogeneous actors including the Australian Government, AUASB, IAASB, and the accounting and non-accounting professions.

4.2.4 Forming research questions from three sources of controversy

After presenting the major controversies from the above mentioned three aspects of sources – the *NGER External Audit Instruments*, the absence of ISAE 3410 and the relevant literature, it is time to form the research questions. As inspired by ANT, there are three interrelated questions for this thesis:

- 1) What is greenhouse and energy auditing?
- 2) How was greenhouse and energy auditing including auditor expertise, constructed by heterogeneous actors through transferring and transforming existing types of audits including financial audits and environmental audits?
- 3) What has been transformed in trials of strengths between the accounting and engineering professions in this process? And consequently, what constitutes strength?

These questions are critical, because more knowledge about greenhouse and energy auditing and a critical understanding of how greenhouse and energy auditing expertise was transferred and transformed from existing types of audits are necessary. Moreover, it should be emphasised that, with respect to the increasingly important role of the accounting profession, the focus of this thesis is less about whether its involvement is a good thing which requires an investigation of the outcome of greenhouse and energy audits, than about paying attention to the process of ‘translation’, at the heart of which lay the claims to auditing expertise before the controversies were settled. Moreover, in terms of strategies of translation, this thesis pays attention not only to the linguistic and rhetorical perspective of interpretation, but also to the geometric meaning of displacement embedded in the notion of translation (Callon 1986; Latour 1987). By so doing, this thesis addresses these important theoretical questions, which

have not been comprehensively examined in the extant literature yet, and contributes to the scant literature of ANT-inspired auditing and lobbying research (Chapter 3).

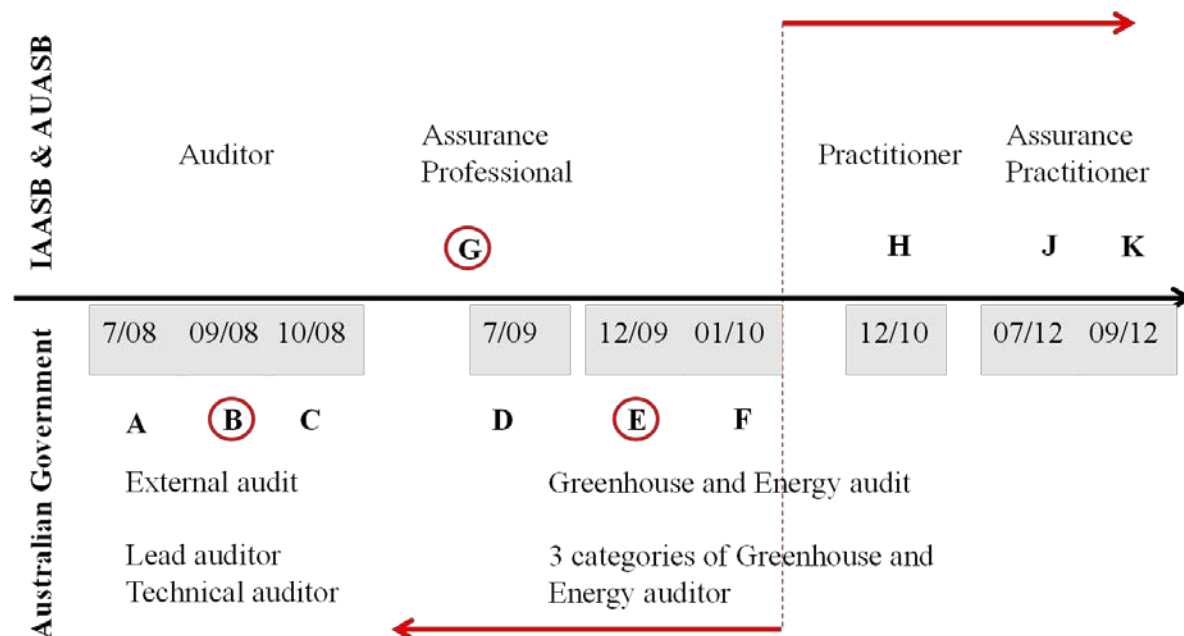
4.3 Research data, method and analysis approach

The research method of this study is heavily influenced by the methodological underpinnings of ANT. First, Latour (1987) emphasised the importance of timing in tracing back and following controversies before they are settled. Also based on the three controversies in forming the research questions, Section 4.3.1 explains the stages and timeline in tracking and following the controversies among heterogeneous actors and actants. Second, in identifying and following actors, Latour (2005a, p217) clarified the methodological meaning of network and emphasised that “attachments are first, actors are second”. Given that the data source of this thesis is largely relied on government documentation and submissions in the extensive consultation process, Section 4.3.2 explains the nature of the extensive consultation process. Section 4.3.3 then specifies the main source of data and introduces how they were selected and followed. Section 4.3.3 continues to demonstrate the framework of the analytical approach which is based on the translation model.

4.3.1 Setting the stage and timeline

Setting the timeline and stage is important to identify actors and follow their conflicts and controversies before they are temporarily solved or managed. According to the first rule of method (Latour 1987), the timing of my engagement in this project also matters to trace and follow the controversies. It needs to be noted that this PhD study formally began in August 2009; five months later, the NGER Audit Determination 2009 was published. From this perspective, the timing of embarking on this research project allows a good opportunity to

trace as well as follow the translation process when greenhouse and energy auditing was still ‘in the making’ (Fig 4.1 and Appendix 2).



Legend:

- A: CPRS Green Paper
- B: *NGER Act 2007*
- C: NGER Act and CPRS External Audit Consultation Paper
- D: Greenhouse and Energy Audit Framework – Overview Paper
- E: NGER (Audit) Determination 2009
- F: NGER Auditor Registration Instrument 2010
- G: Draft ISAE 3410 Assurance Engagement on Greenhouse Gas Statement
- H: ED ISAE 3410 Assurance Engagement on Greenhouse Gas Statement
- J: ASAE 3410 Assurance Engagement on Greenhouse Gas Statement
- K: NGER Audit Determination 2012

Figure 4.1: Define research questions from three sources of controversy

Fig. 4.1 is a brief summary of the three aspects of controversies occurred in the Australian Government and IAASB/AUASB, as discussed in Section 4.2. As depicted in the figure, this study concerns translations in two arenas:

- 1) The first arena is located in the Australian Government Department of Climate Change where the translation of greenhouse and energy auditing could be traced back before

Australian Labor Government ratified the Kyoto Protocol in December 2007, to the reintroduction of the CPRS in December 2012, and the registration of greenhouse and energy auditors from May 2010 until July 2014, close to the submission of this thesis.

- 2) The second arena is placed in the IAASB and AUASB, where the standardisation of ISAE 3410 and its Australian equivalent ASAE 3410 could be traced back from the initial start of the assurance on carbon disclosure project in December 2007 to the publication of ASAE 3410 in July 2012. Given the interrelationship between the two constructions, translations in the two arenas overlapped not only in time but also with the actors; for instance, the key actors who were involved in the lobbying of the NGER External Audit Instruments also participated in the standardisation of ISAE 3410 and ASAE 3410.

As highlighted in Fig 4.1, each of the three sources of controversies reflects part of a longitudinal process of transforming greenhouse and energy audit in the two arenas. For example, E and F represent the two pieces of NGER audit legislation which demonstrate the controversies of auditing terminology. Besides, extant literature have also indicated the different interpretations (e.g. Green & Li 2012; Lodhia & Martin 2012; Martinov-Bennie & Hoffman 2012) and possible contestations (e.g. Simnett & Nugent 2007) between the accounting and non-accounting professions in regard to auditing expertise at nodes B, E and G (highlighted by red circles). However, these literature did not explore the ‘extensive consultation process’ and most of them only draw attention to one static mode in the process. This gap thus drives this thesis to further investigate the extensive consultation process.

4.3.2 Specifying the main sources of data and its relevance

The nature of the consultation process bears similarities to both stakeholder dialogue and lobbying process. It is relevant to lobbying of accounting and auditing standard-setting process because it involved the collective efforts of different actors to promote or obstruct greenhouse and energy auditing legislation. On the other hand, the consultation process was different to the voting system because most of the questions proposed by the Department in the consultation papers were open-ended. For example, in one of the consultation papers, it was asked whether “there are any other generic skills or expertise that could be considered necessary in addition to those outlined” (DCC 2008, p13). Responses to such a question also bore resemblance to the standard-setting and stakeholder dialogue process. From this perspective, both the literature of ANT-inspired lobbying and neo-institutional consultation studies are relevant to understanding the extensive consultation process in constructing greenhouse and energy auditing (e.g. Robson 1991; Young 1995; Jupe 2000; Young 2003; Jeppesen 2010; Archel et al. 2011). However, as suggested by Callon (1986, p200), a researcher “cannot simply repeat the analysis suggested by the actors he is studying”. Therefore, investigation of the extensive consultation process through submissions is not to repeat the work of the Department, rather, its summaries about the previous stakeholders’ feedback in the subsequent consultation papers during the three consultation processes will also become a critical part of the current analysis.

In addition to the stakeholders’ submissions of the three important consultation processes in 2008 and 2009 which were provided by the Department in September 2010¹⁶, this thesis also relied on other source of documentations including different versions of government regulations and auditing standards. To follow actors through documentations, I have traced

¹⁶ Thanks to Mr. Andrew Bray who was the Assistant Director of Renewable Energy and NGER Policy Team in the DEECC, and who finally agreed to provide me the submissions on the two important consultation processes during the development of the greenhouse and energy audit framework.

and followed the government website and publications continuously, and read and reread them carefully in order not to miss any actor or controversy in the process of translation. In addition, I used NVIVO software to search for key terms such as ‘assurance’, ‘audit’ and ‘verification’ to track the claims of the actors. Because most of the documents were accessed online, they were retrieved either from the Internet Archive or by following the updates to the DCC’s website during the research period. For example, the Government website demonstrates how the Government function in charge of greenhouse and energy audits evolved from the DCC (Department of Climate Change) in December 2007 to the DCCEE (Department of Climate Change and Energy Efficiency) in 2010 and the Department of Clean Energy Regulator (CER) in April 2012. In March 2013, the DCCEE was abolished entirely (DCCEE website 2013). Hence, to minimise the confusions, I will use ‘the Department’ to represent the Government function in the remainder of the thesis.

The relevance of using documentations in ANT studies has been recognised. As suggested by Callon (1991) and Latour (1996), one way to follow the actors involved is through examining the documents they produce. The benefit of using documents produced by actors, as opposed to direct engagement with the actors involved, is to maintain a critical distance that keeps a researcher from interfering ‘interdiscursively’ with them (Law 1991, p181). As discussed in Chapter 3, documentation is an important source of data for ANT-inspired new forms of auditing and standard-setting studies. Except for Gendron and Barrett’s (2004) study which was conducted through field work, all the studies were conducted through documentation and interviews (e.g. Robson 1991; Young 1995; Jupe 2000; Gendron et al. 2007; Jeppesen 2010).

The benefit of using written submissions needs to be particularly addressed. Submissions are argued as “the only avenue of participation in the due process available to most constituents”

(Kenny & Larson 1995, p288). Although much of the important work of standard-setters takes place informally and outside of the dual process (Stamp 1985; Cooper & Robson 2006), which has been reinforced in searching for ‘invisible power’ in lobbying the accounting standard-setting process (Hodges & Mellett 2008; Cortese & Irvine 2010; Hodges & Mellett 2010), in practice submissions are the most observable form of lobbying due to their accessibility to researchers and their use as a means of persuasion (Tutticci et al. 1994; Jupe 2000).

4.3.3 Specifying the consultation process of investigation

As presented previously, the particular process of investigation in this thesis is the ‘extensive consultation process’ of constructing two NGER External Audit Instruments: the NGER (Audit) Determination 2009 and the NGER Auditor Registration Instrument 2010. The former defines how to conduct greenhouse and energy auditing, while the latter specifies the expertise of greenhouse and energy auditors. This means that exploring the ‘extensive consultation process’ is critical to investigating how claims to greenhouse and energy auditing expertise were transferred and transformed from financial audits and environmental audits.

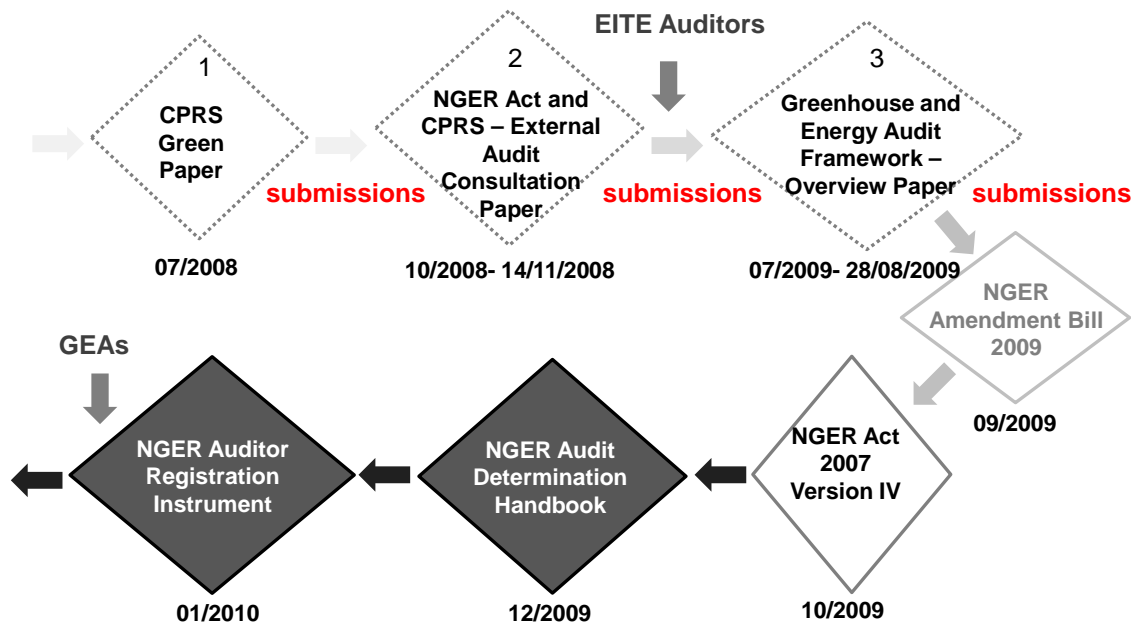


Figure 4.2: The 'extensive consultation process' for NGER External Audit Instruments from 2008-2010

As shown in Fig 4.2, the lobbying of the External Audit Instruments involved three main consultation processes:

1) *Submissions to assurance in the CPRS Green Paper*

In the *CPRS Green Paper* published by the Department in July 2008, third-party assurance was firstly proposed. As the first formal paper that addressed the potential framework for an emissions trading scheme, the publication of the *Green Paper* aroused wide concern from the public. However, of the 1038 submissions received in September 2008, only 13 stakeholders were found to have responded to the third-party assurance issue. These actors included industry large emitters, accounting firms, engineering firms and an accreditation body. To filter out these 13 actors out of the 1038 submissions released by the Department, I used NVIVO software to search for key words such as 'assurance', 'audit' and 'verification'. To confirm these actors, I also reviewed the subsequent *CPRS White Paper* where the Department provided some feedback received from the submissions to the *Green Paper*.

These actors' different interests on the third-party assurance become the concern of this thesis and will be analysed in Chapter 5 – the first episode of lobbying.

2) *Submissions to the NGER Act and CPRS – External Audit Consultation Paper*

Following the consultation on the *CPRS Green Paper*, the *NGER Act and CPRS External Audit Consultation Paper* (hereafter referred to as *External Audit Consultation Paper*) was published by the Department in October 2008. The importance of this initiative was explicitly expressed by the Department as being the “primary mechanism for consultation” (DCC 2008, p1). The *External Audit Consultation Paper* specified 16 questions within two main aspects: 1) external auditor expertise and qualifications and, 2) guidelines for conducting external audits and preparing reports. These two aspects were then sub-divided into eight perspectives: professional expertise, specific expertise for different auditor categories, auditor qualifications, accreditation, recognition of auditors, independence, contents of external audit report and auditing standards.

58 submissions including 40 non-confidential ones were received from a variety of stakeholders, including engineering, accounting, industry and other sectors by 14 November 2008. Instead of presenting feedback to each of these questions (which may have been done by the Department), this thesis focuses more on the controversies which were surrounded by the claims to the nature of the external audits as being ‘technical’, ‘financial’ or both, and consequently the claims to expertise of the external auditors. The controversies in this lobbying process will be analysed in Chapter 6 – the second episode of lobbying.

3) *Submissions to the Greenhouse and Energy Audit Framework Overview Paper*

Publication of the *Greenhouse and Energy Audit Framework - Overview Paper* (hereafter referred to as the *Overview Paper*) by the Department in July 2009 initiated the third and the

final consultation process for the greenhouse and energy audit legislation (DCC 2009). Some important changes were made and settled by the Department despite the controversies received from submissions to the *External Audit Consultation Paper*, such as independence. In the *Overview Paper*, the Department especially sought feedback regarding expertise for different categories of auditors. In response, 28 submissions including 16 non-confidential ones were received, and these actors were limited to accounting, engineering and large emitters. The controversies in this lobbying process will be analysed in Chapter 7 – the third episode of lobbying.

In total, 71 submissions were received from 57 stakeholders during the extensive consultation process, with some stakeholders lobbied in more than one consultation (Fig. 4.3 and Appendix 4).

Established Identities	Values	
	Count of Stakeholders	Sum of No. of submissions
Environmental & Engineering	22	28
Industry	17	21
Accounting	8	12
Standards & Accreditation	3	3
Education & Academic	2	2
Accounting and Engineering Alliance	2	2
Finance	2	2
Legal	1	1
Grand Total	57	71

Figure 4.3: Stakeholders enrolled in the three consultation process for NGER audit legislation

As claimed, an actor is a network effect of translation that is determined by many others (Law 1999). For instance, the consultation process of the greenhouse and energy auditing exemplifies that the actions of an actor (e.g. Department) were a network effect by a group of

stakeholder actors through submissions in the three consultation processes. Therefore, it is only by identifying the *transformations* that the actions by many others through lobbying can be determined. Although these stakeholders are categorised into different groups based on their established identities, it should be noted that according to ANT, their identities as actors can only be determined through their movements in the translations (Latour 2005a). How to identify an actor and its alliance will be exemplified in the following analysis chapters especially from Chapter 5 to 7.

4) *Registration of the Greenhouse and Energy Auditors*

As introduced in Section 4.3.1, in addition to tracking the three lobbying processes within the ‘extensive consultation process’, this thesis also followed the registration of the greenhouse and energy auditors from 2010 to 2014, and recorded four versions of the registration in May 2010, August 2012, December 2012 and July 2014 (see Appendices 8 to 10). In following the number of the three categories of auditors, particularly, comparing the progress of the number of auditors in the engineering firms and accounting firms, this thesis demonstrates how the trials of strength between engineering and accounting actors was settled by the Department. This source of empirical data is to be analysed in Chapter 8 – Episode Four Section 8.3 Mobilisation of Greenhouse and Energy Auditors.

5) *Submissions to the Greenhouse and Energy Audit Framework Overview Paper*

As indicated in Section 4.3.1, it is also necessary for this thesis to follow an overlapping process of constructing ISAE 3410 and its Australian equivalent, ASAE 3410, by the IAASB and AUASB, respectively. The significance of the standardisation of ISAE 3410 is obvious: it is the first standard developed by the accounting profession on a specific subject matter other than financial statements. The main aim of this section is not to present the complete

translation process in constructing the two standards, but to follow the settlement of the controversial issues raised from the NGER audit legislations. It is interesting to learn how the IAASB was persuaded by the AUASB and other Australian accounting actors to incorporate the controversies from greenhouse and energy audits, and how the identity of ‘assurance practitioner’ was transformed from greenhouse and energy auditors.

These issues will be articulated with discursive evidences extracted from the IAASB Roundtables in 2008, the AUASB Roundtables on ED ISAE 3410 in 2011, IAASB and AUASB minutes of meetings, submissions to the IAASB/AUASB and other documentations produced by the IAASB and AUASB. How these documents are linked with the NGER audit legislations are to be analysed in Section 8.4 Incorporating Greenhouse and Energy Audits in constructing ISAE/ASAE 3410.

4.3.4 Exemplifying the framework of the analytical approach as inspired by ANT

ANT methodologically inspires this thesis to explore the controversies of greenhouse and energy auditing in the making, and to use a ‘simple’ method to follow and track a series of translation processes by heterogeneous actors in a longitudinal lobbying/consultation process in multiple locations. Moreover, the model of translation (Callon 1986) is particularly relevant to be adopted as the analytical approach to investigate the lobbying process and the registration of greenhouse and energy auditors, given its merit in dealing heterogeneous actors and actants in translation. By referring to the four moments of translation, it is interesting to learn how greenhouse and energy auditing was problematised, and how and with what kind of devices of intersement the controversies were contested, negotiated and adapted by heterogeneous actors and actants in the trials of strengths. What strategies were used to enrol greenhouse and energy auditors? What role did the boundary knowledge object

of auditing play in mobilising the human actors? Consequently, what is the effect of the greenhouse and energy auditors on auditing professionalisation? Given the complexities and uncertainties involved before, during and after the ‘extensive consultation process’, the four moments of translation are expected to be quite fluid and interrelated (Callon 1986).

To exemplify how to follow controversies, Fig. 4.4 depicts the translation processes derived from the milestone documentations and major events. While Chapter 5 focuses on the problematisation of CPRS assurance from the climate change, Chapter 6 continues the problematisation to external audits under the NGER Act and the CPRS, and intersement between the Department and stakeholder actors. Chapter 7 continues the translation of interests and moves on to the enrolments of greenhouse and energy auditors from existing financial auditors and environmental auditors. Chapter 8 centres on the mobilisation of greenhouse and energy auditing as reflected by the two NGER Audit Instruments, registration of greenhouse and energy auditors as well as the standardisation set forth in ISAE 3410 and ASAE 3410. The data source and the approach of following the data have been presented in Section 4.3.3.

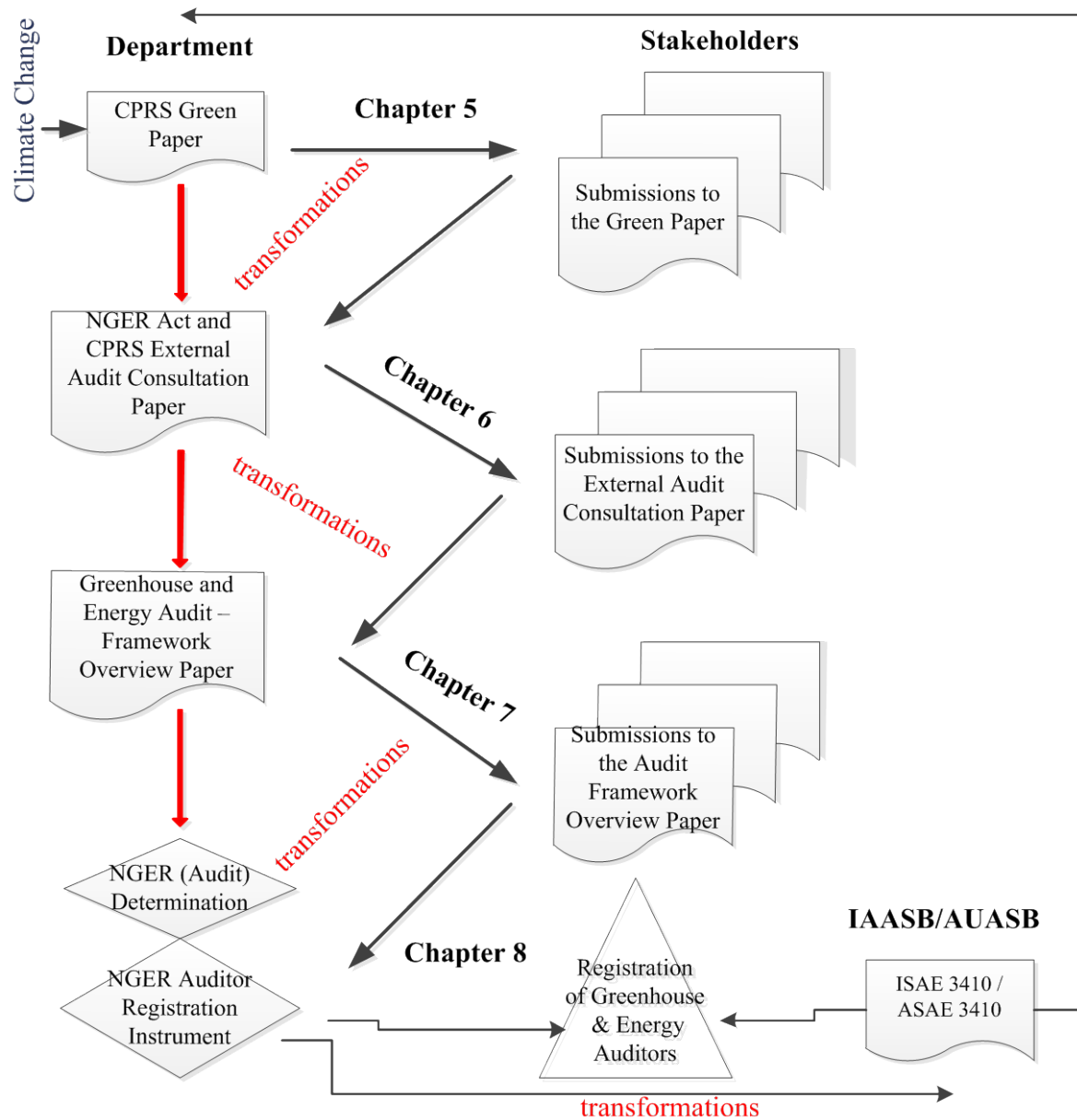


Figure 4.4: How to follow the translation processes of greenhouse and energy auditing

Ostensibly, this approach bears some similarities to the black-box model (Hodges & Mellett 2012) and diffusion model of institutionalisation (Archel et al. 2011); however, they are fundamentally different. Like the black-box model (Hodges & Mellett 2012), the translation model also allows this study to explore a series of triangulation processes between the Department's inputs, submissions and outputs. However, during this longitudinal lobbying process, attention is not limited to the changes made between inputs, outputs and submissions,

but also focuses on the devices of interessement and strategies of enrolment used by various actors, which would be neglected by the black-box model. In comparison to the diffusion model of the institutionalisation (Archel et al. 2011), no power relationships are presumed among the actors in the translation approach except through trials of strength in establishing the obligatory passage points (Callon 1986). Hence, the major transformations exposed in each of the four chapters are expected to help identify the powerful actors and controversies, which will lead this study to follow continuously the trials of strength in translation processes and investigate how controversies were settled with regard to greenhouse and energy auditing.

Although unknown PhD students commonly work under resource constraints, these constraints have also provided an opportunity to demonstrate how the analytical approaches suggested by ANT, especially the translation model (Callon 1986), can assist me as the researcher to track and follow the heterogeneous actors without myself being physically involved in the lobbying process. From this perspective, the translation model is not limited to field studies but can also be applied to archival studies which are based on documentation. This is also a reason why the translation model fits this thesis.

Chapter 5 Episode One: Problematisations of assurance for the CPRS and initial concerns from three stakeholder groups

5.1 Introduction

This chapter presents the first episode of translation – problematisation of assurance for the CPRS and the initial concerns from three stakeholder groups. As presented in Section 2.5.2.1, problematisation is a “due process of construction and de-construction” of problems (Callon 1981, p209) that refers to a chain of inclusion that “carves out a territory from the outside, forming a closed domain with its own coherence and logic” (Callon 1981, p206). Before identifying the problems of greenhouse and energy audit expertise, this episode illustrates how third-party assurance was proposed as a solution for the climate change in Australia. This also can be viewed as the background of the proposing greenhouse and energy auditing.

As Mike Hulme¹⁷, a scientist and authority on climate change, wrote, “climate change can help us bring the physical and the cultural, the material and spiritual, into a new realignment” (Hulme 2009, p357). Indeed, it was through a series of translations initiated from climate change that greenhouse and energy auditing was finally problematised as a solution by the Australia Labour Government. During this process, its translations were accompanied by a series of controversies. Apart from questioning the scientific uncertainties defined by the Inter-governmental Panel on Climate Change (IPCC), concern over the Kyoto Protocol and its proposed emissions trading schemes has made the responses to climate change more of a political issue than an economic one. This is even true in Australia, where the CPRS became a political inscription that distinguished the two major political parties, Liberal and Labor. As claimed by economist professor Ross Garnaut, it “became clear that this subject was one of

¹⁷ Hulme (2009) shared Latour’s (1987; 1999a; 1999b) view towards nature and society and he claimed that the notion of climate change challenges the ‘purification’ of knowledge based on Kantian’s Great Divide – a problem of epistemology.

the most difficult policy problems to come before Australia in living memory” (Garnaut 2008, p3).

This chapter is structured as follows. First, Section 5.2 traces back the controversies over the scientific, economic and political claims to climate change and the ratification of Kyoto Protocol, and follows the more recent ratification of the CPRS in Australia. It should be noted that the debates associated with the CPRS offer an understanding not only of the so-called background of this study, but also of the different analytical approach ANT adopts to make a background/foreground reversal, where context is merged with the content (e.g. Callon 1986). Continuing with the translation of the CPRS, Sections 5.3 and 5.4 focus on how assurance was proposed for the CPRS by the Department through the *CPRS Green Paper* and the concerns and interests from the stakeholders through submissions in the first episode of lobbying. Although assurance was only briefly proposed by the Department and participated in by a few stakeholders in this lobbying episode, it still released some important information from the Department. Moreover, the initial concerns from the stakeholders could predict a triangular relationship between the Department, industry emitters (potential auditees) and the accounting and engineering professions (potential auditors).

5.2 Problematisations of the CPRS to climate change in Australia

In tracing back and following the problematisation of the CPRS, this section pays attention to the controversies surrounding scientific claims made by the IPCC (2007), the economic view from the *Garnaut Climate Change Review* (2008), and the Australian Government’s political response to the Kyoto Protocol, as well as the controversies surrounding the postponement of the CPRS. These controversies were entangled together and eventually contributed to a failed

CPRS which consequently added more dynamics to the translations of the greenhouse and energy auditing in the subsequent lobbying episodes.

5.2.1 Controversies over scientific claims to climate change

The notion of climate change and its association with anthropogenic greenhouse gases came from the leading international scientific body for the assessment of climate change, the IPCC, which was established jointly by the World Meteorological Organisation (WMO) and the United Nations Environment Programme (UNEP) in 1988 (MacKenzie 2009). The IPCC claimed in its *Fourth Assessment Report* that human activities had contributed “70 percent between 1970 and 2004” to global greenhouse emissions (IPCC 2007, p36). According to the IPCC (2007), carbon dioxide (CO₂) is considered to be the most important anthropogenic GHG. In addition, the IPCC (2007) also recognised a pool of emissions as equivalent to CO₂, including methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). These six greenhouse-gas emissions have since been recognised by the Kyoto Protocol and the following various international emissions reporting and trading schemes.

As a legally binding agreement for 37 industrialised countries and the European Union to reduce GHG emissions, the Kyoto Protocol came into being in 1997 and was ratified in 2005¹⁸ (Hulme 2009). Despite lacking consensus to support the climate modelling in terms of the level of reasonable reduction (Boston & Lempp 2011; Milne & Grubnic 2011), the Kyoto Protocol set targets for industrialised countries to reduce their collective emissions of greenhouse gases by 5.2 percent against the 1990 level over the five-year period 2008-2012

¹⁸ The Kyoto Protocol was renegotiated in 2012 (Hulme 2009).

(Kyoto Protocol 1997)¹⁹. To achieve the goal, it set 8 percent reductions for the EU while permitting an 8 percent increase for Australia (Kyoto Protocol 1997), which suggested that greenhouse-gas reductions were a more sensitive issue to the Australian economy.

The Kyoto Protocol has been subjected to increasing criticism, especially in recent years given the fact that global carbon emissions have accelerated since 1997 rather than fallen (Hulme 2009). This largely contributed to the failure of Phase I of European Emissions Trading Scheme (EU ETS) and the rise of the associated carbon fraud (Victor 2001). In particular, Victor (2001, p109) commented that it was “the wrong agents exercising the wrong type of instruments”. Apart from its hierarchical structure, its political influence and its underlined neo-liberalism ideology (Andrew 2000; Victor 2001; Hopwood 2009; Hulme 2009; Andrew et al. 2010), there are also increasing concerns raised regarding its scientific underpinnings (see MacKenzie 2009; Boston & Lempp 2011; Milne & Grubnic 2011).

Essentially, estimation is still a challenge for greenhouse-gas emissions due to a number of inherent risks. In particular, an important scientific question crucial for establishing a carbon market, is the exchange mechanism proposed by the IPCC to translate other emissions into CO_{2-e} (MacKenzie 2009). Concerned about the exchange rate of estimation, MacKenzie²⁰ (2009) investigated the IPCC’s fact-building process and argued that its fabrication was indispensable from political negotiations. Moreover, none of the methodologies of quantifying emissions such as measurement-based or calculation-based approach is inherently error-free because of the various uncertainties involved (MacKenzie 2009; Simnett

¹⁹ See also UNFCCC website: http://unfccc.int/kyoto_protocol/items/2830.php, accessed on 22 February 2010.

²⁰ Mackenzie is also an influential researcher of ANT. His more recent study on carbon market is based on the concept of commensurability of ANT.

et al. 2009). Such scientific and technical problems have been reflected in the four methods defined in the NGER (Measurement) Determination 2008 (Section 4.2.1.2).

5.2.2 Controversies over ratification of the Kyoto Protocol in Australia

In Australia, there were contesting political attitudes towards the ratification of the Kyoto Protocol between the Liberal and Labor Parties. As noted, the Australian Liberal Government did not join in the Kyoto Protocol when it entered into force on 16 February 2005, a fact that aroused wide concern in Australia. The then-Prime Minister John Howard justified his decision by stating that the Kyoto Protocol was ‘next to useless’ and ‘harmful’ because other big polluters such as the USA, China, and India did not sign the treaty and it would cost Australian jobs (Mathieson 2005). Mr Howard’s claim was widely supported by the Australian large emitters, for example, Chip Goodyear, the former Chief Executive of BHP Billiton (a large coal and petroleum company in Australia), claimed that “there is not a negative impact to Australia not signing the Kyoto Protocol at this time” (SBS 2005). Essentially, as its critics pointed out, the Liberal Party did not believe that climate change was induced by humans²¹ (Kirk 2005). On the contrary, the Labor party held that Australia would be locked out of economic opportunities if the Government did not ratify the Protocol (AAP 2005).

Therefore, immediately after the Labor Party won the election on 3 December 2007, the new Rudd Government announced its ratification of the Kyoto Protocol, pledging to reduce the

²¹ The Liberal party leader Tony Abbot did not change his opinion that the ‘so-called settled science’ of climate change was ‘crap’ until May 2010 when he publicly admitted that “mankind does make a difference to the climate” (Taylor 2010). However, Tony Abbot was still accused that he “has been taking every opportunity to describe greenhouse gases as ‘tasteless, colourless, odourless and weightless’. The implication is that these gases are either impossible to measure, or not worth measuring” (The Age 2011). Tony Abbott is the current Prime Minister of Australia, serves since 28 September 2013.

total GHG emissions to 60 percent of 2000 levels by 2050²² (AAP 2007; SMH 2007). On the same day, the DCC was established as part of the Prime Minister and Cabinet Portfolio (DCC Website 2007). Notably it was through the DCC (and DCCEE)²³ that the NGER External Audit Instruments were established in 2010.

Along with the ratification was a proposal for a cap-and-trade emissions trading scheme – the CPRS, as suggested by the Kyoto Protocol (SMH 2007). The Department also attached relevance to the EU ETS and a few other schemes such as New Zealand Emissions Trading Scheme (NZ ETS) (DCC 2008). In addition, another important domestic reference was derived from the *Garnaut Climate Change Review* (2008).

5.2.3 Controversies over the Garnaut Climate Change Review

The *Garnaut Climate Change Review* was an independent study by economics professor Ross Garnaut (2008), which was commissioned on 30 April 2007 when the Howard Liberal Party was still in power. Similar to the *Stern Review* (2007)²⁴ in the UK, the *Garnaut Climate Change Review* aimed to rationalise economic benefits with climate change and sustainable development (Simnett et al. 2009). After the election of the Rudd Labor Government in December 2007, the Government joined the states and territories in participating in the Review (Garnaut 2008). The report was presented to the Prime Minister and eight states and territories on 30 September 2008 (Garnaut 2008). It analysed the costs and benefits of climate

²² In 2012, the Labour Government ambitiously set its commitment to a long term target to cut pollution by 80 per cent below 2000 levels by 2050 (DCC 2012), making an additional commitment of 20 per cent, compared to its goal of 60 per cent in 2007.

²³ As indicated in Section 4.3, the ‘Department’ is used to represent the Government function in the rest part of the thesis.

²⁴ Nicholas Stern is Chair of the Grantham Research Institute on Climate Change and the Environment at the London School of Economics. On October 30, 2006 the *Stern Review on the Economics of Climate Change* was released to the British government, and it provided the most comprehensive economic review on the effect of climate change. Based on an assessment of the science carried out by the IPCC in 2001, the Stern Review calculates that the dangers of unabated climate change would be equivalent to at least 20 per cent of GDP each year, <http://www.global-greenhouse-warming.com/stern-review.html>.

change and began the introduction of the CPRS in Australia. The draft review released in June 2008 formed the basis for the *CPRS Green Paper*, while the final report released in September 2008 formed the foundation for the *CPRS White Paper* (DCC 2008).

Garnaut (2008) emphasised Australia's critical vulnerability of exposure and sensitivity to the potential impact on climate change by referring to the visible evidence that 'temperatures in Australia rose slightly more than the global average in the second half of the 20th century' (pp105-121). Garnaut (2008) recognised that Australia's per-capital emissions were the "highest in the OECD and among the highest in the world"²⁵. As analysed by Garnaut (2008), the growing amount of emissions was largely due to a rapid growth in the energy sector from 1990 to 2005 in Australia. Despite scepticism regarding the validity and reliability of the IPCC's scientific evidence, as well as the uncertainties related to emissions measurement, Garnaut (2008) argued that there was no time to wait for a more effective solution even though the Kyoto Protocol was not an adequate global response to climate change. Given that the Australian economy relies heavily on the coal-mining and energy sectors, Garnaut (2008) proposed a compensation for trade-exposed emissions-intensive industries (TEEI). Following this proposal, an assistance program was specified by the Labor Government in the subsequent *CPRS Green Paper*, although its title was revised to refer to emissions-intensive trade-exposed (EITE) industries (DCC 2008).

The *Garnaut Climate Change Review* received a varied response, as presented by the submissions to the *CPRS Green Paper*. Most of the debates were focused on the EITE assistance program, claiming it was a 'seriously flawed pro-coal Garnaut Climate Change

²⁵ In May 2010, The *Times* magazine ranked Australia as producing the "third largest amount of carbon dioxide per capita in the world", despite being one of the more sparsely populated nations (Kanenev 2010).

Review'. Moreover, the validity of the roles economists played in the climate change was also questioned compared to those of scientists and engineers (Appendix 5).

5.2.4 Controversies over ratification of the CPRS

As a consequence of Australia's ratification of the Kyoto Protocol, the Labor Government intended to commence the CPRS on 1 July 2010 (DCC 2008). Apart from the CPRS, the Australian Government had another option: a carbon tax. Even though both mechanisms place a price on carbon, the former imposes a quantity limit on emissions and relies on the government's regulation, while the latter imposes a price on emissions directly through a tax rate applied to the polluting entity (Andrew et al. 2010). Compared to a carbon tax, the key benefit of the CPRS, as claimed by the Department in the *CPRS White Paper*, is that "it secures the environmental objective by controlling the quantity of emissions directly" (DCC 2008, pp5-17). To justify its decision, the Labor Government also highlighted the global financial crisis to account for "the need for a prudent and balanced approach to delivering the CPRS" (DCC 2008, pxvi).

In proposing participation in the CPRS, the Labor Government faced strong opposition from political parties as well as the wide public, as shown from the submissions to the *Green Paper* (Appendices 5 and 6). Even though the Department claimed that the 'majority' of the submissions to the CPRS *Green Paper* supported the Scheme in December 2008 (DCC 2008), the Rudd Government formally announced in May 2009 that it would postpone the CPRS for another year to July 2011, reemphasising the 'global economic crisis' (AAP 2009). In the later part of 2009, the ratification of the CPRS to be implemented in 2011 was rejected by the Australian Senate in both August and December 2009 (Sartor 2010). It was during this time that the NGER Audit Instruments were published.

On 27 April 2010, then-Prime Minister Mr Kevin Rudd made an announcement that the implementation of the CPRS should be deferred for an indeterminate period (DCCEE website 2010). In less than two months Mr Rudd had to step down as Prime Minister, which was claimed to be partly his failure to put forward a concrete proposal on the CPRS. What is ironic is that he came into power mainly for the same reason (Dow Jones Business News 2010). On 5 April 2011, Mr Rudd publicly admitted that it had been a mistake to delay the CPRS during his term as Prime Minister of Australia (ABC Transcripts 2011).

In November 2011, during the multi-party Gillard Government, the Clean Energy Act 2011 and the Carbon Pricing Scheme (CES) were passed which introduced the Carbon Pricing Mechanism (CPM). The CPM set a price on carbon, starting at \$23 a tonne from July 2012 and was planned to rise by 2.5 percent each year in real terms. From 2015 the price would be set by the market under a 'cap and trade' scheme (CER Website 2012). In comparison with the CPRS, the CPM covered about 60 percent of emissions (around 500 of the largest emitters), compared to about 85 percent in the previously proposed CPRS. Moreover, it only included four of the six greenhouse gases covered under the Kyoto Protocol (Parliament of Australia 2014).

To streamline the reporting obligations of the NGER and CPM, a new regulator, the Clean Energy Regulator (CER), was established by the Clean Energy Regulator Act 2011, who was to take over responsibility for the functions previously held by the DEDO of the DCCEE from 2 April 2012 (AUASB 2012). From 1 July 2012, as under the proposed CPRS, corporations with over 125,000 tonnes of CO₂-e Scope 1 emissions would be required to submit a reasonable assurance report under the CPM (AUASB 2012). On 1 July 2014,

however, the Clean Energy Act 2011 was repealed by the current Abbott Liberal Government; therefore the CPM will be abolished from 2015 (CER 2014) .

The political uncertainty regarding the ratification of the CPRS was one of the significant elements that mediated the translation of the greenhouse and energy auditing. The next two sections of this chapter will turn to the proposal of assurance for the CPRS by the Department in the *CPRS Green Paper* and responses from interested stakeholders, which started the first lobbying process for greenhouse and energy auditing.

5.3 Problematisation of CPRS assurance and strategies adopted by the Department

Assurance was only generally proposed by the Department in the *Green Paper* in July 2008 (DCC 2008). Of the paper's 13 chapters and 532 pages, assurance covers only four pages. As noted by the AUASB in its 32th Board meeting minutes, "the paper does not fully address audit issues" (AUASB 2008). However, the importance of the *Green Paper* for greenhouse and energy auditing should not be neglected because it was through this paper that the NGERs was proposed as the starting framework for monitoring, reporting and assurance under the CPRS (DCC 2008).

The two greatest obstacles the Department faced were regarding how to enrol the auditees and the absence of IASE 3410/ASAE 3410 at the time. In dealing with these obstacles, the Department proposed mandatory assurance for large emitters and alignment of financial reporting and greenhouse gases verification systems. Under these strategies, the Department also proposed to work together with the AUSAB; interestingly, it used mixed auditing terminologies such as assurance and verification in the *Green Paper*. The following

subsections discuss the obstacles faced by the Department and the strategies it adopted in more detail.

5.3.1 Distinguishing CPRS assurance and enrolling large emitters

The objective of assurance under the CPRS was to obtain accurate and robust emissions data for an effective cap and trade program, however, the Department also admitted that it had to face two main challenges. The first was related to its impact on the potential auditees which involved the uncertainties and excessive cost to be imposed on liable entities (DCC 2008). The Department proposed two options. One was to have self-assessment which would minimise the costs for entities, but it would be risky for the Scheme to obtain robust data. The other option was to have mandatory third-party assurance which would ensure the credibility of the emissions data, but potentially add extra compliance costs for the entities.

As introduced, before the CPRS, there had been established a number of emissions trading schemes nationally and internally, including the EU ETS, RGGI, Alberta Scheme, JV ETS, and NSW GGAS (Nugent & Simnett 2008; Green et al. 2009). Additionally, NZ ETS commenced in 2008, which was expected to cover full sectors and gases in 2013 (DCC 2008). Different schemes accepted different reporting and assurance requirements. For example, the EU ETS has binding rules for monitoring and reporting guidelines and third-party verifications; the JV ETS requires reporting and verifications, while verifications should be conducted by reviewing the monitoring report and on-site visits by qualified members of the Operational Entity Association of Japan (Nugent & Simnett, 2008). In Australia, the extant NSW GGAS requires both compliance reporting and compliance audits (Nugent & Simnett, 2008). Different to these international and domestic schemes, third-party assurance for large emitters (with 125,000 tonnes of CO₂-e Scope 1 emissions or more) was proposed by the

Department for the CPRS in consideration of the compliance burdens likely to be placed on small entities (DCC 2008). This proposal attached reference to the requirements of third-party verification for the EU ETS and assurance for financial statements specified by the Corporations Act 2001 (DCC 2008). Obviously, assurance for the CPRS required higher level of assurance than other schemes and although not explicit, it indicated the potential relevance of the accounting profession in assurance.

To enrol the large emitters, the Government proposed two rates of assistance based on Garnaut (2008). These included 90 percent for activities that had at least 2,000 tonnes CO₂-e per million dollars of revenue, and 60 percent for activities that had at least 1,500 tonnes CO₂-e per million dollars of revenue²⁶. It was estimated that EITE industries would be allocated around 25 percent of total carbon pollution (DCC 2008). The assessment period started from 1 July 2004 to 31 December 2008. The Department also announced that the share of permits provided to EITE industries would increase over the first 10 years of the Scheme (DCC 2008). It should be noted that although the EITE assistance program was part of the design of the CPRS, the assurance framework for EITE assistance was to be developed in advance of the audit framework of the CPRS, and was independent of the CPRS and the NGERs as a whole (DCC 2009).

5.3.2 Aligning financial and emissions reporting and verification systems with AUASB

In addition to attach relevance of assurance for financial statements specified by the Corporations Act 2001, the Department proposed to align financial and emissions reporting and verification systems (DCC 2008, pp208-209). However, the second challenge the Department faced was the absence of specific international standards for emissions assurance

²⁶ The *CPRS White Paper* further reduced the lower level from 1,500 to 1,000 tonnes CO₂-e per million dollars of revenue (DCC 2008).

and accreditation for auditors at the time (DCC 2008). The Department put forward its proposition that emissions reports submitted for the CPRS be audited in accordance with the requirements set out under the NGER Act and standards produced by the AUASB (DCC 2008). Meanwhile, the AUASB was expected to act as a liaison between the Department and the IAASB (AUASB, 2008). Compared to the IAASB, the AUASB is an Australian Government body whose primary function is to make legally enforceable auditing standards for the purpose of the corporation's legislation and to formulate auditing standards and guidance for other purposes (AUASB 2010). AUASB therefore tends to have a broader mandate than the IAASB in formulating auditing and assurance standards (Green et al. 2009).

During that period, the AUASB issued ASAE 3000 in July 2007, and was planning to issue ASAE 3100 *Compliance Engagements* in September 2008 (AUASB 2013). As acknowledged by the AUASB in its 29th Board meeting minutes, these two standards were expected to be incorporated into the NGER external audit instruments once ASAE 3100 was finalised (AUASB 2008). With regard to formal recognition of external auditors, the minutes stated that all third-party assurance providers would be accredited to ensure a pool of properly trained and qualified providers (AUASB 2008).

5.3.3 Reshuffling auditing terminologies from different auditing professions

The auditing terminology used in the *Green Paper*, such as 'audit', 'assurance' and 'verification', also deserves attention. For example, one instance can be found in the new term 'assurance audit':

The scheme regulator would have powers to conduct *assurance audits* using a risk-based approach for all emissions reports submitted under the scheme, as is the current approach under the NGER System (DCC 2008, p208, emphasis added).

The term ‘assurance audit’ is interesting. According to the AUASB, assurance includes two types of engagements: reasonable assurance (also called audit) and limited assurance (also known as review). Obviously the new term may imply a different relational structure between audit and assurance. Important evidence can be found in the meeting minutes of the IAASB Australian Roundabout meeting in May 2008 which was attended by Department and the accounting bodies CPA and ICAA. IFAC (2008) wrote in its minutes:

“External audit” is used in the NGER Act, but refers to the post lodgement compliance mechanism and is about the relationship between the regulator (GEDO) and the company. It could relate to an “audit” (reasonable assurance), limited assurance or agreed-upon procedures (IFAC 2008).

This excerpt suggests that ‘audit’ for the NGER and CPRS bears a different meaning to its common understanding as defined by the accounting profession. Another example can be related to the use of verification, for example, the Department stated:

This chapter refers to the ‘assurance’ as opposed to the ‘verification’ of emissions reported by entities. This distinction is made to bring terminology into line with that used in the audit industry, where ‘assurance engagements’ are undertaken by accredited auditors to provide reasonable assurance that an organisation has complied with its reporting obligations; and to retain the principle that the reporter remains responsible for accuracy of any reported information, even after assurance is completed (DCC 2008, p217, emphasis added)

Thus the Department intentionally reshuffled auditing terminologies from different audit professionals. Noticeably, no stakeholder actor raised any question with regard to these terminologies. However, they were subjected to vigorous debates by the accounting professions in the subsequent lobbying processes.

5.4 Lobbying over CPRS assurance from stakeholder actors

After presenting the initial propositions held by the Department in terms of CPRS assurance and the strategies used in introducing its propositions, this section focuses on the stakeholders' reactions to these propositions. Owing to inadequate enthusiasm from the wider range of professional stakeholders at the stage, this section only presents some initial stakeholders' concerns and interests, which distinguished the three main actor groups: emitting entities, engineering actors and accounting actors.

5.4.1 Visible actors and their representation strategies

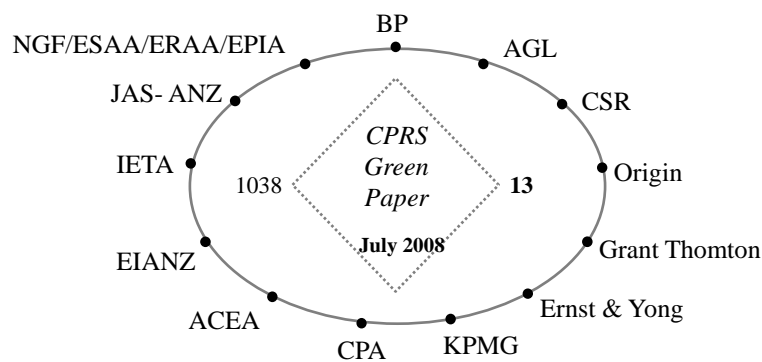


Figure 5.1: Visible stakeholders enrolled in the CPRS Green Paper

Only a few stakeholders were enrolled in the initial lobbying for assurance under the CPRS. As shown in Fig. 5.1, out of more than 1,000 submissions to the *Green Paper*, only 13 responded to the assurance issue, reflecting the importance of these actors and their sensitivity and interests to the new assurance market. They included the four large industry emissions emitters or energy consumers: BP, Origin, AGL and CSR; industry bodies ESAA and IETA; the environmental and engineering institutes ACEA and EIANZ; the accounting auditing firms Ernst & Young, KPMG and Grant Thornton and the accountant professional

body CPA Australia; and the accreditation body for verification in Australia and New Zealand, JAS-ANZ (Fig. 5.2).

Industry	Accounting	Engineering	Accreditation
ESAA	KPMG	EIANZ	JAS-ANZ
IETA	Ernst & Young	ACEA	
BP Australia	Grant Thornton		
Origin	CPA Australia		
AGL			
CSR			

Figure 5.2: Actors enrolled in the *CPRS Green Paper* lobbying

As addressed, representation is an important strategy for mobilisation (Callon 1986). Representation had also been found to be a distinctive character of lobbying behaviour (Jeppesen 2010). In the submissions to the *Green Paper*, most of the stakeholders emphasised their representation of particular sectors and their significance to the Australian economy and business. Particularly, adjectives such as ‘leading’, ‘significant’, ‘peak’, ‘only’, ‘oldest’, ‘representing’ were used and/or supported by ‘hard facts’ such as the number they employed or their economic value. For example, the three professional bodies and the accreditation body claimed that:

The Association of Consulting Engineers Australia (ACEA) is an industry body *representing* the business interests of firms providing engineering, technology and management consultancy services. There are over 260 firms, from large multidisciplinary corporations to small niche practices, across a range of engineering fields represented by ACEA with a total of some 41,000 employees (ACEA submission, emphasis added).

EIANZ is the *peak* professional body in Australasia for environmental practitioners, and promotes independent and interdisciplinary discourse on environmental issues (EIANZ submission, emphasis added).

JAS-ANZ is an international organisation established by treaty between the governments of Australia and New Zealand and the government-appointed *accreditation body* responsible for providing accreditation of conformity assessment bodies in the fields of certification and inspection including GHG validation and verification (JAS-ANZ submission, emphasis added).

CPA Australia *represents* the diverse interests of more than 117,000 finance, accounting and business advisers. Our organisation is committed to working with governments and their agencies to ensure current and future economic and social policies foster an environment that facilitates sustainable economic growth (CPA submission, emphasis added).

However, there were also some exceptions, in particular, the two Big 4 accounting firms KPMG and Ernst & Young and the large emitter BP did not use the representational strategy, indicating their confidence with their international recognised identities. It is important to note that the stakeholders involved in the lobbying were representative, similar to the fishermen in the case of fishermen and scallops (Callon 1986).

5.4.2 Stakeholder actors' concerns over assurance

In response to the 'assurance' requirements defined in the *Green Paper*, the three stakeholder groups demonstrated varied and even distinctive opinions. The most controversial issues are focused on the cost of assurance for large emitters, aligning financial and emissions reporting and verification systems as well as auditor accreditation.

5.4.2.1 Initial concerns for independent assurance

Since the proposal of mandatory external assurance for large emitters (125,000 tonnes of CO₂ equivalent or more) would directly affect the industry, especially the emissions intensified sector, it drew wide interest from the industrial actors; however, they expressed different opinions (Fig. 5.3).

Department's Proposal	Actors	Representation	Response
large emitters (125,000 tonnes of CO _{2-e} or more) would be required to have their annual emissions reports assured by an independent accredited third party prior to the submission	BP Australia	a large emitter (oil)	Support
	Origin	a large emitter (energy)	Support
	AGL	a large emitter (energy)	Questioning
	CSR	a large emitter (manufacturing)	Questioning
	ESAA & NGF & ERAA & APIA	energy associations	Not Support
	IETA	182 member companies include some of the world's largest industrial and financial corporations	Support
	CPA Australia	more than 117,000 finance, accounting and business advisers	Support

Figure 5.3: Stakeholders' responses to mandatory external assurance for the CPRS

For the industry actors, cost was generally a concern regardless of whether they conditional supported the proposal (e.g. BP submission 2008), questioned it (e.g. AGL submission 2008) or disagreed with it (e.g. ESAA submission 2008):

BP supports initial mandatory third party assurance for large users. Once a robust system has been established, there should be the provision for *self-assessment* with periodic audits. This would *align with the tax system practices* and *reduce the cost burden* of this assurance process (BP submission 2008, emphasis added).

AGL suggests that the benefits of this approach need to be *balanced against the costs* of such a requirement. AGL suggests a degree of discretion is appropriate (AGL submission 2008, emphasis added).

Third party assurance audit requirements should be on an exceptions basis where the scheme regulator has cause for concern; universal requirement would be an *unnecessary cost burden*. Self-assurance models as in MRET and the proposed NZ ETS are preferred (ESAA submission 2008, emphasis added).

Moreover, the matter of alignment with the NGER was also raised as a concern. While some actors believed that the requirement under the NGER and the CPRS was consistent (e.g. Origin submission 2008), others disagreed (e.g. CSR 2008):

Origin supports independent assurance for large emitters and that these requirements are consistent with NGER (Origin submission 2008)

Assurance should align with NGERs requirements. However, *NGERS does not require mandatory audits* whereas the Green Paper suggests mandatory audit for all emitters over 125,000 tpa. The rationale for a different approach is not clear (CSR submission 2008, emphasis added).

Among the supporters, some actors explicitly proposed third-party verification to the emissions trading scheme (e.g. IETA submission 2008). Distinctively, accounting actors (e.g. CPA Australia) promoted independent external assurance prior to submission for *all* liable entities, not only large emitters:

Market credibility requires that data used for trading is reliable, true, and fair. While there may be some circumstances in which it is not necessary, in *most cases* the third-party verification model is the *best means* of providing this credibility (IETA submission 2008, emphasis added).

Assurance of emissions reporting be undertaken by independent third-party assurers, *for all liable entities*, prior to the submission of the reports (CPA Australia 2008, emphasis added).

Given that the *Green Paper* was more focused on the impact on potential auditees, unsurprisingly large emitters were more active in the initial consultation. Compared to the general silence of the engineering firms, the reactions of the accounting profession demonstrated more interest in the new field, a significant change from their initial lack of interest in environmental auditing two decades previously (Hillary 1993; Power 1997b).

5.4.2.2 *Contesting opinions to aligning financial and emissions verification systems*

Although the Department did not explicitly address the relevance of auditing expertise in the *CPRS Green Paper*, its proposal to rely on the AUASB in developing assurance guidelines and aligning financial and emissions reporting and verification systems aroused wider concerns from the stakeholder actors, particularly, non-accounting actors (Fig. 5.4).

Government Proposal	Actor	Representation	Actor's Opinion
Align financial and emissions reporting and verification systems	Ernst & Young	Accounting Big 4 firm	Support
	KPMG	Accounting Big 4 firm	Support
	Grant Thornton	Accounting Big 6 firm	Support
	CPA Australia	Accounting Institute	Support & Suggestion
	EIANZ	Environmental Institute	Not Support
	ACEA	Engineering Association	Not Support
	JAS-ANZ	Accreditation body	Not Support
	Origin	Large emitter	Not Support
	AGL	Large emitter	Support

Figure 5.4: Contesting opinions on aligning financial and emissions reporting and verification systems for the CPRS

Accounting actors

Undoubtedly, none of the accounting actors was against the proposal. Although some accounting actors raised the urgency for the AUASB to develop an appropriate standard by aligning with the IAASB (e.g. KPMG submission 2008), other accounting actors believed that the lack of a detailed emissions reporting standard was unlikely to hinder the ability of assurance (e.g. Ernst & Young submission 2008). They stated:

We believe this standard should be ASAE 3000 until such time as the AUASB issues additional guidance and standards on the specific topic of emissions (Ernst & Young submission 2008).

KPMG believes that costs of compliance associated with this assurance may be minimized by assessing how emissions reporting and financial statement assurance can be aligned. We

commend the Government's approach to the development of assurance frameworks in conjunction with the AUASB. KPMG would encourage further alignment with International Auditing and Assurance Standards as far as possible (KPMG submission 2008).

Notably, CPA Australia also acknowledged the relevance of the engineering profession in the field:

ASAE 3000 and ASAE 3100 Compliance Engagement should be the assurance standards... Membership of professional bodies like CPA Australia and *Engineers Australia* should be recognized as one pathway to be eligible as an 'assuror' (CPA Australia submission 2008, emphasis added).

Environmental and engineering actors

In contrast, none of the environmental consulting actors or the accreditation body supported the proposal. To the contrary, engineering actors proposed the relevance of environmental auditors and ISO 14064:3 *Greenhouse gases – Part 3 Specification with guidance for the validation and verification of greenhouse gas assertions* and ISO 14065 *Greenhouse gases – requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* as the appropriate standards (e.g. EIANZ, ACEA and JAS-ANZ submissions 2008):

The Department of Climate Change should seek to provide an opportunity for industry to elect to use ISO 14064.1 in combination with specific NGERS quantification and reporting methodologies (JAS-ANZ submission 2008).

We recommend environmental auditors who qualify under AS ISO 14064:2006 and ISO 14065:2007 be included in the list of people *who can sign off on the external audit* of a National Greenhouse and Energy Report (ACEA submission 2008, emphasis added).

We strongly believe environmental auditors should *retain the right to provide sign-off of external audit reports* as required under the CPRS (EIANZ submission 2008, emphasis added).

The contesting attitudes between the accounting and engineering actors in terms of the AUASB and the ‘auditing’ standards towards the emissions ‘verification’ system signalled the potential controversies in subsequent lobbying with regard to the boundary of greenhouse and energy audits and the relevance of auditor expertise (see Chapter 6). Also as highlighted in the above quotations, the environmental-engineering actors emphasised the leadership of environmental auditors in signing off on audit reports. Distinctively, the trials of strength in attaching relevance to team leadership became the most controversial issue in the third lobbying episode (see Chapter 7). Moreover, attention also needs to be paid to the terminologies used in different documents, especially in regard to ‘audit’ and ‘verification’. The arguments about the language used for assurance by different professionals later became one of the most controversial issues in lobbying the relevance of auditor expertise (see Chapter 7).

Industry actors

As a matter of concern, most of the emitters kept silent with only a few exceptions. Generally cost was a concern for the industry entities as liable auditees. While some large emitters supported aligning financial and emissions reporting and verification systems (e.g. AGL submission 2008), some resisted the proposal, instead supporting ISO on the grounds of reducing compliance costs (e.g. Origin submission 2008). Others proposed the relevance of both accountants and engineers (e.g. BP submission); for example:

[l]imiting an examination of financial information (such as billing invoices) to a person holding an accounting qualification and an examination of technical information (such as

emission measurement methodologies) to a person holding an engineering qualification would result in inefficiently large audit teams being required (BP submission 2008).

Large corporations, particularly those with international operations, may wish to have external assurance of corporate inventories (consistent with ISO 14064.1 and GHG Protocol) conducted according to these standards. It is logical therefore that NGER and CPRS would accommodate these standards also, to eliminate the requirements for multiple audits of the same data (Origin submission 2008).

If cost was a concern for emitters to select an auditor, by the same token the cost consideration was also a reason for accounting actors to justify their proposal of aligning financial and emissions assurance (e.g. KPMG submission 2008). These varied attitudes towards assurance providers from the auditees are similar to those encountered in relation to the issue of sustainability assurance, in which the accounting profession - especially the Big 4 auditing firms - shared the market with the engineering consulting firms (Simnett *et al.* 2009). According to Simnett *et al.* (2009), there was little cross-selling in the sustainability assurance service; companies would keep the same assurance provider for a number of years. Simnett *et al.* (2009) disclosed that although the Big 4 auditing firms charged nearly four times²⁷ more than the other profession (e.g. environmental engineers), a considerable percentage of large companies still preferred to use the accounting profession for sustainability assurance to increase credibility. Hence, it is not surprising to see the different preferences towards auditor from the auditees' perspective. However, rather than exploring why the industry actors held different preferences for auditors, this thesis is more interested in the effect of their preferences in mediating the translation of greenhouse and energy auditing.

²⁷ This information was also confirmed in my interview with the environmental engineer.

5.4.2.3 *Interests on accreditation for verification companies*

Along with standards, accreditation is another important area to institutionalise auditing know-how (Power 1997b). As the Department proposed to recognise only individual auditors rather than their organisations, it was opposed by the accreditation body JAS-ANZ and the emissions network IETA with reference to the EU ETS. They stated:

The NGER Act 2007 should be amended to enable recognition of JAS-ANZ accredited verification and validation *bodies* in addition to the ‘*individuals*’ currently recognized under the Act.... EA-6/03 –EA Document for Recognition of Verifiers under the EU ETS Directive (2010) defines a “Verifier” as meaning a competent, independent, accredited *verification body or person* (JAS-ANZ submission 2008, emphasis added).

The accreditation of technical *verification companies* is currently not addressed in the Green Paper. We urge the Department on Climate Change to take into consideration the competencies amongst existing technical *verification companies* to lead and conduct rigorous verifications of greenhouse gas inventories, and to provide a reasonable level of assurance on the reporting process. *This is the approach that is in use in EU ETS and the Climate Registry in USA* and it has proved effective and suitable (IETA submission 2008, emphasis added).

It was noted later that in the third lobbying episode, the Department proposed to consider registration of auditor firms “once a pool of auditors is well established in Australia” (DCC 2009, p20). In contrast to engineering actors, accounting actors kept silent on the issue of accreditation at this stage. However, these actors raised more recommendations on auditor expertise, such as consistency with the level of assurance specified in the ASAE 3000 in terms of audit, review and agreed-upon procedures (e.g. Ernst & Young submission 2008) and the independence and quality assurance knowledge and expertise required in the assurers’ competences standard (e.g. CPA Australia submission 2008; Ernst & Young submission 2008). These issues then became more useful later on in the trials of strength with the engineering actors in competing for relevance of expertise and leadership.

5.5 An overview of Episode One – problematisation of assurance for the CPRS

This chapter presents the first lobbying in the ‘extensive consultation process’. As indicated in the beginning of this chapter, problematisation can involve a series of constructing and deconstructing problems. This is especially true for the long processes in problematising greenhouse and energy audits. As inspired by ANT, assurance under the CPRS is treated as one critical part included in the translation of greenhouse and energy auditing, rather than merely a background which would normally be treated in a thesis influenced by social construction. This also reflects the different analytical approach ANT adopts to make a background/foreground reversal, where context is merged with the content (e.g. Callon 1986).

This chapter traces back the controversies surrounded by the notion of climate change in relation to the scientific, political and economic claims, which contributed to the failure of introducing the CPRS as scheduled. This uncertainty consequently added more controversies to the construction of the greenhouse and energy auditing which had initially been proposed to underpin both the CPRS and the NGERs.

In the *Green Paper*, the Department proposed some important preferences for third-party assurance issue and attempted to establish a triangular relationship between the Department, large emitters and auditors. In designing the first inscription for the ‘translation’, the Department adopted some important strategies to draw interests and/or deal with resistance such as limiting mandatory assurance for large emitters, relying on the AUASB and aligning financial reporting and greenhouse verification systems. These strategies aroused different concerns from the three main stakeholder groups; for instance, the emitters were concerned more about the compliance cost, the engineering actors cared about their leadership and the accounting actors seemed more interested in promoting their auditing expertise. But an

interesting strategy that was neglected by the stakeholder actors at the time related to auditing terminology such as ‘audit’, ‘assurance’ and ‘verification’. The Department reshuffled these terms and granted them new interpretations as compared to the common understandings from the accounting profession.

Even though only 13 visible stakeholder actors participated in this lobbying episode, their submissions comprehensively represented the interests from the three stakeholder groups: potential auditees, the accounting profession and the engineering profession. Distinctively, there was a dramatic behaviour change compared to professional reactions to environmental auditing two decades ago, when the accounting profession had lagged behind the engineers (Hillary 1993; Power 1997b). The contesting opinions between accounting actors and engineer actors in regard to the assurance proposal could predict stronger trials of strength in the subsequent lobbying processes.

Chapter 6 Episode Two: Problematisation of ‘external audits’ and trials of strength between ‘technical’ and ‘financial’ in the intersement

6.1 Introduction

This chapter presents the second consultation process. Following with the previous problematisation of assurance for the CPRS, this chapter continues with problematisation of the ‘external audits’ for both the NGER Act and CPRS. It also presents the moment of intersement in which the controversies were surrounded by the trials of strength between the accounting and engineering professions and their respective supporters in establishing the obligatory passage point (OPP). In this translation process, the most controversial issue was whether the knowledge boundary object of ‘external audits’ was going to be more technical, financial or both. Such renderings bear the ‘geometric meaning’ of translation (Latour 1987, p117).

This chapter is organised as follows. Section 6.2 introduces the problematisation of the knowledge boundary object of ‘external audits’ as ‘what they are not’ by the Department and the strategy, and describes the means the Department adopted in terms of auditing standards, auditing terminology and independence. Section 6.3 articulates the stakeholder actors. It is striking because it demonstrates how the stakeholder groups such as accounting, engineering, industry and other actors are reshuffled and consolidated into the *technical-actor-network* and *financial-actor-network* by following the trial of strength between ‘technical’ and ‘financial’ embedded in the lobbying. Section 6.4 then illustrates the strategies of translation adopted by each of the actor-networks in enlisting the Department in their own interest. Both the engineering and accounting professions attempted to attach relevance of expertise, however,

with quite different approaches. In this process of lobbying, it is also interesting to note how the anti-accounting actors resisted the accounting profession.

6.2 Problematisation of the knowledge boundary object of ‘external audits’ and establishing a strategy of ‘multidisciplinarity’

First, in the *External Audit Consultation Paper*, the Department reiterated its position that the AUASB would be involved in developing an external audit framework under the NGER legislation and the CPRS (DCC 2008). Despite opposition from the engineering industry and other stakeholders, the Department reemphasised its intention of establishing a single process of emissions reporting and audits for purposes of both the NGER Act and the CPRS. It also emphasised that the quality of emissions data underpinning the CPRS would need to be “investment grade to provide the market with a solid foundation for decision making” (DCC 2008, p2). The Department also emphasised its intention to establish a multi-disciplinary team to serve as external auditors (DCC 2008, p6).

In setting up this multidisciplinary audit team, the Department adopted five means to draw interests from both the engineering and accounting profession: 1) problematising the ‘external audits’ as what they were not; 2) mixing standards from both the accounting and engineering professions; 3) creating a new auditing terminology; 4) categorising two types of external auditor and; 5) compromising the independence of technical experts. Based on the strategy of multidisciplinarity, auditing terminology and independence were especially transformed by the Department.

6.2.1 Problematising external audits as what they were not

External audits of emissions and energy under the NGER Act or future legislation to underpin the Carbon Pollution Reduction Scheme are *clearly distinguishable from financial or environmental audits, reviews and other procedures of an audit Nature*, as they *do not* comprise the same information. However, *many* of the essential principles, basic procedures and understanding of corporate financial information, environmental and quality audits may be *relevant* to external audits of emissions and energy information (DCC 2008, p6, emphasis added).

The above statement presented how the Department interpreted the term ‘external audits’. In the first place, the negative format of external auditing exemplifies the unfolding characteristic of auditing as a knowledge object (Knorr-Cetina 1997). Knorr-Cetina (1997) described:

[t]hings that continually ‘explode’ and ‘mutate’ into something else, and that are much defined by what *they are not* (*but will, at some point, have become than by what they are*) (Knorr-Cetina 1997, pp14-15, emphasis added).

Hence, it also implies a process of transforming ‘what they are not’ to ‘what they are’ by creating ‘convergences and homologies’ (Callon 1981, p211) from different audits such as financial audits, environmental audits and reviews and other procedures of an audit-like nature. This was the purpose of the consultation processes: what Callon (1986) has termed as ‘problematisation’. It is strongly reminiscent of the studies conducted in reopening the black box of auditing knowledge in constructing relevance and legitimacy in non-financial audit fields, such as environmental audits (e.g. Power 1997b), quality audits (e.g. Gendron et al. 2007) and e-business audits (Gendron & Barrett 2004)²⁸. According to Power (1996b), an emerging type of audit, such as environmental auditing, is never constructed as something completely new; rather, it is a series of continuous transportations and transformations

²⁸ See Section 3.2 for more discussion about construction of new audit expertise in emerging non-financial audit fields.

accomplished by realigning particular portfolios of competences from existing auditing types. In such a process, by carving out a territory and creating frontiers between what is and is not relevant from existing financial and environmental audits (Callon 1981), the newly established external audits would be subject to “many trials of strength through which are revealed which link is solid and which one is weak” (Latour 1987, p200).

Consequently, the ‘external audit’ as interpreted by the Department was likely to reshuffle the interests and goals from both financial and engineering auditors. This is what Latour (1987) termed as ‘the fourth rule of translation’. Such a strategy is dialectical. On the one hand, it would limit the number of enrolments of auditors; on the other hand, it does not eliminate their enrolment from the existing professional groups. Moreover, the Department proposed that ‘external audits’ also differed from other processes of environmental programs and legislation in that

[a] variety of standards, approaches and *terms such as ‘verification’ and ‘audit’* are used to describe concepts and processes applicable within the specific context of each program (DCC 2008, p6, emphasis added).

In the above statement, the Department emphasised the use of terms such as ‘audit’ and ‘verification’ in different types of audit. Notably the term ‘verification’ is claimed by the engineering auditors in more recent studies (Owen & O'Dwyer 2005). Similar to the construction of environmental auditing, it can be predicated that in translating external audit under the two schemes, existing expertise in terms of ‘audit’ and ‘verification’ need to be reconfigured “by the re-alignment of a particular portfolio of competences” (Power 1997b, p133).

6.2.2 Mixing auditing standards from the AUASB and ISO

The Department's strategy of multi-disciplinarity was also shown by the relevant standards it proposed which included standards developed by both the AUASB and ISO; for example, ASAE 3000, ASAE 3100, ISO 14064-3:2006, and ISO 19011:2002 *Guidelines for quality and/or environmental management systems auditing*. In addressing the relevance of these standards, the Department proposed that:

ISO 14064-3:2006 provides principles, requirements and guidance for those conducting greenhouse gas information validation and verification ... *thereby providing a useful basis for development of components of the NGER external audit legislative instrument* (DCC 2008, pp27-28, emphasis added).

ISO 19011:2002 - *Guidelines for quality and/or environmental management systems auditing* was drafted to be flexible and *can be used* for audits of different scope size and complexity (DCC 2008, p29, emphasis added).

The AUASB Standard on Assurance Engagement ASAE 3000 supports many of the envisaged mandatory requirements for the conduct of external audits and provides explanatory guidance, thereby *providing a useful basis for development of the NGER external audit legislative instrument* (DCC 2008, p24, emphasis added).

The AUASB has also recently issued "Standard on Assurance Engagements ASAE 3100 *Compliance Engagements*". This standard references ASAE 3000 both in its mandatory provisions and explanatory guidance notes, and *would also be referenced within the NGER external audit guidelines instrument* (DCC 2008, p24, emphasis added).

As emphasised in the above statements, the four standards were endowed with different levels of relevance. While the Department acknowledged that both ISO 14064-3:2006 and ASAE 3000 were 'providing useful basis', to a lesser extent, ASAE 3100 'would also be referenced' and ISO 19011:2002 'can be used' (DCC 2008, pp24-28).

Compared to the *Green Paper*, the Department explicitly indicated the relevance of ISO 14064-3:2006, reflecting the lobbying of the engineering practitioners in their submissions to the *Green Paper* (Section 6.3.2). In contrast to the AUASB, the ISO is a non-governmental standard-setting organisation (Francis 2011). Although very little was known at the time about its governance structures or operations, what known was that ISO was a big competitor to the Big 4 accounting firms. For instance, it was found that “ISO’s revenues in 2009 were slightly larger than the combined 2009 global revenues of both KPMG and Ernst & Whinney” (Francis 2011, p3). However, in calling for submissions, the Department stated:

Stakeholders are invited to comment on the use/referencing of existing standards such as ASAE 3000 in the external audit guidelines (DCC 2008, p24).

Notably the ISO standards were not mentioned in the above consultation question, indicating the weight the Department put on ASAE 3000 as well as predicting the controversies it may cause in the lobbying process.

6.2.3 Creating a new auditing terminology

The Department introduced three circumstances to initiate external audits under the NGER Act and the proposed CPRS (Fig. 6.1). First, two types of audits were proposed for the NGERs: compliance audits²⁹ and audits for other purposes³⁰. Compliance audits could only be initiated where the GEDO had reasonable grounds to suspect non-compliance, and therefore it might be of a forensic nature. The scope of a compliance audit and the required level of assurance (if any) would differ on a ‘case-by-case basis’, and the expense for conducting such audits was to be carried by the reporting entity. External auditors could be

²⁹ Section 63 states that greenhouse and energy audits are compliance audits which are only applied if the GEDO “has reasonable grounds to suspect that a registered corporation or ‘other person’ responsible for providing information has contravened, is contravening, or is proposing to contravene, this Act or the regulations” (the NGER Act 2007, revision 4, dated 16 October 2009).

³⁰ Section 64 of the NGER Act.

either chosen by the entity or specified by the GEDO. Audits for other monitoring purposes could be initiated by the GEDO and would be conducted at the Government's expense; for example, reviewing industry understanding and use of particular estimation methodologies or the quality management controls used by entities to ensure compliance with the NGER Act (DCC 2008).

Audit under	<i>NGER Act 2007</i>		CPRS		
Nature	post-submission		pre-submission		
Application	non-compliance (section 73)	compliance monitoring (section 74)	large emitters		
Types	case-by-case	case-by-case	reasonable assurance	limited assurance	review of procedures
Cost	entity	government	entity		

Figure 6.1: Contexts of External audits under the NGER Act 2007 and the CPRS as defined in the *External Audit Consultation Paper*

As shown in Fig. 6.1, besides the two types of audit under the NGER Act, the proposed CPRS required pre-submission audit for the liable entities³¹. For this type of audit, the Department especially attached relevance to financial audits, claiming that:

the concept of “assurance” is well established, particularly in the financial audit sector, and is increasingly being adopted in other sectors of the economy where value is placed on an independent third party providing confidence over particular matters (DCC 2008, p9).

This statement exactly explained the intention of the Department to enrol the financial auditors, which would be an important reference in contrast to the resistance from the anti-accounting stakeholders (Section 6.4.1). Three levels of engagements for pre-submission audits were proposed: ‘reasonable assurance’, ‘limited assurance’ or other types of

³¹ Liable entities are those with emissions of 125,000 tonnes of CO₂-e or more.

engagements such as a ‘review of procedures’. In addition, the CPRS liable entities would also be subject to compliance audits up to four years from submission, or unlimited in case of fraud, the same as that specified in the *Green Paper* (DCC 2008).

Apparently, the proposed external audits were going to combine different types of audits. For example, it was argued that many services related to environmental audits were probably limited to compliance audits, and that maybe only compliance audits could be called ‘environmental audits’, as the other types were system-related (Hillary 1991; Gray et al. 1993; Gray & Bebbington 2001; Moore & Beelde 2005). On the other hand, the terms ‘reasonable assurance’ and ‘limited assurance’ were common to financial audits. However, the term ‘review of procedures’, as highlighted in Fig 6.1, was not consistent with the *Green Paper*, in which ‘verification’ was used to compare with ‘assurance’ (Section 6.2.2), nor was it exactly the same as ‘agreed-upon procedures’, a term common in the accounting profession. It should be noted that in the IAASB’s Australian Roundabout meeting, which the Department, the CPA Australia and the ICAA attended, the accounting profession rejected the term ‘verification’ because “it has connotations of 100 percent accuracy” (IFAC 2008).

If the creation of a new term was not a careless mistake, and given the attention the Department itself, as well as the AUASB behind the Department, have placed on the terminologies, it is then not unreasonable to question whether it was not an error but a deliberate intention. If this is the case, then it is reasonable to suggest that the term ‘review of procedures’ was a terminology device the Department used to align more interests with the accounting than the engineering profession. This suggestion could also explain why the accounting actors generally kept silent about this term despite their sensitivity to other auditing terminology in general (Section 6.4.3).

6.2.4 Categorising ‘lead auditors’ and ‘technical experts’

In addition to creating a new term and reshuffling the existing auditing standards, the Department’s intention for a multidisciplinary auditor team was also reflected by its proposal for two type of auditors: lead auditors and technical experts who are “from different subject areas and professions” (DCC 2008, p7). For these two types of auditors, the Department proposed their respective roles as:

- Leading an audit team (‘lead auditor’); or
- Providing ‘technical’ skills and experience e.g. in financial accounting/auditing, engineering or science, or for a more specific area such as coal fired power stations (‘technical expert’) (DCC 2008, p12)

The auditors’ titles could also suggest environmental audits and financial audits. For the accredited environmental auditors, they are called Lead Environmental Auditors (LEAs). For the accounting profession, using an expert such as a lawyer in an environmental audit is not an uncommon practice (Riesel & Zarin 1991 in Power 1997b). Indeed, ASA 620 *Using the Work of an Expert* has legitimised such practices by the accounting profession.

Of the two types of auditors, a lead auditor needs to have more expertise. For example, in addition to leading an audit team, a lead auditor could also undertake an audit independently without technical experts. Importantly, a lead auditor *should understand the work of technical experts* and be able to provide an opinion for an assurance engagement (DCC 2008). Especially, the Department stated that “different categories of lead auditors” could have different sets of skills to perform different roles (DCC 2008, p12). For an audit team, the Department emphasised the importance of “mixed professional expertise and qualifications must be well matched to the level of assurance being provided” (DCC 2008, p12). Some

general attributes were raised for submission in regard to external auditors' professional expertise, including independence, conflicts of interests and relevant experience.

Four accreditation systems were proposed from the existing system, including: 1) the Australian Securities and Investments Commission (ASIC) – accreditation for RCAs; 2) the Registrar Accreditation Board and the Quality Society of Australasia International (RABQSA International) – accreditation for LEAs; 3) ISO – ISO 14065:2006; and 4) accreditation by professional bodies. However, according to the Department, none of the four possibilities was without its scope limitations (DCC 2008). For example, even though ISO 14065:2006 was suggested by the engineering practitioners in their submissions to the *Green Paper* as the accrediting body, its purpose is to accredit firms rather than individual auditors. Moreover, in comparison of the relevance and strengths of RACs and LEAs in conducting external audits, the Department wrote:

RCAs may need to rely on the work of experts from other professional disciplines such as engineering or the sciences. Secondly, *if only RCA status were recognised under the NGER Act and the Carbon Pollution Reduction Scheme, the ASIC focus on accounting professionals could present a barrier to participation in the external auditor role for non-accounting professionals* (DCC 2008, p15, emphasis added).

LEA experience may predominantly relate to audits and reviews of environmental information, *LEAs may need to rely on the work of experts from other professional disciplines such as law or accounting* (DCC 2008, p16, emphasis added).

Apparently none of the professions could conduct the external audits independently without relying on others' work. While the RCAs would need technical expertise from engineering professionals, the LEAs had a lack of experience with assurance engagements. The categorisation of the two types of auditors can be seen as an important means for the

Department to attract interest from both the accounting and engineering professions. However, how to allocate tasks to each of them was not clear at this stage, which caused the trials of strength between the two professional groups in the subsequent lobbying (Section 6.4).

6.2.5 Adjusting independence for technical experts

Independence seemed to be ‘a complex and wide-ranging issue’ especially in view of the limited resources for technical experts (DCC 2008, p21). The Department claimed:

Based on the size of the market in Australia, it may, however, *be inappropriate to automatically preclude all external auditors where a potential conflict of interest may exist. It may, in some cases, be sufficient that the external auditor declare that a potential conflict of interest exists*, that they are aware of the potential threats to their independence and that safeguards have been put in place in order to minimise these threats to acceptable levels (DCC 2008, p22, emphasis added).

The adjustment sounds reasonable given that the existing auditing professionals have not yet adequately established emissions and energy auditing expertise. A common type of conflict of interest would be related to review of one’s own work, because the technical expert may be the only person available to set up the measurement system for the emissions entity. Hence, the Department considered that a form to declare the existence of potential conflict of interest would be acceptable and appropriate for all members, especially the technical experts. This requirement was apparently different to the independence requirement for financial audits. A financial audit does not require disclosing information about team members and technical experts in the auditor report; however, conflicts of interest must be adequately safeguarded. One effective means of doing this is to remove the technical expert from the audit team. More dramatically, the declaration is a form of acknowledging the existence of conflict of interest

rather than its non-existence. Hence, independence became an important device to protect the interests of the engineering profession.

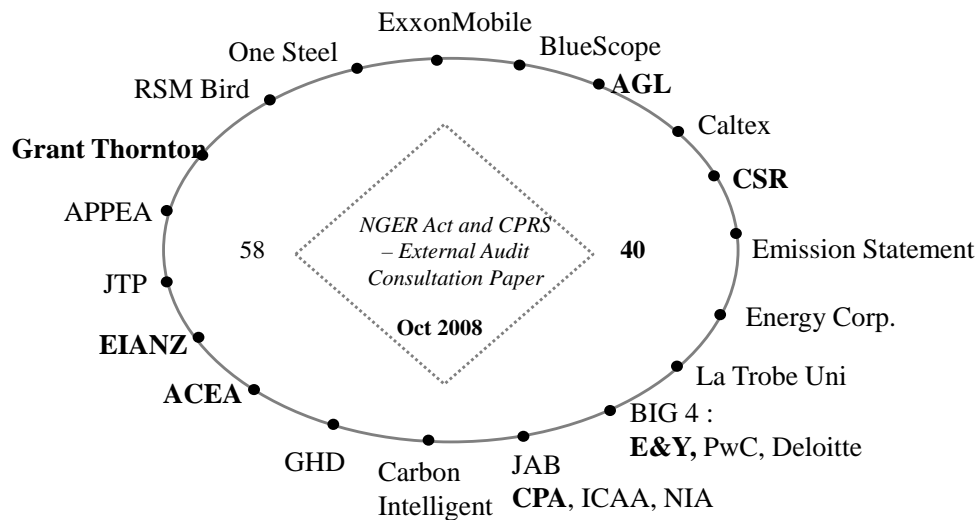
6.2.6 A brief review of the interest of the Department

This section articulates how the Department problematised the ‘external audits’. The critical part was how the ambiguous term ‘external audits’ was translated by the Department to catch the interest of a wide range of auditors from different professional backgrounds. Actually, before obtaining its own name, the loosely defined term ‘external audits’ used in this consultation process was acted as a ‘funnel of interest’ (Callon & Law 1982) that served to specify and mobilise the interested actors in the fact-building process. To establish a multidisciplinary audit team and attract interest from both the engineering and accounting professions, the Department referred to a group of devices, such as existing standards, independence, auditing terminology and categories of auditors. However, how to allocate the roles of the accounting and engineering professions under each of the two categories would only become clear contingent on the trial of strength in lobbying the boundary of the ‘external audits’ between ‘financial’ and ‘technical’. In the next section, the four types of displacements made by the stakeholder actors in terms of ‘technical’ or ‘financial’ are precisely mapped to their different interest, some matched with the Department, others not.

6.3 Displacement of the ‘external audits’ and consolidation of technical-actor-network and financial-actor-network

A variety of stakeholders were interested in and concerned about the external audits. According to the Department (DCCEE 2010), workshops were held in capital cities and were attended by 300 people from different backgrounds. Finally, 58 submissions were received from a variety of stakeholders including engineering, accounting, industry and other sectors

by 14 November 2008. The 40 that were non-confidential are analysed in this section (Fig. 6.2).



Note: Bold type means the stakeholder also submitted to the CPRS Green Paper

Figure 6.2: Visible stakeholders enrolled in the NGER Act and CPRS External Audit lobbying

Of the 40 submissions examined here, 38 percent were from environmental and engineering bodies, firms and individuals, 30 percent from industry emitters and bodies, 13 percent from accounting firms and bodies; and 6 percent from other sectors such as legal, finance, training and education (Fig. 6.3). Six stakeholders had participated in the previous *Green Paper* consultation, including three professional bodies: CPA Australia (financial auditors), EIANZ (environmental auditors) and ACEA (consulting engineers).

As addressed in Chapter 2, Latour (2005a) emphasised that the 'actor' is "anything that does modify a state of affairs by making a difference" (p61). Hence, not every stakeholder was an actor and an entity's status as actor was not solely decided by its established identity as an accounting, engineering or industry body. Rather, their identities were contingent on their roles in transforming the 'external audits'. Therefore, after briefly introducing these

stakeholders according to their established identities in Section 6.3.1, these 40 submissions will be reshuffled and consolidated in Section 6.3.2 and Section 6.3.3 into four actor-network groups according to their translations of the ‘external audits’: (a) technical rather than financial; (b) more technical than financial; (c) ‘both technical and financial’; and (d) more financial than technical. These four types of translations embed a trial of strength in establishing the obligatory passage point as either ‘technical’ or ‘financial’.

	Industry	Engineering	Accounting	Accounting and engineering alliance	Finance	Legal	Standards & Accreditation	Education & Academic	Total
1	ACI	ACEA	Joint Accounting Bodies (JAB): CPA, ICAA, NIA	RSM Bird Cameron & Coffey Environments	NAB	Gadens Lawyers	Standards Australia	LA Trobe University	
2	AIGN	EIANZ	Deloitte Touche Tohmatsu	Pkysis & Sothertons	G100			Swinburne University of Technology	
3	APPEA	AIRAH	Ernst & Young						
4	AGL Energy	GHD	Grant Thornton						
5	Boral	Carbon Intelligence	PwC						
6	BlueScope Steel	Carbon Planet							
7	CSR	Emission Statement							
8	Caltex	Energy Corporate							
9	ExxonMobil	Expert Group							
10	OneSteel	Flinders Partners							
11	QAF Meat Industries	JTP							
12	Wesfarmers	Mining Plus							
13		Parsons Brinckerhoff							
14		Sustainable Strategic							
15		Carol O'Donnell							
Total	12	15	5	2	2	1	1	2	40
Percentage	30%	38%	13%	5%	5%	3%	3%	5%	100%
Note: Bold type highlights stakeholders who have also submitted to the CPRS Green Paper									

Figure 6.3: Visible actors in the NGER Act and CPRS External Audit Consultation

6.3.1 Visible stakeholders and their established identities

Engineering stakeholders

Fifteen engineering stakeholders were enrolled, including three engineering professional bodies: EIANZ (the professional body of environmental auditors), ACEA (the professional body of consulting engineers), and AIRAH (the accreditation body for energy auditors), along with 12 environmental and engineering firms and individual engineers (Fig. 6.4). Most of these actors had already been involved in existing greenhouse and energy emissions verification and audits. For example, GHD as an international professional services company had already been working with the Government on climate-change projects (GHD submission 2009). Additionally, GHD was an audit service panel in the NSW GGAS³² (GGAS 2008). In addition to highlighting their extensive experience in the field of emissions and energy verifications, some actors also explicitly addressed the relevance of the ISO standards as guidelines.

Accounting stakeholders

As shown in Fig. 6.4, five accounting stakeholders were enrolled, including three of the Big 4 auditing firms (the exception was KPMG). Notably the three professional accounting bodies - Certified Public Accountants (CPA) Australia, the Institute of Chartered Accountants in Australia (ICAA) and the National Institute of Accountants (NIA) - established an alliance as the Joint Accounting Bodies (JAB) in this consultation. In addition, one large second-tier accounting firm RSM Bird Cameron, established an alliance with the engineering consulting firm Coffey Environments, and a third-tier accounting firm Sothertons Accountants submitted jointly with an engineering firm Pyksis.

³² NSW GGAS commenced under the Electricity Supply Act 1995 on 1 January 2003 and ceased on 1 July 2012 (GGAS 2011).

As presented in Chapter 3, accounting firms especially the Big 4 auditing firms have increasingly become involved in non-financial audits such as environmental audits, quality audits and sustainability assurance (e.g. Power 1997b; Owen & O'Dwyer 2005; Simnett et al. 2009). It is worthwhile noting that the Big 4 firms no longer fit the description of traditionally recognised accounting firms, because they also employ non-accounting professionals such as engineers and other specialists. However, the submissions from the accounting firms in this case represented the interests of the financial auditors. In relation to climate change projects in Australia, all the Big 4 auditing firms had been enrolled as the audit service panel for the NSW GGAS (GGAS 2008). Notably, among the actors, Ernst & Young was one of the two firms (the other being GHD) qualified to provide a full range of auditing services (GGAS 2010).

Industry stakeholders

The consultation also aroused significant concerns from industry entities. In addition to AGL and CSR, which had participated in the previous lobbying to the *Green Paper*, 10 extra industry stakeholders³³ were enrolled this time. Most of these stakeholders are significant liable entities under the NGERs. According to the released emissions and energy data in 2008 and 2009, among them were the top 20 liable entities in Scope 1 (e.g. BlueScope Steel), Scope 2 (e.g. Wesfarmers, BlueScope Steel) and energy consumption (e.g. ExxonMobil, Caltex, BP, Blue Scope) (Fig. 6.4).

³³ It is interesting to note that the submission of AIGN was identical to that of Wesfarmers, indicating that the two stakeholders had the same interests.

Industry Actors	2009-2010 Ranking			2008-2009 Ranking			Submissions
	Scope 1 emissions	Scope 2 emissions	Energy	Scope 1 emissions	Scope 2 emissions	Energy	
ExxonMobil	26	58	1	26	59	1	External Audit
Caltex	37	53	2	35	51	2	External Audit
Wesfarmers	30	3	26	21	3	22	External Audit
BP	41	37	36	40	36	4	Green Paper
BlueScope	8	10	15	11	13	10	External Audit
One Steel	25	14	25	29	14	25	External Audit
Origin	36	154	14	45	163	26	Green Paper
CSR	61	41	23	58	43	20	Green & External
AGL Energy	43	152	31	38	151	23	Green & External
Boral	31	68	-	-	-	-	External Audit
Total registered entities in 2008 are about 235							
Total registered entities in 2009 are about 325							

Figure 6.4: Ranking industry entities' emissions and energy consumption in 2008 and 2009

Other stakeholders

Besides the three major stakeholder groups – large emitters (potential auditees), engineering practitioners (potential auditors) and accounting professionals (potential auditors) – a number of other stakeholders were also enrolled in this consultation process, including finance actors such as National Australia Bank (NAB) and the Group of 100 (G100). G100 is an organisation of chief financial officers from Australia's largest business enterprises; its purpose is to advance Australia's financial competitiveness (G100 submission 2008); Other stakeholders included training and education institutions such as La Trobe University and Swinburne University of Technology, in particular, professor Carol Adams from La Trobe University, who is a well-known researcher in sustainability reporting and assurance studies in Australia (e.g. Adams & Narayanan 2007); certificate and accreditation bodies such as Standards Australia; and firms in the legal sector such as Gadens Lawyers (Fig. 6-4). The enrolment of these stakeholders suggests the wide interest in 'external audits' aroused in Australia.

Although the four stakeholder groups are identified and some alliances are found within a

few groups, this is not enough for the analysis under the lens of actors and translation. Especially in regard to industry and other stakeholders, no assumption about their role as actors could be made except by following their translations of the ‘external audits’. In the next section, the four types of displacements of the ‘external audits’ rendered by these stakeholders are presented, which form the basis to decide their role as actors in constructing the boundary of the ‘external audits’.

6.3.2 Four types of displacements of the ‘external audits’

As discussed above, the Department interpreted the external audits as “clearly distinguishable from financial and environmental audits” (DCC 2008, p6). This was a rather ambiguous interpretation that left many options that the stakeholders could manipulate. Thus, despite the fact that the Department interpreted financial auditing and accounting as parts of technical expertise paralleling science and engineering in a multidisciplinary audit team (DCC 2008), most of the stakeholders intended to displace financial audits to ‘financial’ and environmental audits to ‘technical’, indicating the clear boundary of each audit. This is another indication that auditing is a boundary object that mobilises different interpretations from stakeholders. Moreover, a considerable number of stakeholders, especially the non-accounting actors tended to counterpose ‘financial’ and ‘technical’ as two opposite and exclusive substances. Hence, once the boundaries of ‘financial’ and ‘technical’ were clearly established, the most controversial matter in lobbying the nature of the ‘external audits’ was whether it would be considered more technical, financial or both.

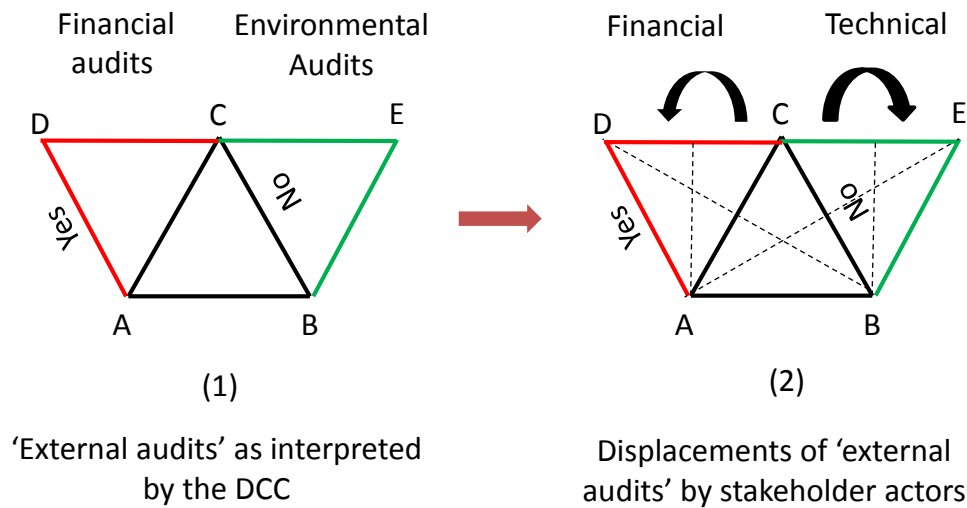


Figure 6.5: Displacements of ‘external audits’ from the Department to stakeholders

The two geometric diagrams in Fig. 6.5 show the movements from what are ‘not financial or environmental audits’ to what are ‘financial or technical or both’. If ΔABC in Fig. 6.5 (1) represents the Department’s interpretation of the external audits, which are “clearly distinguishable from financial and environmental audits” (DCC 2008, p6), then in the stakeholders’ reinterpretation, ΔABC can move to ΔABD , ΔABE , $\square ABCD$, $\square ABEC$ and even more in Fig. 6.5 (2), according to different emphases on ‘financial’ and/or ‘technical’ ((the dashed lines in Fig. 6.5 (2)).

A close examination finds that the stakeholders' reinterpretations showed four main types of displacement: (a) 'technical rather than financial'; (b) 'more technical than financial' (multidisciplinary with an emphasis on technical); (c) 'both technical and financial' (multidisciplinary with financial and technical); and (d) 'more financial than technical' (multidisciplinary with an emphasis on financial) (Fig. 6.6). Certainly, the geometric shapes cannot be very precise because under each of the four types there were still more substantive translations involved. For instance, stakeholders claimed a different interpretation of 'both technical and financial' as either the rectangle $\square ABC1C2$ or the triangle $\triangle ABC$ ((Fig. 6.6 (c)).

While the former represented both financial and environmental audits, the latter represented neither financial nor environmental audits – the only one that matched the Department’s interpretation.

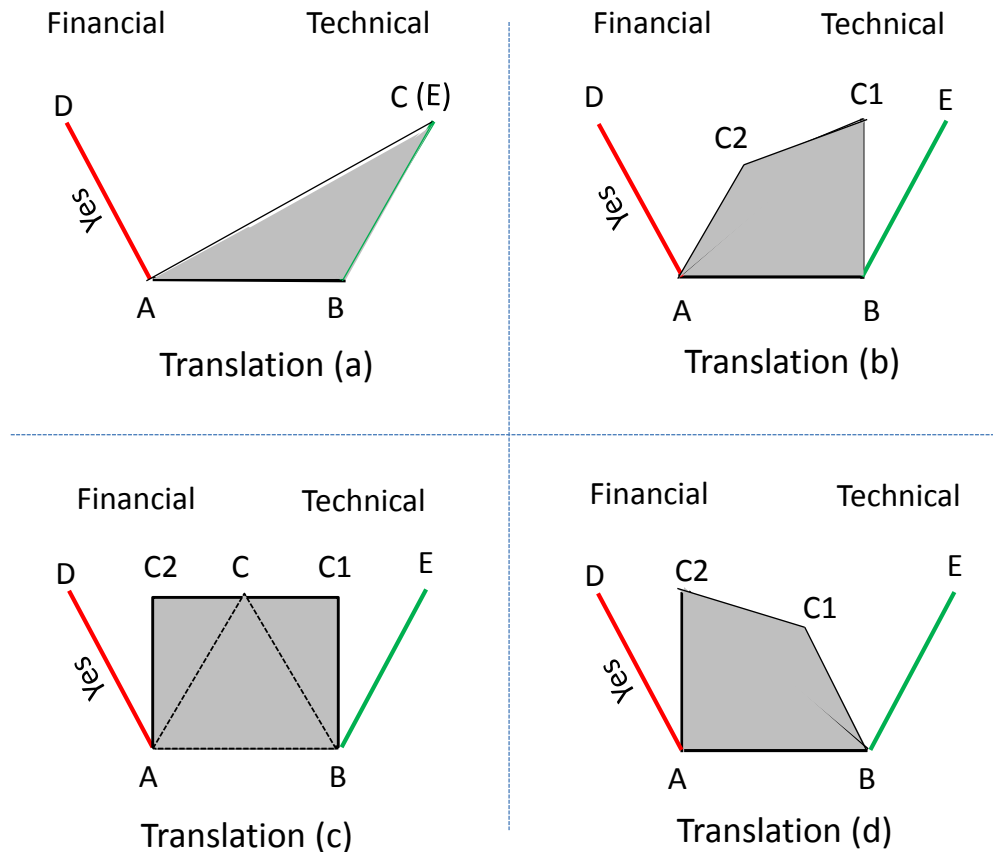


Figure 6.6: Four types of ‘external audits’ as reinterpreted by the stakeholders

6.3.3 Reshuffling and consolidating the technical-actor-network and financial-actor-network

The actors can be decided, reshuffled and consolidated according to the four types of displacements. As shown in Figs. 6.7 and 6.8, of the 39 actors of concern³⁴, 16 interpreted the ‘external audits’ as either (a) or (b). These actors accounted for 80 percent of environmental engineering actors, 25 percent of industry emitters and 33.3 percent of other actors. In addition, 12 actors interpreted the ‘external audit’ as (c); these included the remaining 20

³⁴ Because Gadens Lawyers did not address the relevant issues, it was omitted from the actor analysis.

percent of the engineering actors, 50 percent of industry emitters, 50 percent of other actors and one alliance of accounting and engineering. On the other hand, 11 actors interpreted the ‘external audits’ as (d), including all the accounting and finance actors, 25 percent of industry emitters and one alliance of accounting and engineering. Given that translations (a), (b), (c) and (c’) covered all the environmental engineer actors and their supporters, this group of actors is thus categorised as *technical-actor-network*. In contrast, because translation (d) covered all the accounting actors and their supporters, this group of actors is termed *financial-actor-network*.

Actors	Technical-Actor-Network			Financial-Actor-Network	Total
	technical rather than financial (a)	more technical than financial (b)	both technical and financial (c&c')	more financial than technical (d)	
Environment Engineering	6	6	3		15
Accounting				5	5
Accounting & Engineering			1	1	2
Industry Emitters & Body	3		6	3	12
Finance				2	2
Standards			1		1
Education & Academic	1		1		2
Total	10	6	12	11	39
	25.64%	15.38%	30.77%	28.21%	100%

Figure 6.7: Constructing the *technical-actor-network* and *financial-actor-network*

This method is inspired by ANT’s view on the role of an actor: its identity and interest are not decided *a priori* but only through the translation it renders (Callon & Law 1982; Callon 1986; Latour 1987; Latour 2005a). Moreover, the consolidation of the two networks is a presentation of the outcomes of the previous processes of enrolment among the stakeholder actors themselves (Callon & Law 1982), although this process is outside the scope of this

thesis³⁵.

In applying the analytical approach, one benefit of reshuffling and consolidating two actor-networks is to visualise the networks of support and trials of strength the accounting and engineering profession could each establish and consolidate, given their competition to come. The other advantage is to crystallise the distinctive strategies the *financial-actor-network* adopted as compared to the *technical-actor-network* in their translations. The following sections will present the trials of strength between the two actor-networks in attaching relevance and establishing/bypassing an OPP through the four types of displacement in more detail.

³⁵ At least three matters of concern contribute to this assumption: the workshops that were attended by stakeholders before the submissions (DCCEE 2010); the identical submissions from Wesfarmers and AIGN; and the joint submissions from accounting and engineering stakeholders, such as RSM Bird Cameron and Coffey Environment.

Engineering	Industry	Education & Academic	Standards and Accreditation	Accounting	Finance	Joint accounting and engineering
AIRAH	CSR Ltd	LA Trobe University	Standards Australia	Joint Accounting Bodies (JAB): CPA, ICAA, NIA	NAB	RSM Bird Cameron & Coffey Environments
ACEA	Wesfarmers	Swinburn University of Technology		Ernst & Young	G100	Pkysis & Sothertons
Expert Group	AIGN			Grant Thornton		
Carbon Intelligence	ACI			Deloitte Touche Tohmatsu		
Sustainable Strategic Solutions	AGL Energy			PwC		
Carol O'Donnell	Caltex					
ELIANZ	APPEA					
GHD	Boral Ltd					
Carbon Planet	BlueScope Steel					
Emission Statement	OneSteel					
Flinders Partners	QAF Meat Industries					
Mining Plus	ExxonMobil Australia					
Energy Corporate						
JTP						
Parsons Brinckerhoff						

Note:

	technical rather than financial
	more technical than financial
	both technical and financial
	more financial than technical

Figure 6.8: Reshuffling actors according to the four reinterpretations of 'external audits'

6.4 Trials of strength between ‘technical’ and ‘financial’ in lobbying

The consultation process was a two-way process of ‘interessement’ between the Department and the stakeholders. While Section 6.2 illustrated how the Department problematised the ‘external audits’ as they are not and attempted to draw wide interest from stakeholders with different professional backgrounds, this section presents how the Department’s interpretation was transformed by stakeholder actors. The most controversial issue was the trial of strength between ‘technical’ and ‘financial’ according to their different interests.

6.4.1 Reinterpretations and strategies of translation adopted by the technical-actor-network

As discussed above, the engineering profession got support from 65 percent of industry actors and all other actors in the lobbying. The engineering actors and their supporters emphasised scientific and technical substances of the external audits. In translating the ‘external audits’, the *technical-actor-network* demonstrated three types of displacement: (a) ‘technical rather than financial’; (b) ‘more technical than financial’; and (c) ‘both technical and financial’. Although the importance of ‘technical’ was discounted from (a) to (c), ‘technical’ was not less important than ‘financial’ as claimed by the *technical-actor-network*.

In establishing and reinforcing their claims, the *technical-actor-network* endeavoured to emphasise the importance of technical expertise through three means: 1) displacing ‘external audits’ to ‘technical’ and detaching relevance to ‘financial’; 2) emphasising technical expertise for both lead auditors and technical experts and/or attaching relevance of lead auditors to LEAs; and 3) displacing multidisciplinary with different ‘technical’ and attaching relevance of lead auditors to GHG verifiers. Remarkably, although the flexible independence was welcomed by the *technical-actor-network*, a number of actors claimed a bias toward financial auditors. In the following subsection the three types of displacements adopted by the

technical-actor-network are articulated using discursive evidence obtained from their submissions.

6.4.1.1 *Displacement (a): Technical rather than financial*

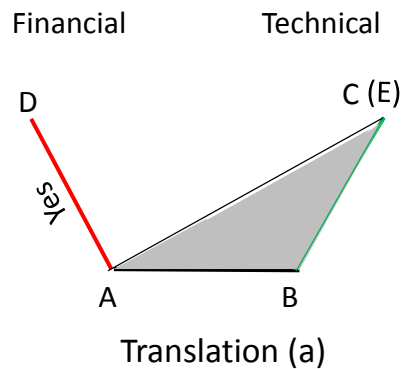


Figure 6.6 (a): Technical rather than financial

For this type of displacement, 6 engineering actors, 3 industry emitters and an academic actor explicitly distinguished ‘external audits’ from financial audits, claiming that they were technical and scientific rather than financial in nature, for example, Carbon intelligence, Wesfarmers, Expert Group, CSR, ACEA, and La Trobe University (see Fig. 6.8). From these actors’ translations, financial auditors are competent at valuing accounts receivable and bad debt (e.g. Carbon intelligence submission 2008); hence valuing volume (represented for the external audits) must be separated from valuing money (represented for financial audits) (e.g. Wesfarmers submission 2008). In particular, the importance of technical and scientific methodology such as data collection and estimation methods were emphasised for the external audits (ACEA submission 2008). For example, Carbon Intelligence and La Trobe University claimed that:

Just as a financial lead auditor must have a good sense of what accounts receivable value and bad debt provisioning would be expected for an operation with a certain turnover in a

particular industry; *so should a greenhouse emissions auditor have a good sense of what tonnage of emissions of what gases would be expected* for an operation with a certain production tonnage and staffing in a particular industry (Carbon Intelligence submission 2008, engineering actor, emphasis added).

Qualifications and experience in these matters provide auditors with the expertise required to address the audit elements set out in 3.4 and are *more important than skills in 'financial accounting standards' and 'business accounting'* (La Trobe University submission 2008 , emphasis added).

In their claims, distinctively, financial audits were commonly used as a reference to distinguish the external audits in the translations. It was emphasised that financial audits bear no or little relevance to technical audits. For example, 'just as a financial lead auditor', 'rather than financial', 'less than financial', 'more important than skills in financial' or 'a difference between audits of a financial Nature' were used in the submissions of most of the 'technical rather than financial' actor-network.

In these translations a detour was rendered. First, the translations were made as 'external audits' = technical; financial audits = verifying value; and environmental audits or greenhouse verifications = valuing volume. The conclusion was made that 'external audits' = environmental audit or greenhouse verification \neq financial. By comparing 'technical' to 'financial', the goal of the 'technical rather than financial' actors was also to establish the 'technical' as the OPP, while to exclude or reduce the relevance of financial audits to the minimum. This strategy demonstrated the confidence and prestige of the engineering profession in the existing emissions audit and their strong resistance to the enrolment of the accounting profession in the emerging field.

6.4.1.2 Displacement (b): More Technical than Financial

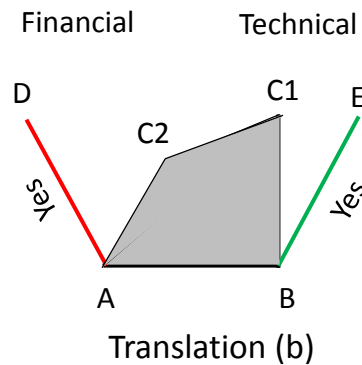


Figure 6.6 (b): More technical than financial

Rather than completely excluding financial auditors from the proposed external audits as the ‘technical rather than financial’ actors attempted, 6 engineering actors reinterpreted the ‘external audits’ as *multidisciplinary* that were not only ‘technical’ but also ‘financial’; however, technical expertise was viewed more important than financial skills, for example, EIANZ, GHD, Carbon Planet, Emission Statement, Flinders Partners, and Mining Plus (see Fig. 6.8). In particular, it was argued that scientific and technical skills were ‘core skills’ (e.g. GHD submission 2008). In addition to emphasising the importance of technical expertise for technical experts, some of them also claimed the relevance of technical knowledge for lead auditors, for example, EIANZ, GHD, and Flinders Partners. Especially, environmental auditors such as LEAs, were proposed to be lead auditors. For example, the environmental auditor’s professional body EIANZ argued that:

Both sets of competencies are needed to provide assurance on the reporting of greenhouse emissions and energy to meet the requirements of the NGERS and CPRS legislation; the Institute believes that *environmental practitioners have a central role in undertaking greenhouse gas and energy audits* (EIANZ submission 2008, emphasis added).

In terms of technical qualification, while the ‘technical rather than financial’ actors emphasised that lead auditors and technical experts “must be a technical professional with appropriate engineering or scientific qualifications” (e.g. ACEA submission 2008; Expert Group submission 2008), the ‘more technical than financial’ actors also acknowledged financial accounting knowledge for technical experts, although to a much lesser degree in terms of qualification and work experience. For example, Carbon Planet wrote:

Carbon Planet promotes two types of technical experts: engineering and science, and financial accounting. For the former type it requires masters or *PhD in engineering (chemical or mechanical) or science (environmental) with at least 5 - 6 years’ experience*, while for the latter type it requires *bachelor degree with 1-3 year experience* (Carbon Planet submission 2008, emphasis added).

Similar to the translation of ‘technical rather than financial’, the central theme in ‘more technical than financial’ was still surrounded by financial audits = financial; environmental audits = technical. Although knowledge of ‘financial’ was acknowledged, it was put at a less important position under ‘technical’ expertise. By focusing on the technical substance and measurement methodology, the main aim of translation was to establish LEAs as an OPP for the ‘external audits’.

6.4.1.3 Displacement (c): Both Technical and financial

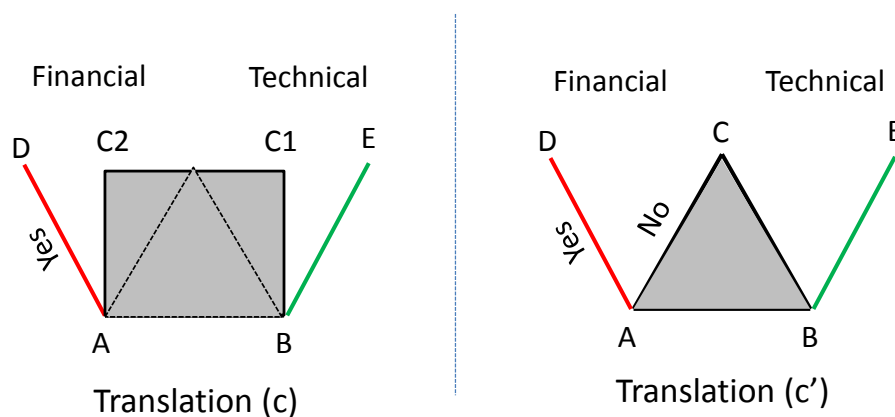


Figure 6.6 (c & c'): Both Technical and Financial

Besides establishing 'technical' as an OPP for the external audits and environmental auditors for lead auditors, there was also a middle-range claim among 3 engineering and 6 industry actors (see Fig. 6.8) who interpreted the 'external audits' as 'both financial and technical', albeit with different understandings of 'technical' among themselves. One translation was to interpret the 'external audits' as both financial and environmental audits (Fig. 6.6 c), while the other translated the 'external audits' as neither financial audits nor environmental audits, but greenhouse emissions verifications (Fig. 6.6 c').

Notably, most of the actors in this group including all the 6 industry actors, held the former interpretation. A common strategy shown by these actors was to attach relevance from RCAs, LEAs and accredited engineers to the role of lead auditors. For example, it was suggested by JTP that the 'external audits' be transported and transferred from the existing financial and environmental audits on the equal basis and use 'common language'. As it stated that:

As there are two main sectors that will make up the audit teams (i.e. *financial and the technical greenhouse gas sector*), both should be involved on an *equal basis* in the development of the guidelines/report and *common language* to be used throughout the guidelines/report. This doesn't mean that we need to reinvent the wheel. *Existing standards in both sectors are relevant* (JTP submission 2008, emphasis added).

In addition, the industry body APPEA also proposed the importance of auditing experience (e.g. APPEA submission 2008):

A lead auditor may have *either technical (science/ engineering) or legal (accounting/finance)* skills but in all cases they should have *experience in all aspects of auditing* (APPEA submission 2008, emphasis added).

However, one actor, a carbon consulting firm, held a different view. While acknowledging the ‘external audits’ as multidisciplinary, Energy Corporate injected a different interpretation to ‘technical’. It claimed that “consultants with expertise in energy and emissions management have a completely different set of skills and qualifications to those in the environmental and accounting fields” (Energy Corporate submission 2008). In more detail, it argued:

Environmental auditors are not considered qualified to audit financial accounts, nor are *financial auditors* considered qualified to audit environmental reports In general terms, *consultants with expertise in energy and emissions management have a completely different set of skills and qualifications to those in the environmental and accounting fields*. To suggest otherwise would suggest that an experienced NGER auditor would also have the ability and competency to work in the finance or environmental sector (Energy Corporate submission 2008, emphasis added).

For translation (c’), ‘technical’ did not refer to environmental auditors but to GHG emissions verifiers. Although it was not as apparent as the other types of displacements, the different interpretation of ‘technical’ in the *technical-actor-network* actually exposed the third professional group GHG verifiers in the new turf battle in addition to RCAs and LEAs.

6.4.1.4 *Supporting a flexible independence for technical auditors*

As indicated in Section 6.2.6, the Department intended to apply a loose strategy of independence with an emphasis on factual rather than perceived independence due to limited technical resources. None of the actors who responded from the *technical-actor-network* offered opposition, for example, Caltex, AGL, Carbon Planet, Energy Corporate, and Emissions Statement. The engineering and industry actors emphasised the limitation of technical resources and concerns about costs. It was therefore agreed that independence be applied to only to lead auditors, while a declaration of conflict of interest would be sufficient

for safeguarding all other members. The following quotations are two examples:

AGL are of the view that in most cases, if an auditor *declares any conflict of interest then this is sufficient* to ensure that this potential conflict can be managed by the regulator. If excessive conflict of interest provisions are mandated this can *increase cost of compliance for liable parties* (AGL submission 2008, emphasis added).

Where there is a potential case of conflict of interest, Carbon Planet *support an upfront declaration* that clearly outlines any conflict of interest between the company and a member of the audit team (Carbon Planet submission 2008, emphasis added).

Moreover, there was also a view that an exceptional requirement of conflict of interest should be applied to technical experts, given the limited resources in Australia at the time being. For example:

The only conflicts of interest that may be acceptable are where technical experts are required in highly specialised industries. It is understandable that in such cases, these experts may have had prior dealings with the audited organisation (Emission Statements submission 2008, emphasis added).

The feedback about independence for technical experts further showed that ‘technical’ was an OPP for the ‘external audits’ in the view of the Department as well as the stakeholders.

6.4.1.5 *Claiming a bias over financial auditors*

Despite the endorsement of the Department’s proposal for independence requirement, some actors expressed a concern or critiqued a bias toward financial auditors in designing the external audits under the NGER Act and the CPRS. For instance, it was raised that the *External Audit Consultation Paper* was “directed towards financial auditors” (e.g. BlueScope Steel submission 2008), and ‘the contribution that environmental, engineering and similar practitioners was undervalued’ (e.g. ACEA submission 2008). Among these actors were not

only the engineering actors, but also large emitters and other actors. In particular, it was concerned that engineering actors would be excluded from the audits, as argued by Boral that:

While maintaining a high level of integrity around the audit process and *would allow non-accounting firms to participate* (many of those have years of experience under the NSW GGAS). Any audit that requires *the application of accounting standards will exclude these class of auditors* (Boral submission 2008, emphasis added).

In criticising a bias toward financial auditors, some other actors explicitly expressed the resistance to the involvement of financial auditors. Such a negative opinion on financial auditors was especially shown by the individual engineer's submission (e.g. Carol O'Donnell submission 2008) and that representing academia (e.g. La Trobe University submission 2008). As they stated:

There is an *overemphasis in 3.4 on qualifications specific to Registered Company Auditors (RCAs)*... It would be *unnecessary, inappropriate and detrimental to limit the role of lead auditor to Registered Company Auditors* under the Corporations Act 2001 Limitation of this role to RCAs *is likely to have a detrimental impact* on the involvement of a broader range of expertise in the further development of sustainability reporting, which needs a multi-disciplinary approach (La Trobe University submission 2008, emphasis added).

I bet that none of the people who wrote the NGER External Audit Consultation Paper or any of the people in the consultation venue that I attended had ever measured greenhouse gas emissions in their lives or had any idea of how they would do so if asked. If I was in charge of an audit *I wouldn't sign off on anything* produced by a lawyer, an accountant or a related audit paper shuffler. What do they know about how to measure greenhouse gas? My experience of spending ten years in the NSW Department of Industrial Relations and WorkCover Authority is that *scientific measurement specialists and those working in related occupations are seldom expert verbal or written communicators* (Carol O'Donnell submission 2008, emphasis added).

As shown, La Trobe University's submission used words such as 'detrimental' in regard to

the financial auditors' leadership in the 'external audits'. In fact, it was the only actor that attempted to relate the 'external audits' to sustainability audits and the relevance of Sustainability Assurance Standard AA1000AS (2008) rather than ASAE 3000. However, no other visible actor was found to relate the 'external audits' to sustainability audits.

6.4.1.6 *A brief review of the interest of the technical-actor-network*

Overall, the strategies of translation adopted by the *technical-actor-network* were quite straightforward, with a short displacement. The interest of the engineering actors and their supporters was to claim the relevance of LEAs and GHG verifiers to lead auditors as well as technical experts by setting the boundary of the 'external audits' to 'technical' rather than/more than/or equal to 'financial'. The straightforward strategy adopted by the *technical-actor-network* demonstrated the confidence the engineering profession in claiming relevance of expertise and the wide network of social support they gained from industry and other human actors. The bias claimed by some of these actors also demonstrated their general resistance to the accounting profession and that their interest was not satisfactorily matched with the imputed interest of the Department.

6.4.2 Reinterpretations and strategies used by the financial-actor-network

Different to the *technical-actor-network*, there were not as many as actors supporting financial auditors in the lobbying, to the contrary, only two financial and three industry actors explicitly addressed the importance of financial auditors in the coming field. An additional support was from a joint submission by an accounting firm and an engineering firm. This information indicated that accounting profession was not perceived by the wide stakeholders as highly relevant in the emissions and energy audits.

Compared to the straightforward strategies adopted by the *technical-actor-network*, the *financial-actor-network*, especially the accounting actors had to deal with technical obstacles when claiming relevance. Hence the accounting actors demonstrated more rhetorical strategies than their competitors. In addition to aligning explicit interest in terms of the financial implication embedded in the proposed CPRS, accounting actors also referred to a set of black boxes and inscriptions including established standards and practices such as independence, quality control and using the work of an expert. The accounting actors rhetorically mitigated and displaced the obligatory point of passage of ‘technical’ to the subordination under ‘financial’. In the following subsections the forth type of displacement - ‘more technical than financial’ - and the main strategies adopted by the *financial-actor-network* especially the accounting actors, in claiming relevance to lead auditors are articulated with discursive evidence obtained from their submissions.

6.4.2.1 Displacement (d): More financial than technical

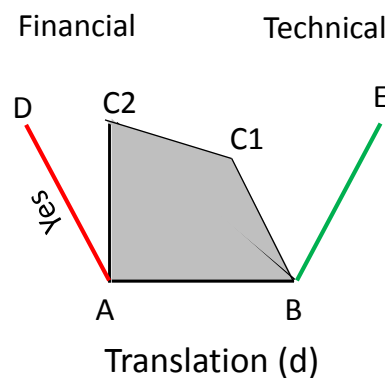


Figure 6.6 (d): More financial than technical

As indicated in Section 6.3.3, all the accounting actors, finance actors, 3 industry emitters and an alliance of accounting and engineering actors translated the external audits as ‘more financial than technical’ (see Fig. 6.8). These actors therefore formed the *financial-actor-*

network. The relevance of financial auditors to the external audits as claimed by the *financial-actor-network*, was largely due to alignment of greenhouse and energy verification reporting with financial system under the proposed CPRS (Section 5.3.2), as well as the financial implications of the CPRS (Sections 5.2.4 and 6.2). Distinctively, instead of debating whether ‘technical’ or ‘financial’ was more important, as attempted by the *technical-actor-network*, all the accounting actors (including Ernst & Young, PwC, Deloitte, JAB and Grant Thornton) concentrated on and highlighted the term ‘investment grade’ in the *External Audit Consultation Paper* (DCC 2008, p2). For example, it was argued by the Joint Accounting Body (JAB) that:

There are *financial implications* for all emitters, particularly the large emitters and reporting entities which are listed entities and involved in the *capital markets*. It is thus important for the NGER framework to be aligned as much as possible with the assurance framework that applies to the financial reporting framework (JAB submission 2009, emphasis added).

In addition, the chief financial controllers from Australian leading businesses were also concerned about the financial implication embedded in the ‘external audit’. Although not mentioned explicitly in its submission, it was acknowledged by G100 later in September 2009 that:

KPMG and the Group of 100 (G100) are pleased to publish, *Managing Financial Impacts and Reporting of Carbon Emissions: A guide for CFOs*. It is a guide designed to provide a starting point for CFOs and their finance teams to assist them to enhance the management of the financial impacts and reporting of carbon emissions (Group of 100 2009).

In contrast, none of the engineering actors was found to mention the terms ‘investment grade’ or ‘financial implication’ in their submissions. This was dramatic because as presented in Chapter 5, the financial implication of emissions was the most controversial issue regarding

the ratification of the proposed CPRS. Aligning explicit interest with the Department in terms of ‘investment grade’ enabled the accounting actors to justify that “the purpose of an external audit under the NGER Act or CPRS is expected to be the same as for a financial statement audit” (e.g. Ernst & Young submission 2009). This strategy also depicted what Latour (1987) called ‘I want what you want’. In addition to financial auditors, it is well known that no other auditing profession has a direct connection to the capital market, as implied in the JAB’s submission. Hence, by displacing the relevance from ‘technical’ to ‘investment grade’, the legitimacy of accounting profession in the ‘external audits’ seemed to be less questionable.

Furthermore, indirect measurement of Scope 2 emissions and energy consumption also justified the relevance of financial auditors. For instance, ExxonMobil, the number one energy consumer, and One Steel, the number 10 Scope 2 emitters in Australia (Fig. 6.5), claimed that:

[i]n many cases, quantification of emissions will be based on *commercial invoices*, where verification through audit is expected to be *essentially an accounting activity* (ExxonMobil submission 2008, emphasis added).

Superior understanding and experience in auditing *financial information* if required by companies *under the CPRS provisions for EITE entities* (OneSteel submission 2008, emphasis added).

However, it is noted that no one actor dared to claim that the ‘external audits’ were ‘financial rather than technical’. Rather, all the supports for financial auditors also recognised the importance of technical expertise; for instance, some supporters (e.g. submissions from G100, ExxonMobil, OneSteel and QAF) proposed both the accounting and engineering professions as lead auditors. The major difference between the supporters of ‘both technical and financial’ and ‘more financial than technical’ was that the latter also recognised financial auditors’

assurance expertise in addition to financial knowledge.

6.4.2.2 *Lobbying against flexible independence*

In contrast to the general consent for a comprised independence from *technical-actor-network* in view of a small number of technical specialists, the accounting actors and some of their supporters from the *financial-actor-network* seemed sensitive to the potential for conflict of interest. Most of the *financial-actor-network* held that independence should not be compromised in any case. It was argued that all members of an audit team, not just the lead auditors, should be subject to an independence test, for instance, JAB; Grant Thornton; PwC; Deloitte; RSM Bird Cameron & Coffey Environments, NAB, and ExxonMobil. In particular, the Joint Accounting Body and PwC claimed:

We are of the view that the requirements be the same for all team members – *absence of conflicts of interest and independence in both appearance and in fact for all team members* is vital (JAB submission 2008, emphasis added).

[i]t is a well-established expectation that *the members of the assurance team, as well as the firm*, be independent of the assurance client” (PwC submission 2008, emphasis added).

The claims from the accounting actors looked legitimate for the purpose of the client. As highlighted, the JAB emphasised that independence was not only required as a fact but also needed to be seen as independent. Moreover, PwC proposed to also apply independence for auditors’ firms.

On the other hand, the accounting and financial actors argued that a declaration of conflict of interest for all the team members would be neither adequate nor necessary. PwC and Ernst & Young proposed that the lead auditor had the responsibility to oversee conflict of interests of

the technical experts, while the names of the technical experts did not need to be disclosed in an audit report. As they claimed that:

All threats to independence must have adequate safeguards, regardless of the market size Independence and conflict of interest requirements should be applied to audit teams, rather than merely the Lead Auditor (PwC submission 2008, emphasis added).

There should be no difference in the independence and conflict of interest requirements for the Lead Auditor versus other team members Finally, we disagree with the identification within the report of the external audit team members and conflict of interest disclosures. The Lead Auditor (and Firm) are those that should be held accountable by including their details within the reports (Ernst & Young 2008, emphasis added).

In particular, accounting actors proposed that the APES 100 *Code of Ethics for Professional Accountants* to be used as a guideline for independence. Deloitte described it as “an appropriate and well developed framework” (Deloitte submission 2008). The relevance of APES 110, as lobbied by the PwC, was that:

APES 110 applies not only to the individuals performing the audit, but also to the audit firm. This means that all professionals working within chartered accounting firms, whether accounting professionals or not, are bound by it (PwC submission 2008, emphasis added).

Its relevance to other professionals was also recognised by the joint submission from RSM Bird Cameron & Coffey Environments:

We believe it would be appropriate to apply the Code of Ethics and Professional Standards that currently apply to members of the assurance profession. These professional standards are issued by the Accounting Professional and Ethical Standards Board and cover areas such as independence, conflicts of interest, quality etc (RSM Bird Cameron & Coffey Environments submission 2008, emphasis added).

The debates between the *technical-actor-network* and the *financial-actor-network*, especially the accounting actors, in regard to independence are interesting. While the Department and the *technical-actor-network* focused on factual independence of technical experts, the accounting actors emphasised the importance of both real and perceived independence. As widely accepted, independence was one black box well established by the accounting profession (Power 1996). By attaching relevance to the inscription of APES 110, the most critical part of the accounting actors' claim was to bestow the responsibility of supervising independence on lead auditors. This strategy was rhetorical because rather than arguing the importance between 'technical' and 'financial', it was through a detour to the black box of independence that the accounting profession claimed more relevance to acting as lead auditors and supervising technical experts. This ambition could be further seen from their rejection of disclosing technical experts' names in an audit report.

6.4.2.3 *Redefining the relationship between lead auditors and technical experts*

Apart from arguing the relevance of APES 110 to independence, the accounting actors also referred to other established standards and practices to minimise the obstacle of lacking of technical expertise in becoming lead auditors. As indicated by the Department, the lead auditor needs to understand an expert's work (Section 6.2.4). While the *technical-actor-network* tended to interpret this as meaning that both lead auditors and technical experts needed to gain experience and qualifications in engineering and science, accounting actors rather applied the established standards such as ASA 620 *Using the Work of an Expert* and APES 320 *Quality Control for Firms* to bypass the obstacles.

Ernst & Young argued that using the work of an expert was an established practice for financial auditors that had allowed them to work together with other specialists in financial and non-financial auditing (Ernst & Young submission 2008):

There are *already examples within the financial statement assurance model which demonstrate how the assurance provider leverages the skills and expertise of technical specialists in reaching their assurance conclusion*. For example assurance providers rely on experts such as actuaries for pension accounting, engineers or geologists for data relating to oil and gas reserves and IT specialists for systems assurance. *This work is performed in compliance with the Auditing Standard ASA 620 Using the Work of an Expert and is consistent with the requirements in paragraphs 46 to 55 of the Standard on Assurance Engagement 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information (ASAE 3000)* (Ernst & Young submission 2008, emphasis added).

Ernst & Young highlighted the consistency between ASA 620 and ASAE 3000. As introduced in Section 6.2.2, ASAE 3000 had already been proposed by the Department as a guideline for the ‘external audits’. In regard to using the work of an expert, ASAE 3000 required that:

the assurance practitioner and the expert shall, *on a combined basis*, possess adequate skill and knowledge regarding the subject matter (AUASB 2007, para 47, emphasis added).

The assurance practitioner is *not expected to* possess the same specialised knowledge and skills as the expert (AUASB 2007, para 53, emphasis added).

From these two statements, it can be seen that ASA 620 provided the accounting profession a useful inscriptive device to bypass the obstacle of ‘technical’. The capacity of the accounting profession in using the work of technical experts was also acknowledged by its supporters, such as ExxonMobil and NAB mentioned the existence of ASA 620 in helping the accounting profession incorporating the work of an expert. In contrast, no actor from the *technical-actor-network* recognised the capacity of the accounting profession to understand the work of an expert.

All the accounting actors related quality control to the responsibility of lead auditors and attached the relevance of APES 320. For example, it was argued by Ernst & Young that:

For the quality to be consistent irrespective of who provides the assurance, *the firm and Lead Auditor* must have *appropriate assurance skills as well as quality control processes* to support the work performed (Ernst & Young submission 2008, emphasis added).

In particular, APES 320 can be applied to the non-accounting practitioners from the Big 4 auditing firms. ASAE 3000 also requested that team leaders apply quality control to technical experts:

[t]he assurance practitioner needs to adopt quality control procedures that address the responsibility of each person performing the assurance engagement, including *the work of any experts who are not assurance practitioners* (AUASB 2007, para 50, emphasis added).

In addition, JAB also mentioned the relevance of ASA 220 *Quality Control for Audits of Historical Financial Information*:

The AUASB auditing standard ASA 220 *Quality Control for Audits of Historical Financial Information* contains a requirement that the engagement partner (*lead partner*) has to be satisfied that the engagement team collectively has the appropriate capabilities, competence and time to perform the audit engagement in accordance with Auditing Standards and regulatory and legal requirements, and to enable an auditor's report that is appropriate in the circumstances to be issued (JAB submission, emphasis added).

Accounting actors' enthusiasm for promoting quality control for lead auditors and auditing firms was in distinct contrast to the absence of interest from the *technical-actor-network*. Researchers have found no uniform mechanism of quality control in place for non-accounting assurers (Green & Li 2012). Viewed from the lobbying of the accounting actors, it can be seen that the accounting professions were more capable of establishing standard inscriptions

to deal with different contexts. This ability allowed the Big 4 auditing firms to lobby their relevance to engaging in non-financial subject matter and subordinate technical experts without *really understanding* the technical substance. Similar to perceived independence, these were another device of ‘image management’ (Power 1997a; Power 2003) that the financial auditors applied to bypass the obligatory passage point of ‘technical’ substance of the ‘external audits’ and claim relevance as lead auditors.

Moreover, Ernst & Young paid attention to the terms and language used in the ‘external audits’. It was especially concerned about the term ‘verification’:

We recommend that this focus on *terminology also include the use of the word “assurance” instead of “verification” or “certification”*. The terms “verification” and “certification” are *not consistently defined or understood by the financial market*, whereas the terms “assurance” and “audit” are defined and governed by a framework of principles based (and in limited cases rules based) standards (Ernst & Young submission 2008, emphasis added).

This argument started to show the sensitivity of the accounting actors to the term ‘verification’. In fact, auditing terminology became one of the most controversial issues in the next lobbying episode.

6.4.2.4 *A brief review of the interest of the financial-actor-network*

As Power (1997 a; 2003) suggested, the accounting profession is good at image management. This skill allows the accounting actors to claim more relevance in the ‘external audits’. As shown, the accounting actors were proficient in using established black boxes of independence, quality control and the use of experts’ work, as well as using established standard inscriptions and producing new ones in all aspects to bypass the obstacle of lacking technical expertise. Through these ‘devices of intersement’, the accounting actors either

aligned explicit interest with the Department or made a detour in attaching their relevance to acting as lead auditors.

6.5 An overview of Episode Two: Problematisation of external audits and Intersement of technical-actor-network and financial-actor-network

This chapter presents the second lobbying in the ‘extensive consultation process’. In terms of translation, it relates to problematisation and intersement (Section 2.5.2). While problematisation is the process by which the primary actors seek to define the nature and problems of others and provide solutions (Callon 1986), in the case of constructing external audits for the NGER Act and CPRS, the primary actor – the Department did not know what the main problems were but ‘what they were not’. This feather thus adds more character to the moment of problematisation. In terms of intersement, it relates to a series of trials of strength in which the primary actors seek to lock other actors into the roles proposed for them (Callon 1986). It is also a reciprocal process (Latour 1987). These two characters of intersement are also reflected by the construction of external audits where it relates to the trial of strength between the *technical-actor-network* and *financial-actor-network* in persuading the Department in establishing the OPP as technical or financial.

This chapter actually deals with the most controversial lobbying episode due to the number of enrolled actors and the information covered. In analysing the Department’s documents and stakeholders’ submissions, the break-even point was the Department’s statement that the external audits under the NGER Act and the proposed CPRS were “*clearly distinguishable from financial or environmental audits, reviews and other procedures of an audit nature*” (DCC 2008, p6). It was this statement that suggested a way to follow the controversies among the heterogeneous actors. Substantial examinations of the submissions found four types of displacement: ‘technical rather than financial’, ‘more technical than financial’, ‘both

technical and financial’, and ‘more financial than technical’. By using geometric diagrams, this chapter presents these four types of displacement, which in turn helped me to follow the actors.

Following the number of supporters in each actor-network reveals that the accounting actors were not in a pervasive position; rather, it was in a weaker network as compared to the engineering actors due to its lack of technical expertise. Consistent with what Power (1995b; 1996; 2003) suggested, there was still wide resistance to the accounting profession being involved in this new field; for instance, the engineering actors, standards and accreditation and academic actors all expressed a negative opinion of financial auditors’ enrolment. To an extreme, some engineering actors even proposed to exclude financial auditors from the audit team entirely.

In claiming relevance to external auditing expertise, it can be seen that the engineering actors and their supporters were confident with their existing expertise and used rather straightforward strategies to establish similarities between environmental audits, greenhouse gas verifications and the ‘external audits’, and attached relevance of LEAs and GHG verifiers to both technical experts and lead auditors. In contrast, the accounting actors applied more rhetorical strategies of using established black boxes and inscriptions as well as continuously producing new inscriptions to bypass the obstacle of ‘technical’ and subordinate it. This strategy has been found in the previous accounting standard-setting and auditing studies (e.g. Young 1995; Power 1997a; 2003; Gendron et al. 2007). The trials of strength embedded within the stakeholder actors’ four displacements also exposed three competing professional groups: environmental auditors, greenhouse gas verifiers and financial auditors.

In relation to financial auditors' expertise, unlike what was found by Gendron *et al.*'s (2006) study of the construction of expertise in performance audit, fewer actors recognised the expertise of the financial auditors as context-free 'general' knowledge; rather, financial auditors were painted as specialists in verifying bad debt and financial value (e.g. Carbon Intelligence submission 2008). This discrepancy drives this study back to a previous question as discussed in Section 3.2.5: is auditing a knowledge boundary object? So far, this study has examined the four displacements made by the engineering and accounting actors as well as their respective alliances. While the accounting actors preferred auditing without borders (Francis 2011), the engineering profession did believe that auditors had boundaries, either financial or technical.

After articulating in this chapter the trials of strength between 'technical' and 'financial' involved in the translation of 'external audits' by a variety of actors, the next chapter will take the story to the third translation episode: transformations from 'external audits' to greenhouse and energy audits and trials of strength between 'auditing' and 'technical'. It will present the moment of enrolment (Callon 1986; Latour 1987), that is, how the Department attempted to enrol the accounting and engineering professions and provisionally lock their respective roles, and how this goal was translated and contested by contested interests of RCAs, LEAs and GHG verifiers in terms of auditor expertise.

Chapter 7 Episode Three: Enrolment and trial of strength between ‘auditing’ and ‘technical’

7.1 Introduction

This chapter presents the final and third lobbying process in the ‘extensive consultation process’. During this consultation period, the proposed CPRS was rejected the first time by Parliament (Appendix 1). The uncertainty of the CPRS inevitably made the role of the accounting profession more controversial in this episode of lobbying process. It is important to note that while ‘investment grade’ was emphasised by the Department in the *External Audit Consultation Paper*, it was not mentioned in the *Audit Framework Overview Paper* at all.

This lobbying episode was also critical because it was via the *Overview Paper* that the ‘external audits’ were formally transformed into ‘greenhouse and energy audits’ and ‘lead auditors’ were transferred into three categories of ‘registered greenhouse and energy auditors’ (RGEAs). Viewed from the model of translation, this episode is related to the third moment of translation - enrolment (Callon 1986; Latour 1987). As presented in Section 2.5.2, enrolment relates to “multi-lateral negotiations, trials of strength, and devices of intersement which enable them to succeed” (Callon 1986, p211), it is also a dialectic process that involves a balance between enrolling and controlling actors (Latour 1987). In this thesis, it concerns how the Department intended to provisionally allocate and lock the roles of the RCAs, LEAs and GHG verifiers within different types of audits but was contested by other actors due to their different interests and goals. In competing for higher-position roles or being unlocked, the trail of lobbying strength among the stakeholder actors moved from the previous ‘technical vs. financial’ to the current ‘auditing vs. technical’ in

regard to auditor expertise. If the lobbying of ‘external audits’ exemplified the *geometric* meaning of translation (Latour 1987) through movements from one audit boundary to another (Chapter 6), then the lobbying of the auditor expertise of the three categories of RGEAs demonstrated more about the *linguistic* perspective of translation (Latour 1987), through movements from one professional language to another.

The chapter is organised as follows. Section 7.2 presents the transformations from ‘external audits’ to ‘greenhouse and energy audits’ made by the Department as a means to comfort and catch both the accounting and engineering professions and lock their roles in different types of greenhouse and energy auditing. Section 7.3 presents the stakeholder actors in the current *technical-actor-network* and *auditing-actor-network*, describing how the latter evolved from the previous *financial-actor-network*. The section then examines the decentralisation of the *technical-actor-network*, as compared to the uniformity of the *auditing-actor-network* formed by accounting actors. Section 7.4 exposes the controversies surrounding three controversial aspects in terms of auditor expertise: ‘relevant audit experience’, auditing terminology and professional judgement. The trial of strength between ‘auditing’ and ‘technical’ surrounded by lobbying against and for these three aspects further showed the strong network of the accounting actors with auditing terminology and professional judgement, and the weak network between the engineering actors and auditing.

7.2 Transformation of the ‘external audits’ to greenhouse and energy audits and the strategies adopted by the Department

In the *Overview Paper*, the term ‘external audit’ was formally replaced by ‘greenhouse and energy audit’ (DCC 2009, p8). The Department reemphasised that “*greenhouse and energy audit* is not confused with other types of audit, be they financial, environmental or any other scrutiny process” (DCC 2009, emphasis added). In transforming the ‘external audits’ to

‘greenhouse and energy audits’, the Department attempted to please both the engineering and accounting profession and meet their interests. Five major changes were made: 1) defining two audit types and reapplying the term ‘verification’; 2) using commonly understood language and concepts; 3) transforming lead auditors into three categories of RGEAs and emphasising ‘relevant audit experience’; 4) altering independence to align with the accounting profession; and 5) controlling professional judgement through three layers of control. Through changes made in these five aspects, the Department expected to enrol auditors from different professional backgrounds and provisionally lock their roles within different types of audits while controlling their professional behaviour. In the following subsections these five aspects are articulated by comparison of the detailed discursive evidence extracted from the *Green Paper*, the *External Audit Consultation Paper*, the previous lobbying of the *technical-actor-network* and *financial-actor-network*, the current *Overview Paper* and other sources of literature.

7.2.1 Defining two types of greenhouse and energy audits and reapplying the term ‘verification’

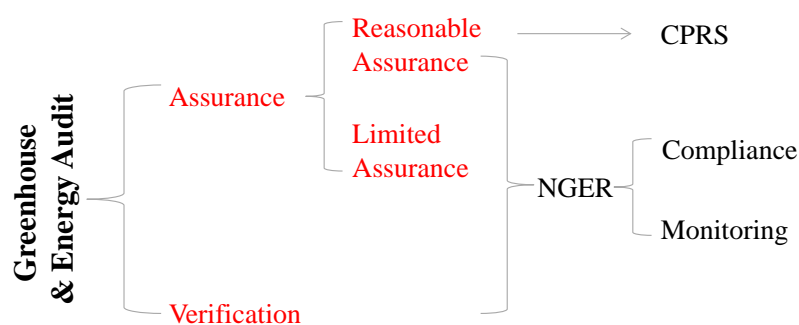


Figure 7.1: The types of engagement of the greenhouse and energy audits

In the *Overview Paper*, the Department finalised two types of greenhouse and energy audit: assurance and verification, the former including reasonable assurance and limited assurance

(Fig. 7.1). Compared to the *External Audit Consultation Paper*, three substantial changes were made (Fig. 7.2). First, in the *External Audit Consultation Paper*, ‘case-by-case’ was used to decide the level of compliance or non-compliance engagements under the NGER Act which was replaced by the two types of engagement in the *Overview Paper*. Second, in the *External Audit Consultation Paper*, audits under the CPRS covered three types of engagement: reasonable assurance, limited assurance and ‘review of procedures’. In the *Overview Paper*, reasonable assurance became compulsory for all large emitters under the proposed CPRS. It can be seen that audits under the NGER Act imported the structure of audits previously proposed for the CPRS.

Audit for	NGER Act 2007		CPRS		
Timing	post-submission		pre-submission		
Application	non-compliance (section 73)	compliance monitoring (section 74)	large emitters		
Scope	case-by-case	case-by-case	reasonable assurance	limited assurance	review of procedures
Cost	entity	government	entity		
	two types of audit: assurance and verification				
	Assurance includes reasonable assurance and limited assurance				

Figure 7.2: Mediations from external audit to greenhouse and energy audit

The third and most interesting change was that the term ‘review of procedures’ was again replaced by ‘verification’. It was the second time that the term had been changed: from ‘verification’ in the *Green Paper* to ‘review of procedures’ in the *External Audit Consultation Paper*, and then back to ‘verification’ in the *Overview Paper*. If to say changing the term from ‘verification’ to ‘review of procedures’ was to align more interests with the

accounting profession, then changing it back to ‘verification’ despite the strong sensitivity from accounting actors to the term ‘verification’ (e.g. Ernst & Young submission 2007), may suggest a message of comfort to the engineering profession. This suggestion is not unreasonable given the strong resistance to financial auditors on the one hand, and a bias claimed in the previous lobbying by the *technical-actor-network* on the other hand. This suggestion also matches with Martinov-Bennie and Hoffman’s (2012) survey study, in which their findings suggested that the Government intended “*not to be seen as* being beholden to the accounting profession” (p200, emphasis added).

The mixed terms used for greenhouse and energy audits were also consistent with the chaos in assurance statement practices in environmental, social and sustainability reports where auditors from different professional backgrounds tended to use different terms (Owen & O'Dwyer 2005). By importing the term ‘verification’ from the engineering profession and reshuffling it with ‘audit’ and ‘assurance’ from the accounting profession, the Department apparently legitimised the enrolment of financial auditors, environmental auditors and GHG verifiers. For the Department, the term ‘verification’ was a terminology device to enrol the engineering profession. From another perspective, this terminology device is evidenced as indispensable attachment to the knowledge boundary object of auditing that mobilised the relationship between the Department and the two contesting professional groups. In the next section another example will be presented in terms of terminology device.

7.2.2 Using commonly understood language and concepts

As a response to the previous lobbying, the Department emphasised the importance of “using commonly understood language and concepts to enable a broader range of auditing professionals” (DCC 2009, p14):

The Audit Determination was developed so that it would be consistent with *existing* standards but was written *using commonly understood language and concepts to enable a broader range of auditing professionals*, including *financial auditors and existing greenhouse gas verifiers*, to participate in audits under the NGER Act (DCC 2009, p14, emphasis added).

In ‘using commonly understood language and concepts’, important evidence should not be neglected: the positioning of the adverb ‘existing’. As highlighted, it was the ‘greenhouse gas verifiers’ that were entitled as the ‘existing’ rather than ‘financial auditors’. If ‘greenhouse gas verifiers’ were acknowledged as ‘existing’, then it can be said that financial auditors were more like ‘invaders’ than ‘pioneers’. Thus the strong resistance from the engineering actors was understandable. From this perspective, using terminology devices can be viewed as an important strategy to comfort the engineering profession.

One such example has been evidenced with the readoption of the term ‘verification’. Another pervasive example can be found in the term ‘conclusion’ used for greenhouse and energy audit reports. In the *Overview Paper*, a ‘conclusion’ was explained as

an expression of the outcome of an assurance engagement designed to enhance the degree of confidence of the intended user about the matters that were auditee” (DCC 2009, p37).

The Department defined three types of audit conclusions: 1) reasonable or limited assurance (as per the objective of the engagement); 2) an adverse conclusion; or 3) a *conclusion* that he or she is unable to form an *opinion* as to whether or not to give an assurance (DCC 2009, p19, emphasis added). Apparently this was a different usage to that for financial audits, for which ‘conclusion’ and ‘opinion’ are used for a limited assurance or a reasonable assurance respectively (Gay & Simnett 2010). Researchers have found that environmental audits usually require a conclusion because they normally require a “(limited) form of public

opinion” (Power 1997b, p126). On the other hand, financial auditors are more familiar with the use of ‘opinion’ which indicates their ‘professional judgement’ (Gay & Simnett 2010). In particular, a financial auditor can give five types of opinion according to the materiality and pervasiveness to the financial report: i) an unqualified (unmodified) opinion; ii) an unqualified opinion with an emphasis of matter; iii) a qualified opinion; iv) an adverse opinion; and v) a disclaimer opinion (Gay & Simnett 2010).

However, the Department did not attempt to clarify these terms used in different levels of audit engagement. Instead, it attempted to blur the gap between a limited assurance and a reasonable assurance by undifferentiating ‘conclusion’ and ‘opinion’. Moreover, the shift from ‘a disclaimer opinion’ to “a conclusion that he or she is unable to form an opinion as to whether or not to give an assurance” also indicated the Department’s attempt to translate the professional language from the accounting profession to other professions. This was another instance of how terminology was used as a ‘device of interessement’ by the Department to maintain and comfort the existing greenhouse verifiers and environmental auditors.

7.2.3 Transforming lead auditors to three categories of RGEAs and emphasising ‘relevant audit experience’

The controversy surrounded by lead auditors had been one of the most controversial issues in the previous lobbying. While the engineering actors and their supporters had emphasised technical expertise for both lead auditors and technical auditors, the accounting actors had promoted their relevance as lead auditors only. In the *Overview Paper*, the Department stated that only lead auditors should be registered as greenhouse and energy auditors (RGEAs), while team members including technical experts were to be appointed by the RGEAs according to their ‘professional judgement’ (DCC 2009, p11, emphasis added). These changes ostensibly established the hierarchical structure of a greenhouse and energy audit

team, which matched with the goal of the accounting profession in lobbying their team leadership. It was also stated that auditors' firm would be considered as a RGEA in the future once "the pool of auditors is well established" (DCC 2009, p22). This implies that the number of RGEAs in an auditing firm also mattered in the long term.

The Department specified the knowledge and experience required for the three categories of RGEAs as:

Category I auditors will need to have knowledge and experience in audit activities like *verification* or *agreed-upon procedures*. Category II & III auditors require team leadership and knowledge and experience in *leading audit teams and providing assurance* (DCC 2009, p24, emphasis added).

To control the enrolment, the Department also specified the number of days as a measurement of 'relevant audit experience'. As shown in Fig. 7.3, 100 days was required for Category I RGEAs, while 200 days in the preceding three years was required for Category II and III auditors. In addition, Category III auditors also needed to have conducted two greenhouse and energy audits.

The propositions of the Department revealed very important information. First, the professional backgrounds can be inferred from the terms attached to the three categories of RGEAs. For instance, Category I technical auditors could be either GHG verifiers or RCAs as viewed from the terms 'verification' and 'agreed-upon procedures'. On the other hand, Categories II and III, which required substantive 'assurance' experience and team leadership would be more relevant to RCAs and LEAs, with the former having expertise in both reasonable and limited assurance while the latter being more familiar with limited assurance.

Second, it required ‘relevant audit experience’ rather than ‘relevant technical experience’, implying an attempt to displace the OPP from ‘technical’ to ‘auditing’ for Categories II and III RGEAs. This later became the target for the engineering actors’ claims of a bias toward financial auditors, signalling the start of trials of strength between ‘technical’ and ‘auditing’ in lobbying.

Knowledge Requirements	Category I	Category II	Category III
Auditing	Knowledge of audit	Knowledge of audit, leading multi-disciplinary teams and providing assurance	
NGER	Category I technical NGER exam Category I non-technical NGER exam	Category II / III NGER exam	
Auditing experience	At least 100 days of 'relevant audit experience' during the preceding three years	At least 200 days of 'relevant audit experience' during the preceding three years, including at least 50 days spent leading audit teams	Category II experience PLUS participated in at least two greenhouse and energy audits in the preceding three years

Figure 7.3: Knowledge and experience required for three categories of auditors in the *Overview Paper* (DCC 2009, p24)

7.2.4 Adjusting independence to align with the accounting profession

Another example of favouritism toward the accounting profession was shown by the changes made to the requirement of independence. Following the accounting actors’ lobbying, the Department amended the flexible requirement applied to technical experts into ‘strict’ independence for all team members, including technical experts (DCC 2009, p29). To justify this amendment, the Department stated:

Stakeholders agreed that *strict requirements for independence* were essential for the audit findings to be robust. The following independence requirements have, therefore, been based

on the requirements for *Registered Company Auditors as outlined in the Corporations Act 2001* (DCC 2009, p29, emphasis added).

The Department mentioned ‘stakeholders’ to justify that the changes it made were representative. However, as has been explored, most of the actors in the *technical-actor-network* instead supported flexible independence on the grounds of limited technical resources (Section 6.4.1.4). In practice, studies also found that independence was not strictly emphasised by the engineering profession in environmental audits or sustainability assurance (Owen & O'Dwyer 2005). Rather, it was the accounting actors that pushed for strict independence in both appearance and fact.

In line with the lobbying by the accounting actors, the Department required that the implementation of independence the responsibility of the team leaders, who must now identify any conflict of interest within the team members, including technical experts, and who also needed to provide procedures to resolve this situation, or else either exempt or remove the member if the other methods could not work (DCC 2009). Moreover, the requirement of declaration of conflict of interest by team members was cancelled, instead, the team leader must now sign a declaration of independence known as ‘an independence and conduct declaration’ for each team member (DCC 2009, p8).

By changing the rule of independence in accordance with the lobbying of the accounting profession and highlighting the supervision role of the team leaders, the Department latched onto the accounting profession’s interest and was enlisted by it (Callon & Law 1982). Consistent with previous research (Power 1997b), the black box of independence as an important rhetorical device demonstrated another success in counter-enrolling the Department to the accounting profession.

7.2.5 Controlling professional judgement through three layers

The Department emphasised professional judgement of the team leader when selecting qualified audit team members, making an audit plan, collecting audit evidence, conducting audit procedures and forming a conclusion. The Department defined professional judgement as:

the audit team leader's application of competence including skills and experience, in making informed decisions about the courses of action that are appropriate to assurance engagements including assessment of risks. The *professional judgement* of an auditor emanates from characteristics such as the auditor's expertise, experience, knowledge and training (DCC 2009, p37, emphasis added).

While drawing on both the engineering and accounting profession to construct greenhouse gas and energy auditing, the Department also imputed three layers of control to the professional judgement: personal engagement, peer review and disclosure of detailed findings. Through these three layers it aimed to make professional judgement more determinable, just as the title of the proposed legislation – NGER (Audit) Determination suggested.

The first layer was related to the team leaders' personal involvement in the audit. As emphasised by the Department, "they cannot just be the signatory to the audit conclusion" (DCC 2009, p15). This requirement seemed challenging for the accounting profession because it was not normally required when conducting financial and non-financial audits by the accounting profession. As it stated in the ASAE 3000:

The assurance practitioner shall be involved in the assurance engagement and understand the work for which an expert is used, *to an extent that is sufficient to* enable the assurance practitioner to accept responsibility for the conclusion on the subject matter information (AUASB 2007, para 51, emphasis added).

From “leader auditors would need to understand an expert’s work” in the *External Audit Consultation Paper* (DCC 2008, p14) to “team leaders must be personally involved in the audit” in the *Overview Paper* (DCC 2009, p15), the Department seemed more stringent toward the accounting profession, which claimed to be capable of using the work of an expert.

The second layer of control was through the role of peer reviewer. In the previous lobbying, the accounting actors had lobbied the importance of quality control for lead auditors. Notably the Department did not follow the lobbying of the term ‘quality control’; instead, it injected another important role of peer reviewer to evaluate the professional judgements of the team leaders. The Department defined a peer reviewer as:

A person who *evaluates the judgements made by audit team leaders* when preparing for, conducting and reporting on assurance engagements (DCC 2009, p36, emphasis added).

The Department required that a peer review report be attached to the audit report, and that the name of the reviewer be disclosed together with that of the team leader. The addition of peer reviewers would challenge the authority of the team leaders’ professional judgement.

The third layer was related to disclosure. For instance, a summary of the audit procedures, details of a qualified conclusion and the findings of a peer review were requested by the Department to be disclosed in the audit report. This was also contrary to the practice of the accounting profession for whom the audit team leader usually provides an opinion or a conclusion rather than details in an audit report. On the other hand, it is known that verification provides factual findings rather than opinion/conclusion. The requirements of the team leader’s personal involvement, the disclosing of details of an audit and a peer review would seem to inject a challenge to the accounting profession’s judgement.

7.2.6 A brief review of the goal and strategies of the Department

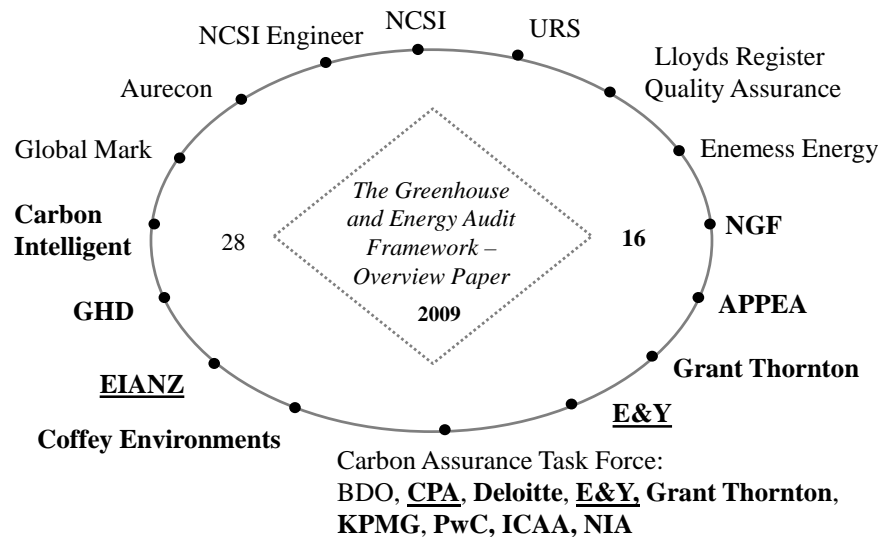
The changes made in transforming the ‘external audits’ into the greenhouse and energy audits demonstrated the dialectic of enrolment (Callon & Law 1982; Latour 1987). While on the one hand, the Department expected to enrol both the accounting and engineering professions and provisionally lock their roles into different types of greenhouse and energy audits; on the other hand, it needed to limit their enrolment numbers and control their professional behaviour.

In the process of the transit, it can be seen that through the terminology device, the Department aimed to allocate and reshuffle the RCAs, LEAs and GHG verifiers to the three categories of RGEAs. This was especially evident in the reapplication of the term ‘verification’ and the use of ‘commonly understood language and concepts’. This also can be viewed as comforts and a message to maintain the GHG verifiers within the roles of technical experts and Category I RGEAs. On the other hand, although the changes made to independence and requirements for ‘relevant audit experience’ provided more advantage for the accounting profession to claim relevance to Categories II and III RGEAs, the three layers of control could be a challenge for the accounting profession. It should be noted that except for independence which was mobilised in the *Overview Paper* and completed its translation, all the other four transformations were subject to be further transformed by the stakeholder actors in the lobbying process, which will be presented in Section 7.4 following the introduction of the two actor-networks in Section 7.3.

7.3 Evolution to auditing-actor-network and technical-actor-network

After the Department released the *Overview Paper*, 28 submissions were received from stakeholders, of which 12 were confidential to the public (Fig. 7.4). Compared to the previous

lobbying, the ‘greenhouse and energy audits’ narrowed the scope of interest to the two competing professional groups: the engineering and accounting professions. As highlighted in Fig. 7.4, some stakeholders had also participated in the previous lobbying (see also Appendix 3).



Note:

Bold, underlining type means the stakeholder submitted to all of three consultation papers;

Bold type means the stakeholder submitted to two of the three consultation papers.

Figure 7.4: Visible stakeholders enrolled in the greenhouse and energy audit framework lobbying

Further, as shown in Fig. 7.5, the two professional groups expressed distinct opinions regarding the proposed audit framework. While all the accounting actors supported the audit framework in alignment with the financial reporting system, as they had previously in lobbying assurance for the CPRS, most of the engineering actors and their supporters from industry expressed the opposite opinions. Given that the financial implication was discounted by the rejection of the CPRS as well as the controversies surrounded by auditor expertise displaced from ‘financial’ to ‘auditing’, the *financial-actor-work* was changed to the *auditing-actor-network*, in comparison with the *technical-actor-network* maintained by the engineering actors and their supporters. The advantage of this consolidation is not only to

follow their previous lobbying but also to crystallise the distinctive interest and goals held by the auditing-actor-network and technical-actor-network in counter-enrolling the Department. In the following subsections, more information will be given regarding their general feedback.

	Actor	Established Identity	Attitude for CPRS Assurance	Attitude for 'External Audit'	Attitude for Greenhouse and Energy Audit
Auditing-actor-network	CATF	accounting	support	more financial than technical	fair
	Ernst & Young	accounting	support		fair
	Grand Thornton	accounting	support		fair
Technical-actor-network	Coffee Environment	engineering		more financial than technical	emphasise difference between NGER & CPRS audit
	GHD	engineering		more technical than financial	fair
	Carbon Intelligence	engineering		technical rather than financial	fair
	EIANZ	engineering	against	more technical than financial	against
	Aurecon	engineering			bias towards financial auditing
	Enemess	engineering			bias towards financial auditing
	Global Mark	engineering			bias towards financial auditing
	NCS Engineer	engineer			bias towards financial auditing
	NCS Intrnational	engineering			bias towards financial auditing
	URS	engineering			bias towards financial auditing
	Lloyds	engineering			emphasising engineering
	APPEA	industry associations		more technical than financial	bias towards financial auditing
	NGF	industry associations	against third party assurance for large emitters		Against

Figure 7.5: Stakeholders' general attitudes towards greenhouse and energy audit framework

7.3.1 General support from the auditing-actor-network

The *auditing-actor-network* involved 9 accounting actors, as compared to 5 in the previous lobbying. Distinctively, all accounting actors formed an alliance called the Carbon Assurance

Task Force (CATF), including all three professional accounting bodies, as well as the Big 4 and three second-tier accounting firms, representing nearly all the accounting profession – the RCAs in Australia (Fig. 7.4). The establishment of the CATF signified the homogeneous interest shared by the accounting profession and their strong wish to enter into this new field. Of these actors, Ernst & Young and CPA Australia were the most active actors³⁶ because they participated in all of the three lobbying episodes (Fig. 7.5). In addition to their joint submission under the title of CATF, Ernst & Young and Grant Thornton also acted individually by providing additional submissions to support the CATF.

In response to the greenhouse and energy audit framework, the accounting actors supported the use of existing frameworks from both the accounting and engineering professions, including the Corporations Act 2001, AUASB, APESB and ISO, indicating their acknowledgment of the importance of the engineering profession in greenhouse and energy audits. In regard to the changes made by the Department, the CATF especially welcomed the modifications made to independence, indicating the success of the black box of independence made to counter-enrol the Department (Callon & Law 1982). However, the accounting actors were very sensitive to the use of terminology and the three layers of control.

7.3.2 Overall opposition from the technical-actor-network

The *technical-actor-network* included 11 engineering and 2 industry actors. However, no official alliance was established among these actors, rather, they were dispersed even within the same firm. For instance, it is noted there were two submissions from NCSI, one from an individual engineer and another submitted on behalf of the firm³⁷. Of the engineering

³⁶ Although Grant Thornton also participated in all the lobbying processes, its submission lacked substance rather than emphasising its consistence with CATF.

³⁷ A check of the published registration of RGEAs, revealed that Mr Ratna Pullela (the individual engineer) was registered as a Category I technical auditor from NCSI. In September 2012, I conducted an informal interview

stakeholders, EIANZ, GHD, Carbon Intelligence and Coffee Environment also participated in the previous lobbying, while EIANZ as the professional body of environmental auditors participated in all three consultations. Of the industry actors, only NGF and APPEA participated; all other industry actors withdrew from the final episode of lobbying, indicating that auditor expertise was not interesting to industry-wide actors in general. Both NGF and APPEA also participated in the previous consultation as anti-accounting actors. Consistent with their previous lobbying, they resisted the proposal of the NGER audit as well as the involvement of the accounting profession (Fig. 7.5).

For the engineering actors, only GHD and Carbon Intelligence supported the greenhouse and energy audit framework. For example, GHD commented that the framework was “clear, unambiguous and fair” (GHD submission 2009); Carbon Intelligence also believed that the framework “recognises the critical importance of technical knowledge of greenhouse emissions, and non-technical knowledge” (Carbon Intelligence submission 2009). In particular, GHD, as an international professional service company and an audit service panel in the NSW GGAS³⁸ (GGAS 2008) had already been working with the Government on climate change projects (GHD submission 2009). In contrast, Carbon Intelligence Pty Ltd, a consulting and information technology service company, was created to address the need for information and practical advice about greenhouse gas emissions. Its primary focus is Australian mid-size corporations and non-corporate entities (Carbon Intelligence submission 2009). However, all other engineering stakeholders expressed negative opinions, including the environmental auditor professional body EIANZ as well as the newly enrolled GHG

with Mr Pulella and email communications with Mr Nav Brah (the preparer of the other submission from NCSI) who had already quit NCSI by that time. It was confirmed that the two preparers had no knowledge of the existence of each other’s submission. There was no formal discussion about the greenhouse and energy audit framework within NCSI.

³⁸ NSW GGAS was commenced under the *Electricity Supply Act 1995* on 1 January 2003 and ceased on 1 July 2012 (GGAS 2011).

verification firms. In particular, the firms conducting GHG verifications claimed that there was a bias towards financial auditors.

It also needs to be noted that the alliance formed previously by Coffee Environment and RSM Bird Cameron broke up in this episode. In particular, Coffee Environmental lobbied as an individual actor regarding the difference between audit under the NGER Act and the proposed CPRS. This break-up was a direct result of the postponing of the CPRS and the fragility of any stable alliance temporarily formed due to the change of interest.

Viewed from the two distinctive attitudes towards the greenhouse and energy auditing framework, this final episode saw a more intensified trial of strength between the accounting and engineering actors. The bias claimed by the *technical-actor-network* could suggest the relative success the accounting actors achieved in counter-enrolling the Department. In the next section the trials of strength between ‘auditing’ and ‘technical’ as evidenced from lobbying the auditor expertise, is articulated with detailed discursive evidence obtained from submissions and other sources of documentations and literature.

7.4 Trials of strength between ‘auditing’ and ‘technical’ in lobbying

While the Department attempted to please both the accounting and engineering profession and meet their goals in transforming the ‘external audits’ to ‘greenhouse and energy audits’, its translation could only be partial because it could not correctly translate their respective interests. In lobbying for auditor expertise, the controversies were surrounded by three issues: relevant audit experience, auditing terminology and professional judgement. While the engineering profession concerned about ‘relevant audit expertise’ and viewed it as an obstacle for them to be enrolled as Category II and III RGEAs, the accounting actors were

more sensitive to the use of auditing terminology and three layers control imputed on their professional judgement. The lobbying for and against these three inscriptions by the *auditing-actor-network* and *technical-actor-network* clearly depicted the respective interest and obstacles of the existing engineering and accounting actors in the trials of strength between ‘auditing’ and ‘technical’.

7.4.1 Lobbying against ‘relevant audit experience’ by the technical-actor-network

In response to the ‘relevant audit experience’ required for three categories of RGEAs (Section 7.2.3), interestingly, neither the *auditing-actor-network* nor the *technical-actor-network* were happy about the measurement. Instead, both actor-networks claimed that this measurement was too strict and suggested making it looser. However, the key point of the analysis does not finish here. What is more interesting is that the 200 days of ‘relative audit experience’ was interpreted by the engineering actors as favouritism toward financial auditors. To lobby against auditing experience, the technical-auditor-network reemphasised the importance of relevant technical experience.

7.4.1.1 Interpreting a favouritism over financial auditors

The required 200 days audit experience for Category II and III RGEAs was interpreted as a particular indication of bias toward financial auditors. The engineering actors conducting GHG verifications concerned that it would “preclude nearly all the engineering consultants” from lead auditors (e.g. Aurecon Australia submission 2009). In their opinion, the 200 days of auditing experience in the past 3 years is “extreme” and “too stringent limiting” (e.g. Global Mark submission 2009). It was concerned that greenhouse and energy audits were “treated more like financial check for carbon balance sheet” (e.g. Individual engineer from

NCSI submission 2009). Explicitly, they argued that there was a bias over financial auditors, for example,

The approach seems to *be exclusively focused at recognizing auditing competences from a financial/accounting background* (Global Mark submission 2009, emphasis added).

Only in Australia the audit framework as well as NGER is *highly biased towards financial auditing models* (Individual engineer from NCSI submission 2009, emphasis added).

The current approach *favours* authorised audit companies under section 1299C of the Corporations Act 2001 and persons that are registered company auditors under section 1270 of the Corporations Act 2001 (URS submission 2009, emphasis added).

As highlighted in the above excerpts, these engineering actors emotionally expressed their strong resistance, using the terms such as ‘preclude nearly all’, ‘exclusively focused’ and ‘highly biased’. Notably these actors were all experienced with GHG verification but not assurance. Their claims showed that they were not satisfied to be enrolled as Category I auditors, but held ambitions to become Category II and III RGEAs. From this perspective, the Department’s translation of the greenhouse and energy audits did not meet their interest.

7.4.1.2 *Lobbying for ‘technical’ as against ‘auditing’*

To fight back, the representative of environmental auditors, EIANZ, strongly opposed applying the “exact level of detail and assurance as required by financial audits” (EIANZ submission 2009). It reemphasised the *central role* of environmental auditors in greenhouse and energy audits:

The Institute *consistently communicates that environmental practitioners have a central role in undertaking GHG and energy audits* (EIANZ, repeating submission to the external audit, emphasis added).

While the LEAs argued for their leadership in greenhouse and energy audits, not the RCAs', GHG verifiers also lobbied for the recognition of verification bodies, for example:

NCSI strongly recommends greater acknowledgement and recognition of the use of ISO Greenhouse standards for greenhouse gas reporting, verification and auditor competence and the role of Verification Bodies accredited by JAS-ANZ (NCSI submission 2009, emphasis added).

In addition, Coffee Environmental addressed the differences between audits under the NGER Act and CPRS, and emphasised the relevance of engineering profession to NGER audits. As it claimed that:

NGER audits and CPRS audits have different emphasis and therefore require different skills sets.... NGER audits should be led and conducted by auditors with Engineering and Science backgrounds. CPRS reports have a significant financial component so CPRS audits should be led by auditors from financial backgrounds with expert input from auditors with Engineering and Science backgrounds as needed (Coffee Environment submission 2009, emphasis added).

More sharply, the industry body – APPEA argued that 'technical' understanding is more important than 'auditing' (APPEA submission 2009). In APPEA's opinion, "an audit is just that and is premised on sample" (APPEA submission 2009). It was also reemphasised by URS that all three categories of RGEAs need to obtain technical expertise (URS submission 2009). Moreover, the environmental auditors' professional body EIANZ argued that financial auditors' experience was of little relevance, while environmental auditors' experience was 'more transferable experience' (EIANZ submission 2009). As it argued that:

We strongly suggest that years of experience in financial, safety or health audits are of limited or no relevance to greenhouse and energy auditing. Individuals with direct exposure to experience in environmental auditing and assessment would have a more transferable

experience set should direct greenhouse and energy experience be lacking (EIANZ submission, emphasis added).

These arguments show that the trial of strengths had moved from the previous ‘technical vs. financial’ to ‘technical vs. auditing’. The lobbying from the LEAs and GHG verifiers showed the construction of environmental audit expertise (Power 1997b). Power (1997b) suggested that “the field of environmental audit is one in which existing knowledge are both transferred and transformed, in which a new configuration of expertise is constructed by the re-alignment of a particular portfolio of competences” (p142). By the same token, what mattered in the construction of greenhouse and energy auditing as has been exposed was also about transferring and transforming existing expertise by RCAs, LEAs and GHG verifiers via the trial of strengths between ‘auditing’ and ‘technical’.

7.4.2 Lobbying against using commonly understood language and concepts

While engineering actors lobbied against ‘relevant audit experience’ and viewed it as favouritism toward financial auditors, the accounting actors were more concerned about the proposal of ‘using commonly understood language and concepts’ (Section 7.2.2). Especially, they lobbied against the adoption of the term ‘verification’ and the different use of ‘audit’ and ‘assurance’ (e.g. Ernst & Young submission 2009; CATF submissions 2009). Their strong sensitivity to auditing terms was a distinctive reference in contrast to the *technical-actor-network*, which was uninterested in distinguishing the face value of the terms, caring more about the real value.

7.4.2.1 Concern about ‘verification’ by the auditing-actor-network

In response to the two audit types assurance and verification (Section 7.2.1), the auditing actors argued boldly that these terms were misleading to users of financial markets because

they were used inconsistently with the AUASB's usage. Details were addressed to compare the differences between audit (reasonable assurance), review (limited assurance) and verification. For instance, it was argued that using the term 'audit' to refer to *all* potential greenhouse and energy engagements could cause confusion in financial markets (CATF submission 2009). In particular, using the term 'audit' to describe 'verification' might be misleading because no assurance was provided (Ernst & Young submission 2009), and using the word 'audit' to mean 'limited assurance' might overstate the limited level of assurance provided (CATF submission 2009). It was recommended that the term 'verification' should be replaced by terms such as 'assess', 'examine', or 'subject to the procedures' (Ernst & Young submission 2009; CATF submission 2009). As they claimed:

There are a number of areas that we wish to draw to your attention, where the Determination and the existing frameworks provide *different definitions and terminology* as well as areas where the practical application of the existing frameworks differs to that required by the Determination.... [W]e have endeavoured to redefine terms in the Determination in the context of an engagement to *make them consistent with the existing frameworks, specifically their meaning in the standards issued by the AUASB* (CATF submission 2009, emphasis added).

The use of the terms 'greenhouse and energy audit' or 'audit' to describe all three types of engagements (reasonable assurance, limited assurance and verification) is open to misinterpretation by the engagement teams, the entity or the users of our reports [T]he term '*verification*' *is not a term understood in the assurance framework currently maintained by both local and international assurance standards*. The phrase verification to users who may not be familiar with what an audit is, is likely to *cause confusion in the market place* as it implies a level of procedures which would support the users assuming some sort of assurance was being provided (Ernst & Young submission 2009, emphasis added).

It was also suggested that the team leader designated to conduct a verification engagement should be called a 'practitioner' rather than an 'auditor' (CATF submission 2009):

Given that under the AUASB assurance framework the word “audit” would not be used by practitioners who provide assurance on financial statements and other information other than in a reasonable assurance engagement, as contemplated under the legislated auditing standard ASA 700, *the use of the word “audit” in the context of a verification engagement should be reconsidered* (CATF submission 2009, emphasis added).

The term ‘conclusion’ used in audit reports also caught the attention of the auditing actors.

For instance, Ernst & Young argued:

This section appears to be *confusing terminology in relation to conclusions, opinions and assurance*. Under the Australian Auditing and Assurance Standards a conclusion is expressed for both reasonable and limited assurance, unless the auditor is unable to form a conclusion, in which case no conclusion is given. Furthermore, under limited assurance the auditor does not express an ‘opinion’, which is only provided in the conclusion under a reasonable assurance engagement.... [T]he conclusions do not seem to include “emphasis of matter” qualifications or conclusions. In addition, in section 3.19, it is not clear what the difference is between an “Adverse conclusion” and a “Conclusion that he or she is unable to form an opinion as to whether to give a reasonable or limited assurance (Ernst & Young submission 2009, emphasis added).

The sensitivity of auditing actors to auditing terminology was not unexpected. Importing and exporting vocabularies have been found as important strategies for accounting profession being enrolled in non-financial audit fields and subordinate auditors/evaluators from the engineering profession, such as in environmental audits (Power 2003) and performance audits (Gendron et al. 2007). In the case of constructing greenhouse and energy auditing, what is new about auditing terminology was that it acted as a double-edged sword for the accounting profession. On the one hand, it represented the financial auditors’ ‘auditing’ expertise when translating their own interest; on the other hand, it represented financial auditors’ ‘financial’ expertise when translating the interest of the public. By referring to auditing terminology, the

auditing actors could also impute the interest of the financial market and make their claims more representative.

7.4.2.2 *Confusions about limited/reasonable assurance by the technical-actor-network*

Unlike the accounting profession, the engineering profession did not intend to differentiate between the terms ‘verification’ and ‘assurance’, nor were they interested in distinguishing between ‘limited assurance’ and ‘reasonable assurance’. A GHG verifier claimed:

The proposed framework is not matching with international practice of having one type of *verification audit*. In my opinion there is *no need to differentiate between Assurance and verification engagement....* In greenhouse gas areas, *verification audits are conducted to provide assurance (limited or reasonable)* (NCSI Individual submission 2009, emphasis added).

Hence it was also argued that there was no harm in providing an opinion for a ‘verification audit’ (e.g. NCSI submission 2009; NCSI individual auditor submission 2009). Especially, the *technical-actor-network* was ‘confused’ about the differences between ‘limited assurance’ and ‘reasonable assurance’, for example,

It is unclear *what value a ‘limited assurance engagement’ provides over a ‘reasonable assurance engagement’* for the purpose of assurance audits³⁹ (NGF submission 2009, emphasis added).

The definitions of the terms “*reasonable*” and “*limited*” *seem to be too open for interpretation*. One view held by APPEA’s members is that an audit is just that and is premised on *sampling*, for example, at one Australian site an APPEA member company has 6 process drivers and 5 power generators and were asked during an audit to provide all 11 calibration certificates for the fuel gas flow meters. To pick, for example, 2 or 3 of the

³⁹ This question should be asked in a different way, that is, what value a ‘reasonable assurance engagement’ provides over a ‘limited assurance engagement’. This further suggests that the engineering actors were not familiar with the levels of assurance engagement.

process drivers and 2 of the power generators is sampling/auditing – not all 11. *Such an approach unreasonably – adds time and costs for Companies and adds no real value to reducing emissions – the intent of the CPRS and the one of the intents of a comprehensive NGERs* (APPEA submission 2009, emphasis added).

As highlighted in the above quotes, the concern of the *technical-actor-network* was ‘what value a reasonable assurance can provide over a limited assurance’ (e.g. NGFI submission 2009)? The answer could be ‘no real value but adds time and costs’ (e.g. APPEA submission 2009). It was also suggested by Coffee Environmental that an NGER audit should focus on limited assurance and verification rather than reasonable assurance, due to a ‘technical focus’ of the NGER audits:

NGER reports and audits are best conducted by GHG technical specialists and should similarly have a *technical focus*. We also believe that NGER audits should be limited to *Verification or Limited Assurance engagements* except for the special case of Compliance Audits where the GEDO could require Reasonable Assurance (Coffee Environment submission 2009, emphasis added).

The confusions from the *technical-actor-network* showed their lesser interest in the auditing terminology, which in their opinion was more associated with audit sampling techniques than the outcome of an audit. However, in addition to lack of ‘relevant audit experience’, their lack of knowledge about auditing terminology could also be translated as a lack of expertise in ‘auditing’. In contrast, it is interesting to note how hard the accounting profession tried to protect the originality of their terminology. In claiming their knowledge on auditing terminology, the accounting profession could demonstrate an expert image in both ‘financial’ and ‘auditing’, as compared to the *technical-actor-network*’s lack of knowledge in this respect.

7.4.3 Lobbying for professional judgement by the auditing-actor-network

As discussed in Chapter 3, ‘professional judgement’ was considered an important rhetorical device that legitimised auditing expertise as well as the accounting profession (Power 1992; 1995b; 1996). In protecting the legitimacy of their professional judgement in greenhouse and energy auditing, the participants in the *auditing-actor-network* objected strongly to the three layers of control imputed by the Department, including personal engagement, peer review and disclosing more details in an audit report (Section 7.2.5). On the other hand, the technical-actor-network challenged how financial auditors could exercise ‘professional judgement’ on technical matters.

7.4.3.1 *Sensitivity to the three layers of control by the auditing- actor-network*

The auditing actors strongly opposed the requirement for team leaders’ personal involvement in the audit, it was claimed by Ernst & Young that:

It appears that the audit team leader must personally conduct all steps of the assurance procedures. We recommend that this be revised so that the audit team leader has an *oversight, review and direction role, with only key steps requiring personal activity* (e.g. agreeing engagement terms, approving the audit plan and finalising and signing the assurance report) (Ernst & Young submission 2009, emphasis added).

As highlighted, the ‘key steps’ for the accounting actors did not include conducting tests but did include signing the assurance report. It seemed that producing a report with an authorised signature was more important than going out to the site with the technical experts for a test. It would be interesting to ask how the accounting profession was expected to make a professional judgement without participating in a site test. According to the auditing actors, the team leader’s supervision and absence from personal activity in an audit were for the

purpose of quality control, which led to the concern of the *auditing-actor-network* regarding the second layer of control by peer review:

[T]he current requirement for the team leader to oversee the work that each team member is undertaking is *unrealistic in practical terms*. ASQC 1 requires adequate supervision and review responsibilities to be put in place (CATF submission 2009, emphasis added).

In this quote, the CATF proposed a new quality control standard, ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements*. ASQC 1 was to be effective from October 2009 (AUASB 2009) while the third consultation was to close by the end of August 2009. APES 320 mentioned by the accounting actors in the previous lobbying was amended in May 2009 because of its overlap with the proposed ASQC 1 (APESB 2013). This additional information regarding quality-control standards demonstrated that the accounting profession was very capable of producing new standard inscriptions, although some of them may overlap. By attaching relevance to an established future standard, CATF argued to change the term ‘peer review’ to ‘quality control’ and ‘peer reviewer’ to ‘quality control reviewer’.

Moreover, it was argued that the peer reviewer should neither perform additional assurance procedures nor form another opinion/conclusion, and the findings of the review would not be appropriate to be reported externally if they did not affect the conclusion (e.g. Ernst & Young submission 2009, CATF submission 2009). In addition, CATF also argued against disclosing the name of the peer reviewer:

Firstly, it is not normal practice to name other parties in an assurance practitioner’s report. This is largely due to concerns about the confusion it could create as to the relative roles and responsibilities of the peer reviewer vis-à-vis the engagement team leader. Our second concern is with the requirement that matters raised by the peer reviewer must be included in

the report. In practice, all these matters must be resolved between the peer reviewer and the engagement team leader before the engagement team leader can conclude on the engagement....[I]nclusion of information of this nature in the assurance report is unprecedented and *could create confusion as to the status of their resolution* (CATF submission 2009, emphasis added).

The lobbying against peer review was interesting. First, it demonstrated another evidence of the sensitivity of auditing actors to the terminology used; second, if a quality control review was similar to a peer review, why did they lobby against it? Third, if a peer reviewer cannot run an extra test, then, what does a peer reviewer need to review? And fourth, why should a peer reviewer's name be invisible? Actually, what was not said by the *auditing-actor-network* was that quality control is an internal system of the auditor's firm, while peer review could be an external system outside the auditor's firm in which the accounting profession's judgement would be subject to be evaluation by other professionals. Regardless, the accounting profession did not like to be audited especially by another profession. As research on accounting professionalisation has revealed (e.g. Armstrong 1985; Power 1997a), the legitimacy of the accounting profession depends on its obscurity and indeterminacy rather than determinacy. This also drives the current study's attention to its sensitivity to the third layer of control – disclosure of audit details.

In addition to opposing the disclosure of peer reviewers' findings, the auditing actors also strongly opposed disclosing other details in an audit report. For example, in regard to a summary of audit procedures, Ernst & Young emphasised the importance of the team leader's professional judgement, and argued that exposing detailed information in an audit report was not only unnecessary but could lead to increased risk of fraud. Hence, the CATF suggested the requirement to be removed:

We recommend that the requirement in section 3.22 (3) (j) to include *details of the items or matters that particularly impact on the engagement be removed from the assurance practitioner's report*. Information of this Nature could be included in a management letter or board report (CATF submission 2009, emphasis added).

As far as professional judgement is concerned, Power (1997a, p27) once argued that auditing knowledge is rooted in 'deep epistemological obscurity'. From the claims of the *auditing-actor-network*, it can be seen that they were reluctant to let their professional judgement be challenged by other professionals as well as exposed to the public. However, in protecting the legitimacy and the mystery of their professional judgement, rather than expressing it directly, the CATF imputed their interest to the public, claiming that the users would be confused (CATF submission 2009). This again showed the ability of auditing actors to play rhetorical games and make a detour.

7.4.3.2 *Challenges from the technical- actor-network*

In contrast to the strong sensitivity from the auditing actors, few responses were received from the *technical-actor-network* in regard to the three layers of control. In fact, only URS responded to the requirement of peer review, supporting the position that the reviewer should also provide their professional judgement/opinion.

As presented previously, the engineering profession did not set up a uniform quality control system, as had the accounting profession (Green & Li 2012). This may explain the general silence of the engineering actors on this issue. However, the technical-actor-network questioned the accounting profession's judgement. In particular, the industry association APPEA wrote:

Professional Judgement – this comes up in several places, for example, regulation 6.40 2a. Similar to our comments above on regulation 6.10, it is unclear *how someone with professional audit-related experience can exercise “professional judgement” on an engineering matter (or vice versa)* (APPEA submission 2009, emphasis added).

To compete against the accounting profession, the engineering actors reemphasised that the professional judgement required for a greenhouse and energy audit was related to a ‘science of estimation’ (EIANZ submission 2009), rather than ‘bad debt estimation’ (Carbon Intelligence submission 2009), therefore the reviewer should have the technical expertise (URS submission 2009). As EIANZ and Carbon Intelligence argued that:

We suggest that the key challenge with GHG emission audits is the level of *professional judgement required to determine whether GHG emissions have been identified and measured or at least estimated* and to what extent with what level of confidence. It is well recognised that GHG and energy emissions is *a science of estimation* that is reliant on a level of uncertainty and standard deviation. A technical background is critical for the correct application of science to an energy and greenhouse audit (EIANZ submission 2009, emphasis added).

The challenge with greenhouse emission audits is the *professional judgement required to determine if emissions have been identified and measured or at least estimated*. Just as a financial lead auditor must have a *good sense of what accounts receivable value and bad debt provisioning* would be expected for an operation with a certain turnover in a particular industry; so should a greenhouse emissions auditor have a good sense of what tonnage of emissions of what gases would be expected for an operation with a certain production tonnage and staffing in a particular industry (Carbon Intelligence submission 2009, repeating submission 2008, emphasis added).

The challenge the accounting profession faced clearly showed how it was viewed by its competitors and even clients. The lobbying around professional judgement and the three layers of control once again exemplified the trials of strength between the ‘auditing’ expertise of the accounting profession and the ‘technical’ expertise of the engineering profession. In

presenting the claims from the *technical-actor-network*, the question arises again, as asked by Power (1997a): what is the nature of auditing? Is it to bring more documents or more value? And does auditing have borders (Francis 2011)? The answer may rest on the ones who are doing the audits (Power 1997a): some of them, such as those from the accounting profession may prefer auditing without borders; others, such as those from the engineering profession, believe those boundaries do and should exist.

7.5 An overview of Episode Three: Enrolment and trial of strength between technical-actor-network and auditing-actor-network

This chapter presents the third and final lobbying in the ‘extensive consultation process’. In terms of translation, this chapter deals with interessement and enrolment. From Callon’s (1986) viewpoint, there exists a triangular relationship of A-B-C, where if A wants to enrol B, then C must be excluded. Different to the case of scallops and fishermen, the Department (A) wanted to enrol both B (financial auditors) and C (environmental auditors) and D (greenhouse gas verifiers). However, the problem is how to allocate them to different roles and control their behaviours. This also indicates the dialectical perspective of enrolment (Latour 1987).

The trials of strength - specifically, among the Department, the accounting actors, and the engineering actors in terms of their roles in greenhouse and energy audits - were more furious in the episode. While the Department attempted to allocate and lock in the respective roles of RACs, LEAs and GHG verifiers in the three categories of RGEAs and in the different levels of auditing, this goal was challenged and contested by different interests from all three sides. In terms of GHG verifiers, they were not satisfied with their roles as Category I auditors or technical experts but wanted to be upgraded to Category II and III auditors. In regard to environmental auditors - LEAs, they were unhappy with the accounting profession playing a

centre role therefore flighted for its own leadership. On the other hand, although the financial auditors – specially, the RACs - were happy to be enrolled as Category II and III auditors, they disliked having their professional judgement challenged, controlled and disclosed to others. From ‘investment grade’ to ‘relevant audit experience’, the displacement made to greenhouse and energy auditing presented a relative success of accounting actors in a trial of strength with the engineering actors.

In lobbying for auditor expertise, the two professional groups had to deal with their respective obstacles. Although the *auditing-actor-network* formed by all the accounting actors, lacked technical expertise, it demonstrated more skill in playing rhetorical games. On the one hand, it had established a set of standard inscriptions and was ready to produce new ones to bypass the obstacle of ‘technical’, such as independence and claims to the relevance of leadership in a new field. On the other hand, it owned auditing terminology through which it demonstrated its expertise of auditing. What is more dialectic was that it demonstrated an ability to impute its interest onto others, such as the general public. By referring to the interests of groups such as financial markets, it claimed legitimacy to subordinate the engineering profession while escaping the net of the three layers of control.

In contrast, although the OPP of ‘technical’ had been lobbied by the *technical-actor-network* in the previous episode, it was mitigated by ‘relevant audit experience’ in this episode. Compared to the compound system of attachments established by the accounting profession, the engineering profession had not established a sophisticated system to produce inscriptive devices. Despite its market size, which was competitive with the Big 4 auditing firms (Francis 2011), the ISO only produced the series of ISO 14064 standards for GHG verifications. In particular, it did not produce any equivalent uniformed standards for quality

control or independence (Green & Li 2012). In addition, the *technical-actor-network*'s lack of interest in professional language made them appear less professional in 'auditing'. Moreover, as compared to the close alliance of accounting actors and their rhetorical skills, their separation between firms and individuals, environmental auditors and GHG verifiers and their straightforwardness made the lobbying of the *technical-actor-network* in general more widely dispersed and less strong.

This episode further witnessed the role of auditing terminology played in different hands. For example, in the hands of the Department, terminology was used as a device to allocate the accounting and engineering profession within different boundaries and to comfort the engineering profession. In the hands of the accounting actors, terminology was used to claim their expertise in auditing and to subordinate other professionals in an orchestration of a multi-disciplinary team (Power 1997b). The engineering actors, however, did not use it; hence it became a signifier for their lack of expertise in auditing. It further suggested that auditing terminology is an integral part of attachments to auditing. After presenting the transformations of greenhouse and energy audits and the trials of strength between 'auditing' and 'technical', the next chapter will articulate the final translation episode: mobilisation of greenhouse and energy auditing by the Department in the NGER Audit Legislations – the NGER (Audit) Determination 2009 and NGER Auditor Registration Instrument 2010, the enrolment of the accounting and engineering professions, and the mobilisation of the ISAE / ASAE 3410 by the accounting profession.

Chapter 8 Episode Four: Mobilisation and displacement from ‘auditing’ to ‘professional judgement’

8.1 Introduction

After the final lobbying for auditor expertise, the NGER (Audit) Determination 2008 and the NGER Auditor Registration Instrument 2010 were published by the Department in December 2008 and January 2010 respectively. Because the proposed CPRS Bill was rejected the second time by Parliament in December 2009, pre-submission audits for the CPRS were formally removed from greenhouse and energy audits (Australian Government ComLaw 2009). As claimed by the Department, “greenhouse and energy audit is a key monitoring compliance measure under the NGER Act” (DCCEE 2010, p5). Following the NGER Auditor Registration Instrument, the three categories of greenhouse and energy auditors have been registered since May 2010.

During this period, the then Gillard Government introduced the CPM to replace the CPRS (Section 5.2.4). From 1 July 2012, under the CPM, emitters with over 25kt CO₂-e scope 1 emissions (collectively equates to 80-88 percent of total direct emissions in Australia) had been required to submit a reasonable assurance NGER audit report on their emissions (AUASB 2012), which was equivalent to the CPRS assurance requirement.

On the other hand, following the two instruments, the IAASB finally approved ISAE 3410 in March 2012 after a long lobbying process (IFAC 2012). In April 2012, the AUASB proposed the equivalent ASAE 3410 to “underpin the assurance under the NGERS and CES” (AUASB 2012, p2). The implementation of ASAE 3410 commenced from July 2012 and became applicable to three categories of RGEAs (AUASB 2012). Following the publication of ASAE

3410, the NGER Audit Determination 2009 (Australian Government ComLaw 2012) was revised in September 2012 and the NGER Auditor Registration Instrument 2012 (Australian Government ComLaw 2012) were published in November 2012 to accommodate the changes made.

Viewed from the model of translation, this chapter covers three moments of mobilisation (Callon 1986). The first moment covered in Section 8.2, articulates how the Department mobilised the NGER Audit Instruments as adaptations to the trials of strength between ‘auditing’ and ‘technical’. In this moment, the three disputable issues surrounding auditor expertise - ‘relevance audit expertise’, auditing terminology and professional judgement – that emerged from the final lobbying continue to be followed. It is worthwhile noting many adjustments and displacements made by the Department, especially, from ‘auditing’ to ‘professional judgement’ in terms of team leaders’ expertise.

The second moment covered in Section 8.3, follows the registration of three categories of RGEAs by the accounting and engineering firms from 2010 to 2014. The results demonstrate the successes and failures of the Department in locking in the different roles of the accounting and engineering professions. The third moment covered in Section 8.4, follows the AUASB and other accounting actors in incorporating the residual controversies of greenhouse and energy audits in constructing ISAE 3410/ASAE 3410, including those concerning limited assurance and professional judgement. It is interesting to note how the Australian actors persuaded the IAASB. Finally, this chapter introduces the transformation of a new identity ‘assurance practitioners’ created by the AUASB with the rise of multidisciplinary greenhouse and energy auditors in Australia.

8.2 Adaptation of the Department to lock in the roles of placeholders

The mobilisation of the two NGER audit legislation is to allocate and lock the RCAs, LEAs and GHG verifiers into the three categories of RGEAs. In contrast to the three researchers in the case of scallops and fishermen, in which the fishermen aimed to produce as many scallops as possible (Callon 1986), the Department needed to control the number of their enrolment. In negotiating the trials of strength between ‘auditing’ and ‘technical’, the Department finally revised and confirmed five main aspects in relation to auditor expertise: 1) placing the roles of RCAs, LEAs and GHG verifiers by relevant knowledge; 2) extending the measurement of ‘relevant audit experience’ to enrol more auditors; 3) establishing a three-party relationship and emphasising the role of team leaders; 4) adjusting the three layers of control of professional judgement; and 5) modifying ‘commonly understood language and concepts’. In the following subsections these five perspectives are articulated by comparing the differences between the *Overview Paper*, the previous lobbying by the *auditing-actor-network* and *technical-actor-network*, and the NGER audit legislations.

8.2.1 Allocating the roles of RCAs, LEAs and GHG verifiers by ‘relevant knowledge’

As introduced in Chapter 4, consistent to its proposition in the *Overview Paper* and despite strong opposition from the accounting actors, the Department confirmed ‘assurance’ and ‘verification’ as two types of greenhouse and energy audits in the NGER (Audit) Determination 2008 (Australian Government ComLaw 2009), while ‘assurance’ included ‘reasonable assurance’ and ‘limited assurance’. Moreover, in the NGER Auditor Registration Instrument 2010, the Department confirmed three categories of greenhouse and energy auditors: Category I (including technical and non-technical), Category II and Category III (Australian Government Attorney-General's Department 2010). By referring to the terms ‘verification’ and ‘assurance’, ‘technical’ and ‘non-technical’, the existing accounting and

engineering professions in greenhouse and energy audits could be allocated and locked in by the Department.

To be placed into the three categories, different knowledge is required, such as NGER legislations, auditing and team leadership and assurance (Fig. 8.1). For example, to be placed in Category I technical, knowledge about estimation methods defined in the NGER (Measurement) Determination must be obtained. To be placed in Categories II and III, knowledge about assurance and team leadership, but not measurement, must be obtained. Hence, in addition to using the term ‘verification’, by referring to measurement knowledge, the allocation of GHG verifier as Category I technical RGEAs in greenhouse and energy verifications could be confirmed as locked in.

Knowledge Requirements	Specification	Category I Technical	Category I Non-Technical	Category II	Category III
NGER legislations	NGER Act 2007	General			
	NGER Regulations 2008				
	NGER (Measurement) Determination	Methods of estimation	General		
	NGER (Audit) Determination	Verification	Verification	Assurance	Assurance
Auditing	Evidence of training	A course related to Corporations Act 2001, greenhouse and energy verification, environmental audit, course delivered by ICAA, CPA or NIA, ASAE 3000, ASAE 3100, NGER audit			
	Evidence of qualifications	A RCA or an environmental auditor			
Audit team leadership and assurance	Assurance and team leadership	Not relevant		RCA or training course in greenhouse gas verifications, NGER audits, course delivered by ICAA/CPA/NIA	
	Team leadership			Certified LEA or a training course by ISO	
	Assurance			Course of Corporations Act 2001, ASAE 3000, ASAE 3100	

Figure 8.1: Knowledge required for three categories RGEAs in the NGER Auditor Registration Instrument 2010

Moreover, in terms of Category II and III auditors, RCAs could meet the assessment for both assurance and team leadership, while only team leadership was recognised for LEAs. Hence,

LEAs also need to obtain knowledge about ASAE 3000, ASAE 3100 or the Corporations Act 2001 to be placed as team leaders in greenhouse and energy assurances. At this stage, it became clearer why the professional environmental auditors' body EIANZ strongly opposed the adoption of a similar audit framework to that for financial audits, and why the engineering profession claimed a bias toward financial auditors in the lobbying (Section 7.4.1). It can be seen that RCAs gained an advantage when placed into Categories II and III.

8.2.2 Extending 'relevant audit experience' to enrol more auditors

Consistent to its previous propositions, the Department recognised a broad set of relevant experience from financial audits, environmental audits, greenhouse gas verifications and compliance audits (Australian Government Attorney-General's Department 2010). However, as shown in Fig. 8.2, it made dramatic modifications in relation to the measurement of 'relevant audit experience'.

	Overview Paper (Department)			CATF (Accounting)			NCS (Engineering)			Registration Instrument (Department)		
GEAs	days	years	NGER Audits	days	years	NGER Audits	days	years	NGER Audits	hours	years	NGER Audits
Category I	100	3	N/A	50	3	N/A	20		N/A	350	5	N/A
Category II	200	3		100	3		too limiting	>3		700	5	
Category II team leader	50	3		25	3		too limiting	>3		490	5	
Category III	200	3		100	3		too limiting	>3		700	5	
Category III team leader	50	3	2 audits (team leader or member)	25	3	defer 3 years	too limiting	>3		490	5	2 assurances

Figure 8.2 Modifications of 'relevant audit experience' in NGER Auditor Registration Instrument 2010

Fig. 8.2 compares the measurement of 'relevant audit experience' by the Department in the *Overview Paper*, lobbying by the CATF (an accounting actor) and NCS (an engineering actor) in the previous consultation process, and the measurement revised by the Department in the

NGER Auditor Registration Instrument 2010. As shown, the final mobilisation of the measurement of ‘relevant audit experience’ seems more clear, but less rigorous. For example, the 200 days’ experience in the preceding three years required for Category II auditors is changed to 700 hours (equivalent to 100 days) in the preceding five years. The significant reduction of 100 days and extension of two years apparently followed lobbying by both CATF and NCS. On the other hand, the reduction to team leaders’ experience seems less significant, suggesting the importance of team-leadership experience for greenhouse and energy assurances. However, the extension from three to five years still reflects the lobbying efforts made by the engineering actors. Moreover, the Department also changed the prerequisite for Category III RGEAs from at least two ‘audits’ (DCC 2009) to two ‘assurances’ (*Australian Government Attorney-General's Department 2010*), again suggesting the importance of Category II auditors because Category I auditors are locked in with ‘verification’ not ‘assurance’.

As discussed previously, the measurement of ‘relevant audit expertise’ was the most controversial issue strongly opposed by the engineering actors in the final consultation process (Section 8.4.1). Although the Department attempted to set it as an OPP to limit the number of enrolled Category II and III auditors and allocate the roles to RCAs, it was unsuccessful: not only did the engineering actors, especially the GHG verifiers, view it as a significant bias toward financial auditors, it was also too stringent for the accounting actors themselves. The change made to the measurement of ‘relevant audit experience’ is a good example of negotiating and modifying an unsuccessful OPP by the Department; engineering actors, and accounting actors. It is hard to tell if it was especially modified to enrol more auditors from the engineering profession, because the original OPP was also too narrow for the accounting profession to pass through. Regardless, no accounting actor claimed any bias

toward the engineering profession, indicating an advantage the accounting actors gained from ‘relevant audit experience’ in claims to relevance.

8.2.3 Establishing a three-party relationship and displacing emphasis on the role of team leaders

Distinctively, the Department claimed that “a three party relationship must exist between the GEDO, the audited body, and the *audit team leader*” (DCCEE 2010, p9, emphasis added). As highlighted in Fig. 8.3, an attention needs to be paid to two terms. First, ‘assurance’ is highlighted for an audit engagement by the Department. Clearly this three-party relationship was established for greenhouse and energy assurance, not verification. Second, the role of a ‘audit team leader’ was emphasised among other Category II or III ‘auditors’ who can conduct reasonable and/or limited assurances.

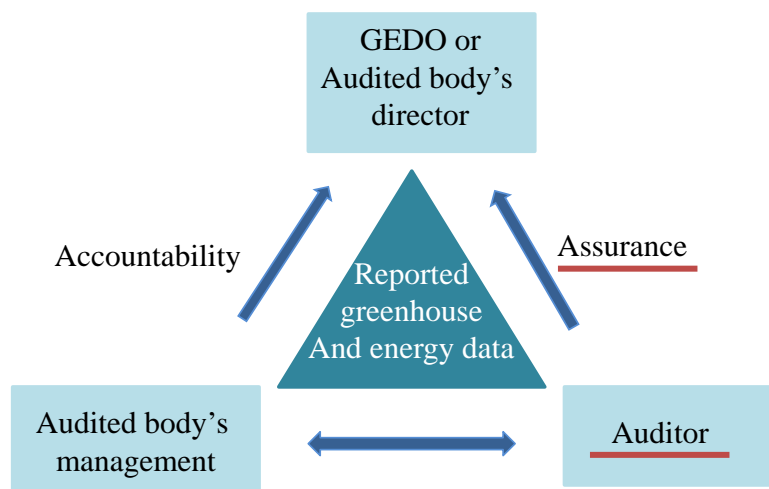


Figure 8.3: Three-party relationship as defined by the Department (DCCEE 2010, p10)

As shown in Fig. 8.4, tracking the key roles for greenhouse and energy audits reveals that the emphasis was displaced from lead auditors and technical experts in the *External Audit Consultation Paper* (DCC 2008), to three categories of RGEAs (transformed from lead auditors) in the *Audit Framework Overview Paper* (DCC 2009), until finally to Category II

and III team leaders in the NGER Auditor Registration Instrument (Australian Government Attorney-General's Department 2010). In this process, the Department used the term 'team leadership' to settle the controversies between 'technical' and 'auditing'.

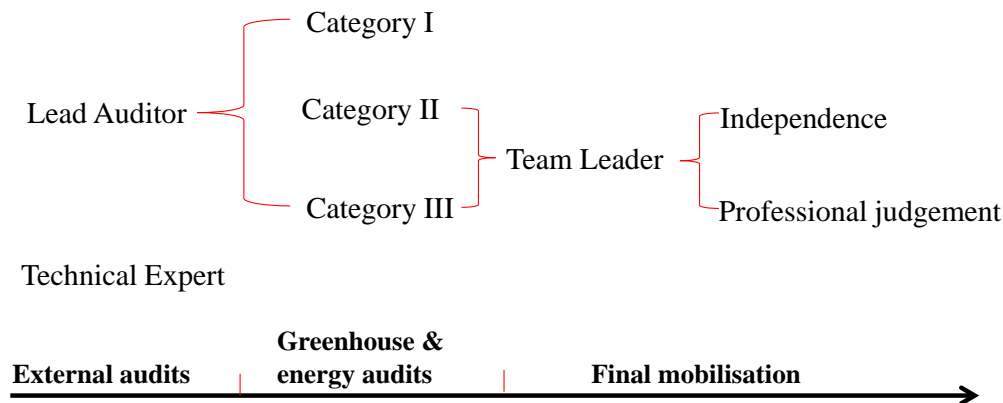


Figure 8.4: Transformations of the role of greenhouse and energy auditors

As discussed previously, the identity of a team leader was closely associated with the overview of independence and conflict of interest of team members, and the use of professional judgement in selecting team members and preparing an audit plan and audit report. In terms of independence, the accounting actors had already successfully enlisted the Department in the previous lobbying. In regard to leadership in professional judgement, they had also persuaded the Department with their relevance in using the work of an expert and quality control. However, there were still some uncomfortable requirements challenging the accounting profession such as personal engagement and the disclosure of audit details, which will be presented in the next section. These controversial issues distinctively mediated the translation process of constructing the standards ISAE 3410/ASAE 3410 (Section 8.4).

8.2.4 Adjusting three layers of control for team leaders' professional judgement

In respect to the three layers of control, some adjustments were made by the Department. First, in terms of team leaders' personal engagement in an audit, and despite the strong resistance by the accounting actors, the Department insisted on the requirement - and, in fact, making it stricter:

- 1) The audit team leader *must be personally involved* in preparing for and *carrying out* the audit and in the preparation of the audit report.
 - (2) The audit team leader must *supervise* the work that each audit team member is undertaking in the carrying out of the audit.
- (Australian Government ComLaw 2009, p8, emphasis added).

As highlighted in the above quote, the Department insists that the team leader must be 'personally involved in carrying out the audit' and 'supervise' the work of each audit team member, including the technical experts (Australian Government ComLaw 2009). These requirements are in strong contrast to the lobbying by Ernst & Young (Section 7.4.3.1), whose representatives asserted that team leaders should have an 'oversight, review and direction role' and only needed to be involved in the 'key steps' which did not include carrying out audit procedures (Ernst & Young submission 2008). Notably, the term 'overview' was used in the draft (Audit) Determination (DCC 2009). From 'oversight' and 'overview' to 'supervise', and from 'personally involved' to 'personally involved in carrying out the audit', the displacements made by the Department apparently became more stringent for team leaders from the accounting profession.

In regard to audit disclosure, despite the strong opposition from the accounting actors, the Department insisted on most of its propositions, for instance, it requested disclosures such as 'details of aspects of the matter', 'details of any matter, related to the matter being audited',

and ‘details of the outcome of the evaluation undertaken by the peer reviewer’ (Australian Government ComLaw 2009, p24). These details, however, were required to be disclosed in Part B instead of Part A in an audit report, which made it appear less significant than previously required in the Draft Determination (DCC 2009). In addition, a summary of audit procedures needed to be disclosed in an audit report⁴⁰. However, some adaptations were also made in accordance with the lobbying of the accounting actors, the most important of which was related to detailed findings. Notably, it was no longer necessary to disclose the ‘details of the audit team leader’s conclusion for the audit’ or the ‘detail why the audit team leader provided an adverse conclusion’ (DCC 2009, p22).

Additionally, the Department insisted that the name of the peer reviewer and details of outcome of the evaluation be included. However, following the lobbying of the accounting actors, no additional tests were required (Australian Government ComLaw 2012). Moreover, the peer reviewer would now be appointed by the team leader, and there was no explicit requirement that a peer review should come from outside the auditor’s firm. To this end, peer review and quality control could be substantially streamlined.

8.2.5 Modifying ‘commonly understood language and concepts’

In the final NGER Audit legislations, the Department did not emphasise the importance of ‘using commonly understood language and concepts’ (DCC 2009), however, when referring to the existing standards from the AUASB, APESB and ISO, it claimed that common terms ‘may have slightly different interpretation’(DCCEE 2010, p19). As shown in Fig. 8.5, some modifications were made in relation to the use of audit opinions or conclusions in the NGER Audit legislations.

⁴⁰ For a verification engagement, detailed procedures needed to be disclosed (Australian Government ComLaw 2009).

Overview Paper	NGER (Audit) Determination	NGER (Audit) Determination Handbook	Financial Audit
a reasonable or limited assurance	a reasonable (limited) assurance conclusion	an unqualified conclusion (p31, p60)	an unqualified opinion
	a qualified reasonable (limited) assurance conclusion	a qualified opinion/conclusion (p86)	a qualified opinion
an adverse conclusion	an adverse conclusion	an adverse opinion/conclusion (p86)	an adverse opinion
a conclusion that he or she is unable to form an opinion about the matter being audited	a conclusion that he or she is unable to form an opinion about the matter being audited	a disclaimer opinion/conclusion (p86)	a disclaimer opinion

Figure 8.5: Transformations and modifications of audit opinions or conclusions

Compared to the *Overview Paper* (DCC 2009), the terms used in the *Audit Determination* 2009 and especially the *Audit Determination Handbook* 2010 aligned more with financial audits. For example, a requirement for a qualified conclusion was added in line with financial audits. Moreover, although the NGER (Audit) Determination 2009 still used ‘a conclusion that he/she is unable to form an opinion about the matter being audited’, the term ‘disclaimer’ was adopted in the *Audit Determination Handbook* 2010. Distinctively, the Department also attempted to distinguish between ‘conclusion’ and ‘opinion’ as shown by ‘a qualified opinion/conclusion’ (DCCEE 2010, p86). These delicate modifications provided evidence that greenhouse and energy auditing was becoming more aligned with financial auditing in terms of language and concepts.

8.2.6 A brief review of the adjustments and displacements made by the Department

This section illustrates the final modifications the Department made in mobilising the NGER audit legislations, which were similar to the ‘collector’ used by the three researchers to catch the scallops in St Brieuc Bay (Callon 1986). But in contrast to the case of the scallops and fishermen, in which the researchers aimed to catch as many of one type of scallop as possible,

the Department needed to allocate and lock different types of auditors into its ‘collector’. As discussed, the Department confirmed its goal in locking in the different roles of RCAs, LEAs and GHG verifiers and controlling the behaviour of team leaders through inscriptions such as auditing terms, relevant knowledge, ‘relevant audit experience’ and professional judgement.

This episode has witnessed many adjustments and displacements. For instance, the OPP of ‘relevant audit experience’ was widened to allow more auditors to pass through. Moreover, the emphasis of auditors was displaced from lead auditors to three categories of RGEAs and then to team leaders of Category II and III, while auditor expertise was displaced from the previous ‘technical’ and ‘financial’ to ‘technical’ and ‘auditing, and finally to the current ‘professional judgement’. Furthermore, team leaders’ personal involvements were displaced from ‘overview of team members’ to ‘supervise team members’, and became more specific in relation to carrying out the audit. These adjustments and displacements showed the result of negotiation among the Department and the accounting and engineering actors as well as their respective professions. Although RCAs seemed more favoured by the Department due to their relevant audit knowledge and experience, there were still some uncomfortable challenges for them in exerting professional judgement. This therefore led to the modifications made by the accounting actors in standardisation of ISAE 3410/ASAE 3410, which will be presented in Section 8.4.

8.3 Mobilisation of RGEAs and the rise of the Big 8 greenhouse and energy auditing firms

This section follows the registration of the accounting and engineering professions in the three categories of RGEAs after the publication of the NGER Auditor Registration Instrument 2010. As shown in Fig. 8.6, the Category II and III auditors increased more dramatically than the Category I technical auditors from May 2010 to July 2014 (see also

Appendix 8.11). Hence, in following the registration, the Category II and III auditors deserves attention given their importance in the three-party relationship, so do the disputes it aroused among RCAs, LEAs and GHG verifiers (Section 7.5). In addition to paying attention to the enrolment of the accounting and engineering professions in general, a particular attention is paid to the lobbying actors to see how many places they have held so far. From this perspective, these auditors are ‘placeholders’ (Latour 2005a, pp153-154) who are the actants rather than actors. The result of the registration is more convincing evidence to link to the trials of strength between ‘technical’ and ‘auditing’ and the goal of the Department in locking in the different roles of the accounting and engineering professions.

Download time	Firms	Category I technical	Category I non-technical	Category II	Category III	Total no. of auditors
May-10	70	100	38	41		123
Aug-12	84	115	59	64	2	162
Dec-12	84	122	67	72	4	173
Jul-14	82	116	77	81	14	172

Figure 8.6: Registered greenhouse and energy auditors in 2010, 2012 and 2014

8.3.1 The initial success of the eight actors in 2010

The three categories were occupied in May 2010 by a total of 123 auditors from different professional backgrounds. The Department got 100 Category I technical auditors, 38 Category I non-technical auditors and 41 Category II auditors (Appendix 8); some auditors occupied multiple categories.

Of these auditors, the lobbying actors occupied 38 percent of the total places, and 44 percent of Category II (Fig. 8.7). These actors included six accounting firms - the Big 4 auditing firms (KPMG, Ernst & Young, Deloitte and KPMG), and two second-tier accounting firms -

BOD (a member of CATF) and RSM Bird Cameron (joint submission with Coffee Environment). It also included two engineering actors - GHG and Carbon Intelligence. This information was important because, as presented previously, GHD and Carbon Intelligence were the only two engineering actors that had supported the Department's proposal of greenhouse and energy framework in the final consultation process (Section 7.3.2).

Actors	Identity	No. of EITE Auditors	No. of Category II Auditors	Total no. of auditors	No. of submissions
KPMG	Accounting	23	8	14	2
Ernst & Young	Accounting	16	11	12	3
GHD Pty Ltd	Engineering		2	4	2
Deloitte Touché Tohmatsu	Accounting	5	3	3	2
RSM Bird Cameron	Accounting	8	2	3	1
Carbon Intelligence	Engineering		1	3	2
BDO Audit (WA)	Accounting	7	1	2	1
Parsons Brinckerhoff	Engineering			2	1
PwC	Accounting	21	1	1	2
Emission Statement Pty Ltd	Engineering			1	1
Energy Corporate	Engineering			1	1
URS Australia	Engineering			1	1
JTP Australia	Engineering			1	1
Total auditors 123				48	39%
Total Category II auditors 41			29		44%
Total EITE auditors 125		80			64%

Figure 8.7: Enrolment of active actors in 2010

Distinctively, 75 percent of the Category II auditors were occupied by three Big 4 firms. In addition, the accounting actors also occupied 80 percent of EITE auditors⁴¹. In contrast, the engineering firms occupied the Category I technical auditors, with one each in more than 60 engineering firms. The distribution of the Category I technical and Category II auditors by the accounting and engineering lobbyists may present the success of the Department in allocating different roles of the accounting and engineering profession across the three

⁴¹ As presented in Section 5.2.3, the assurance framework for EITE assistance was to be developed in advance of the audit framework of the CPRS, and was independent of the CPRS and the NGERs as a whole (DCC 2009). These auditors have been analysed in the study by Green and Li (2012).

categories. It also suggests the success of the eight active actors in pursuit of their places, especially the Big 4 auditing firms in taking places in Category II.

8.3.2 Balancing the places of Category III in 2012

In December 2012, the total number of auditors increased to 173. As shown in Fig. 8.8, these auditors occupied 122 places in Category I technical, 67 places in Category I non-technical, 72 places in Category II and four places in Category III (also see Appendix 10).

Profession	No. of firms	Auditor Category I technical	Auditor Category I non- technical	Auditor Category II	Auditor Category III	Sum
Accounting	15	21	41	51	2	70
%	18%	17%	61%	71%	50%	40%
Engineering	69	101	26	21	2	103
%	82%	83%	39%	29%	50%	60%
Total	84	122	67	72	4	173

Figure 8.8: Comparison the accounting and engineering professions' enrolment as of December 2012

Compared to 2010, the allocation of the accounting and engineering professions showed a similar trend in 2012. As shown in Fig. 8.8, although there were only 15 accounting firms (18 percent), they held 71 percent of places of Category II. In addition, they also occupied 17 percent of Category I technical. A closer examination of the background of the auditors shows that there are a number of auditors from the Big 4 auditing firms who are experienced in both financial and environmental audit (Appendix 12). This information indicates the multidisciplinary background of auditors in the Big 4 auditing firms. In contrast, only 28 percent of Category II auditors were occupied by the engineering firms, however, they occupied 82 percent of Category I technical auditors.

Category III RGEAs were divided evenly between the accounting and engineering firms (Fig. 8.9). It is also worth noting that of the two Category III auditors registered in August 2012 (Appendix 9), one was occupied by an auditor from RSM Bird Cameron, and the other by an auditor from GHD. Interestingly, when the Category III auditors were increased to four in December 2012, all places were still occupied by these two firms.

No.	Expertise	Company name	Auditor Category I technical	Auditor Category I non-technical	Auditor Category II	Auditor Category III
1	environmental	GHD Pty Ltd	yes		yes	yes
2	environmental	GHD Pty Ltd	yes	yes	yes	yes
3	financial	RSM Bird Cameron		yes	yes	yes
4	financial	RSM Bird Cameron			yes	yes

Figure 8.9: Registered greenhouse and energy Category III auditors as of December 2012

The background information shows that the two placeholders from RSM Bird Cameron specialised in financial audits, while the two from GHD had expertise in environmental audits. It also shows that one of the GHD auditors was also the one who had prepared the submission papers for GHD in the lobbying process. Given that the team leader for a compliance audit under the NGER Act must be appointed by the GEDO (DCC 2009), there are reasonable grounds to believe that the places in Category III were arranged purposely by the Department.

8.3.3 The rise of the new Big 8 greenhouse and energy auditing firms in 2014

By 16 July 2014, the three categories were occupied by total 172 auditors from 82 firms (Australian Government Clean Energy Regulator 2014). As indicated in Fig. 8.10, although the total number of auditors had not increased compared to December 2012, Category III had increased from 4 to 14 auditors (also see Appendix 11).

Company	Count of Auditor category I technical	Count of Auditor category I non technical	Count of Auditor category II	Count of Auditor category III	Count of auditors
Ernst & Young	9	8	13	4	15
GHD Pty Ltd	5	2	3	3	5
RSM Bird Cameron		3	4	2	5
KPMG	15	18	16	1	31
PwC	3	9	8	1	10
Deloitte	4	5	5	1	6
BDO		4	3	1	5
Carbon Intelligence	4	3	2	1	4
Total of Big 8	40	52	54	14	81
Grand Total	116	77	81	14	172
	34%	68%	67%	100%	47%

Figure 8.10: The Big 8 greenhouse and energy auditing firms in July 2014

As shown in Fig. 8.10, these 14 places were now held by eight firms, including the Big 4 auditing firms, the two engineering firms GHD and Carbon Intelligence and the two second-tier accounting firms RSM Bird Cameron and BDO. These were exactly as the eight active lobbyists that had occupied 44 percent of the places of Category II four years before (Section 8.3.1). While Ernst & Young now held four places as the number one placeholder, GHD was second with three places. In addition, these eight auditing firms constituted 47 percent of total auditors, holding 67 percent of the Category II places and 68 percent of the Category I non-technical places.

It is important to hold places in the Category III because it means that the placeholders have conducted at least two greenhouse and energy assurances, according to the registration requirement (Section 8.2.2). Meanwhile, these eight firms were also within the top 10 firms in terms of the total number of auditors (Appendix 11). As presented in Section 8.2.3, the total number of auditors also matters critically because the firm with ‘a pool of auditors’ will be considered to be registered in the long run (DCC 2009, p22). Given the growth trend of

the enrolment and the reasonable assurance requirements for large emitters under the CES (AUASB 2012), it is reasonable to suggest that these eight firms will possibly become the first Big 8 greenhouse and energy auditing firms in the near future once the firms can be registered. On the other hand, 63 engineering firms still hold only one place for Category I technical (Appendix 10). These firms include the previous lobbyists who emphasised the importance of technical auditing and/or claimed a significant bias toward financial auditors; for example, Coffee Environmental, Aurecon and NCS. The gaps between the Big 8 and the rest of the engineering firms in occupying the three categories had now become distinctive.

Moreover, more auditors became multi-placeholder. For example, most of the Category III placeholders in the Big 4 auditing firms now also held places in Category I technical and non-technical. Except for the two second-tier accounting firms, all the other firms now had a number of technical auditors. KPMG in particular does not only own the largest pool of auditors, it also holds the most number of technical auditors of all the 172 firms. This indicates the capacity of the Big 4 auditing firms to develop technical skills as well as incorporating professionals from other backgrounds to its subordination (Power 1997b).

8.4 Incorporating greenhouse and energy audits in constructing ISAE 3410 /ASAE 3410

The story this research has been tracing has not yet ended because of the uncomfortable challenges faced by the accounting profession in legitimising their professional judgement on the new subject matter (Section 8.2). Therefore it is necessary to follow another overlapping process of constructing ISAE 3410 and its Australian equivalent, ASAE 3410, by the IAASB and AUASB, respectively. The significance of ISAE 3410 is clear: it is the first standard developed by the accounting profession on a specific subject matter other than financial statements. The controversies in developing this standard have been discussed in Section

4.2.2; some studies have also been done in relation to its problematisation (e.g. Simnett & Nugent 2007; Simnett et al. 2009; Green & Li 2012). However, the main aim of this section is not to present the complete translation process in constructing the two standards, but to follow the settlements of the controversial issues raised from the NGER audit legislations. It is interesting to learn how the IAASB was persuaded by the AUASB and other Australian accounting actors to incorporate the controversies regarding limited assurance and professional judgement from greenhouse and energy audits, and how a new identity, 'assurance practitioner', was transformed by the AUASB in consideration of the multi-disciplinary backgrounds of Category II and III auditors.

In the following subsections these issues will be articulated with discursive evidences extracted from the IAASB Roundtables in 2008, the AUASB Roundtables on ED ISAE 3410 in 2011, IAASB and AUASB minutes of meetings, submissions to the IAASB/AUASB and other documentations produced by the IAASB and AUASB. This evidence will be linked with the NGER audit legislations as well as the lobbying of the accounting actors in constructing the NGER greenhouse and energy audits.

8.4.1 The representation of the AUASB

It is first necessary to review the role the AUASB played in constructing greenhouse and energy audits in Australia. As discussed in Chapter 5, the AUASB is an Australian Government body with a broader mandate than the IAASB in formulating auditing and assurance standards (Green et al. 2009). It has been found that the construction of NGER audit legislation was an important agenda for the AUASB Board meetings from February 2008 to February 2013 (Appendix 13). Actually, the AUASB was a hidden actor behind the Department throughout the translation process. As acknowledged in its 18th Board meeting

during 25-26th February 2008 - eight months before the 'external audit' consultation - it stated:

The AUASB received an update on recent meetings with the Department of Climate Change and the status of the Department's project on issuing Regulations and Policy under the National Greenhouse and Energy Reporting Act (NGER) The AUASB agreed to continue working with the Department on the proposed audit requirements (AUASB 2008).

After the Department released the first list of RGEAs in May 2010, the AUASB commented in its 46th Board Meeting in July 2010:

The Board noted that practitioners have been applying for registration as approved auditors from April 2010, and that *a number are from outside of the accounting profession* (AUASB 2008, emphasis added).

These quotes highlight that "a number [of practitioners] are from outside of the accounting profession". It is understood that this mainly referred to the Category II auditors. The quote itself suggests that the AUASB was surprised that 'a number' of Category II auditors came from the engineering profession. Or at least it did not expect that 'a number' of them would come from outside the accounting profession. This information confirms that the original goal of the Department and the AUASB was not to allocate most places in Category II to the engineering profession. It also suggests that although the AUASB has a broader mandate than the IAASB (Green et al. 2009), it still has a preference for Category II auditors between the accounting and the engineering profession.

8.4.2 Filling in the gap between technical knowledge and professional judgement

In legitimatising their professional judgement on greenhouse gas emissions, the financial auditors first faced the unavoidable obstacle of their technical experience and knowledge

(Section 7.4.3). As discussed in Section 7.4, the engineering actors and their alliance had attempted to establish ‘technical’ as the OPP for the ‘external audits’ in Episode Two; however, this was mediated by ‘auditing’ in Episode Three (Section 8.2). Nevertheless, the professional judgement of financial auditors was still being challenged. As the IFAC acknowledged in the Australian Roundtable of May 2008:

Uncertainty – emissions data will always be an estimate. Unlike dollars, not every CO₂e can be counted. There are, necessarily, a lot of extrapolations and estimations involved. It is *more like valuing an intangible* than reporting on transactions (IFAC 2008, p4, emphasis added) .

In particular, the IFAC (2008) emphasised that the biggest risk of uncertainty was associated with Scope 3 emissions because like goodwill, measuring these emissions will never meet the assertion of completeness. Interestingly, despite the fact that the Australian accounting actors complained in their internal meeting that “accountants cannot accurately measure emissions, even scientists cannot” (IFAC 2008), the IAASB members - particularly those from Australia ones - increasingly emphasised technical expertise (IAASB 2012). For example, when representing Australia at the ED ISAE 3410 Australian Roundtable meeting in March 2011, the AUASB proposed that measurement methodology was critical for audits under the NGERS (AUASB 2011). The AUASB also critiqued the IAASB for only addressing “methods used for determining organisational boundaries” but not “facility activities” (AUASB 2011, p4).

Notably, in the final standard, the IAASB explicitly suggest that Scope 3 be excluded from any assurance engagement. Moreover, a standard statement was requested to address the uncertainties in the assurance reports, because:

[e]missions and energy quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases (IAASB 2012, p86).

More importantly, in addition to a general understanding of climate science, emissions trading schemes and market mechanisms, laws and regulations, such as those required by the Department in the NGER Auditor Registration Instrument, SAE 3410 and ASAE 3410 emphasised competency in measurement methodologies in dealing with the associated scientific and technical uncertainties (AUASB 2012; IAASB 2012). Thus, as influenced by the AUASB and other members, the IAASB seemed to have established a higher criterion for auditors, as the Department did not require measurement knowledge for Category II and III RGEAs for NGER audits (Section 8.2.2). This may also explain why the number of Category I technical auditors in the Big 4 auditing firms have boomed since 2012 (Section 8.3.3).

In dealing with technical obstacles, the strategies adopted by the accounting actors in enhancing their professional judgement were focused on two aspects: first, rhetorically, using a standard statement in an audit report to address the inherent uncertainties of greenhouse gases; and second, practically, building up technical knowledge on emissions measurement to fill in the knowledge gap.

8.4.3 Problematising limited assurances and differentiating professional judgement

How to define the extent of professional judgement became another significant problem, which was especially related to the problematisation of limited assurances in ISAE 3410/ASAE 3410. As discussed in Section 7.4.2.2, the two terms ‘limited assurance’ and ‘reasonable assurance’ once confused the engineering and industry actors in Episode Three. In particular, ‘limited assurance’ became one of the ‘key matters’ for the AUASB (2011), and

‘the most significant issue’ for the IAASB (2011). As the IAASB acknowledged in its ED of ISAE 3410 in January 2011:

The most significant issue arising in the comments on the Consultation Paper was a call for the ISAE to *deal with limited assurance engagements*. Proposed ISAE 3410 therefore covers limited assurance engagements in addition to reasonable assurance GHG engagements (IAASB 2011, p6, emphasis added).

The IAASB proposed to include limited assurance as an alternative to reasonable assurance in ISAE 3410 (IAASB 2011). During the AUASB Roundtable on ED 3410 in March 2011, both the accounting and engineering professional groups strongly supported this proposal (AUASB 2011). As claimed by Grant Thornton, it was limited assurance rather than reasonable assurance that was “currently being used in practice in the early greenhouse gas assignment” (Grant Thornton submission 2011). One reason, as claimed by the AUASB, was that “emitters are no longer generally considered ready for reasonable assurance over emissions as yet” (AUASB 2011). The other reason, as claimed by the AUASB, was that:

[t]here was *discomfort* regarding the differing approaches taken to limited assurance between the different pronouncements of the IAASB with respect to limited assurance however. It was noted that the difference between *limited and reasonable assurance will cause problems and was confusing to practitioners from differing backgrounds* (AUASB 2011, p2, emphasis added).

Therefore, it was suggested by the AUASB that further guidance was needed to distinguish between reasonable and limited assurance because of the ‘discomfort’ and ‘confusion’ caused to non-accounting professionals. It consequently brought in another two interrelated questions in terms of professional judgement. The first question was whether it is necessary to apply professional judgement to a limited assurance and, if so, to what extent professional judgement should be applied in deciding audit procedures for a limited assurance in

comparison with a reasonable assurance. The second question was related to disclosure: to what extent the professional judgement about audit procedures should be disclosed in limited assurance and a reasonable assurance reports.

In regard to the first question, the IAASB members held different opinions:

Some IAASB members were of the view that the limited assurance report should only include standardized procedures, with no ability to further tailor. Others were of the view that the *limited assurance report should allow the practitioner to use professional judgment in describing the procedures* and, in their view, was consistent with ISAE 3000 (IAASB 2012, p11, emphasis added).

In this respect, the AUASB suggested that other procedures in addition to analytical procedures and enquiry that are commonly used in a review of financial statements be considered for a limited assurance on a greenhouse gas statement (AUASB 2011). Eventually, the Australian accounting actors' suggestion was adopted in ISAE 3410 in which professional judgement which was also termed as 'significant judgement' was required for both reasonable assurance and limited assurance (AUASB 2012; IAASB 2012). On the other hand, although not mandatory, site visits⁴² became an important audit procedure for a reasonable assurance (IAASB 2012). This change can also be attributed to the lobbying of the AUASB (2011) on the basis that GHG emissions are measured at the facility level rather than from operational boundaries.

The second question was more controversial due to the fact that "the description of the assurance practitioner's procedures in a limited assurance engagement is ordinarily more

⁴² It was raised in my informal interview with a Category I technical auditor that a client complained that accounting firms only audited three out of the 60 sites in a greenhouse and energy audit. This information could reflect that site visits were not normal procedures in audits by the accounting profession.

detailed than in a reasonable assurance engagement” (AUASB 2012, p103; IAASB 2012, p80). The IAASB was concerned about the risk of misleading users to believe that “limited assurance conveyed a higher level of assurance than reasonable assurance” (IAASB 2012, p11). In this respect, while the members ‘expressed mixed views’ (IAASB 2012, p11), the AUASB (2011, p2, emphasis added) suggested that the “details of procedures conducted should *be limited* as users may misinterpret the procedure”. Finally, the IAASB required that the summary of audit procedures for a limited assurance would be:

a description of procedures that were not performed that would ordinarily be performed in a reasonable assurance engagement” (AUASB 2012, p103; IAASB 2012, p80).

On the other hand, the AUASB required that the summary of audit procedures in a reasonable assurance should be brief because specific procedures ‘would not assist users to understand’ the auditors’ opinion (IAASB 2012). Hence, by appealing to users’ interests, the black box of professional judgement for a reasonable assurance was rhetorically protected by the accounting profession.

8.4.4 Transformation from ‘assurance profession’ to ‘assurance practitioners’

After the draft ISAE 3410 was issued in June 2008, the IAASB predicted that this standard would “likely be of interest to a broader range of stakeholders than the IAASB’s usual constituency” (IFAC 2009, p2). Hence, the term ‘assurance professional’ was proposed in the IFAC meeting on the draft ISAE 3410, which was defined as:

the person or persons conducting the audit, usually the engagement partner or other members of the engagement team, or, as applicable, the firm (IFAC 2009, p2) .

However, it was argued that the term ‘assurance professional’ was problematic in consideration of the multidisciplinary nature of the engagement team (IFAC 2009). For instance, the IFAC (2009) highlighted that “the term suggests a single person but the definition means that it may include the engagement team, external experts, or even the entire firm”. Especially, it was problematic when the work of an external expert is used. As it claimed:

it is difficult to understand requirements that require the ‘assurance professional’ to evaluate some aspects of an ‘assurance professional’s expert’ as this could be an expert evaluating his/herself (IFAC 2009, p7).

What really mattered was whether this standard could be applied by the engineering profession. In this respect, the Australian members strongly protested restricting the application to ‘professional accountants’ only and proposed the term ‘assurance practitioners’ to broaden the coverage to professional engineers (AUASB 2010). As the AUASB argued:

This precludes a non-accountant registered by the Regulator in Australia as a greenhouse and energy auditor from adopting the ISAE (AUASB 2010).

The AUASB’s proposal was also supported by JAB and the Big 4 auditing firms in Australia. They lobbied that the standards should also consider the needs of practitioners other than professional accountants:

The competency and qualifications of assurance practitioners are arguably matters which individual regulators can determine separately for their own jurisdictions. That is, should they choose to do so, regulators can still adopt this proposed ISAE but merely amend paragraph 12(a) to *permit the engagement partner to be a person other than a professional accountant in public practice* (JAB Submission 2010, emphasis added).

We believe that the issue of who is able to adopt the IAASB standards relates to more than competence.... This is particularly important in areas *such as assurance on greenhouse gas statements where the appropriate expertise may not be confined to the “traditional” users of the IAASB standards*, i.e., those with auditing and accounting knowledge (KPMG submission 2010, emphasis added)

The enthusiasm from the Australian accounting actors to promote ISAE 3410 and ASAE 3410 to the engineering professions distinguished them from the European members of the IAASB (IFAC 2008). However, it was not surprising, given that ‘a number are from outside of the accounting profession’ (AUASB 2008). After a long lobbying process, the IAASB discarded the term ‘assurance professional’ in favour of ‘practitioner’ in the final ISAE 3410 (IAASB 2012), while ASAE 3410 adopted the term ‘assurance practitioner’ in Australia (AUASB 2012). It was explicitly mentioned by the AUASB that ‘assurance practitioner’ includes assurance practitioners from accounting firms and environmental and engineering firms (AUASB 2011).

8.4.5 A brief summary of the adaptations and modifications made by the IAASB/AUASB

The modifications and adaptations made by the IAASB and AUASB in regard to limited assurance and professional judgement strongly suggest the mediating role of greenhouse and energy auditing in Australia on the standardisation of ISAE 3410 and ASAE 3410. Through an articulation of the role that AUASB and other accounting actors played in incorporating the controversies over limited assurance and its associated issue of professional judgement in the ISAE 3410 and ASAE 3410, the strength of the accounting profession in translation was further exposed (Young 1995; Jupe 2000; Gendron & Barrett 2004).

It should be reemphasised that auditing expertise is only partly knowledge-based; it also relies on the auditors' professional judgement (Power 1992; Power 1996). Although the accounting actors attempted to fill in the gap of technical knowledge, they were careful to not to expose their professional judgement to outsiders. Especially, how 'reasonable' a reasonable assurance is in comparison to a limited assurance was still a mystical area that accounting actors attempted to keep it as a black box, which could also explain why a briefer summary of audit procedures is preferred for a reasonable assurance than for limited assurance.

From 'auditor' to 'assurance professional' and then to 'practitioner' and finally to 'assurance practitioner', the term 'professional' was discarded by the greenhouse and energy auditors. The changes suggest that the boundary between financial auditors, environmental auditors and GHG verifiers became blurred with the rise of greenhouse and energy audits. Auditors from different professional backgrounds have become reshuffled and consolidated, and become more multidisciplinary. Although it is still too early to predict the rise of a new 'auditing profession' or 'assurance profession' with the development of 'assurance practitioners', it is not unreasonable to anticipate a transformation given the continuous reconfiguration and consolidation of the existing accounting and engineering professions in the field of greenhouse and energy audits.

8.5 An overview of Episode Four – Mobilisation of two professional groups and the development of ISAE 3410

This chapter presents the episode of mobilisation - the final episode of translating greenhouse and energy auditing. According to Callon (1986), mobilisation refers to a set of methods used by proponents to ensure that the supposed spokesmen for various relevant collectives can properly represent them, and will not betray them. If we refer it to the relationship between

actors and actants, then mobilisation deals with how actors become the spokesmen and representatives of the actants.

This chapter presents mobilisation from three moments. In the first moment I followed the adaptations the Department made in the NGER Audit Instruments 2010 in settling the controversies between ‘auditing’ and ‘technical’. Distinctively, the Department allocated and locked the roles of three categories of greenhouse and energy auditors to RCAs, LEAs and GHG verifiers by attaching their roles to different knowledge, ‘relevant audit experience’ and auditing terminology. Although relevant audit experience was adjusted to accommodate environmental auditors, these methods inevitably were more favourable for the accounting actors. At the meantime, however, the three layers of control in terms of team leaders’ personal engagement, disclosure of audit details and peer review were adjusted to be more stringent especially regarding personal engagement. Many adjustments and displacements were made by the Department, especially, from ‘auditing’ to ‘professional judgement’ in terms of team leaders’ expertise.

In the second moment of mobilisation, I followed the actants of three categories of RGEAs from the accounting and engineering firms from 2010 to 2014. The data of registration provides further evidence for the success of the accounting actors especially Ernst & Young and KPMG in occupying the places of Category II auditors, while engineering actors in taking the roles of Category I technical auditors. In the analysis, the registered auditors were viewed as placeholders who were actants (Latour 2005). It is also interesting to note the rise of the new Big 8 greenhouse and energy auditing firms. Of them, there were only two engineering firms: GHD and Carbon Intelligence. As presented in Section 7.3.2, GHD and

Carbon Intelligence were the only two engineering actors that supported the greenhouse and energy audit framework.

In the third moment of mobilisation, I followed the AUASB and other accounting actors in incorporating the residual controversies of greenhouse and energy audits in constructing ISAE 3410/ASAE 3410, especially in terms of limited assurance and professional judgement. This moment provides further evidence for the rhetorical strength of the accounting profession in translating new expertise and enrolling other actors (Young 1995; Jupe 2000; Gendron & Barrett 2004). Finally, the new identity of ‘assurance practitioners’ with multidisciplinary backgrounds bears particular implication of auditing professionalisation in Australia.

Chapter 9 Concluding Remarks and Reflections on ANT

9.1 Introduction

Throughout this study, ANT and especially the model of translation have been applied as an analytical tool to deconstruct the process of another emerging form of auditing – greenhouse and energy auditing ‘in the making’. In tracking and following the controversies from climate change to the proposed CPRS and to greenhouse and energy audits until ISAE 3410/ASAE 3410, it has witnessed many transformations and displacements in terms of the four episodes of translation: problematisation, interessement, enrolment and mobilisation (Callon 1986). In following the actors constructing greenhouse and energy auditing, it also transformed me from a methodologically confused PhD student to an ANT-inspired early career researcher. In this learning process, ANT was initially problematised as a solution for my methodological confusion (Sections 1.3 and 2.6). I was seduced by and enrolled in ANT via doing this thesis. Therefore, in this final chapter, while making concluding remarks, I would also like to share some of mine transformative experience on ANT.

9.2 Revisiting my research purpose

After embarking on this study, whenever I mentioned the contests between the accounting and engineering profession, the general feedback I received from my academic colleagues was a question of why financial auditors can audit greenhouse gases. Similar to the submission from Professor Carol Adams to the External Audit Consultation (Section 6.4.1), academics tended to suspect that there was a bias toward financial auditors. It was reasonable and insightful given their worry about the monopoly of the Big 4 auditing firms and the scandals in terms of their claimed independence since the last century (Sikka & Willmott 1995; 2010). However, being an early career researcher who is also inspired by ANT, I did

not wish to jump to such a conclusion so quickly without myself investigating the actors and their claims and movements. I was also inspired by Power (1997b, p124), who holds that “an economic interest in a new area of work is not even a sufficient condition for establishing credible and legitimate claims to work in that area”. Hence, as mentioned in Chapter 4, with respect to the contests between the accounting and engineering professions in the emerging fields of greenhouse and energy audits, the focus of this study is less about whether the involvement of financial auditors is a good thing that requires an investigation of the outcome of greenhouse and energy audits than about paying attention to the process of ‘translation’, at the heart of which lies the claims to auditing expertise before the controversies were settled. In this process, my role was to humbly follow the actors and actants and their translations of greenhouse and energy audits with ‘a new critical approach’ (Justesen & Mouritsen 2011, p182), as suggested by ANT, rather than conduct a critique of the accounting profession. In so doing, I would rather let the readers have own interpretations and form their opinions; this is my understanding of translation.

9.3 An overview of the thesis

In overall, this thesis endeavoured to depict the process of greenhouse and energy auditing in the making rather than a ready-made greenhouse and energy auditing. It traced and followed the longitudinal process of translation through lobbying in two main arenas - the regulatory arena in the Australia Government from 2008 to 2010 and the standard arena in IAASB/AUASB from 2010 to 2012. The first arena covered three major consultation and lobbying episodes in Australia for CPRS assurance (Chapter 5), NGER Act and CPRS external audits (Chapter 6), and greenhouse and energy audits (Chapters 7). These three consultation processes depicted the moments of problematisation, interessement and enrolment in terms of translation. The last moment of translation – mobilisation was covered

in the finalisation of the NGER Audit legislation and the registration of greenhouse and energy auditors in Australia, as well as the consultation and lobbying for standardisation of ISAE 3410 and ASAE 3410 from the Exposure Drafts to the standards (Chapter 8).

Compared to previous ANT inspired studies on new forms of auditing (e.g. Gendron & Barrett 2004; Gendron et al. 2007) and lobbying of accounting and auditing standards (e.g. Robson 1991; Young 1995; Jupe 2000; Young 2003; Jeppesen 2010), this case study involved more heterogamous actors and actants (as represented by the actors). For example, the Department (representing the regulator), environment and engineering firms and bodies (representing the engineering profession), accounting firms, bodies and standard bodies (representing the accounting profession), large emitters (presenting auditees), and other interested stakeholders who wanted to play a role or influence the lobbying process, such as accreditation bodies, lawyers, and trainers and academics. There was also another important actor – the knowledge boundary object of auditing that mobilised the trials of strength of human actors and mediated the composition of greenhouse and energy auditing and auditors. Especially, it is interesting to learn how the uncertainties, controversies, and conflicts encapsulated and attached to greenhouse and energy auditing terminology were negotiated, transformed, and adapted by the Department and lobbyists with different strategies, despite being temporarily mobilised in the NGER Audit legislations and new assurance standard on greenhouse emissions.

As presented in Chapter 3, ANT as a theory is still in action (Justesen & Mouritsen 2011). Previous ANT inspired auditing and lobbying studies explored some of the notions of ANT, such as ANT inspired auditing research (e.g. Power 1996; Gendron & Barrett 2004; Gendron et al. 2007) which focused on notions such as black box, laboratory, and experiment in

fabricating claims to auditing knowledge (Latour 1987; Latour 2005a), and moments of translation such as problematisation and enrolment in establishing a network of support (Callon 1986). On the other hand, ANT inspired lobbying studies (e.g. Robson 1991; Young 1995; Jupe 2000; Jeppesen 2010) concentrated on the rhetorical perspective of translation in terms of devices of interessement and dialectical perspectives of enrolment between the standard setter and lobbyists in dealing with resistance (Callon 1986; Latour 1987). In addition to adding more ANT characteristics to what has already been attempted, this thesis is the first attempt to illuminate the *semiotic* and *geometric* meanings of translation (Latour 1987), thanks to the rich story presented in this thesis. The semiotic meaning of translation was associated with transferring auditing vocabularies from the ‘accounting profession’ to ‘auditing practitioners’, while the geometric meaning was related to the displacement from ‘what they are not’ to ‘what they are’ greenhouse and energy audits by reshuffling the existing type of financial audit, environmental audit, and greenhouse gas verification. It also needs to be noted that the semiotic and geometric perspectives of translation were interrelated given that the geometric displacements were inspired by linguistic interpretations.

9.4 Revisiting research questions and findings

As inspired by ANT, with regard to the emergence of greenhouse and energy auditing in which where financial auditors have taken significant roles, the focus of this thesis is less about whether the involvement of the accounting profession is a good thing, which requires an investigation of the post construction of auditing expertise, than being reminded of the process of translation at the heart of which lies the discourse of claims to expertise before the controversies and contestations have been settled within and outside the jurisdictional boundaries.

Essentially, the construction of greenhouse and energy auditing disclosed how interests and goals attached to auditing terminology by financial auditors, environmental auditors, and greenhouse gas verifiers were contested, negotiated, reassembled, reshuffled, and finally adapted in actor-networks and then mobilised as a piece of comfort at a temporary break-even point. The transformative role of auditing vocabulary in expanding auditing boundaries has been acknowledged by previous studies (Jasanoff 1987; Mills 1989; Power 2003; Gendron et al. 2007). This study revealed the multi-dimensional mediating role that auditing terminology played in transforming existing audit expertise into the new field of greenhouse and energy audits.

In this study, auditing terminology played different roles in different hands. For example, in the hands of the Department, terminology was used to coordinate the relationship between financial auditors and technical auditors in different types of greenhouse and energy audit engagements. In the hands of the accounting profession, terminology was not only an important signifier (Sikka & Willmott 1995), it was also a device of interessement (Callon 1986) for them to maintain their authority in the field of auditing and to subordinate technical experts in an orchestration of a multi-disciplinary team (Power 1997b). In the hands of the engineering profession, auditing terminology became an obstacle to hinder their claims to auditing expertise, despite their existing experience in verifying the estimation of emissions. This also explained why technical auditors, especially greenhouse gas verifiers, increasingly claimed that there was a bias over financial auditors in designing the NGER Audit framework. Whereas for other interested stakeholders, auditing terminology served as a filter to delist those outside the auditing profession such as the emitters, to be enrolled in the final episode of translation through which the greenhouse and energy audit framework would be established. Finally, by reshuffling the auditing terminology, auditors have evolved from

being an ‘auditing profession’ to becoming an ‘auditing practitioner’ by the AUASB, for which it includes both financial auditors and technical auditors.

In terms of greenhouse and energy auditing, there is so far no clear definition from the NGER Audit Instruments. Through its translation process, it has shown that this new type of auditing is not something completely new; rather, it is transported and transformed from the existing financial audits, environmental audits, and greenhouse gas verifications. This exactly conforms to Power’s (1997b) claim that a new type of audit is never created as something completely new; rather, it is a continuous configuration and transformation accomplished by realigning a particular portfolio of competences from existing auditing professionals.

The point of the question, however, is not restricted to the descriptive differences embedded in auditing terms, auditing procedures and auditor reports. A more critical point is embedded in its translation process, which is related to trials of strength between the accounting and engineering actors and their respective alliances in claims to existing expertise. In addition, it is critical to understand the role of the knowledge boundary object of auditing and the strength it has in shaping the accounting professions in the future. The construction of new auditing expertise is not solely determined by the human actors, but by the alliance between heterogeneous actors and actants (Briers & Chua 2001). A successful translation is never indispensable from the collective of both humans and non-humans.

In understanding the process of negotiating greenhouse and energy audit expertise, two aspects were considered, one related to the trials of strength between financial auditors and technical auditors in negotiating audit expertise, while the other was associated with the potential of a newly established identity - assurance practitioners.

Firstly, in negotiating the closure of what counts as audit knowledge, ANT inspired research (e.g. Power 1996; Gendron et al. 2007) suggested that the process of translation cannot be free from contestation and resistance from different levels of allies and opponents with different interests. In the case of constructing greenhouse and energy auditing, the accounting profession was strongly resisted, especially by most of the *technical-actor-network* including emitters, engineering firms and academics. However, the outcome revealed that auditors with assurance background were more favourable than those with engineering background, and auditors from accounting firms with capacity to establishing various auditing standards were favoured more than those who only obtained technical expertise from engineering firms. In the process of translations, the rhetorical devices of established standards and rules not only helped the accounting actors to break through the obstacle of lacking technical expertise, but also to subordinate technical experts from engineering firms.

Moreover, in contrast to the large number of individual lobbyists from the engineering and environmental firms, accounting actors united as a Carbon Task Force (CATF) during the final lobbying. Indeed it reinforced the notion that unlike its competitors, accounting actors were better at establishing a network of support to deal with resistance and enrol other actors (e.g. Gendron & Barrett 2004; Gendron et al. 2007). However, even though financial auditors were favoured more in the translation process due to their rhetorical devices during the lobbying process, their mystical ‘professional judgement’ was challenged. To compromise the questioning from the anti-accounting actors, the Department required them to disclose details of audit procedures in relation to professional judgement in an audit report. This new challenge finally mediated the standardisation of ISAE 3410 to include limited assurance and also adjusted the prescription of professional judgement.

Secondly, the analysis of negotiation also helped to manifest the image of the accounting profession in the eyes of other stakeholders, especially its counterparties. It was suggested that negotiation depends not so much on solving problems using common sense, but whether the recipient who sees the problem as being solved (Power 1995b; 1996; 2003). Unlike previous studies (e.g. Power 1996; Gendron et al. 2007) where auditing expertise was perceived to be a set of general good practice by the auditees, this study has shown that financial auditors were painted by their competitors and some of the auditees as ‘financial’ specialists who could identify bad debt and intangible assets rather than as auditors with context-free knowledge. The relative success of the accounting profession rather contributed to their relevant audit experience and capability of signing off an audit report, as well as establishing black boxes of rules and standards in financial and non-financial auditing fields. Such a finding is an important supplement to understanding the controversial image that the accounting profession has in the eyes of others. Moreover, particular attention was paid to the term ‘an assurance practitioner’ provided that its lobbying process was from ‘an auditor’. Given the broad coverage of assurance practitioners, there was reasonable ground to suspect that a new identity of ‘assurance profession’ would one day be possible along with greenhouse and energy auditors being transferred from RCAs (registered company auditor), LEAs (lead environmental auditor), greenhouse gas verifiers and accounting and engineering auditing firms.

9.5 Reflections on the application of ANT

As presented previously, ANT is still in the making and there are still confusions regarding the applications of ANT. In applying ANT in this study, I also accumulated some reflections regarding the main notions of ANT. In the following subsections, I will exemplify my reflections in four aspects: 1) using ‘network’ as a methodology; 2) understanding the actors

and actants; 3) applying the model of translation; and 4) understanding the meaning of translation. Hopefully these personal reflections will also help others to better understand the essence of ANT.

9.5.1 On using network as the methodology

In terms of ‘network’, an objective of this thesis is to follow Latour’s (1997; 1999b; 2005a) suggestion, that is, it is a methodological approach rather than a physical or social network. To fulfil this approach is to follow the principle that ‘attachments are first, actors are second’ (Latour 2005a, p217; Justesen & Mouritsen 2011, p182). Through extensive reading of the various stakeholders’ submissions as well as the documentation produced by the Department, AUASB and IAASB, at the final stage of this research I realised that notions such as ‘technical’, ‘financial implication’, ‘multidisciplinary’, ‘relevant audit experience’, ‘independence’, ‘quality control’, ‘personal involvement’ and ‘professional judgement’ are also attachments in addition to the auditing terminology. Actually it was through following the trails of the auditing terminology with which I started this research that I was able to continuously see the emergence of more attachments of the knowledge boundary objects of ‘auditing’ and how they mobilised the human actors. Hence, from this perspective, network is not only a way to follow actors but also a way to follow attachments.

However, there are also some problems in applying the approach of network, which became evident in writing up this thesis. The first problem, I have to admit, is that I used the term ‘network’ to differentiate the *technical-actor-network* from the *financial-actor-network* (Section 7.3). This may mislead readers to believe that I suggest the existence of two social networks. It may be the case in reality as has been demonstrated with a few social networks established by the actors themselves; for example, the joint submission by the accounting and

engineering firms, the identical submissions by two industry entities, and the alliances formed within the accounting firms. However, the way I used the term ‘network’ was an analytical tool because through the translation of the ‘external audits’ as being ‘technical’ or ‘financial’, I was able to the identify actors’ roles and consolidate them to crystallise the different strategies used in their translations.

The second problem is related to the concept of articulation which is also termed ‘proposition’ (Latour 2005a). As suggested (Latour 2004; Justesen & Mouritsen 2011), this is to let the researcher get closer to the fact rather than go away from it. To articulate means less interpretation from the researcher. This is particularly challenging for this thesis. While the actors in this study tried to interpret and reinterpret the greenhouse and energy audits and auditors in different ways, such as technical, financial or auditing, my job as a researcher has been to articulate rather than reinterpret (or re-reinterpret). However, this is not easily done. In writing up this thesis, I could not avoid interpretations completely in the analysis. Thus, similar to what Latour (1996) did in interpreting the interviews, I also became an actor, although invisible from others.

However, the limitations are not without their positive effects. In understanding the limitations of my own study, I realised that it is hard for any knowledge to be impartial. However, this is a conclusion rather than a prerequisite and I acknowledge it as a limitation for continuous improvements in future research. Actually, the initial reason that drove me into embracing ANT was because the ontological dualism between realism and social constructionism became stagnant, and thus, as commented by Armstrong (2002, p281), ‘uninteresting’. Although I agree with the limitations of positivist research, I could not see a much better way of moving away from contents to contexts, which was also the concern of

Latour (2004). With respect to my ontological confusions, I could also find support from another influential ANT researcher Czarniawska:

Does it still make sense to insist on the two realms, the natural and the social, and the two sets of methods (Czarniawska 2003, p129) ?

Another important reason to ask the above ontological questions is in concern that deciding ontological position has become *a priori* for PhD students, however, people do not hold to their ontologies. Developing an ontological position is not a taken-for-granted task; rather, it requires a researcher to ask questions continuously (Czarniawska 2003, p134).

The emergence of ANT, ‘a new critical approach’ (Justesen & Mouritsen 2011, p182), has opened another window for a student. However, it is better to ask questions than take the answers as granted. In applying ‘network’ as a methodological foundation, the biggest contribution of this study is for my own intellectual development because it allows me to ask questions continuously and not let the taken-for-granted ontological views lock my movements in searching for ‘truth’.

9.5.2 On understanding actors and actants

First of all, it took me a long time to digest the notion of ‘actor’, especially the differences between a subject and an actor, and between an actor and an actant. Only after tracing the complete movements of those involved in the translation processes did the identity of the heterogeneous actors and actants become more visible.

The notable human actors were the Department (initially called the Department of Climate Change, then the Department of Climate Change and Energy Efficiency, and currently the Clean Energy Regulator), various stakeholders in the lobbying processes as well the AUASB and the IAASB hidden in the process. However, humans are not necessarily actors (Latour

2005). The most distinctive human actants were greenhouse and energy auditors, who are represented by RCAs, LEAs and GHG verifiers. On the other hand, not all non-human objects are actants, which is especially related to the role of the knowledge boundary object of auditing. Although earlier ANT works viewed human expertise as intermediary (Callon 1991) and boundary objects as actants (Briers & Chua 2001), more-recent ANT works emphasise that non-humans also can have agency in view of their mediating role (Latour 2005) and ties with different human actors (Sayes 2014). From this perspective, the role of auditing, a knowledge boundary object, as an actant or actor is pending on its role as a mediator or merely an intermediary (Latour 2005).

The difference between an actor and an actant is also to do with representation (Callon 1986; Latour 2005a). This was another interesting phenomenon in this study because there were multiple layers of representation in the lobbying process. For example, there were individual engineering actors, accounting and engineering firms and later CATF, which was formed from all the accounting actors. In this study, all these actors are treated equally whether they are an individual, a collective or a profession. Representation also matters to study the actors' power (Callon 1986). In terms of the accounting and engineering actors in the lobbying process, although there were fewer accounting actors than engineering actors, they represented nearly the whole accounting profession; for example, in the establishment of the CATF (Section 8.3.1). On the other hand, while there were more engineering actors, they never formed the same representation as did the accounting profession. Compared to the case of scallops and fishermen (Callon 1986), the actors and actants also demonstrated some interesting resemblances but with more complicated interrelationships.

The Department vs. three researchers

The role of the DCC (later became DCCEE) was similar to that of the three researchers (Callon 1986), as it needed to construct a new type of audit in Australia. However, different to the three researchers, who could refer to a successful program in Japan, the DCC had no established reference and had to deal with more political and scientific uncertainties with the CPRS program and emissions estimation. Moreover, while the three researchers needed to anchor as many larvae as possible to increase the population of scallops, the DCC needed to select the relevant ‘larvae’, and allocate and transform them into different categories for different level of engagements while controlling their numbers and behaviour.

The greenhouse and energy auditors vs. scallops

The three categories of RGEAs that the DCC needed were analogous to the scallops (Callon 1986). In contrast to the naturally grown scallops, there was no existing ‘larva’ available, and the DCC did not know exactly what they are, but only they are not. To work out what the new ‘scallop’ should be, the DCC needed to negotiate with two groups who had the ‘sibling larvae’ to anchor on the programs designed by the Government – the NGER Act 2007 and the CPRS, and develop them into scallops. These scallops were however, more like ‘placeholders’ (Latour 2005a, pp153-143), actants rather than actors. However, once the RGEAs were developed in scale, they would change the structure of the professional groups.

The accounting and engineering actors vs. representatives of fishermen

The narrative examined here was more complicated than that in Callon (1986), as there were two competing groups – the accounting and engineering professions, represented by their lobbyists. While the fishermen in Callon (1986) needed to rely on the project of the three researchers to gain sustainable economic benefits, the DCC had to consult with the accounting and engineering actors to breed the new ‘larvae’. Different ‘larvae’ were owned

by the engineering and accounting actors. While the former owned technical ‘larvae’ and were confident with their orthodoxy, the accounting actors owned financial (also called auditing) ‘larvae’ and adopted a better marketing campaign to attach their relevance and leadership through established black boxes of auditing. Although the DCC may have had its preference for different categories of RGEAs, it needed both of them; therefore, balancing its relationship with each other so as not to be seen as biased became an important task for the DCC.

The AUASB vs. the scientific colleagues

The AUASB was similar to the scientific colleagues (Callon 1986) of the three researchers. However, these ‘colleagues’ also had a more close relationship with one ‘fishermen group’ – the accounting profession. While the three researchers needed to convince their scientific colleagues through interessement devices (Callon 1986), the DCC did not need to convince the AUASB about the necessity of ‘breeding new larvae’; rather, the AUASB worked together with the DCC to produce the inscriptions to enrol and control ‘scallops’.

Industry actors vs. the consumers in the St Brieuc Bay

Notably there was also another important group of actors made up of the industrial large emitters, who were like the consumers in the St Brieuc Bay (Callon 1986). Although the consumers in the case of the fishermen and scallops were not actors, they were in the case of greenhouse and energy audits. These consumers – potential auditee - had different tastes; some preferred ‘technical’, some preferred ‘financial’, but most of them preferred a combination of both. Since most of the consumers were forced by the DCC to buy the new breed of ‘scallops’ (scallops were the prescription rather than gourmandise for them), cost was a significant concern for them. In addition, other actors from the wider community had

interests in the ‘scallop’, and most of them professed a social and environmental responsibility and criticised the perceived bias toward the accounting profession.

Auditing and a boundary knowledge object

Auditing, or what was called as ‘external audits’ was the boundary knowledge object that attached to many black boxes in this study, including terminologies as well as established standard inscriptions on independence, quality control and professional judgement. The DCC used terminological devices to reshuffle the GHG verifiers, environmental auditors and financial auditors. For the accounting actors, the established black boxes were used as interessement devices to counter-enrol the DCC, while protecting the legitimacy of their professional judgement away from peer review and public disclosures. The engineering actors endeavoured to claim their relevance and expand their boundary directly through technical similarities, but lacked of attachments to play the game. Therefore they criticised a perceived bias toward financial auditors. To maintain its control over team leaders and being seen as unbiased, the DCC made professional judgement a target through the three layers of control. Finally, the boundary of greenhouse and energy audits was negotiated and settled with three levels of engagements and three categories of GEAs.

As such, auditing has agency in this study because it mobilised different interests and goals of the human actors. Moreover, is the boundary knowledge object of auditing a mediator or an intermediary? If it is an intermediary, no matter how many black boxes and inscriptions it is attached to, it acts as one black box (Latour 2005). However, this study has shown that auditing did not merely link different actors through one black box (Callon 1991), instead, it was subject to being reopened, reshuffled and transformed in many aspects especially in terms of professional language and judgement. These two attachments are not ‘placeholders’

that transport known inputs into the same outputs; rather, they are the mediators that transformed greenhouse and energy auditing from financial auditing, environmental auditing and GHG verification. In particular, it is difficult to distinguish between human and non-human parts with respect to professional judgement (Callon 1991), despite 'relevant audit experience' being used by the Department to classify different levels of professional judgment: from no professional judgement required (i.e. verification and agreed-upon procedures conducted by Category I technical and non-technical auditors) to the highest level of professional judgement required (i.e. reasonable assurance conducted by Category II and III auditors). Professional judgement is a mixed actor or actant that auditors within different professional boundaries may translate in varied ways. This was also the reason that the accounting actors were strongly opposed to disclosing any detail of their professional judgement in conducting audit procedures or writing up an audit report. Based on the evidence, this study suggests that the boundary knowledge object of auditing can be viewed as an actor. This suggestion is different to Briers and Chua (2001) who viewed the boundary objects as an actant without agency.

Other actants

In addition, another important actant was the Scope 1 emissions. Its scientific uncertainty contributed to the debates over the nature of greenhouse and energy auditing as being technical or financial. Hence, in constructing greenhouse and energy auditing, the scientific, technical and social controversies were integrated. Of these six main actors, some identities can still be further discussed. For example, once the RGEAs developed into pools, they could mediate the identity of the professional groups from auditors into assurance practitioners. The roles of these actors and actants further show that actors are not locked by human subjects, while actants are not necessarily non-human objects (Latour 2005a).

Compared to the four main actors in the case of scallops and fishermen (Callon 1986), this study demonstrated a no less complicated translation process among six main actors. Moreover, like the fishermen, they also involved multiple competing and cooperating groups. These complicities however, are not and will not be unique to this study given the rise of new turf battles between the accounting profession and other professions in an object-orientated Society (e.g. Power 1991; Knorr-Cetina 1997; Power 1997a; Power 1997b; Gendron & Barrett 2004; Gendron et al. 2007), as well as in the various consultation and lobbying processes involved (e.g. Robson 1991; Young 1995; Jupe 2000; Archel et al. 2011). The demonstration of actors in this study hopefully can help future ANT-inspired researchers in understanding and applying the notion of actor/actant (Callon 1986; Latour 2005a) in dealing with heterogeneous actors.

9.5.3 On applying the translation model as an analytical tool

In articulating the process of constructing greenhouse and energy auditing, this thesis relies heavily on the model of translation that includes four episodes: problematisation, interessement, enrolment and mobilisation (Callon 1986). In comparison with Callon (1986), the four episodes in this study also demonstrated some interesting features.

Problematisation

This study involved a series of problematisations (Callon 1981), and the critical starting point was the issue of Climate Change. It was for this reason that the NGERS and CPRS were problematised as two programs by the Australian Labor Government (Chapter 4), while for the efficient CPRS, assurance was problematised as a solution (Chapter 5), and for both the NGERS and CPRS, 'external audits' were problematised as a solution (Chapter 6). Then, it was because of the emergence of greenhouse and energy audits in Australia that ISAE 3410

were problematised as the new standard on greenhouse gas statements by IAASB. However, different to the three researchers who obtained a successful reference of breeding scallops in Japan, the Department had to deal with the uncertainties especially in regard to the proposed emission trading scheme – the CPRS (Chapter 5). Although the CPRS was rejected during the translation process, it still mediated the two types of greenhouse and energy audits.

The most distinctive problematisation was disclosed in Chapter 6 which was related to the negotiation of the OPP as being ‘technical’ or ‘financial’. This was largely due to the fact that the Department did not know what the ‘external audits’ were, but only what they were not. This indicated a more interdependent relationship between the Department, the accounting and engineering professions than that between the three researchers and the fishermen (Callon 1986).

Interessement

Interessement mainly happened between the Department and the large emitters, and the Department and the accounting and engineering professions. To get the large emitters involved, the Department proposed economic benefits for them, such as the EITE program (Section 5.4.2.1). The Department did not need to make efforts to attract the interest of the accounting and engineering professions, because both of them were keen to get involved in the new market; rather, the job of the Department was to control and limit the number of enrolments. However, to be enrolled, the two competing professional groups needed to interesse the Department.

As presented in Chapter 6, the engineering actors attempted to establish similarities between environmental audits and greenhouse verification with the proposed ‘external audits’ through

the ‘technical’ ingredient. Moreover, they also tried to use ‘technical’ to differentiate their work from financial audits. This approach was very similar to that of the financial auditors used in establishing relevance to environmental audits (Power 1997b). In contrast, the accounting actors attempted to bypass the obstacle of ‘technical’ while aligning interest with the Department in terms of the ‘financial’ implications of the proposed CPRS. In addition, they also attached to their established black boxes within the big black box of ‘auditing’, such as using the work of an expert, quality control and independence in establishing their relevance. As presented, the trial of strength in the interessement was between ‘technical’ and ‘financial’. Compared to the engineering actors, who directly and consistently relied on ‘technical’, the accounting actors were better at using marketing strategies by making many visible and invisible detours through the black box of ‘auditing’. Therefore, what matters in the interessement is closely correlated with problematisation, that is, how to convert the obligatory point of passage from others to self to make oneself indispensable to others. The critical successful factor however, is less about what one really is but what attachments you one had and how flexibly one can use them.

Enrolment

Enrolment was a challenging task for the Department in this study because it needed to limit the number of enrolments of the greenhouse and energy auditors, lock them into different categories and control their behaviour. The strategy adopted by the Department exactly illustrated the dialectical perspective of enrolment (Latour 1987). As presented in Chapter 8, although the Department attempted to enrol both the accounting and engineering professions, it was criticised as biased by most of the engineering actors because they were unhappy with their designated roles. On the other hand, although the Department was supported by the

accounting actors, it was also opposed by them because of the three layers of control as well as its attempt of opening their black box to others.

In the episode of enrolment, the interests of the actors become more distinct and conflicting, especially among the financial auditors, environmental auditors and GHG verifiers. When the trial of strength was displaced to between ‘technical’ and ‘auditing’ in this episode, the engineering profession was greatly disadvantaged because ‘technical’ is more contextualised than ‘auditing’. Hence enrolment in this case study is concerned with the hierarchical structure, which is less dependent on the specific expertise than the general knowledge and team leadership on the top level. Once again, it is also decided by who owns the black box of auditing.

Mobilisation

Unlike the three researchers in St Brieuc Bay (Callon 1986) who were betrayed by the scallops and fishermen, the Department finally mobilised the NGER audit legislations by making further adaptations, filtering the greenhouse and energy auditors out from the existing accounting and engineering professions and locking them into their designated categories. This success was largely due to the different interrelationships between the ‘scallops’ and ‘fishermen’; in this case where the ‘scallops’ are manufactured, not naturally grown, and the ‘fishermen’ do not just represent the ‘larvae’, but also own them. Therefore, mobilisation in this case was more about the ‘fishermen’ than the ‘scallops’. However, when the assurance practitioners grow in scale, they could also transform the structure of the existing auditing profession. This is the implication for auditing professionalisation. From following the enrolment of greenhouse and energy auditors in the three categories and especially in Categories II and III, the new Big 8 greenhouse and energy auditing firms as well as the new

identity of ‘assurance practitioners’ have started to reshuffle and consolidate the existing accounting and engineering professions. In the episode of mobilisation, more light was shed on the black box of ‘professional judgement’; hence it was becoming increasingly challenging for the accounting profession to keep it in their black box.

In following the actors in this study, the model of translation (Callon 1986) facilitated this study to track and expose the controversies and trials of strength among the actors in a convincing matter. Although the translation model was extracted from a case that happened nearly two decades ago in St Brieuc Bay among the fishermen and scallops, it still has its innovative and competitive value today. A recent paper published in the *Critical Perspectives on Accounting* by Becker *et al.* (2014) is another example of its potential use in broader accounting studies in dealing with complexities (Justesen & Mouritsen 2011).

9.5.4 On understanding the meaning of translation

Like the ANT concept of actors, translation is another challenging notion (Justesen & Mouritsen 2011). It can be related to transformations and displacements (Callon 1986; Latour 1987), or it can refer to its interpretative and rhetorical meaning (Latour 1987), or to any mediation (Latour 2005a). A translation process can cover the four episodes as suggested by Callon (1986), or some of them, because translation can fail at any time. From a claim to knowledge (or expertise), it may cover a series of translations (Latour 1999a). This thesis, in addition to exemplifying the aforementioned multi-perspectives, has also emphasised the geometric meaning of translation – a slow movement from one place to another as embedded in displacements (1987).

In terms of its transformative meaning, translation is the key theme throughout this thesis because without such transformations, greenhouse and energy auditing would still be called ‘external audits’, and the three categories of greenhouse and energy auditors ‘external auditors’. Transformations were especially witnessed by the changes made by the Department in the three consultation papers and the final NGER audit legislations. It can be said that the construction of greenhouse and energy auditing was a process of continuous transformations.

In regard to the linguistic meaning of translation, this thesis has witnessed how ‘commonly understood language’ was used by the Department to translate the auditing terminology from the accounting profession to engineers. It also witnessed the controversies between the actors in regard to the terms ‘verification’ and ‘agreed-upon procedures’, ‘peer review’ and ‘quality control’, ‘conclusion’ and ‘opinion’, as well as ‘limited assurance’ and ‘reasonable assurance’. The accounting actors were more sensitive than engineers to the use of auditing language and terminology because they are part of the black box of ‘auditing’.

Its broad mediating meaning was especially shown by the adaptations made by the mobilisation of ISAE 3410/ASAE 3410 in incorporating the new requirement for limited assurance and disclosure of professional judgement (Section 8.4). It was also related to the role of the knowledge boundary object of auditing in mobilising the stakeholder actors into different actor-networks (Section 6.3.2). To some extent, the failed program CPRS also played a role because it mediated the types of greenhouse and energy audits even though the ‘financial implication’ of the ‘external audits’ did not exist (Section 7.2.1).

The accounting actors successfully used displacements – that is, making detours in translating expertise in auditing government performance to deficit and debt (Gendron et al. 2007), and

regaining its OPP in e-commerce assurance by displacing the emphasis from B2C commerce to B2B commerce (Gendron & Barrett 2004). The accounting actors also successfully used displacement in this case by displacing lead auditors from 'technical' to 'using the work of an expert', 'independence' and 'quality control' in the episode of interessement (Section 6.4.3.3). Displacement on the other hand, allowed the engineering actors to claim a bias toward accounting based on the 200 hours of relevant audit expertise in the episode of enrolment (Section 7.4.1.1). The emphasis of auditors was also displaced from lead auditors to three categories of RGEAs and then to the Category II and III team leaders, and from 'technical' to 'relevant audit experience' in terms of auditor expertise and then to 'professional judgment' throughout the translation processes (Section 8.2.4).

However, a more striking aspect of translation as highlighted in this thesis was related to its geometric meaning, a more visualised displacement in terms of the boundary of the 'external audits' as being 'technical rather than financial', 'more technical than financial', 'both technical and financial' or 'more financial than technical' (Section 6.3.2). In presenting the displacements of 'external audits' from 'not financial audits or environmental audits', I have attempted to draw geometric shapes to visualise four types of movements (Figs. 6.6 and 6.7). Although these shapes may not accurately depict the degree of the movements, it was an innovative attempt to understand the meaning of translation and visualising it in an analysis. The evolvement of accounting research methods has shown both a mathematical approach for generalisation and a discursive approach for contextualisation; however, research to date has given little attention or the use of geometric techniques. A challenge as well as an opportunity that has been offered by ANT, but not fully explored yet in accounting research, can be associated with the geometric meaning of translation. This thesis is an attempt to apply such a geometric approach.

9.6 Limitations and Future Research

No research is without its limitations due to the constraints of obtaining 360 degrees of resources, the theoretical and methodological limitations, and the researcher's own knowledge base. This thesis proved to be no exception, despite the intention to learn about auditing and ANT which drove this case study as a means of commencing the learning process. Although this thesis attempted to collect enough discursive and numerical evidences from a variety of sources, the major challenge of its articulation was constrained by not being able to become personally involved in the lobbying process. However, as presented in Chapter 4, this was also the motivation for focussing on publicly available sources and to test the extent to which this study can reach even without obtaining evidence from other direct sources. Based on the analytical approach of translation, the findings of the research were interesting, persuasive, and in some ways similar to conducting an audit where the result was reasonable but not absolute. Furthermore, being a researcher in this case study, this thesis cannot be immune from my own interpretations of the actors' translations, which raises another controversial issue in revisiting the dialectical relationship between articulation and interpretation. However, I would rather call this a concern rather than a limitation.

On the other hand the limitations of this research also provided further opportunity to continue this study afterwards, because as already indicated, the construction of greenhouse and energy auditing is still in the making in Australia and elsewhere as long as it has not yet been black-boxed. Given that this study has relied fully on public documentation, future research should consider using other sources of data, such as interviews with the Category III auditors and field studies. It would be particularly useful to get involved in audits led by an auditor from the accounting and engineering backgrounds. The involvement of a researcher

in a field could possibly add more depth to understanding the knowledge boundary object of auditing and how it can mediate the accounting and engineering professions in a new field.

To conclude, I would like to use the word from C.S. Lewis to encourage and remind myself:

If you look for truth, you may find comfort in the end; if you look for comfort you will not get either comfort or truth, only soft soap and wishful thinking to begin, and in the end, despair.

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Appendices

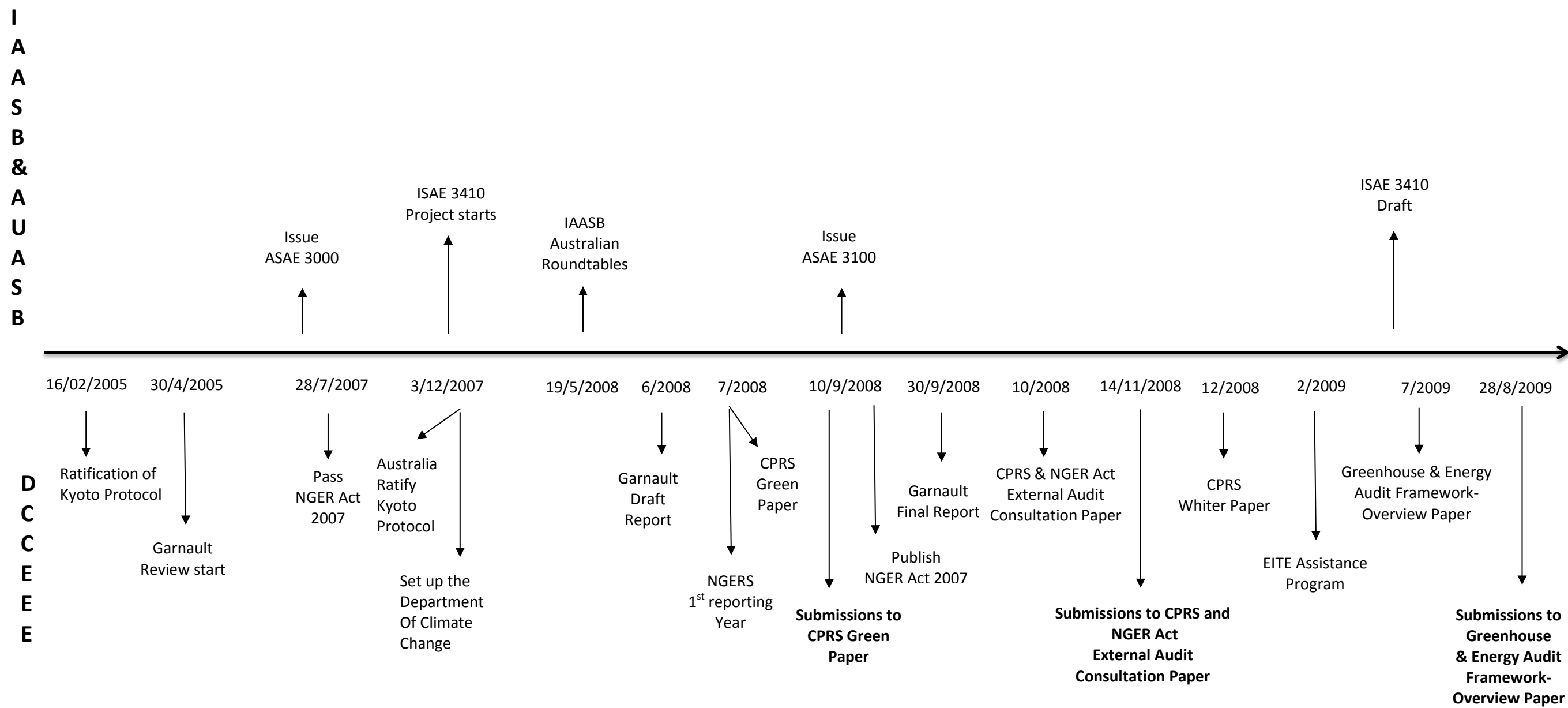
Appendix 1: National Greenhouse and Energy Reporting Thresholds

Figure 1.2: The National Greenhouse and Energy Reporting thresholds for facilities and corporations



Notes: TJ = terajoule (10^{12} joules) of energy consumed or produced; kt = kilotonne (10^3 kilograms) CO₂-e equivalent of greenhouse gases emitted Conversion factors: Energy—1 terajoule = 1000 gigajoules, 1 gigajoule = 1000 megajoules, 1 megajoule = 1000 kilojoules, 1 kilojoule = 1000 joules; CO₂-e emissions—1 kilotonne = 1000 tonnes, 1 tonne = 1000 kilograms.

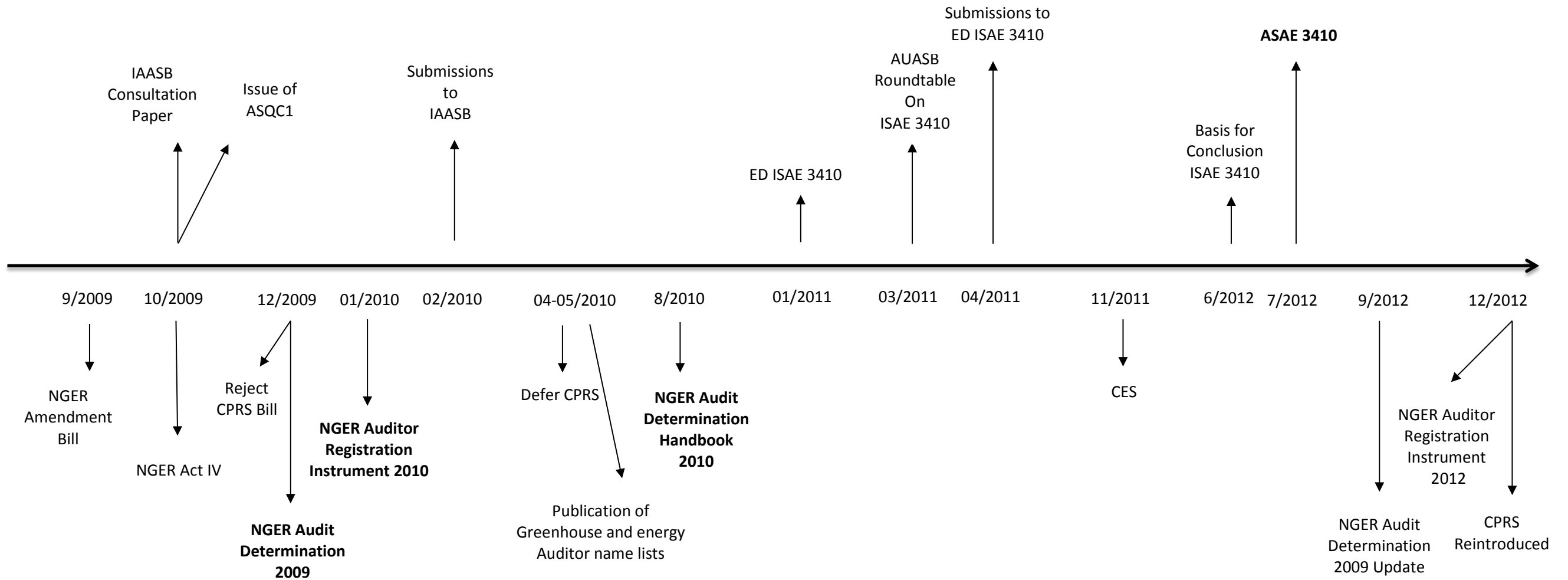
Appendix 2: Timeline of Key Events in Two Arenas from 2007-2012



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Appendix 3: Key Notes of the Milestone Documentation

Legislative framework	Time	Key Propositions for greenhouse and energy auditing	Key Propositions for audit standards	Key Propositions for auditor expertise and qualifications
The CPRS Green Paper	Jul-08	Third-party assurance for large emitters with 1250,000 tonnes of CO ₂ -e emissions or more prior to submission	Standards under <i>NGER Act</i> and AUASB	Accredited 3rd-party assurance providers
The <i>NGER Act</i> and CPRS External Audit Consultation Paper	Oct-08	External audit as a key compliance monitoring measure under the <i>NGER Act</i> and for the Carbon Pollution Reduction Scheme Distinguishable from financial audit, environmental audit and other audit in nature under other environmental program/legislation; However, essential principle and basic procedures may be relevant	The AUASB Standard on Assurance Engagements ASAE 3000; ISO 14064-3:2006 Greenhouse gases - Part 3; ISO 19011:2002(E); The International Standard on Related Services (ISRS) 4400; The former AUASB standard, AUS 904	RCA (registered company auditor) and environmental auditor as lead auditor
		Three types of audit: non-compliance, compliance monitoring under the <i>NGER Act</i> and pre-submission for CPRS. For audits under the <i>NGER Act</i> , the engagement level will be decided by the GEDO on a case-by-case basis, for pre-submission audits under the CPRS, engagement level varies from reasonable assurance, limited assurance, and review of procedures.		Accredited by Corporations Act 2001, ISO, RABQSA or the professional body. None of the four methods is without limitations.
The CPRS White Paper	Dec-08	Confirmed third-party assurance for large emitters with 1250,000 tonnes of CO ₂ -e emissions or more prior to submission	Besides standards proposed in the External Audit Consultation Paper, ASAE 3100 was proposed as relevant. However, finalisation of audit standards would be dependent on the submissions made in response to the External Audit Consultation Paper	Recognised the tension between accounting and engineering profession. Registration of auditors would be finalised according to the submissions to the External Audit Consultation Paper
		reasonable assurance for CPRS is recommended	Raised different positions between accounting and engineering profession	
The CPRS EITE Guidance Paper	Feb-09	Assurance to be developed in advance of the audit framework of the Scheme, and was independent to the Scheme and NGERs as a whole	AUASB 3000	RCA as lead auditor
		One-off assurance on 3 categories of data: emissions relating to activities, production and financial data		Team member must include a senior member with demonstrable technical experience (e.g. an engineer/scientist)

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Greenhouse and Energy Audit Framework Overview Paper	Jul-09	greenhouse and energy auditing is a key compliance monitoring measure under the NGER Act and for the Carbon Pollution Reduction Scheme	ASAE 3000 and the AS ISO 14064-3:2006	3 categories greenhouse and energy auditors: category I requires knowledge and audit experience for verification or agree-upon procedure. Category II & III requires experience and knowledge in team leadership and assurance. All greenhouse and energy auditors are registered by the GEDO
		An audit is required under 2 circumstances: Compliance audit or review under the Act; Pre-submission for large emitters (125 ktCO ₂ -e) for CPRS		
		2 types of greenhouse and energy audits: Verification and Assurance. Assurance includes reasonable and limited assurance		
NGER Amendment Bill 2009	Sep-09		External Audit changed to 'Greenhouse and Energy Audit' External Auditor changed to 'Registered Greenhouse and Energy Auditors (RGEA)'	Restricts the type of audited data to be published
The NGER Act 2007 (IV)	Oct-09		AS ABOVE Add: audits of person	Entity/person more flexibility to choose auditor
NGER Audit Determination 2009	Dec-09	Confirms two types of greenhouse and energy audits: Verification and Assurance. Assurance engagement includes reasonable and limited assurance. Audit for the CPRS is not mentioned.	Procedures for performing assurance and verification engagements	Team leader must be personally involved in preparing for and carrying out the audit
NGER Audit Determination Handbook 2010	Oct-10	Greenhouse and energy auditing is a key compliance monitoring measure under the NGER Act	Standards under consideration include AUASB, APESB, ISO; however, the interpretation may be slightly different	Three party relationships must exist between the GEDO, the audited body and the audit team leader
NGER Auditor Registration Instrument 2010	Jan-10	Knowledge and experience for three categories of auditors – team leader only: Category I (technical & non-technical); Category II (requires assurance experience)		
		Only Category I technical auditors require knowledge of measurement estimation methods Recognise audit knowledge accredited by all the four accreditation possibilities as proposed in the External Audit Consultation Paper.		

Appendix 4: The Stakeholders and Their Involvements in the Three Consultation Processes

No.	Actor Name	Actor Identity	Enrolments in the lobbying	No. of submissions
1	Ernst & Young	Accounting	CPRS Assurance, External Audit & Greenhouse and Energy Audit	3
2	Grand Thornton	Accounting	CPRS Assurance, External Audit & Greenhouse and Energy Audit	3
3	EIANZ	Environmental & Engineering	CPRS Assurance, External Audit & Greenhouse and Energy Audit	3
4	ACEA	Environmental & Engineering	CPRS assurance & External Audit	2
5	AGL Energy Ltd	Industry	CPRS Assurance & External Audit	2
6	CSR Ltd	Industry	CPRS Assurance & External Audit	2
7	NGF	Industry	CPRS Assurance & Greenhouse and Energy Audit	2
8	Carbon Intelligence	Environmental & Engineering	External Audit & Greenhouse and Energy Audit	2
9	Coffee Environment	Environmental & Engineering	External Audit & Greenhouse and Energy Audit	2
10	GHD	Environmental & Engineering	External Audit & Greenhouse and Energy Audit	2
11	APPEA	Industry	External Audit & Greenhouse and Energy Audit	2
12	CATF (CPA, ICAA, NIA, Deloitte, E&Y, Grant Thornton, KPMG, PwC, BDO)	Accounting	Greenhouse and Energy Audit	1
13	Aurecon Australia	Environmental & Engineering	Greenhouse and Energy Audit	1
14	Enemess Energy Services	Environmental & Engineering	Greenhouse and Energy Audit	1
15	Global Mark	Environmental & Engineering	Greenhouse and Energy Audit	1
16	LRQA	Environmental & Engineering	Greenhouse and Energy Audit	1
17	NCS International	Environmental & Engineering	Greenhouse and Energy Audit	1
18	Ratna Pullela	Environmental & Engineering	Greenhouse and Energy Audit	1
19	URS	Environmental & Engineering	Greenhouse and Energy Audit	1
20	Deloitte Touche Tohmatsu	Accounting	External Audit	1
21	JAB (CPA, ICAA & NIA)	Accounting	External Audit	1
22	PriceWaterhouseCoopers	Accounting	External Audit	1
23	Pkysis & Sothertons	Accounting and engineering alliance	External Audit	1
24	RSM Bird Cameron & Coffey Environments	Accounting and engineering alliance	External Audit	1
25	LA Trobe University	Education & Academic	External Audit	1
26	Swinburg University of Technology	Education & Academic	External Audit	1
27	Carbon Planet	Environmental & Engineering	External Audit	1
28	Carol O'Donnell	Environmental & Engineering	External Audit	1
29	Emission Statement	Environmental & Engineering	External Audit	1
30	Energy Corporate (Australia)	Environmental & Engineering	External Audit	1
31	Expert Group	Environmental & Engineering	External Audit	1
32	Flinders Partners	Environmental & Engineering	External Audit	1
33	JTP	Environmental & Engineering	External Audit	1
34	Mining Plus	Environmental & Engineering	External Audit	1
35	Parsons Brinckerhoff	Environmental & Engineering	External Audit	1
36	Sustainable Strategic Solutions	Environmental & Engineering	External Audit	1

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37	Group of 100	Finance	External Audit	1
38	National Australia Bank	Finance	External Audit	1
39	ACI	Industry	External Audit	1
40	AIGN	Industry	External Audit	1
41	BlueScope Steel Ltd	Industry	External Audit	1
42	Boral Ltd	Industry	External Audit	1
43	Caltex Australia Ltd	Industry	External Audit	1
44	ExxonMobil Australia Pty Ltd	Industry	External Audit	1
45	OneSteel Ltd	Industry	External Audit	1
46	QAF Meat Industries Pty Ltd	Industry	External Audit	1
47	Wesfarmers Ltd	Industry	External Audit	1
48	Gadens Lawyers	Legal	External Audit	1
49	AIRAH	Standards & Accreditation	External Audit	1
50	Standards Australia	Standards & Accreditation	External Audit	1
51	CPA Australia	Accounting	CPRS Assurance	1
52	KPMG	Accounting	CPRS Assurance	1
53	BP Australia	Industry	CPRS assurance	1
54	ESAA	Industry	CPRS assurance	1
55	IETA	Industry	CPRS assurance	1
56	Origin	Industry	CPRS assurance	1
57	JAS-ANZ	Standards & Accreditation	CPRS Assurance	1
			Total submissions	71

Appendix 5: Extracted Submissions to the Green Paper regarding Garnaut Climate Change Review and Emissions Trading Scheme

If you take a *climate scientists view, not an economists view*, the earth is actually cooling now, not warming up and has been for a decade [...] (Submission No. 0024, emphasis added).

The countries problems *require action using an engineering approach* at the strategic level not a policy that allows the free market to run the agenda. The free market will provide solutions at the tactical level. *Use engineers to solve physical problems not economists, lawyers or politicians by creating extra layers.* One problem we have is that not enough politicians have an engineering back ground and they tend to present solutions to problems based on their areas of expertise ie; Law and Economics. That is why our Society is driven in the direction of more laws and bureaucracy (Submission No.0003, emphasis added).

I have fears of situations like the old “cooked chook and uncooked chook” [...] To burden the whole community with carbon emissions trading when a simple tax or levy on producers of coal and other fossil fuels would be far more simple (Submission No.0002)

I am once again amazed that the government agencies are *paralysed and intent on producing another layer of bureaucracy* for everyone particularly the Road Transport Industry to deal with (Submission No.0003, emphasis added).

Fundamentally, the Carbon Pollution Reduction Scheme (CPRS) FAILS because it will actually INCREASE Carbon Pollution in both the short-term and the long-term (submission No. 0004)

In their climate change policy the Labor Government is attempting to walk both sides of the street. In its pre-2007 election policy launches they indicated that they would keep petrol and grocery prices low (now where have I heard that before, but in a different context?) and that they would also implement the above discussed climate change proposals. Now they can't have it both ways. None of our primary industries must be disadvantaged by any of the implications of this policy (Submission No. 0007).

By calling it Climate Change instead of Man Made Global Warming the Govt can thus have a Never Ending Hobgoblin with which to Tax people (Submission No.1005).

Appendix 6: Green Christianity Submission to the CPRS Green Paper

CLIMATE CHANGE

Think Climate

Think Change

Think Mr. Rudd

Think God

Really? I don't think so.

Think Carbon Emissions Trading Scheme / Think wasting billions
Think Carbon Pollution Reduction Scheme ~ of dollars

Think billions of dollars to spend Think harvesting rain water

Think Christian politicians? Think about reading the Bible *

Think Climate Change Think GOD

The climate will change in God's own time and you and everyone else will be absolutely powerless to do anything about it.

Sure we can make a difference when it comes to saving water and restricting pollution but change the climate - NEVER

* "In the beginning God created the heavens and the earth." Genesis 1:1

"The heavens will disappear with a roar; the elements will be destroyed by fire, and the earth and everything in it will be laid bare." 2 Peter 3:10

"Then I saw a new heaven and a new earth, for the first heaven and the first earth had passed away, and there was no longer any sea." Revelation 21:1

You are wasting lots of time and lots of money
a a-se«cise!!

Appendix 7: Registered EITE Assurance Providers in 2009

Count of EITE Assurance Providers	
Company	Total
KPMG	23
PricewaterhouseCoopers	21
Ernst & Young	16
RSM Bird Cameron	8
BDO Kendalls	7
PKF Chartered Accountants and Business Advi	6
Grant Thornton	5
Deloitte Touche Tomatsu	5
Moore Stephens	5
MGI Assurance Brisbane Pty Ltd	4
WHK Horwath	4
McLean Delmo	3
MGI Assurance (SA)	2
Bentleys Melbourne Audit Pty Ltd	2
Walker Wayland (WA) Pty Ltd	2
Hayes Knight Audit Pty Ltd	2
Williams Partners Independent Audit Specialists	2
HLB Mann Judd	2
Bentleys (Qld) Pty Ltd	2
Skaines Reeves & Jones	1
Forsythes	1
T A Khoury & Co	1
Carbon Credit Corporation (C3) Pty Ltd	1
Grand Total	125

Appendix 8: Registered Greenhouse and Energy Auditors as at May 2010

No.	Company name	NO. of Auditor category 1 technical	No. of Auditor category 1 non-technical	No. of Auditor category 2	No of Total Auditor
1	KPMG	5	10	8	14
2	Ernst & Young	5	5	11	12
3	GHD Pty Ltd	4	1	2	4
4	Carbon Intelligence Pty Ltd	3	2	1	3
5	Perenia Pty Ltd	3		1	3
6	MWH Australia Pty Ltd	3			3
7	Deloitte Touche Tohmatsu	3	3	3	3
8	RSM Bird Cameron		2	2	3
9	Environmental Resources Management Australia Pty Ltd	3			3
10	SGS Australia Pty Ltd	3	1	1	3
11	Sinclair Knight Merz Pty Ltd	2			2
12	Parsons Brinckerhoff	2	1		2
13	Pangolin Associates Pty Ltd	2			2
14	Carbonetix Pty Ltd	2	1		2
15	AECOM Australia Pty Ltd	2	1		2
16	Coffey Environments Pty Ltd	2			2
17	SAI Global	2			2
18	NCS International	2			2
19	Sustainability Pty Ltd	2			2
20	BDO Audit (WA) Pty Ltd		2	1	2
21	HRL Technology	2			2
22	Johnsons MME	2		2	2
23	Rio Tinto	1			1
24	Denis Cooke & Associates Pty Ltd	1			1
25	SRJ Walker Wayland			1	1
26	Banarra	1	1		1
27	Ecofund Queensland Pty Ltd	1	1		1
28	Genesis Now	1	1		1
29	SAI Global Limited	1			1
30	Clear Environment Pty Ltd	1			1
31	United Group Services	1			1
32	Graham A Brown & Associates	1			1
33	Ndver Pty Ltd	1	1		1
34	HAC Consulting Pty Ltd	1			1
35	Emission Statement Pty Ltd	1			1
36	Aurecon	1			1
37	Energetics Pty Ltd	1			1
38	Hydro Tasmania	1			1
39	ENVIRON Australia Pty Ltd	1			1
40	Impact Zero	1	1	1	1
41	Thirdparty Management Systems Pty Ltd	1			1
42	International Standards Certifications Pty Ltd	1			1
43	Mustard Environmental Pty Ltd	1			1
44	URS Australia Pty Ltd	1			1
45	DNV Australia	1			1

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No.	Company name	NO. of Auditor category 1 technical	No. of Auditor category 1 non-technical	No. of Auditor category 2	No of Total Auditor
46	Ward Management Group Pty Ltd	1			1
47	Net Balance Management Group Pty Ltd	1	1	1	1
48	WSP Environment and Energy Pty Ltd	1			1
49	EEP Management Pty Ltd	1			1
50	Kema Inc	1		1	1
51	Pricewaterhouse Coopers	1	1	1	1
52	Kiewa Consulting Pty. Limited	1	1	1	1
53	RPS Australia East Pty Ltd	1			1
54	KMH Environmental Pty Ltd	1			1
55	Energy Corporate (Australia) Pty Ltd	1			1
56	Bureau Veritas Australia Pty Ltd	1		1	1
57	SAI Global Ltd	1			1
58	Landcare Research New Zealand Ltd	1			1
59	EnvironarcDesign Pty Ltd	1			1
60	Lycopodium Process Industries Pty Ltd	1			1
61	Balance Carbon Pty Ltd	1			1
62	MJM Environmental Pty Ltd	1			1
63	Tropical Energy Solutions	1			1
64	Moore Stephens	1		1	1
65	ERM Australia Pty Ltd			1	1
66	MSI Taylor Chartered Accountants	1	1		1
67	WorleyParsons Services Ltd	1			1
68	JTP Australia Pty Ltd	1			1
69	Accredited Energy Consultants Pty Ltd	1			1
70	KEMA Consulting	1			1
	Grand Total	100	38	41	123

Appendix 9: Registered Greenhouse and Energy Auditors as at August 2012

No.	Company name	No. of Auditor category 1 technical	No. of Auditor category 1 non-technical	No. of Auditor category 2	No. of Auditor category 3	No of Total Auditor
1	KPMG	7	14	15		21
2	Ernst & Young	5	6	12		13
3	PricewaterhouseCoopers	3	8	4		8
4	Net Balance Management Group Pty Ltd	6	4	2		6
5	GHD Pty Ltd	6	2	3	1	6
6	SAI Global Ltd	4				4
7	carbon intelligence Limited	4	2	3		4
8	SGS Australia Pty Ltd	3	1	2		3
9	Deloitte Touche Tohmatsu	2	3	3		3
10	BDO Audit (WA) Pty Ltd		3	2		3
11	RSM Bird Cameron		1	3	1	3
12	NCS International	2				2
13	Ecofund	2	1			2
14	PAEHolmes	2				2
15	Energetics Pty Ltd	2				2
16	MWH Australia Pty Ltd	2				2
17	Carbonetix	2	1			2
18	Earth Systems Consulting Pty Ltd	2				2
19	Coffey Environments Pty Ltd	2				2
20	Pangolin Associates Pty Ltd	2				2
21	Beca	1		1		2
22	MJM Environmental Pty Ltd	2				2
23	Sustainability Pty Ltd	2				2
24	Johnsons MME			2		2
25	Sinclair Knight Merz Pty Ltd	2	1	1		2
26	SLR Consulting Pty Ltd	2				2
27	Edwards Collins Group		1	1		1
28	DNV Australia	1				1
29	Rio Tinto	1				1
30	Environarc Design Pty Ltd	1				1
31	Dupont Australia Ltd	1				1
32	Environmental Resources Management Australia			1		1
33	Perenia Pty Ltd	1		1		1
34	Banarra	1	1			1
35	Balance Carbon Pty Ltd	1				1
36	Genesis Now	1	1			1
37	MSI Taylor Chartered Accountants		1			1
38	Clear Environment Pty Ltd	1				1
39	Ndver Pty Ltd	1	1			1
40	Graff, Paul and Parnell			1		1
41	EEP Management Pty Ltd	1				1
42	Graham A Brown & Associates	1				1
43	Emission Statement Pty Ltd	1				1
44	Grant Thornton Australia			1		1
45	RPS Australia East Pty Ltd	1				1

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No.	Company name	No. of Auditor category 1 technical	No. of Auditor category 1 non-technical	No. of Auditor category 2	No. of Auditor category 3	No of Total Auditor
46	Barrann Consulting Services	1				1
47	ENVIRON Australia Pty Ltd	1				1
48	SRJ Walker Wayland			1		1
49	Moore Stephens			1		1
50	AGL Energy Limited	1				1
51	Mustard Environmental Pty Ltd	1				1
52	Thirdparty Management Systems Pty Ltd	1				1
53	Aurecon	1				1
54	United Group Services	1				1
55	Carbon Cactus	1	1	1		1
56	Ward Management Group Pty Ltd	1				1
57	Palaris Mining Pty Ltd	1				1
58	WSP Enviroment and Energy Pty Ltd	1				1
59	Parsons Brinckerhoff		1			1
60	Denis Cooke & Associates Pty Ltd	1				1
61	PKF East Coast Practice			1		1
62	JTP Australia Pty Ltd	1				1
63	Richard Furler	1	1			1
64	KEMA Consulting	1				1
65	Risk Strategies	1	1			1
66	Kema Inc	1		1		1
67	Em-Power Consulting and Training	1				1
68	Det Norske Veritas	1	1			1
69	Energy Corporate (Australia) Pty Ltd	1				1
70	LRQA	1				1
71	Lycopodium Process Industries Pty Ltd	1				1
72	HAC Consulting Pty Ltd	1				1
73	Sustainability by Innovation	1				1
74	Hills Holdings Limited	1				1
75	Sustainometrics Pty Ltd	1	1			1
76	HRL Technology	1				1
77	Tropical Energy Solutions	1				1
78	Hydro Tasmania	1				1
79	Walker Wayland (WA) Pty Ltd			1		1
80	Impact Zero	1				1
81	WorleyParsons Services Ltd	1				1
82	International Standards Certifications Pty Ltd	1				1
83	AECOM Australia Pty Ltd	1	1			1
84	Jenkcos Pty Ltd	1				1
Grand Total		115	59	64	2	162

Appendix 10: Registered Greenhouse and Energy Auditors as at December 2012

No.	Company name	No. of Auditor category 1 technical	No. of Auditor category 1 non-technical	No. of Auditor category 2	No. of Auditor category 3	No of Total Auditor
1	KPMG	8	15	14		22
2	Ernst & Young	5	5	12		13
3	Pricewaterhouse Coopers	4	9	6		10
4	Net Balance	6	4	3		6
5	RSM Bird Cameron		3	4	2	6
6	BDO		4	3		5
7	GHD Pty Ltd	5	2	4	2	5
8	SAI Global	4				4
9	Carbon Intelligence Pty Ltd	4	2	3		4
10	Deloitte Touch Tohmatsu	3	3	3		4
11	SGS Australia	3	1	2		3
12	Beca Pty Ltd	2	1	1		3
13	Ecofund	2	1			2
14	Clear Environment	2	1			2
15	Pangolin Associates Pty Ltd	2				2
16	Sustainability Pty Ltd	2				2
17	Banarra	2	1			2
18	Johnsons MME			2		2
19	PAEHolmes	2				2
20	Earth Systems Consulting Pty Ltd	2				2
21	Carbonetix Pty Ltd	2	1			2
22	Sinclair Knight Merz Pty Ltd	2	1	1		2
23	Energetics Pty Ltd	2				2
24	MWH Australia Pty Ltd	2				2
25	NCS International	2		1		2
26	Coffey Environments	2				2
27	MJM Environmental Pty Ltd	2				2
28	WorleyParsons Services Ltd	2				2
29	Det Norske Veritas	1	1			1
30	Sustainability by Innovation	1				1
31	Risk Strategies	1	1			1
32	Enproc	1				1
33	Moore Stephens			1		1
34	ENVIRON Australia Pty Ltd	1				1
35	Carbon Cactus	1	1	1		1
36	Environarc Design Pty Ltd	1				1
37	Emission Statement Pty Ltd	1				1
38	Environmental Resources Management Australia			1		1
39	Tropical Energy Solutions	1				1
40	CarbonLab, University of Queensland	1				1
41	Mustard Environmental Pty Ltd	1				1
42	Genesis Now	1	1			1
43	DNV Australia	1				1
44	Barrann Consulting Services	1				1
45	Balance Carbon Pty Ltd	1				1

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No.	Company name	No. of Auditor category 1 technical	No. of Auditor category 1 non-technical	No. of Auditor category 2	No. of Auditor category 3	No of Total Auditor
46	Graff, Paul and Parnell			1		1
47	Edwards Collins Group		1	1		1
48	Graham A Brown & Associates	1				1
49	SLR Consulting Pty Ltd	1				1
50	Grant Thornton Australia			1		1
51	Sustainometrics Pty Ltd	1	1			1
52	HAC Consulting Pty Ltd	1				1
53	Energy Corporate (Australia) Pty Ltd	1				1
54	Walker Wayland (WA) Pty Ltd			1		1
55	MSI Taylor Chartered Accountants		1			1
56	WSP Enviroment and Energy Pty Ltd	1	1	1		1
57	Denis Cooke & Associates Pty Ltd	1				1
58	Hydro Tasmania	1				1
59	Ndver Pty Ltd	1	1			1
60	iMine Pty Ltd	1				1
61	Dupont Australia Ltd	1				1
62	Impact Zero	1				1
63	Perenia Pty Ltd	1		1		1
64	International Standards Certifications Pty Ltd	1				1
65	Richard Furler	1	1			1
66	Jenkcoss Pty Ltd	1				1
67	RPS Australia East Pty Ltd	1				1
68	AGL Energy Limited	1				1
69	EEP Management Pty Ltd	1				1
70	JTP Australia Pty Ltd	1				1
71	Em-Power Consulting and Training	1				1
72	KEMA Consulting	1				1
73	SRJ Walker Wayland			1		1
74	Kema Inc	1		1		1
75	AECOM Australia Pty Ltd	1	1			1
76	Crowe Horwath	1		1		1
77	Thirdparty Management Systems Pty Ltd	1				1
78	LRQA	1	1			1
79	United Group Services	1				1
80	Lycopodium Process Industries Pty Ltd	1				1
81	Aurecon	1				1
82	Hills Holdings Limited	1				1
83	Accredited Energy Consultants Pty Ltd	1	1	1		1
84	HRL Technology	1				1
Grand Total		122	67	72	4	173

Appendix 11: Registered Greenhouse and Energy Auditors as at July 2014

	Company	Count of Auditor category I technical	Count of Auditor category I non technical	Count of Auditor category II	Count of Auditor category III	Count of Name
1	KPMG	15	18	16	1	31
2	Ernst & Young	9	8	13	4	15
3	Pricewaterhouse Coopers	3	9	8	1	10
4	Deloitte Touche Tohmatsu	4	5	5	1	6
5	Net Balance Management Group Pty Ltd	6	4	4		6
6	RSM Bird Cameron		3	4	2	5
7	BDO		4	3	1	5
8	GHD Pty Ltd	5	2	3	3	5
9	SGS Australia	4		1		4
10	Carbon Intelligence Pty Ltd	4	3	2	1	4
11	Pangolin Associates Pty Ltd	3	1	1		3
12	MJM Environmental Pty Ltd	2				2
13	Pacific Environment	2				2
14	Clear Environment	2	1	1		2
15	RSM Bird Cameron		1	1		2
16	Earth Systems Consulting Pty Ltd	2				2
17	Energetics Pty Ltd	2				2
18	Walker Wayland		1	2		2
19	Balance Carbon Pty Ltd	1				1
20	QGC Pty Ltd	1				1
21	NCS International	1		1		1
22	Crowe Horwath		1	1		1
23	Sustainability and Environmental Solution Pty Ltd	1				1
24	Crowe Horwath Sydney		1	1		1
25	CarbonLab, University of Queensland	1				1
26	de Haas Consulting		1			1
27	Chan & Naylor - Brisbane		1	1		1
28	Arrow Energy Pty Ltd	1	1			1
29	SAI Global Limited	1				1
30	Denis Cooke & Associates Pty Ltd		1			1
31	Joint Accreditation system of Australia and New Zealand (JAS-ANZ)	1	1			1
32	DNV GL	1	1			1
33	Lloyd's Register Quality Assurance Limited	1				1
34	Carbon Credit Corporation (C3) Pty Ltd/Williams Partners Independent Audit Specialists			1		1
35	MSI Taylor Chartered Accountants	1				1
36	Em-Power Consulting and Training	1				1
37	Ndver Environmental Pty Ltd	1	1	1		1
38	Bureau Veritas Australia	1		1		1
39	PKF Lawler		1	1		1
40	Energy and Carbon Management Support	1				1
41	All Energy Pty Ltd	1				1
42	Energy Corporate (Australia) Pty Ltd	1				1
43	Sinclair Knight Merz Pty Ltd	1				1

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44	Enproc	1				1
45	Johnsons MME	1				1
46	Envirability Pty Ltd	1		1		1
47	JTP Australia Pty Ltd	1				1
48	ENVIRON Australia Pty Ltd	1				1
49	La Tierra Pty Limited	1				1
50	Environmental Accounting Services Pty Ltd	1				1
51	LRQA	1	1			1
52	Environmental Resources Management Australia			1		1
53	Moore Stephens			1		1
54	Aurecon	1				1
55	MWH Australia Pty Ltd	1				1
56	FFT (Fernandes Family Trust)	1				1
57	Ndevr Pty Ltd	1				1
58	Genesis Now	1	1			1
59	Banarra	1				1
60	Vantage Energy and Environment Pty Ltd	1		1		1
61	Carbon Cactus Pty Ltd	1	1	1		1
62	Westpac Banking Corporation	1				1
63	Barrann Consulting Services	1				1
64	Sustainability by Innovation	1				1
65	R & M Witney Pty Ltd	1	1	1		1
66	Sustainometrics Pty Ltd	1	1			1
67	Climate Consulting	1				1
68	Thomas Clark	1				1
69	Coffey Environments Pty Ltd	1				1
70	HRL Technology	1				1
71	SLR Consulting Pty Ltd	1				1
72	Jacobs SKM	1				1
73	CQ Partners Pty Ltd	1				1
74	Jenkcos Pty Ltd	1				1
75	Technip France	1				1
76	Graham A Brown & Associates	1				1
77	BSI Group ANZ	1				1
78	Hills Holdings Limited	1				1
79	Write Thing			1		1
80	Golder Associates Pty Ltd	1	1	1		1
81	AECOM Australia Pty Ltd	1	1			1
82	Graff, Paul and Parnell			1		1
Grand Total		116	77	81	14	172

Appendix 12: Example of a Greenhouse and Energy Auditor's Expertise

Auditor's details	
Date of registration	26-Jul-10
Auditor category	Category 1 – non-technical
	Category 2
Company	Ernst & Young
Nominated specialisation (as provided by the auditor)	Financial
	Energy consumption
	Electricity production
	Chemical or metal product production
	Transport
	Fugitive emissions
	Crude oil production
	Mines - open cut
	Natural gas distribution
	Natural gas production or processing (other than flaring or venting)
	Natural gas transmission
	Industrial process emissions
	Chemical product source
	Waste source emissions
	Solid waste disposal on land
	Waste incineration
	Wastewater handling (domestic or commercial)
	Carbon sequestration
	Reforestation
	Carbon capture and storage

Source: Australian Government Clean Energy Regulator Website (2012)

Appendix 13: AUASB Minutes of Board Meeting from February 2008 to February 2013

No. of Board Meeting	Date	AUASB Title of Agenda	Key Agenda
29th	Feb-08	Sustainability - Assurance on Greenhouse and Energy reporting	Government Paper on Greenhouse and Energy Reporting Requirements. The AUASB agreed to continue working with the Department of Climate Change on the proposed audit requirements.
31th	Jun-08	same as above	roundtable conferences; liaise with the IAASB taskforce on assurance on carbon emissions.
32nd	Jul-08	same as above	the Carbon Pollution Reduction Scheme – Green Paper; The paper does not fully address audit issues – the AUASB is to continue to liaise with the Dept. of Climate Change.
34th	Oct-08	National Greenhouse and Energy Reporting (NGER) Act 2007 - External Auditing Requirements	The Board agreed that a formal submission should be made to the Department on its ‘External Audit Consultation Paper’.
35th	Dec-08	National Greenhouse and Energy Reporting (NGER) Act 2007 and Carbon Pollution Reduction Scheme - External Auditing Requirements	the AUASB will provide staff assistance to the Department to assist in the finalisation of auditing requirements under the NGER Scheme.
36th	Feb-09	National Greenhouse and Energy Reporting (NGER) Act 2007 and Carbon Pollution Reduction Scheme (CPRS)	update on the drafting of auditing and assurance requirements for the NGERS and CPRS schemes; EITE
37th	Apr-09	same as above	NGER regulations for the registration of auditors; A legislative instrument containing the requirements for the conduct of audits; EITE assistance program
38th	Jun-09	same as above	received an update on recent developments affecting the NGERS and CPRS schemes; continues to work with the Department of Climate Change

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39th	Jul-09	same as above	received an update on the proposed draft NGERS <i>Audit Determination</i> , and requested the AUASB Technical Group to pursue this matter further with the Department of Climate Change.
40th	Sep-09	National Greenhouse and Energy Reporting Scheme	received an update on the draft NGER Audit Determination and NGER Audit Regulations, the liaison between the Department of Climate Change and AUASB regarding matters raised by the AUASB relating to the draft proposed NGERS.
41st	Oct-09	same as above	update draft audit requirements for NGERS, CPRS, the Emissions-Intensive Trade-Exposed (EITE) assistance program under CPRS
42nd	Dec-09	National Greenhouse and Energy Reporting/ Carbon Pollution Reduction Schemes	same as above
43rd	Feb-10	National Greenhouse and Energy Reporting (NGERS) and Carbon Pollution Reduction Schemes (CPRS)	received an update on the Department of Climate Change (DCC) on the NGERS Audit Regulations and NGER Audit Determination and draft Audit Determination Guidance; resolved to provide its comments and suggested alterations to this draft document to the DCC on a Government-in-confidence basis.
44th	Apr-10	same as above	received an update on NGER, CPRS, EITE; AUASB's submission on the draft Audit Determination Guidance
45th	Jun-10	same as above	received an update on NGER, CPRS, EITE;
46th	Jul-10	same as above	technical group has provided further input on the proposed NGERS Audit Determinations Guidance. The Board noted that practitioners have been applying for registration as approved auditors from April 2010, and that a number are from outside of the accounting profession.
50th	Apr-11	National Greenhouse and Energy Reporting Scheme	The GEDO and DCCEE are interested in the progress of ISAE 3410 and how this standard, once an equivalent is issued in Australia, may be linked into the NGERS requirements.

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54th	Nov-11	NGER and Clean Energy Schemes	Clean Energy Scheme and the conduct of audits under the NGERs; agreed to develop ASAE 3410 in conformity with ISAE 3410
55th	Feb-12	NGER and Clean Energy Schemes and Greenhouse Gas Assurance	update of the status of the Clean Energy Scheme and the conduct of audits under the NGERs; ASAE 3410 will be considered at the 16 April AUASB meeting.
56th	Apr-12	same as above	intend to coincide ASAE 3410 with the commencement of the Australian Government's carbon pricing mechanism.
57th	Jun-12	same as above	The Board approved a project plan to develop a Guidance Statement, which will link the NGERs and CES assurance requirements with the requirements of the AUASB Standards including ASAE 3410.
Special	Jun-12	Final ASAE 3410	discussed issues raised by stakeholders through consultation, e.g. limited assurance engagements . The AUASB approved the final ASAE 3410.
58th	Jul-12	NGER and Clean Energy Schemes and Greenhouse Gas Assurance	The board approved the scope of the Guidance Statement
59th	Sep-12	same as above	The Board received an update on developments at DCCEE and Clean Energy Regulator and considered the first draft of the Guidance Statement on Engagements under the National Greenhouse and Energy Reporting, Clean Energy and Related Schemes.
60th	Nov-12	same as above	The AUASB approved a new Guidance Statement, titled GS 021
61th	Feb-13	NGERS, Carbon Pricing Mechanism and Related Schemes Assurance	considered an update on the Technical Group's on-going activities with respect to assurance under the NGERs, carbon pricing mechanism and related schemes and liaison with the Clean Energy Regulator and Department of Climate Change and Energy Efficiency.