

## 6. Methodology

### 6.1 Introduction

This study emerged from the author's observation that potentially significant changes in energy management practices were occurring within large energy consuming organisations in Australia that had obligations under the Energy Efficiency Opportunities (EEO) legislation. The EEO legislation commenced in July 2006 and requires organisations using more than 0.5PJ to conduct energy efficiency assessments and report publicly on the outcomes of these assessments annually. Consolidated analysis of the public reports from organisations with obligations under the EEO legislation found that significant energy efficiency outcomes and a range of additional business benefits were being reported (RET 2012b).

However, the legislation was not the only business driver for organisations to reconsider their approach to energy management. Following the commencement of the EEO legislation, many of the same organisations were required to report to the government under the *National Greenhouse and Energy Reporting Act 2007* (Cth) (NGER Act). There had also been substantial attention paid in the national discourse to the introduction of a carbon pricing mechanism which was, ultimately, introduced in July 2012. Additionally, electricity and gas prices had begun to rise from 2007 after a long period of relative stability. There were also indications that a range of organisational stakeholders,<sup>8</sup> including customers, the community and investors, were taking a greater interest in the way in which companies were managing their energy use and taking action to minimise the greenhouse gas emissions associated with their operations.

Whilst it was evident that this complex social setting had led to the emergence of new energy management practices, the causal dynamics were not immediately apparent and the motivation of multiple stakeholders was obscure. For these reasons a focus on Australian organisations with liabilities under the EEO legislation over the period 2006–2012 was considered to provide a valuable setting in which to examine the primary

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<sup>8</sup> As mentioned earlier in the thesis, the term 'stakeholder' (as it is used in this research) refers to an individual or organisation with an interest in the energy efficiency performance of one or more large energy consuming organisations in Australia.

research question presented in this thesis: *How* and *why* do energy management practices change? In so doing, this would also provide new perspectives on the dynamic process of institutional change. The aim of this chapter is to describe the key features of the research design, which are listed in Table 6.1.

**Table 6.1: Key features of the research design**

<b>Feature</b>	<b>Description</b>
Research question	<i>How</i> and <i>why</i> do energy management practices change?
Methodological assumptions	Social constructionism: <ul style="list-style-type: none"> <li>• Knowledge is constructed through the shared meanings interpreted by social groups.</li> </ul>
	Process perspective: <ul style="list-style-type: none"> <li>• The research is concerned with the way in which change unfolds over time and the factors that influence change.</li> </ul>
	Use of qualitative data: <ul style="list-style-type: none"> <li>• Qualitative data supports the examination of complex social processes.</li> </ul>
Approach and analysis	Embedded, single case study design incorporating content analysis, temporal bracketing, visual mapping and narrative development. The data was triangulated across three distinct sources of data. The case is characterised as critical and revelatory.
Level of analysis and research setting	The organisational field associated with energy management practices in large energy consuming organisations in Australia over the period 2006–2012. Organisational and project levels provide embedded units of analysis within the case study.
Perspective	The research draws on the perspective of managers who have had responsibility for progressing energy management improvement within large energy consuming organisations in Australia over the study period. The aim is to advance theory from their viewpoint.
Sampling	Theoretically driven, within-case sampling.
Data sources	<ul style="list-style-type: none"> <li>• 62 presentations delivered by corporate energy practitioners representing 46 large energy consuming organisations and five consulting firms at public conferences held in 2011 and 2012</li> </ul>

Feature	Description
	<ul style="list-style-type: none"> <li>• nine semi-structured interviews with corporate energy practitioners who had played a key role in introducing and maintaining new energy management practices in their organisations</li> <li>• archival documents consisting of 27 publicly-available case studies that had been developed by the Australian Government in collaboration with organisations throughout the study period.</li> </ul>

## 6.2 Methodological assumptions

The social world can be examined and understood by researchers in many different ways. An important component of any research design is to communicate the underlying assumptions that are held by the researcher about the nature of reality and how things can come to be known (Huberman & Miles 2002; Miles & Huberman 1994). This research is underpinned by the key methodological assumptions of social constructivism and interpretivism. It takes a processual approach to change and utilises qualitative data and analytical techniques which are in accordance with the methodological paradigms.

### 6.2.1 Social constructivism

The social constructivist ontology maintains that knowledge is constructed through people's interpretations of reality. To illustrate, Berger and Luckmann (1966) propose that what is 'real' to a Tibetan monk is likely to be different to what is considered 'real' to an American businessman. This is because their perspectives, reality and knowledge relate to the particular social contexts that they exist within. According to the social constructivist ontology, knowledge is dependent on the interpretation of people through their interactions in social groups. A social constructivist perspective contrasts with a 'positivist' perspective which assumes that truth and facts exist in their own right – independent of individual and social interpretation.

As Kuhn (1970, p. 210) describes it: “knowledge is intrinsically the common property of a group or else nothing at all”. A social constructivist ontology emphasises the importance of acknowledging the social context that influences the generation of knowledge that may be different within unique social settings (Berger & Luckmann 1966). The social constructivist perspective is compatible with the tradition of institutional theory, since institutions and organisations are considered to be created through: “common understandings and shared interpretations of acceptable norms of collective activity” (Suddaby et al. 2010, p. 1235).

Social constructivist assumptions influence this research in a number of important ways. For example, these assumptions:

- direct attention to the common understanding and shared interpretations informing the way in which energy management practices are undertaken by large energy consuming organisations in Australia. It is not assumed that there is a single ‘right way’ of doing things that can be ‘discovered’. Rather, the aim is to highlight the influence of the wider social context that individuals and organisations find themselves in.
- examine the way in which this context influences decisions and actions that individuals and organisations take, and the meaning that underpins such action.

This study does not intend to suggest that the findings are an absolute objective reality. Rather, the findings are an outcome of a research process in which the interpretations of corporate energy practitioners are analysed for patterns of stability and change in relation to the way in which energy management practices are conducted. Since the research is conducted at the level of social groups, these patterns are not intended to be absolute. Instead, they reflect the interpretation of the corporate energy practitioner’s experience. They also reflect the values and constructs of the researcher – both in the theory used and the subjective influences involved in interpretation.

The idea that research can be conducted in an impartial or detached way has been strongly challenged (Popper 1972). Van de Ven (2007) suggests that for this reason it is important to be clear about the perspective and viewpoints of the researcher as

well as those of the research participants.

The research participants in this thesis are all managers or consultants with responsibility for progressing energy performance improvement within large energy consuming organisations in Australia. Each is expected to have a unique perspective on the challenges and opportunities associated with changing energy management practices. It is not suggested that their accounts cover all of the perspectives of change within an organisation.

Data gathered through confidential interviews with the research participants may be expected to reflect the individual views of the participants more than the data gathered from public presentations or case study material available for public consumption. That is because public presentations are likely to reflect the individual's view *as well as* the collective view that managers within a particular corporation would like to have reflected in public. These presentations are likely to have been through a series of review processes within an organisations prior to their presentation in public. That is not to say that such data is not valid – rather it is to acknowledge that the different forms of data may be skewed due to the varied degree of individual and organisational input. To an even greater degree, the third source of data, publicly written case study may represent an even more refined view influenced by the organisation since such documents typically go through multiple iterations and are more easily accessible to the general public due to the more enduring nature of written material.

Drawing on the perspective of these individuals has a number of advantages. Since energy performance improvement has been a primary focus for them over the study period, it is expected that these individuals will have:

- direct experience
- received feedback from managers as well as objective measures on what practices have and have not worked in their organisations
- information on the way in which change has progressed over time, and
- information on other challenges that have been faced along the way.

It is acknowledged that such a perspective will be highly subjective to their

experience. However, since there are a large number of subjects involved in the research, this should allow for general patterns of change to be drawn from their accounts.

The researcher on this thesis also has direct experience working with organisations on energy management issues over a period of more than 15 years. Although the research process has been approached in a systematic way to allow for comparison across the board, it is accepted that the researcher's direct experience may influence the selection of some events and issues as being more critical than others (Babb 2006). To address these challenges the researcher obtained review from supervisors acting as 'critical friends' throughout the research process. Following Alveeson and Sköldberg (2009) the researcher has also established a structured process of reflection on his own thinking and assumptions throughout the research process.

Although this presents the potential for bias, it can also be considered a strength. In particular, the challenge of working through a significant amount of qualitative data to highlight issues of relevance to both practitioners and research more generally may be considered to be enhanced by this direct experience and to support deeper insights than may have been obtained without this experience. It may also contribute towards deeper questioning.

The researcher is also known to the presenters and was involved in the conferences as a facilitator. The researcher also co-authored a number of the publicly available case studies used in this research as indicated below. It is expected that this has been a positive aspect in that it has facilitated access to the participants, allowed for deeper questioning during the interview process and has, ultimately, helped the researcher to "understand the dynamics confronting managers who are directing the change effort, and therefore generate new knowledge that advances the theory and practice of managing change" (Van de Ven 2007, p. 206).

The research conducted for this thesis has ethics approval from the University of Technology, Sydney Human Research Ethics Committee. The approval number is 520111396.

### 6.2.2 A process perspective

A process perspective aims to explain phenomena by describing: “patterns in events, activities and choices over time” (Langley 2009, p. 411). Process research emphasises the importance of identifying links between the substance, context and politics of change as it occurs (Dawson 1997). Rather than attempting to provide explanations between independent and dependent variables, the focus of process research is on the way in which events lead to an outcome. This is typically achieved by tracking change over time, examining behaviour rather than conditions and examining ‘what happens in response to what’ (Sminia 2009, p. 100). By describing a sequence of events over time in a narrative, research conducted from a process perspective may also be more accessible to practitioners (Rynes 2007). Another advantage of a process perspective is that examining how changes in practices occur over time and the ways in which individuals and organisations interact within a wider interorganisational context can provide a more dynamic understanding of the ways in which change can be more effectively implemented in terms of the goals of a change program (Langley 2009).

Process research contrasts with and addresses limitations associated with variance research (Meyer, Gaba & Colwell 2005). Variance methods help to explain why one organisation performs better than another, but typically do not provide insights into the way in which an organisation or phenomenon changes from one level of performance or outcome to another. Variance research may highlight that firms with a particular characteristic are likely to perform better than firms with another characteristic, but such research does not provide insights into *how* firms might *develop* the desired characteristic (Langley 2009).

A process perspective is particularly suited to the aims of this research, which are to understand how and why change occurs over time, rather than to compare the static performance of one organisation with another. The change that the research aims to explore is at the level of the organisational field; that is, it examines how multiple actors with an interest and influence on energy management practices affect change – not just at a single point in time, but over a period of six years. A process perspective is appropriate in answering questions of ‘whom’, ‘why’ and ‘how’, rather than ‘whether’ and ‘when’ (Suddaby & Greenwood 2009).

This study is built on an ontological perspective that considers change to be a complex and dynamic process that evolves over time. Rather than approaching change as a substance or a property of individuals and organisations (Langley & Tsoukas 2010), it is considered an ongoing process in which the beliefs of actors and their habits of action are modified through new experiences that occur through their interactions with other actors (Tsoukas & Chia 2002). This perspective is compatible with an interpretivist approach in which the research aims to uncover how people involved in change understand their experience in the process.

### 6.2.3 Qualitative data

Both qualitative and quantitative data can be used in process research. Multivariate, quantitative methods have provided the dominant empirical approach within institutional theory that aims to explain stability. However, qualitative methods have been more prevalent in considering institutional entrepreneurship and change. Multivariate approaches: “give attention to discrete and observable elements of organizations that change in response to change in institutional pressures” (Suddaby & Greenwood 2009, p. 178). As discussed in Chapter 5, such methods have been predominantly applied to research questions associated with institutional adaptation and diffusion (Hargrave & Van De Ven 2006). A central objective in this type of variance research has been to examine the conditions under which particular outcomes will be achieved (Van de Ven & Poole 2005).

Entrepreneurial action that aims to change prevailing social norms can be more difficult to observe than the homogeneity of structures in an organisational field (David & Bitektine 2009). To understand the reasons why institutional entrepreneurs might challenge prevailing social norms, research on institutional entrepreneurship has typically used an interpretivist approach, gathering qualitative data that provides insights into the subjective perceptions of actors and the processes by which change occurs (Leca, Battilana & Boxenbaum 2006; Suddaby & Greenwood 2009).

Institutions are considered to be formed as meanings become shared and, ultimately, taken for granted. Individual interpretations of meaning play an important role and the development of social meaning involves negotiation amongst various parties in order to create a shared meaning (Hardy & Maguire 2008; Zilber 2006).



Eisenhart and Graebner (2007) refer to the outcomes achieved from the research of Greenwood and Suddaby (2006) in suggesting that qualitative data offers insight into complex social processes that would not be easily revealed if quantitative data was used in the research. David and Bitektine (2009) suggest that studies by Greenwood, Suddaby and Hinings (2002) and Maguire, Hardy and Lawrence (2004) would not have been accepted as providing the same rich insights, were it not for the rising acceptance of qualitative research as a valid method. Suddaby and Greenwood (2009) encourage the use of qualitative methods to build understanding of the way in which institutional processes occur.

Researchers have called for more comprehensive depictions of institutional entrepreneurship by examining human agency as a distributed phenomenon (Battilana, Leca & Boxenbaum 2009; Dorado 2005; Garud & Karnøe 2003; Hargrave & Van De Ven 2006; Lawrence, Suddaby & Leca 2011). In seeking to examine the interaction between actors, qualitative research can offer: “comprehensive descriptions that provide a deeper understanding of the actors’ actions, their reasons to act and their subjective perceptions, as well as to gain a detailed knowledge of the process” (Leca, Battilana & Boxenbaum 2006, p. 21). Further, such approaches can provide researchers with an opportunity to examine the efforts of individual actors in creating institutional change, the way in which individual contributions combine, the response that actors have to each other and how the overall contribution of these leads to institutional change and stability (Garud & Karnøe 2003; Lawrence, Suddaby & Leca 2011).

An important issue related to qualitative case study research is the extent to which the findings can be generalised across other settings. It is important to clarify that the aim in this thesis is not to identify a sample and generalise the findings towards a population. Rather, the aim of this research is to generalise the theoretical propositions as a means of expanding and generalising theory (Athens 2010; Eisenhardt & Graebner 2007; Greenwood & Suddaby 2006) .

### **6.3 Case study method and design**

It has been argued earlier in this thesis that existing approaches to researching the energy efficiency gap have been constrained by the focus on individual actors and the market as primary units of analysis. Recent work has begun to examine the organisational and industry-level contextual factors that influence the uptake of energy efficiency in organisations. The literature review has indicated the need to conduct research that views changes in energy management practices as a dynamic process, influenced through the interaction of multiple individual and organisational actors. Such research has the potential to challenge existing assumptions about the reasons for the energy efficiency gap and the actions that might be taken to address it.

Moving towards a more comprehensive understanding of the energy efficiency gap does, however, present distinct challenges. A single case study design has been selected for this study as it is the best way of addressing these challenges. The scope, rationale and details of the case study design are presented in the following paragraphs.

#### **6.3.1 Scope of the case study**

According to Yin (2009, p. 18), a case study is: “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context”. One particular advantage of the case study method is that it provides a systematic way of describing and documenting complex events to observe patterns that would otherwise remain hidden (Hancock & Algozzine 2006). Case study method is particularly appropriate when the boundaries between a particular phenomenon and the context are not clear (Yin 2009) and when research aims to capture contemporary phenomena and provide new insights into complex and interrelated issues (Eisenhardt 1989). For these reasons case study method is considered appropriate for the research presented in this thesis.

Miles, Huberman and Saldaña (2013, p. 28) define a case in abstract terms as: “a phenomenon of some sort occurring in a bounded context.” A critical aspect of case study design is to define the phenomenon that is the focus of the case study as well

as the boundaries. An essential question to clarify is: “What is the ‘case’ in the case study?” (Platt 2007). Table 6.2 sets out the case study boundaries and descriptors. These are then discussed in more detail.

**Table 6.2: Case study boundaries and descriptors**

<b>Boundary</b>	<b>Descriptors</b>
Phenomena being investigated	Corporate energy management practices and the institutions that form around and influence those practices
Level of analysis	The organisational field and the institutions that form around energy management practices in Australia
Embedded units	<ul style="list-style-type: none"> <li>• Large energy consuming organisations in Australia: defined as organisations using more than 0.5PJ of energy annually and fulfilling other criteria requiring participation under the EEO legislation</li> <li>• Projects that are developed within these organisations that aim to improve energy performance</li> <li>• Stakeholders that form the organisational field associated with energy management practices</li> </ul>
Geographic location	Australia
Timeframe	2006–2012
Characteristics of the case	Critical and revelatory
Sampling approach	Theoretical sampling; that is, organisations that were able to clearly demonstrate that they had changed their corporate energy management practices were selected with the aim of providing theoretical insights rather than generalising the findings to a wider population.

Corporate energy management practices and the institutions that form around them are the core phenomena examined in this case study. By way of explanation, institutions have traditionally been viewed as forming around industry groupings, markets and technologies. However, more recent studies have examined the formation of institutions around new management practices (Lounsbury & Crumley 2007; Perkmann & Spicer 2008; Reay, Golden-Biddle & Germann 2006). Consistent

with these developments, the focus of this case study is on the institutions that form around and influence energy management practices.

As defined in Chapter 3 (Section 3.2), energy management practices are understood to be “activities recognised by a community as the legitimate means of coordinating around energy use in accordance with the goals of an organisation.” Large energy consuming organisations are defined as those using more than 0.5PJ of energy in a 12 month period within Australia. This definition is consistent with the legislative threshold for organisations with obligations under the EEO legislation. As of 1 May 2012 there were 319 organisations with obligations under the EEO legislation operating in Australia (RET 2012b).

An important component of case study design is to clarify the scope, levels of analysis being undertaken and the boundaries of the case study. In this research, the primary level of analysis is the organisational field associated with energy management practices in large energy consuming organisations in Australia.

DiMaggio and Powell (1983, p. 148) describe an organisational field as encompassing: “... those organizations that, in the aggregate, constitute a recognised area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products”.

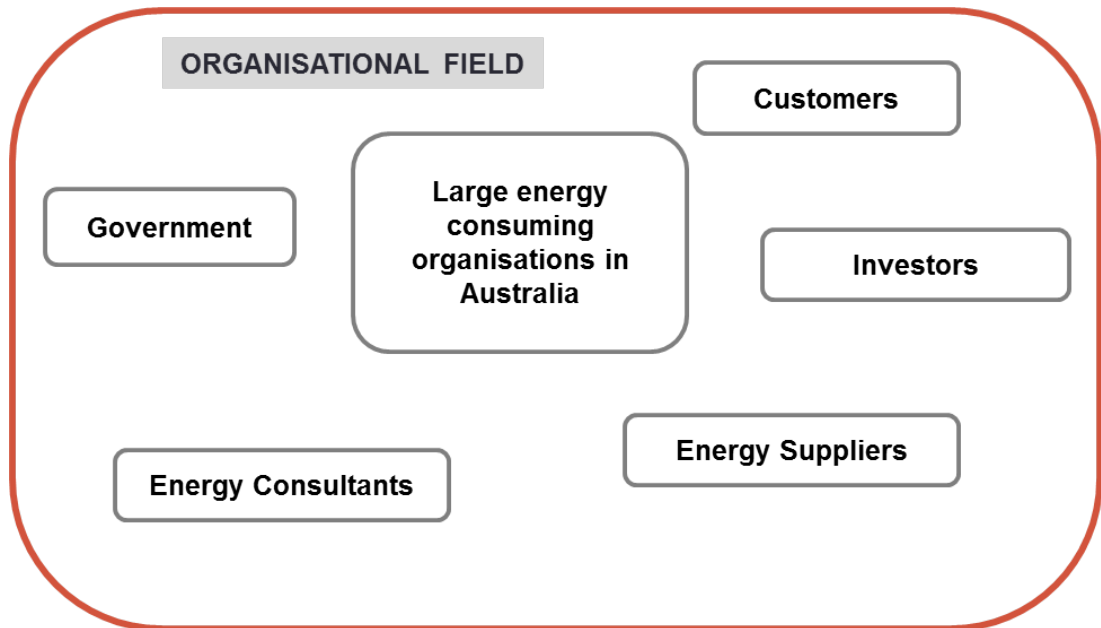
Although large energy consuming organisations are well defined from the outset of this study, other constituents in the organisational field are not. Stakeholders that make up the organisational field associated with energy management practices may include government, investors, customers and energy suppliers (see Figure 6.1).

Important research questions associated with the organisational field include:

- Who are the key stakeholders involved in change?
- How do these stakeholders influence the process of change directly and through their interactions with other stakeholders? (see Chapter 5, Section 5.8 for an explanation of the origin of these questions).

The stakeholders within the organisational field are expected to be revealed inductively through analysis of the data, which is expected to reveal key stakeholders, the energy management practices that are developed and the dynamics through which these practices evolve over time.

**Figure 6.1: Potential stakeholders in the organisational field associated with energy management practices**



Although the primary level of analysis is the organisational field associated with energy management practices, this research aims to examine change in those practices as they occur at multiple levels. For this reason, the case may be characterised as an embedded single-case design (Yin 2009). The ‘embedded’ sub-units of analysis are large energy consuming organisations in Australia, and the projects that are developed by these organisations with the aim of improving energy efficiency performance and delivering other business benefits.

In developing the research design, the levels of analysis and whether the case study should be developed as a multiple-case or single-case design with embedded units, were considerations. The design could have been examined as a multiple-case study – with each organisation making up a single case with comparison being made across the cases. However, the situation was resolved by considering the primary unit of analysis which, in this case, was the organisational field associated with energy management practices. This field is made up of multiple organisations, including the large energy consuming organisations within which energy management practices are applied. Of particular interest in the case were the interactions between multiple actors and the way in which their actions influenced energy management practices; not just in one organisation, but across a large number

of organisations. Therefore, the study is considered to be a single case with the unit of analysis being the organisational field associated with energy management practices in Australia. This approach is further reinforced by the nature of energy management practices as being in a state of flux. Based on their experience in researching nonlinear change in organisational fields, Meyer et al. (2005) have highlighted the importance of raising the level of analysis in these cases to observe the larger environment within which change is occurring.

Framing the research as a single case does not limit the intention to conduct multi-level analysis at the field, organisational and project level. Yin (2003, p. 43) characterises this approach as a single case study using an embedded case study design. Additional levels of analysis are considered units of analysis that are embedded within the broader case as a whole. Each of the organisations involved may be considered an embedded unit of analysis, as are the corporate energy practitioners and projects themselves. There are many other units of analysis that could be examined in this research. However, the challenge here was to analyse different units of analysis at a suitable level of abstraction that allowed local differences to be addressed (Platt 2007) and, ultimately, to respond to the primary research question. Such complexity presents a choice to the researcher between locally relevant detail and the wider, field-level analysis being undertaken in the research. The need to limit the scope of the analysis is ultimately a 'limitation' of the analysis. For example, analysis could occur based on the different industry sectors. While outlying examples and obvious differences will be described, the study aims to identify commonalities at the level of the field, rather than detailed nuances that may occur from one organisation to the next. These are acknowledged limitations, yet this level of analysis is appropriate to the aim of the case study to challenge existing approaches and theoretical assumptions applied in the body of energy efficiency literature.

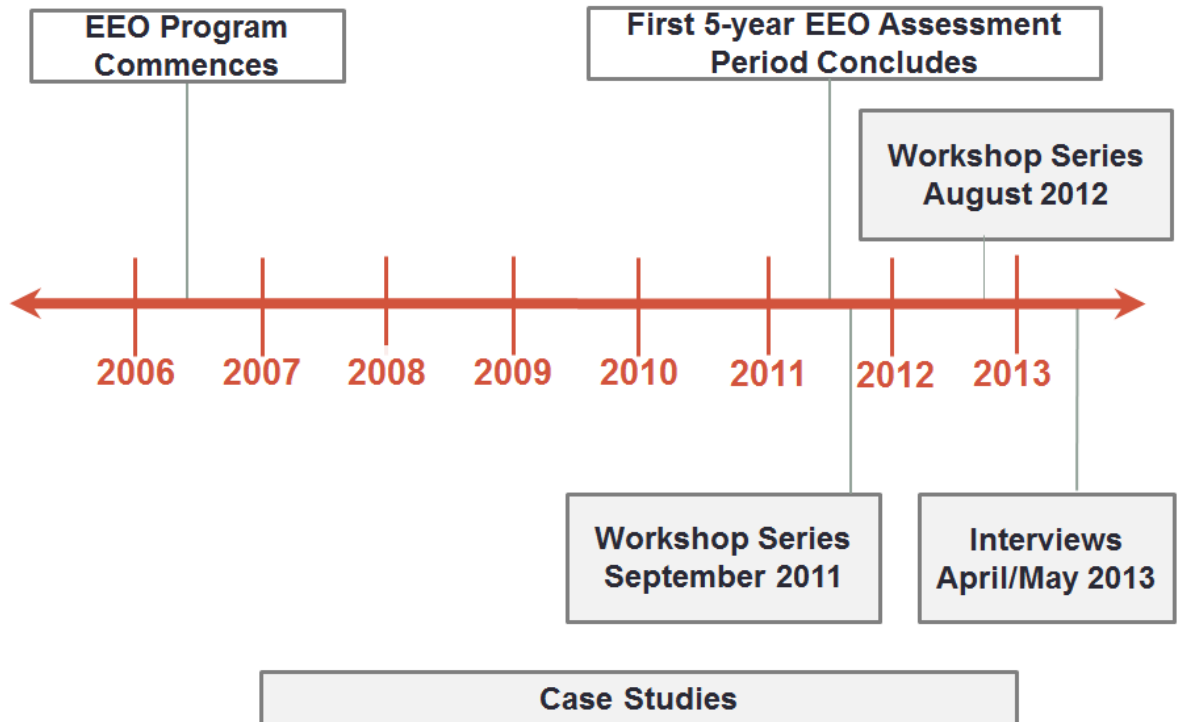
This research acknowledges the challenges and, at a practical level, aims to highlight the broader shifts (patterns) occurring at the level of the field, provide illustrations of the implications at the organisation and project levels and, in cases where there are distinct outliers, to make this clear. (Further complexity is apparent in that the aim is to capture the process of change over time.) Inevitably, there will be a loss of locally

relevant detail, but the broader research aim/question is presented as an important focus throughout the research, which means that there is an emphasis on the wider, field-level trends, as illustrated by the local organisational and project-level interactions.

The case is also bounded by physical location and time. The case is confined to the energy used by large energy consuming organisations in Australia and the period 2006–2012. The case study period begins with the introduction of the first national energy efficiency legislation in Australia that requires organisations to conduct energy efficiency assessments. This would have an impact on the largest energy consuming firms. It may be considered a significant event that was common to all of the organisations involved in the study. It also explicitly aimed to influence energy efficiency practices in firms using a regulatory framework that included penalties for non-compliance. Another advantage of this timeframe was that it provided a clear milestone that practitioners could refer to (as they did) in their presentations (i.e. Here is how we did things before the introduction of EEO legislation ... Here is how we first approached the EEO legislation ... Here is how and why we changed our approach).

The EEO legislation is structured around five-year assessment cycles. A formal requirement is for firms to report to the government on the approach that they intend to take in conducting their energy efficiency assessments and reporting. This structure of the program has also encouraged firms/practitioners to formally review their approach at the commencement of each five-year assessment cycle which concluded (for most firms) in July 2011 – providing another milestone. This corresponded with the topics of the conference presentations (i.e. reflection over the five years about what worked well and what did not, and projections forward about future activities and the reasons for these). The timeframe covered by the case study and the timing of data collection is shown in Figure 6.2.

**Figure 6.2: Timeframe of the case study showing data collection points**



This particular case is being used for a number of reasons. It provides a clearly bounded period of time in which there is evidence that a number of organisations have modified their energy management practices. This was the first time the Australian Government had introduced national legislation making it mandatory for large energy users to conduct rigorous and comprehensive energy efficiency assessments and to report publicly on the outcomes from those assessments each year. This provides a unique data set that offers an opportunity to expose the limitations of dominant theories associated with explaining the phenomenon of the energy efficiency gap. Therefore, the case may be considered to be a ‘critical’ case (Yin 2009). The case is ‘revelatory’ in that there have been few studies that examine how corporate energy management practices change over time, and the underlying dynamics contributing to such change. Single case studies are appropriate to refocus investigations in a particular area of investigation (Yin 2009).



### 6.3.2 Theoretical sampling

The sample of organisations used in this study was selected for their theoretical interest rather than as a means of sampling within a population with the intention of generalising to the wider population (Eisenhardt 1989; Meyer, Gaba & Colwell 2005). Since the focus on changing practices was sought, it was considered appropriate to look for theoretical exemplars (Flyvbjerg 2006; Van de Ven 2007). Thus, organisations were sought that were able to demonstrate – with a high degree of experience – the phenomena of changing energy management practices (the focus of the study). It is important to note that the exemplars being sought were not necessarily based on a preconception of ‘ideal energy management practices’, as may be the case if a variance approach was being used. Rather, organisations for which there was evidence to suggest that energy management practices had *changed* over the study period were sought.

Drawing on public presentations by corporate energy practitioners presented a number of important benefits in relation to the type and number of organisations selected for the study. The focus of the conference setting was one in which presenters were encouraged to describe how energy management practices had changed within their organisation, including current challenges and future opportunities. Therefore, the conference presentation topics and events were aligned with the research questions and provided access to data about a relatively large number of organisations. It was expected (and later borne out in the analysis) that organisations choosing to present at such a public event would have experience of change which they would be willing to share. Thus, this source of data was an effective and efficient way of obtaining data from a large number of organisations that had ‘self-selected’ as organisations in which management practices had changed. Since these organisations had already presented information in the public domain, access to corporate energy management practitioners for interviews was also facilitated.

Access to data from a relatively large number of organisations presented both challenges and opportunities. For example, data from a larger number of organisations increased the time required for analysis. The larger sample meant a

degree of granularity was traded off against the strength in observing the patterns of change that were common to many of the organisations in the study, and those areas of change in which there was greater heterogeneity (Van de Ven 2007). Further, selecting organisations and corporate energy practitioners with the experience to reflect on the state of energy management practices retrospectively (i.e. back to 2006) and prospectively was a valuable criterion in the selection of data and research participants.

#### **6.4 Data sources**

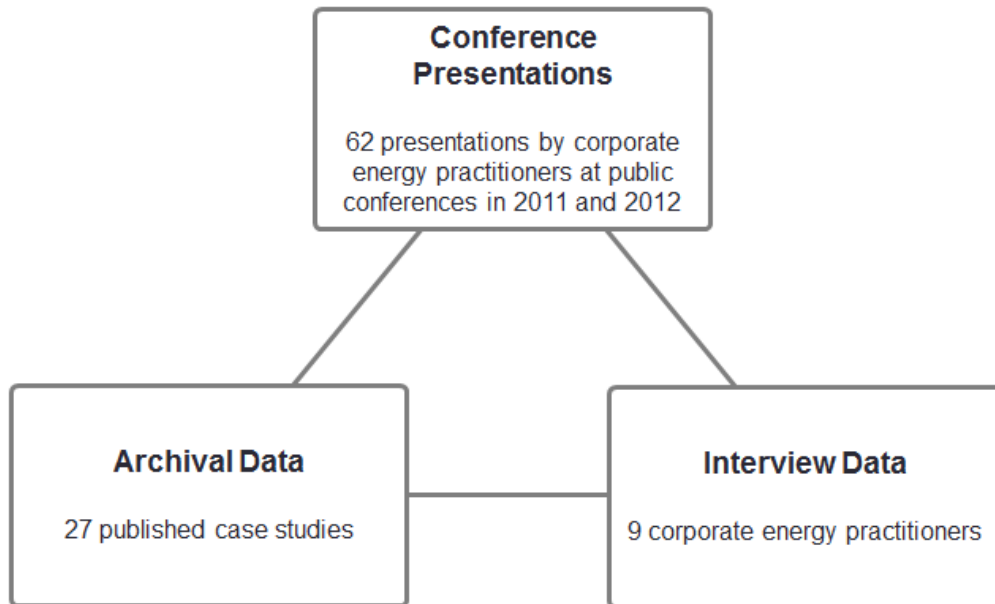
Three distinct data sources were drawn on for this research:

1. conference presentations
2. interview data, and
3. archival data (see Figure 6.3).

Drawing on data from multiple sources allows for the research findings to be compared across the different data sources in order to identify consistencies and inconsistencies. This is known as data triangulation and is an important strategy for enhancing the construct validity of the research (Punch 2005; Yin 2009). By using multiple data sources, the inherent limitations of each data source can also be reduced.

It is important to note that while each source of data reflects individual perspectives, the extent to which each is influenced by corporate rhetoric will vary. For example, corporate influence is likely to be strongest in the published case studies since the process of developing material that will be available to the public in a more permanent sense, involves multiple iterations and reviews by corporate personnel within the case study company. Relatively less corporate public relations influence is likely to exist in the conference presentations. The nature of the conference events – which involved an audience of other corporate energy practitioners (peers) operating within a ‘community of practice’ is likely to have minimised corporate rhetoric. Finally, confidential interviews are likely to have reflected less corporate messaging and stronger individual perspectives since comments by respondents were de-identified. Therefore, the use of multiple sources of data helps to reduce the influence of corporate rhetoric that would be difficult to identify if only one source of data was used.

**Figure 6.3: Three distinct data sources support triangulation**



#### 6.4.1 Conference presentations

The primary data used within this thesis is drawn from public presentations made by experienced corporate energy practitioners at annual energy efficiency conferences hosted by the Australian Government Department of Industry (Department of Industry). The aim of the conferences was to provide a public forum in which energy practitioners could:

- share experiences associated with improving the energy efficiency performance of their organisations
- deliver beneficial business outcomes, and
- support organisations in meeting their compliance obligations under the EEO legislation.

The energy efficiency conferences took place in August and September in 2011 and 2012. They were held in the cities of Brisbane, Melbourne, Sydney and Perth. Each year, approximately 600 energy efficiency practitioners attended the conferences.

Meyer, Gaba & Colwell (2005, p. 467) define ‘conferences’ as being settings in which: “people from diverse social organizations assemble temporarily with the conscious, collective intent to construct an organizational field”. Conferences provide an

opportunity for emerging practices to be shared, discussed, contested, defined and refined amongst participants (Garud 2008). Lampel and Meyer (2008, p. 1026) characterise conferences as “field-configuring events” which they define as:

“... temporary social organizations such as tradeshows, professional gatherings, technology contests, and business ceremonies that encapsulate and shape the development of professions, technologies, markets, and industries (Meyer, Gaba & Colwell 2005). They are settings in which people from diverse organizations and with diverse purposes assemble periodically, or on a one-time basis, to announce new products, develop industry standards, construct social networks, recognize accomplishments, share and interpret information, and transact business.”

Field-configuring events provide important insights into the dynamic changes associated with the emergence and development of institutions. For researchers, they provide important opportunities to observe change ‘as it happens’, providing a unique view and perspective from actors as they interact with others. Such events can act as drivers for change and also represent the outcomes from change (Lampel & Meyer 2008). With regard to research on the energy efficiency gap, the use of data from these events also responds to the call for non-traditional research methods to be applied in order to contribute new knowledge and understanding (Palm & Thollander 2010).

The energy efficiency conferences are a relevant example of a field-configuring event associated with institutional changes related to the development of energy management practices. Table 6.3 shows how these annual energy efficiency conferences correspond with six defining characteristics of field-configuring events, as proposed by Lampel and Meyer (2008).

**Table 6.3: Energy efficiency opportunities conferences as field-configuring events**

	<b>Characteristics of field-configuring events</b>	<b>Characteristics of the energy efficiency opportunities conferences</b>
1	Actors from diverse professional, organisational and geographical backgrounds assemble in one location.	Conferences were held in five capital cities around Australia. Each conference included representations from a diverse range of industry sectors. In 2011, the conferences included sector-specific conferences for participants in the commercial, manufacturing, transport and mining sectors.
2	Limited duration, normally running from a few hours to a few days.	The conferences were held over two full days in 2011 and one full day in 2012. Around 600 people attended the conferences each year.
3	Provide unstructured opportunities for face-to-face social interaction.	The focus of the analysis is on the presentations made by industry representatives and questions posed by participants. However, the events themselves encouraged interaction amongst participants between sessions and during meal breaks.
4	Include ceremonial and dramaturgical activities.	Conferences commenced with a presentation by a senior official within the Department of Industry.  On the first day of each conference, an industry panel session was held which provided conference participants with an opportunity to obtain perspectives from each of three corporate energy practitioners represented on the panels.
5	Are occasions for information exchange and collective sense-making.	This was defined as an explicit objective for the conferences.

	<b>Characteristics of field-configuring events</b>	<b>Characteristics of the energy efficiency opportunities conferences</b>
6	Generate social and reputational resources that can be deployed elsewhere and for other purposes.	The conferences provided opportunities for organisations to demonstrate energy efficiency leadership to government and other organisations. For government personnel, the conferences provided an opportunity to build relationships with participants and demonstrate the constructive intent of the EEO legislation and the willingness of government personnel to provide support wherever possible.

This conference setting presents a unique opportunity for corporate energy practitioners to share their experience and lessons learnt about energy management with other practitioners. In doing so, the practices that they shared and the logic associated within them, can be expected to have influenced the extent to which such practices were considered legitimate in the eyes of regulators and other influential field constituents (e.g. other large energy consuming organisations and energy consultants). Contested issues were also presented and discussed at the conferences. Although the resolution of contested issues did not necessarily occur at the conferences themselves, the opportunity for such issues to be aired and discussed may be considered to contribute towards resolution across the organisational field associated with energy management practices.

Presentations by experienced corporate energy practitioners were a central component of the conferences. Box 6.1 explains the rationale for using the term ‘corporate energy practitioner’ throughout the case study and the common characteristics of presenters and interviewees. The Department of RET provided an open invitation to all organisations with obligations under the EEO legislation. The invitation and brief described the objective of the presentations as being to describe the experiences within the company regarding what they had achieved and how they had approached energy efficiency improvement. Presenters were asked to share their perspectives on how their companies had approached energy efficiency since 2006,

'lessons learnt', how the energy efficiency and change management practices had and had not worked for them, and what they planned to do differently in the future. 6 presentations from consultants were also included in the analysis. In each of these cases the consultants were describing specific case examples of work with long-term clients.

The presentations were between 15–20 minutes long and were followed by question and answer (Q&A) sessions from participants. Audio recordings were made of the presentations and Q&A sessions. The audio recordings were transcribed and the transcriptions were then made available to the researcher by the Department of Industry for analysis in this research on the basis that individuals could not be directly identified. Transcripts from these Q&A sessions were also included in the analysis.

Presenters represented a range of industry sectors. The number of presentations that were used for the analysis (based on conference location) are shown in Table 6.4 and (by industry sector) in Table 6.5. A complete list of presentations, including the industry sector and job title of the presenters is provided in the Appendix Section 11.4.

### **Box 6.1: Characteristics of ‘corporate energy practitioners’**

The term ‘corporate energy practitioner’ is used throughout the case study to describe the research respondents involved in both conference presentations and interviews. A number of other terms were considered, such as energy manager or sustainability manager. However, it was found that there was a great deal of variation between the job titles of the respondents and some differences in their professional backgrounds. Therefore, it was determined that a new term was appropriate. The shared characteristics of ‘corporate energy practitioners’ (as this thesis defines them) are that they:

- have a corporate role in a large energy consuming organisation
- are responsible for improving the overall energy efficiency performance of their organisation and ensuring that legislative requirements are met, and
- have visibility and influence across multiple operating sites within their organisation. This might include factories, buildings and mobile fleet (e.g. trucks/cars).

Corporate energy practitioners may have broader roles associated with operations, environmental management or corporate sustainability. However, to be considered a corporate energy practitioner, each of the three points listed above will have been demonstrated.

**Table 6.4: Conference locations and dates**

<b>Location</b>	<b>Conference dates</b>	<b>Number of presentations analysed</b>
Brisbane	31 August 2011–1 September 2011	8
	23 August 2012	8
Sydney	7–8 September 2011	8
	28 August 2012	7
Melbourne	14–15 September 2011	8
	30 August 2012	8
Perth	28–29 September 2011	8
	6 September 2012	7



**Table 6.5: Number of presentations by industry sector\***

<b>Industry sector</b>	<b>Number of presentations</b>
Commercial buildings	14
Manufacturing	22
Mining	17
Multi-sector	3
Transport	5
Utility	1
<b>Total</b>	<b>62</b>

\*Sectoral definitions are based on the titles used by the Department of Industry at the 2011 conferences.

#### 6.4.2 Interview data

The purpose of conducting interviews to obtain data was to obtain insights into *how* and *why* energy management practices had changed by drawing directly on the perspective of experienced practitioners. In comparison to the data obtained through public presentations, interviews provided a more private setting in which it was made clear to respondents that confidentiality would be maintained. This provided an opportunity to validate the information that had been provided in public, as well as to explore specific areas where deeper perspectives were sought.

The aim of an interview informs the structure (Cassell 2009). In order to obtain an historical perspective it was decided that the interviews would follow a semi-structured format. This encouraged the respondent to reflect not just on their present experience, but also to reflect on their past experiences. The first level of structure in the questioning was formed around their recollection of how energy was managed in historical phases (i.e. prior to 2006) and then through to the present time. A degree of structure was useful to reduce the time required for the interview without compromising the outcomes sought (Bell & Bryman 2007). The structure also enabled a greater level of comparison across respondent's answers, although this requirement was balanced against the priority of accessing respondents experience and perspectives (King 2004).

The interview context has an influence on the data that is gathered, the way it is interpreted and the conclusions that a researcher draws from the data (Fontana & Frey 2008). It is important to carefully consider the power relationship associated with the interview process.

The researcher aimed to present the research process as one in which there were shared benefits (Cassell 2009). For example, the researcher/interviewer obtained the benefit of conducting the research while the interviewee had the opportunity to share their perspective and to influence the research outcomes. Respondents saw benefits in providing information that would progress an issue that they felt personally passionate about. For this research, the researcher/interviewer was known to the respondents through previous research and activities, such as facilitating conferences at which respondents had participated as presenters. An advantage of this familiarity may be that the respondents are more open and willing to provide perspectives that they may not otherwise have shared. A potential limitation of the interview and the experience of the interviewer is that of tacit knowledge (i.e. respondents may not share information that may be assumed to be already known by the researcher) (Ylijoki 2005).

Interviewees were selected on the basis that they had presented information at the public conference events or had contributed to public material that was available in the public domain. All interviewees had three years or more experience working with an organisation in which they had facilitated the introduction of new energy management practices. The sample was initially segmented by industry grouping to obtain a range of perspectives across industry sectors. A list of interview respondents is provided in Table 6.6. The job titles have been modified slightly in order to maintain confidentiality. Interview questions reflected the model developed in the Chapter 5 (see Section 5.8). These questions are listed in Appendix Section 11.4.

**Table 6.6: List of interview respondents**

<b>Identifier</b>	<b>Job title</b>	<b>Industry sector</b>
Interviewee CK	Sustainability Manager	Commercial
Interviewee CL	Principal Climate Change and Energy Efficiency	Mining
Interviewee CM	Climate Change & Resource Efficiency Manager	Multi-sector
Interviewee CN	Business Development Manager	Transport
Interviewee CO	Environmental Manager	Transport
Interviewee CP	Project Manager Energy Efficiency	Manufacturing
Interviewee CQ	Principal Energy Advisor	Mining
Interviewee CR	Principal Energy Efficiency Engineer	Manufacturing
Interviewee CS	Carbon and Energy Manager	Mining

Prior to conducting the interviews a protocol was developed and reviewed by the University of Technology, Sydney Human Research Ethics Committee. The protocol outlined how respondents would be contacted and the way in which the interviews were to be conducted. The steps taken are set out below:

1. The researcher called the head office of the proposed respondent to explain the purpose of the research and to request an interview. In cases where the call was diverted to an answering machine, a message was left.
2. An email was then sent to potential respondents with further detail on the research, including a copy of the consent form that the respondent would be required to complete before the interview could proceed.
3. Questions were sent to the respondent so that they could reflect on the questions prior to undertaking the interview (if they wanted to).
4. A mutually agreed time was agreed on to conduct the interview.
5. The researcher called the respondent at the allocated time and conducted the interview. The length of the interviews varied from 30–60 minutes.

### 6.4.3 Archival data

Archival data was drawn from case studies that were developed and published by the Department of Industry (known at the time as the Department of Resources, Energy and Tourism). Some were stand-alone case studies while others were incorporated into broader documents which provided guidance on how to conduct energy efficiency assessments effectively and how to meet the requirements of the EEO legislation. The case studies are listed in Table 6.7. All case studies were publicly available at the time of writing. Weblinks are listed for each case study in Appendix Section 11.4.

As discussed previously, a limitation of written case studies as a data source is that they may have been sanitised through the development of multiple iterations prior to finalisation and therefore they may be highly reflective of corporate influences and messaging. At the same time however, such iterations can enable key lessons learnt about changing energy management practices to be more carefully refined and clearly articulated.

**Table 6.7: Archival data: Case studies**

Identifier	Organisation	Industry sector	Year
Case CT	Fortescue Metals Group	Mining	2011
Case CU	Fortescue Metals Group	Mining	2012
Case CV	Downer EDI Mining Pty Ltd	Mining	2012
Case CW	Leighton Contractors Pty Ltd	Mining	2012
Case CX	Thiess Australia Mining	Mining	2010
Case CY	OneSteel	Manufacturing	2010
Case CZ	Nyrstar – Port Pirie Smelter	Manufacturing	2010
Case DA	Midland Brick	Manufacturing	2009
Case DB	Incitec Pivot	Manufacturing	2009
Case DC	Alcoa Pinjarra	Manufacturing	2008
Case DD	Xstrata Copper	Manufacturing	2007
Case DE	Orica	Manufacturing	2007
Case DF	Bunker Freight Lines	Manufacturing	2008
Case DG	Woolworths Limited	Commercial	2012
Case DH	GPT Group	Commercial	2012

Identifier	Organisation	Industry sector	Year
Case DI	Spotless Integrated Services	Commercial	2012
Case DJ	National Australia Bank	Commercial	2012
Case DK	Sydney Water	Commercial	2012
Case DL	Simplot Australia	Commercial	2012
Case DM	The Foster's Group	Manufacturing	2012
Case DN	Centennial Coal	Mining	2012
Case DO	Downer EDI Mining Pty Ltd	Mining	2012
Case DP	Newmont Asia Pacific	Mining	2012
Case DQ	Rio Tinto Iron Ore	Mining	2012
Case DR	Australia Post	Transport	2012
Case DS	Linfox	Transport	2012
Case DT	Ron Finemore Transport	Transport	2012

Notes:

- The researcher authored Case CX and co-authored Cases DG to DT with Dr. Helen Lewis under contract with the Department of Industry in 2012.
- There are two distinct case studies for Downer EDI Mining Pty Ltd.

## 6.5 The analytic process

One of the challenges of case study research is that it can involve the analysis of large amounts of data (Yin 2009). Further, being immersed in a case can ‘make everything interesting’ which requires the researcher to carefully analyse the comprehensive set of data that is available to them (Siggelkow 2007).

An important way in which the large quantity of data was managed in this thesis, involved conducting three distinct cycles of analysis. Each cycle corresponded with the time at which the research data was available. These distinct cycles of detailed data analysis were interspersed with periods of reflection and ongoing review of the literature (Dawson 2003). Following Miles, Huberman & Saldaña (2013), each cycle involved three concurrent flows of activity:

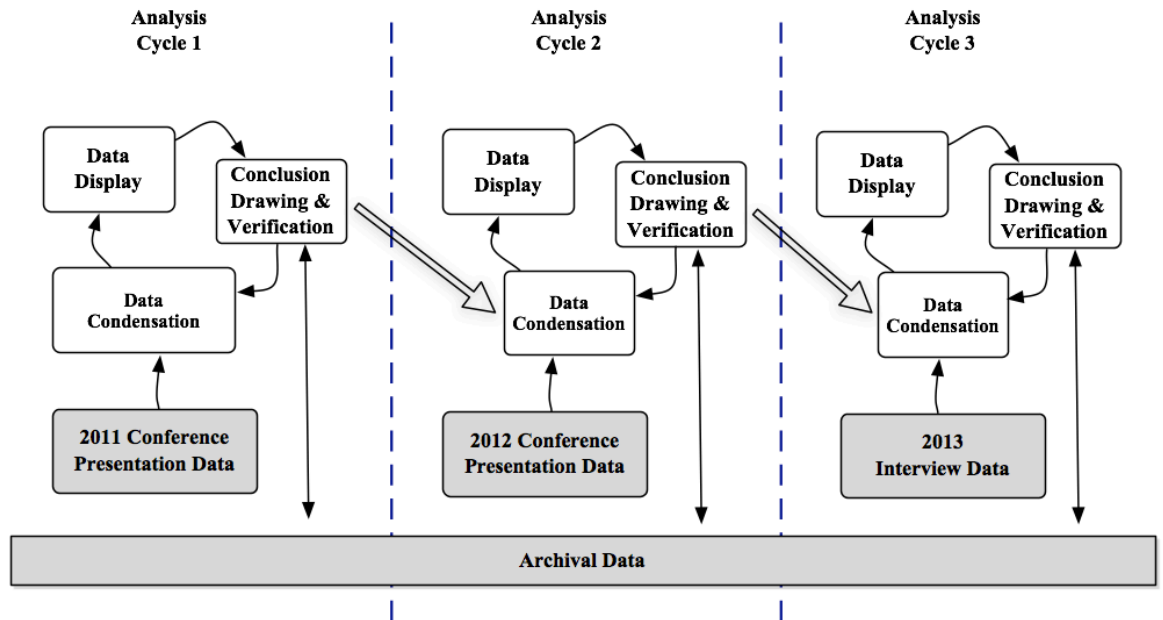
1. data condensation
2. data display, and
3. conclusion drawing and verification.

Figure 6.4 illustrates the progressive and iterative process by which these three streams of analytical activity have been applied within the present study. In the first analytical cycle, the archival data (case studies) and transcriptions of the conference presentations made by corporate energy practitioners in August 2011 were analysed. The presentation data was transcribed and entered into the NVivo Qualitative Analysis Software program. The data (from the published case studies and presentations) was condensed by systematically transforming the raw data through a process of selection, simplification and abstraction.

Analytical techniques, such as content analysis and temporal bracketing, were conducted. Data displays using visual mapping techniques were then applied in order to describe emerging relationships between energy management practices, stakeholders, influencing strategies and the changing constituency of the organisational field. Initial conclusions were then drawn from the data and verified against the archival data (i.e. published case studies). Conclusion drawing and verification involved drafting notes and developing explanations based on each data analysis cycle. Causal flows and propositions were also developed. This approach was then repeated approximately 12 months later with the data from the August/September 2012 conference presentations (analysis cycle 2) together with additional written case studies that were published over this time. Finally, in April and May 2013 the interview data was incorporated into a third and final analysis cycle with the newly obtained data from the interviews.

**Figure 6.4: An interactive and progressive model of data analysis**

(Source: Adapted from Miles, Huberman & Saldaña 2013, p. 14)



As well as addressing the challenge of ‘data overload’, it is expected that the episodic approach to data analysis improved the quality and validity of the analysis by providing periods of reflection, ongoing review of the literature and further development of the theoretical framework that was applied in the study. During the periods of time between each cycle of analysis, the researcher was also involved in many informal discussions with corporate energy practitioners, policymakers, academics and students. This contributed towards the process of exploring and validating propositions and conclusions that emerged through the study. An additional advantage of this progressive approach was that various conference papers and presentations were developed which enabled the outcomes of analysis to be tested within the community of energy efficiency academia, policymakers and practitioners. These publications are listed in Appendix 11.1.

Further, multiple analytical techniques were used to minimise the limitations of a single approach (Langley 1999, 2009), which provided the additional benefit of viewing the research from different perspectives. Four analytical approaches were used to develop the case study:

1. content analysis
2. visual mapping
3. temporal bracketing, and
4. narrative strategy.

Each of these analysis techniques are described in sequence.

### 6.5.1 **Content analysis**

Content analysis, an interpretative research technique that examines recorded human communications (Babbie 2013), was the primary technique applied to achieve data condensation. Data condensation involves transforming the raw data through selection, simplification and abstraction (Miles, Huberman & Saldaña 2013). The aim of data reduction is to minimise the quantity of data while maintaining relevant information and the context that informs that data (Punch 2005).

Content analysis was conducted by first entering the raw data from conference presentations and interviews into NVivo data analysis software. This software aids the analysis process by facilitating sorting of data into particular codes (Punch 2005). Codes are labels that are assigned to ‘chunks’ of data (Miles & Huberman 1994) or ‘strings of words’ that provide particular meaning.

The mode of inquiry combined induction with deduction. Predetermined coding categories were established at the start of the coding process. The initial categories were informed by the research questions and the theoretical framework that was based on institutional entrepreneurship theory. This provided an operational template to guide the coding process at the broadest level. Data condensation was achieved by identifying and recording strings of words (Van de Ven 2007) that captured information about:

- energy management practices
- the social context that influenced those practices,
- the stakeholders involved in influencing changing practices, and
- the strategies that were used by stakeholders to influence change.

Each high-level code was then analysed at different levels of analysis and in relation to time. The high-level codes and sub-codes are listed below in Table 6.8.



**Table 6.8: Descriptive codes applied at the start of the coding process**

Code	Sub-codes
Social context	<ul style="list-style-type: none"><li>• Organisational Field, Organisation or Project level</li></ul>
Energy management practices	<ul style="list-style-type: none"><li>• Past, Present or Future</li><li>• Organisational Field, Organisation or Project</li><li>• Strengths and Limitations</li></ul>
Stakeholders	<ul style="list-style-type: none"><li>• Organisational Field, Organisation or Project level</li></ul>
Change strategies	<ul style="list-style-type: none"><li>• Direct influence</li><li>• Interactions with other actors</li></ul>

Within each of these broad coding categories, multiple sub-categories were developed. Often this involved an ‘inductive’ approach to the analysis. Induction refers to inferences that are drawn directly from observations within the data (Miles, Huberman & Saldaña 2013).

Coding was based on the theoretical model developed in Chapter 5 (see Section 5.8). At first, the coding was highly descriptive and involved little interpretation. As the coding process continued, however, and the researcher identified more complex issues, the coding became more interpretive and involved analysing more complex social dynamics such as the interactions between corporate energy practitioners and key external stakeholders. Further familiarity with the data then allowed for ‘pattern codes’ to be identified. Pattern codes are more inferential and explanatory than descriptive or interpretive codes (Miles & Huberman 1994). Pattern codes include examples of causal dynamics across the organisational field, organisational and project levels of analysis.

### 6.5.2 Temporal bracketing

Temporal bracketing is a form of content analysis. It involves the development of units of analysis based on time periods which are used to structure events (Denis, Langley & Cazale 1996; Langley 2009). Temporal bracketing enables comparative units of analysis to be developed in order to examine and replicate particular theoretical ideas (Langley 1999). One advantage of this approach is that a mass of data can be organised into separate blocks of data that are, nevertheless, connected.

Evidence can be drawn together within a particular period to describe relative stability of change processes, how context affects them and what consequences there might be for future periods (Langley 1999).

To support temporal bracketing, critical incidents and events were first sorted into chronological order to enable comparison. As described previously, 2006 was adopted as a starting point since this year marked the introduction of the EEO legislation. This formed a useful starting point for the case study for three main reasons:

1. The legislation specifically aimed to influence energy efficiency practices across large energy-using firms in Australia and, therefore, provided a widespread and substantial trigger for energy management practices to change.
2. The year 2006 also marked the beginning of a number of critical drivers for energy efficiency as the EEO legislation came into force. Subsequent years saw the acceleration of other drivers for change, including other energy and climate-related legislation, as well as increases in energy prices.
3. Since the corporate energy practitioners involved in the study were responsible for energy management when the EEO legislation was introduced, it provided a clear historical trigger which helped them to recollect the energy management practices in place at that time and the changes that had occurred since commencement of the EEO legislation.

Once critical incidents and events were sorted into chronological order, they were then sorted into three phases:

1. The first phase reflected the energy management practices that organisations applied as they began to respond to the EEO legislation. By establishing the energy management practices being enacted at this time, the first phase acted as a baseline against which comparison of changes to energy management practices could be made.
2. The second phase captured the period of transition in which energy management practices were modified.

3. The third (and final) phase attempted to capture efforts by organisations to maintain energy management practices that had developed in the second phase.

Aside from the established starting year for the analysis, there was no attempt to overly specify the temporal boundaries for each of these phases as it was expected that there would be a high degree of variation from one phase and one organisation to another. The aim was to identify broad trends including the typical sequence of practice development over time.

### 6.5.3 Visual mapping

Visual mapping involves the representation of data in diagrams, tables and other forms of visual displays (Langley 1999, 2009; Miles & Huberman 1994). An important advantage of visual graphical representations in process studies is that they allow for the display and analysis of data that is multi-dimensional and can help to clearly show the ordering of activities, parallel processes and change over time (Van de Ven 2007). Accordingly, visual displays support the development and testing of data and theoretical ideas (Langley 1999; Miles & Huberman 1994).

A range of visual mapping techniques is used in this thesis. One of particular significance is the development of causal networks. These are displays that aim to illustrate the way in which one variable influences another (Miles & Huberman 1994). In this research, these techniques are primarily used to illustrate the key factors that reinforce traditional practice and the process by which structural change in the field occurs. The entrance of new stakeholders in the field, together with the actions of corporate energy practitioners, enable new and improved energy management practices to be initiated. Each visual display is supported by description in text.

In this research the development of causal networks provides several advantages:

1. Causal networks provide a means of identifying and representing patterns in the data. They are especially useful in presenting the various factors and consequences of traditional practices, as well as the consequences and flow-on effects of new practices.

2. They highlight the influence of changes in the constitution of the field and the interactions across different levels.
3. Finally, they can also help to capture complexity in an holistic manner (Sherwood 2002), thereby improving the accessibility of the research by practitioners and academic audiences.

#### 6.5.4 **Narrative development**

To move from surface observation to theory testing and then development, it is necessary to progress from description to explanation. Drawing on the work of Pentland (1999), Van de Ven (2007) suggests that there are five key features of an effective narrative that supports process theory development.

1. A narrative should have a clear chronology, including a beginning, middle and end that allows for the actions referred to in a narrative to be understood as occurring in a sequence: In the present study, the beginning describes the way in which organisations responded to the trigger of new energy efficiency legislation in ways that reflected previously established energy management practices. The middle explains the change process and the end of the narrative describes actions being taken in an attempt to maintain the newly-developed energy management practices.
2. There is a focal stakeholder or stakeholders: In the present study, change is seen from the perspective of the ‘corporate energy practitioner’. That label describes a person who has had responsibility for improving energy performance in large energy consuming organisations over the course of the study period. It is an explicit goal of the research to identify other stakeholders and to identify how they interact. The perspective of the corporate energy practitioner informs who these other stakeholders are, how they influence energy management practices and how they interact. As their role typically involves interacting between many internal and external stakeholders, the corporate energy practitioner as protagonist is considered to have insightful perspective on who these stakeholders are and how they influence the change process. However, it is acknowledged in the research that this is their perspective, as interpreted by the researcher and, as well as being a strength, the reliance on the informants involved in this role is not tested in this research by drawing on the perspective

of other stakeholder perspectives.

3. There is an 'identifiable narrative voice': In this research the case study is intended to be written in the voice of the corporate energy practitioner (as described above).
4. The narrative should provide an evaluative frame of reference: This refers to the need to draw out and the meaning and cultural values that influence the behaviour of individual and organisational actors.
5. The narrative should contain textual devices that describe the context within which action takes place and attributes of the characters involved: This includes the insertion of explanatory context which is required for a reader to understand and make sense of the narrative.

## **6.6 Summary**

This chapter has described the key features of the research design, including the methodological assumptions that underpin the research, the reasons for and features of the embedded, single-case study design, the sources of data and the analysis techniques are applied in the research. Chapter 7 will commence the case study, first by providing important historical context.