

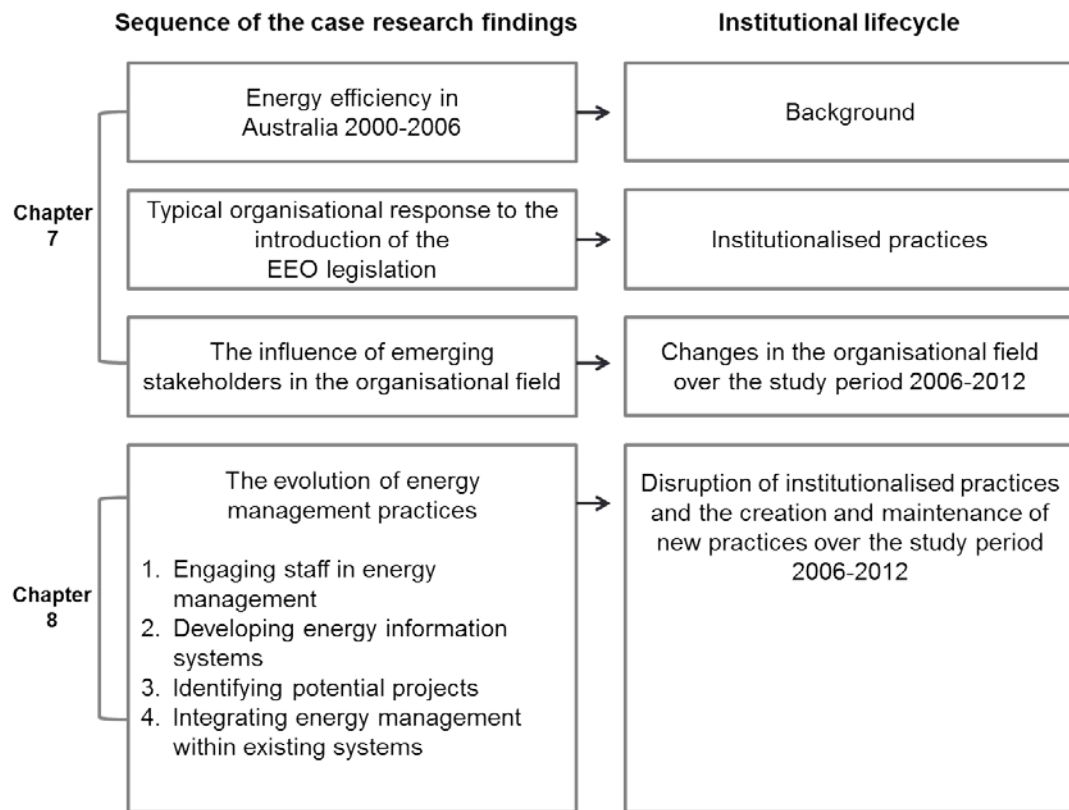
7. The genesis of institutional change

7.1 Introduction

This research describes the evolution of energy management practices in large energy consuming organisations in Australia between the years 2006–2012. It applies the three-level institutional change model (see Chapter 5, Section 5.8) to examine how and why energy management evolved from an activity that was largely managed by technical departments and focused on energy procurement and infrequent energy audits, to a more integrated and continuous process of energy efficiency improvement. The case study illustrates the way in which changes at the field, organisation and project levels interact to influence the development and adoption of energy management practices in organisations. It also examines the strategies that stakeholders have used to disrupt traditional energy management practices and to create and maintain new practices. There is a particular focus on the role of corporate energy practitioners (See Chapter 5, Section 5.8).

Figure 7.1 outlines the structure of the case research and how it corresponds with the institutional life cycle associated with energy management practices (i.e. the period over which energy management practices are disrupted, redeveloped and then maintained). The study begins by providing background information on energy use in Australia and the considerations that informed development of the EEO legislation. It then describes the institutionalised energy management practices applied by large energy consuming organisations as they first began to respond to their legislative obligations. In the final section of this chapter, changes in the organisational field associated with energy management practices over the study period are presented. Chapter 8 then describes the evolution of energy management practices in four key areas.

Figure 7.1: The case of changing energy management practices in Australia



In Chapter 7 and Chapter 8 references to primary data sources will be presented as footnotes. This approach will minimise disruption to the reader as there are a large number of references. The endnotes will contain source information relating to the presenter/interviewee status or the case study/name of organisation, individual position titles, industry areas and the year in which information was obtained. These references refer to prominent examples.

7.2 Background: Energy efficiency in Australia 2000–2006

Australia is an energy rich nation. In 2011, Australia was considered to be the third largest energy producing country in the world. In 2010–2011, 80% of energy production was exported. Reserves of thermal coal and uranium are estimated to fulfil current production levels beyond 2011. Current gas reserves are estimated to meet current production levels for 54 years. Although renewable energy sources contributed only around 10% of electricity production in 2010–2011, renewable sources of energy were considered to be ‘abundant’ (RET 2012c).

Primary energy use by Australian organisations (excluding electricity generators) account for around 46% of the energy consumed in Australia. A relatively small number of the largest energy-using corporations (252) account for approximately 65% of the total energy used by more than 100,000 Australian businesses (see Figure 7.2). The largest energy-using corporations operate in multiple industry sectors, including manufacturing, commercial, transport, mining and oil and gas (see Figure 7.3). The energy sources used and end-use activities are diverse (Department of Industry 2013).

Figure 7.2: Energy use in Australia: 2010–2011

(Source: Adapted from Department of Industry 2013, p. 9)

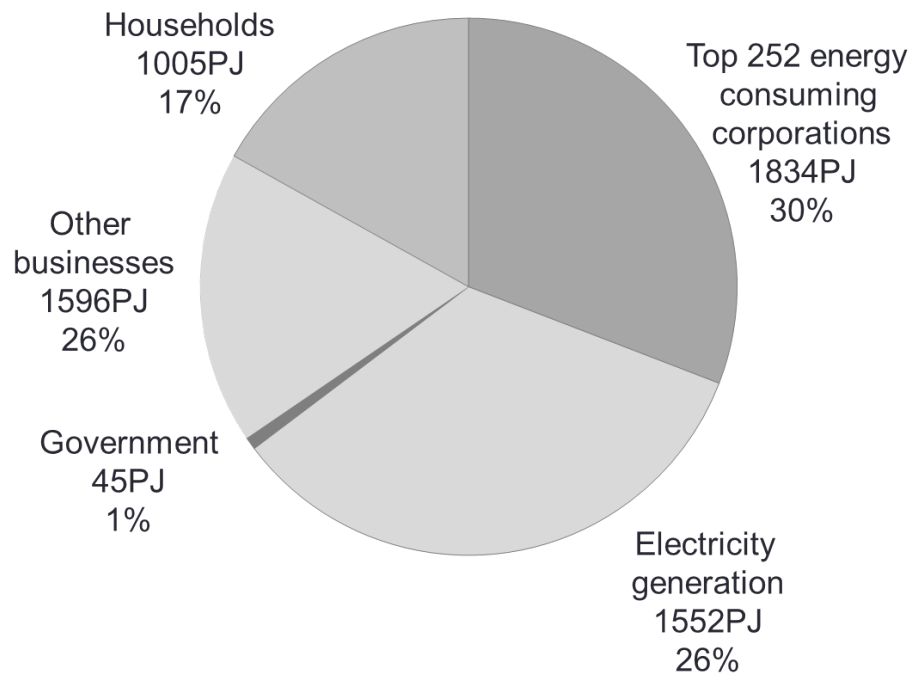
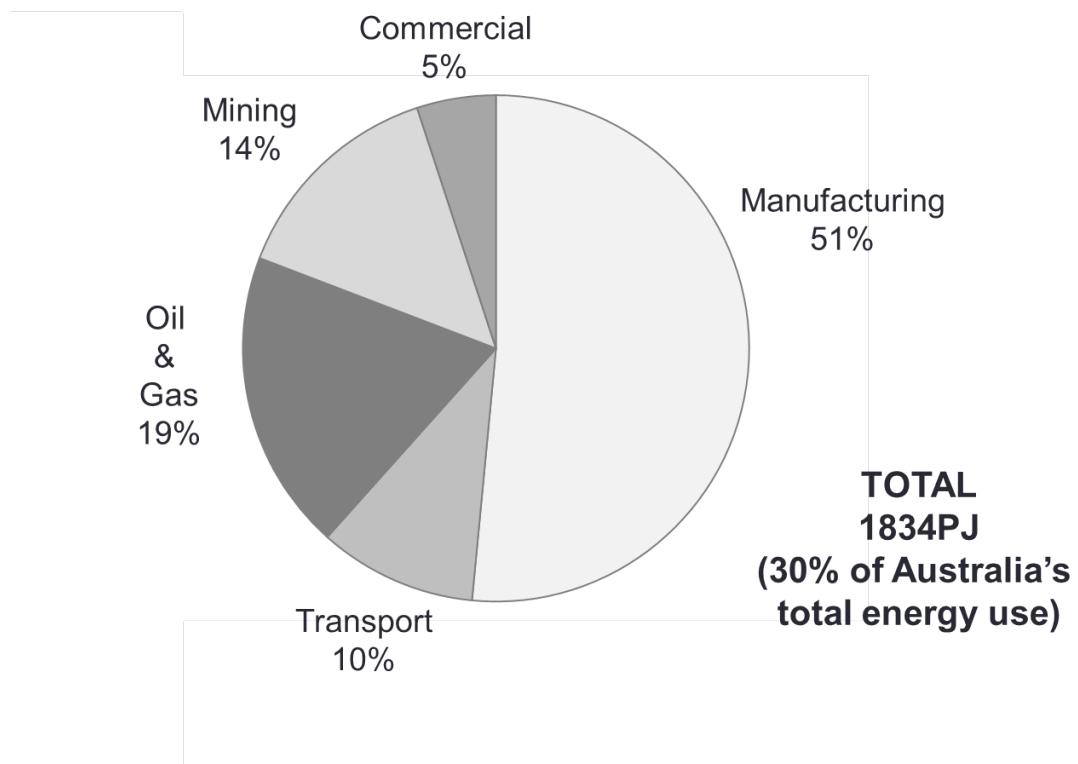


Figure 7.3: Energy use of the largest 252⁹ corporations in Australia (2010–11) by industry sector

(Source: Adapted from Department of Industry 2013, p. 10)



The rationale for improving energy efficiency in large energy consuming organisations is outlined in the Australian Government's Energy White Paper titled *Securing Australia's Energy Future* (White Paper) released in June 2004. It is to: "increase economic welfare, lower the rate of growth in greenhouse emissions and delay the need for new energy generation equipment" (Commonwealth of Australia 2004, p. 106). The White Paper presented energy efficiency as an important priority. It highlighted that between the years 1973–1974 and 2000–2001, energy efficiency in Australia had improved by 3%. However, most of this improvement was attributed to a structural shift in the use of energy from energy intensive manufacturing towards less energy intensive service industries. The rate of energy efficiency improvement was shown to be less than half the rate of improvement in other countries in the Organization for Economic Co-operation and Development (OECD) group of countries. This relatively slow rate of improvement was presented as the

⁹ While 319 corporations were registered by 2010-11, only 252 corporations were required to report in 2011.

rationale for the Australian Government playing a more direct role in encouraging energy efficiency improvement across the nation's economy.

New legislation was proposed in the White Paper to encourage improved energy efficiency in large energy consuming businesses. This was not the first time that the federal or state government had introduced energy efficiency programs. However, this was the first national legislation that required large energy users to conduct rigorous and comprehensive energy efficiency assessments and report publicly on the outcomes of these assessments each year. The EEO legislation had significant influence. As of 1 May 2012, there were 319 corporations participating in the program. At that time, the total energy use of these organisations accounted for 65% of the energy consumed by organisations in Australia (RET 2012b).

The White Paper outlined the reasoning behind the proposed legislation as follows (Commonwealth of Australia 2004, p. 113):

“To facilitate the uptake of these [energy efficiency] opportunities the government will require large energy users to undertake a rigorous assessment of energy efficiency opportunities every five years starting in 2006. These assessments will be undertaken consistent with an improved Australian standard and will be designed to identify energy efficiency investments with a payback of four years or less. Firms will be required to report publicly on the outcomes of the assessment, and will be free to make decisions on investments identified via their normal business processes. The government will act to ensure the assessments are rigorous and comprehensive, and to disseminate the lessons learned to the wider business community. Public reporting will be designed to provide the markets with useful information while protecting firms' reasonable commercial interests. Details of the regime will be developed in consultation with relevant stakeholders.”

The wording of the announcement reveals some of the sensitivities between the government and the organisations that would be affected by the legislation. For example, firms maintained discretion over the decision to implement the identified energy efficiency measures. This was in response to industry concerns about the

government being prescriptive in relation to organisations' investment decisions. Also, by explicitly requiring consultation regarding the details of the legislation, organisations would be able to provide input to and influence the development of the legislation. Details regarding the assessment requirements were of particular concern to companies because the design of this aspect of the legislation could influence the level of resources required to meet compliance requirements.

Following the release of the White Paper, a team within the (then) Department of Industry, Tourism and Resources (DITR); subsequently known as the Department of Resources, Energy and Tourism (Department of RET) and at the time of writing known as the Department of Industry, was tasked with the role of managing the consultation process and developing the legislation. Although consultation was highlighted as an important aspect of the development process, the team began the task by drawing on their past experience of working with organisations on energy efficiency programs. For example, a number of the government personnel involved, including the lead manager, had been directly involved in the Energy Efficiency Best Practice (EEBP) program, which DITR had managed between the years 1998–2003. The genesis and design of the EEBP program provides useful insights into the energy management practices that were typically applied at the time, and the limitations of these established practices as perceived by the team drafting the EEO legislation.

7.2.1 **Lessons learnt from the Energy Efficiency Best Practice Program**¹⁰

The EEBP was a small voluntary energy efficiency program that operated between the years 1998–2003. It predominantly involved manufacturing organisations. The initial aim of the EEBP was to influence the uptake of energy efficiency in firms by

¹⁰ The information in Chapter 7, Section 7.2.1 and Section 7.2.2 is drawn from an interview conducted by the author with the manager within the Department of RET who was responsible for the development and implementation of the EEBP program between the years 1998–2003 and the EEO legislation between the years 2004–2013. The interview was conducted by the author in September 2011 for the dual purpose of contributing to this thesis and developing a case study of the EEO legislation (written by the author and a colleague, Dr. Helen Lewis) that has been incorporated into the IEA publication titled *Energy Management Programmes for Industry: Gaining through saving* (Reinaud, Goldberg & Rozite 2012, pp. 58-62).

establishing energy use benchmarks that firms could access to compare their energy efficiency performance with other firms and energy efficiency 'best practice'. However, soon after the commencement of the program, it became apparent that benchmarking across Australian organisations was severely limited by a lack of quality energy data at the facility (e.g. the manufacturing site) and sub-system levels within firms. Industry feedback at the time also highlighted that organisations found it difficult to justify internal funding to install energy metering equipment and undertake analysis, since the benefits from investing in this equipment were often not sufficiently known to justify the costs involved.

Two new approaches to energy efficiency assessment were trialled through the EEBP program:

1. Best Practice People and Processes, and
2. Big Energy Projects.

Best Practice People and Processes involved establishing a facility-based energy management team that included participants across different functional and professional areas of a manufacturing site. The teams participated in a series of workshops in which they identified, evaluated and developed business case proposals for energy efficiency projects. Government funded training was provided along the way so that the teams collectively developed their skills in energy efficiency assessment and evaluation. Funding for the installation of energy meters was also provided where significant data gaps were identified. One of the projects at a dairy processing facility illustrates the success of the program. Through data analysis, discussion and business case development, the energy management team identified an opportunity to optimise boiler use by improving communications between the boiler operations area and shop floor staff. The project was estimated to save approximately AUD200,000 per year. It required little investment since it involved a procedural change, rather than equipment modification (Crittenden 2003). The involvement of staff from across the site was considered a key success factor in the program. The identification and implementation of projects (such as this) are typically difficult to achieve without collaboration and cross-organisational input.

The second approach, called Big Energy Projects, was a government funded program in which the firms involved were provided with resources to conduct a comprehensive analysis of energy data at the site. Data analysis techniques included examining energy and material flows and benchmarking equipment and processes against theoretical minimum energy use. The report from the data analysis was then reviewed during a two-day workshop with a cross-section of internal staff and external expertise. Stretch goals of more than 40% energy savings were pursued. Follow-up activity involved further evaluation of the opportunities that were identified in the workshop. In one case, the organisations involved identified energy savings in the order of 50% by fundamentally redesigning their plans for a new malting facility. When reflecting on their involvement in the program, key respondents acknowledged that the process helped them overcome commonly held assumptions in the industry about the way in which malting facilities should be designed and operated (Commonwealth of Australia 2002).

7.2.2 Consultation, trials and development of the EEO legislation

Based on the lessons learnt from the EEBP, the Department of RET developed a first draft of the EEO legislation. The consultation process for development of the EEO legislation commenced with an invitation for organisations to participate in a steering group. Twenty-six companies agreed to participate. These organisations were involved in one-on-one meetings as well as workshops in which they reviewed the early drafts of the legislation. Significant issues were identified and, with the input from these organisations, new drafts were developed and trials commenced.

The trials were designed to apply the legislation ‘in practice’ to identify issues and ways to improve the legislation. At the same time as the trials were underway, public consultation sessions with all interested and effected parties were held. The consultation process included the development and release of discussion papers, one-on-one meetings and, ultimately, an exposure draft of the legislation that organisations could review before it was presented to parliament. The four key mechanisms of the legislation that were designed to encourage energy efficiency improvement in firms through implementation of the EEO legislation are summarised in Table 7.1.

A detailed summary of the EEO Assessment Framework is provided in Appendix Section 11.3. The EEO legislation commenced on 1 July 2006.

Table 7.1: Four key design features of the EEO legislation

| Program mechanism | Firm obligations |
|------------------------------|---|
| Energy efficiency assessment | Organisations are required to conduct a rigorous and comprehensive assessment of 80% of their total corporate energy use once every five years. The EEO Assessment Framework, which is included in the regulations, defines the standard for these assessments. |
| Public reporting | Organisations are required to report annually on their energy use, assessments completed, a description of three significant opportunities, the number and associated energy savings of the identified opportunities and their business response to those opportunities. |
| External verification | The Department of Industry (formerly the Department of RET) conducts both desktop and detailed verification audits. The aim of verification is to ensure that the assessment is conducted in accordance with the EEO Assessment Framework and reported data is true and accurate. |
| Capacity building | Publications (e.g. guides, case studies) and annual conferences are provided to support organisations with implementation. |

(Source: Adapted from RET 2011)

7.3 Typical organisational response to the introduction of the EEO legislation

One direct implication of the introduction of the EEO legislation in 2006 was that many organisations allocated responsibility for energy management to a corporate-level manager (referred to as a ‘corporate energy practitioner’ in this case study – see Chapter 6, Box 6.1) for the first time. This helped to elevate the importance of

energy management, relative to other current and emerging business issues¹¹ and provide a central point of communication and accountability within these organisations on energy management issues.¹²

Traditionally, energy management had been considered the domain of engineering professionals due to their technical knowledge of operations and energy use.¹³ However, since energy management had also become an issue of legislative compliance, many organisations deemed it appropriate for managers with experience in managing environmental legislation to coordinate their organisation's response to the EEO legislation¹⁴. Of the 62 presentations made by corporate energy practitioners at energy efficiency conferences organised by the Department of RET in 2011 and 2012, around half had professional backgrounds in engineering and the other half had environmental management backgrounds. This is an important and influential change brought about through the introduction of legislation that was designed to drive changes in energy management practices.

Reflecting on their experience of the early energy efficiency assessments conducted to meet the EEO legislation, corporate energy practitioners found (as described in both presentations and interviews) that there were a number of limitations associated with this approach to energy management. Figure 7.4 illustrates the interconnected characteristics of these limitations and shows how such limitations were reinforced at the organisational field, organisational and project levels. The figure is described below with examples provided by respondents that correspond to each of the numbered boxes in the diagram.

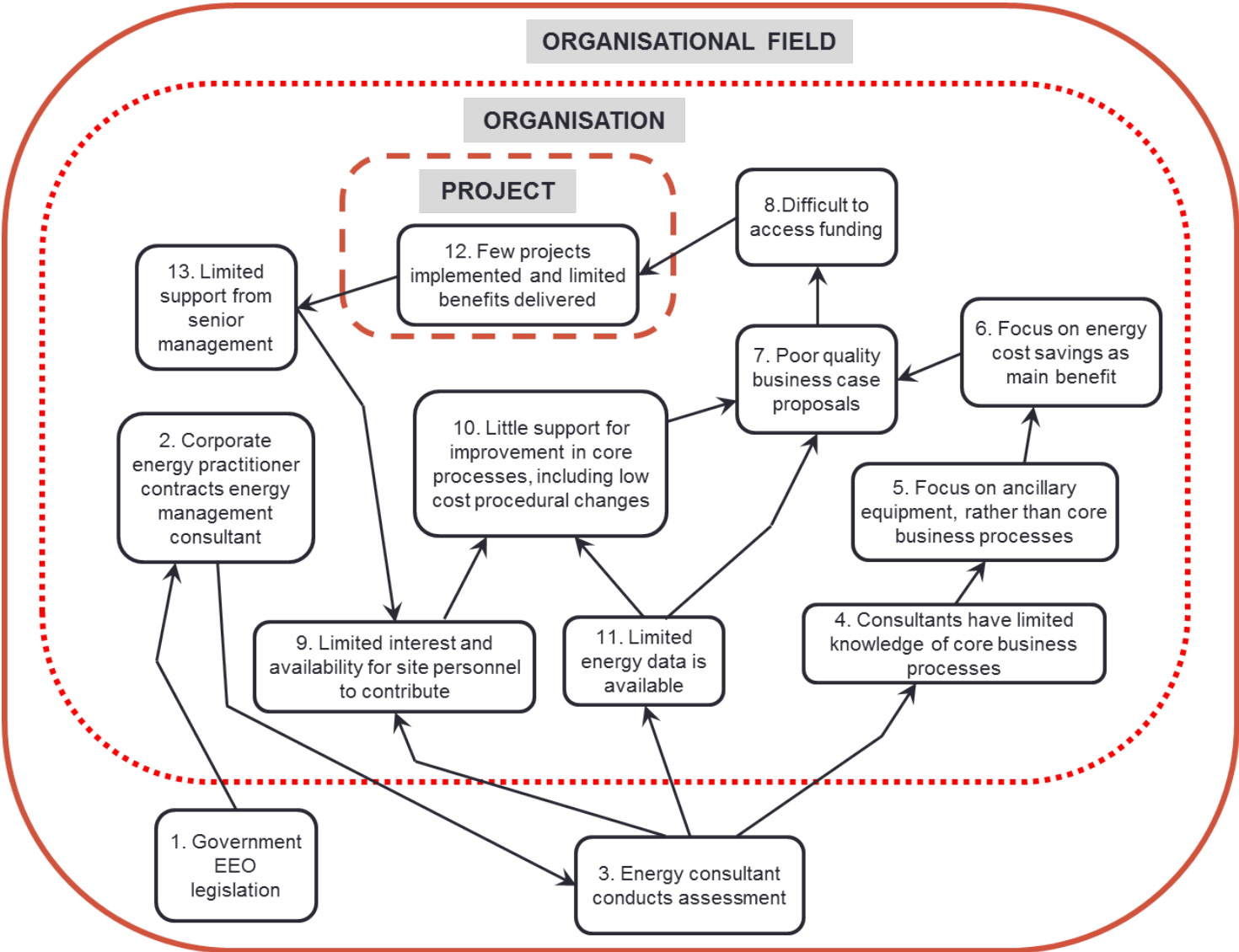
¹¹ Presenter BK Strategic Projects Manager Mining 2012

¹² Presenter BS Climate Change Manager Multi-sector 2012; Presenter BZ Environmental Systems Manager Manufacturing 2012; Presenter CB Technical Manager Manufacturing 2012

¹³ Presenter BL Manager Sustainability Commercial 2012; Presenter BO Energy Analyst Manufacturing 2012; Presenter BS Climate Change Manager Multi-sector 2012

¹⁴ Presenter AK Manager Climate Change & Environment Commercial 2011; Presenter BV Manager Resource Efficiency & Climate Change Manufacturing 2012; Presenter CD Environmental Sustainability Manager Commercial 2012

Figure 7.4: Limitations of traditional energy management practices



Even though corporate energy practitioners had varied backgrounds, the new and emerging role of the corporate energy practitioner exhibited distinct similarities from one organisation to the next. In the first instance, corporate energy practitioners were responsible for ensuring that the organisation met its legislative responsibility under the EEO legislation¹⁵. However, corporate energy practitioners found that when it was first introduced, the full implications of the EEO legislation were not well understood by managers, even as they were allocating staff or creating new positions to manage it. There was a tendency to assume that energy management was primarily a technical issue that should be managed in accordance with established energy management practices. As the Principal Energy Advisor in a mining organisation explained:

“When I came on board in 2006 into my newly-created role, the sense was that we need to sort EEO out as it is a compliance thing. We know we need to do fourteen site audits. So, management just wanted me to ‘make it happen’. It was very much seen as a technical exercise that would primarily involve the use of external consultants.”¹⁶

The traditional ‘energy auditing’ approach applied by organisations as they conducted initial energy efficiency assessments to meet the requirements of the EEO legislation exhibited a number of similar characteristics and challenges. Underlying the approach, there were a number of assumptions about ‘how energy management should be done’.

Table 7.2 summarises what the majority of respondents highlighted as key assumptions that were held when the initial energy efficiency assessments were being conducted under the EEO legislation.

¹⁵ Presenter CC Environment Advisor Manufacturing 2012; Presenter BL Manager Sustainability Commercial 2012; Presenter BN Carbon Policy Manager Manufacturing 2012

¹⁶ Interviewee CQ Principal Energy Advisor Mining 2013

Table 7.2: Underlying beliefs that informed responses to the EEO legislation

| Aspect | Underlying beliefs |
|------------|--|
| Resourcing | External consultants seen to have the credibility and legitimacy to conduct energy efficiency assessments Outsourcing considered an efficient way of meeting compliance obligations since it would reduce the focus of staff on core operational issues ¹⁷ |
| Value | Considered an opportunity to reduce costs associated with energy use – for many organisations energy costs were considered a low proportion of overhead costs ¹⁸ |
| Time | Episodic – based on external reviews done every few years rather than continuous improvement ¹⁹ |

First, organisations without sufficient in-house expertise assumed that external expertise in the form of external consultants was required to conduct the energy efficiency assessments. The use of external consultants was considered an appropriate approach since ‘outsourcing’ the assessment was expected to minimise disruption of the day-to-day activities of management and staff.²⁰ Second, the aim of an energy efficiency assessment was to establish a list of projects that could deliver energy performance improvements. The main benefit of such improvements was assumed to be cost savings associated with reduced energy use. Since energy efficiency projects often deliver other business benefits,²¹ this meant that energy management was typically undervalued.²² Third, this traditional approach also

¹⁷ Interviewee CR Principal Energy Efficiency Engineer Manufacturing 2013; Presenter CD Environmental Sustainability Manager Commercial 2012; Presenter CG Manager Sustainability & Energy Manufacturing 2012

¹⁸ Presenter AT Sustainability Analyst Manufacturing 2011

¹⁹ Interviewee CP Project Manager Energy Efficiency Manufacturing 2013; Interviewee CQ Principal Energy Advisor Mining 2013

²⁰ Interviewee CM Climate Change & Resource Efficiency Manager Multi Sector 2013; Interviewee CR Principal Energy Efficiency Engineer Manufacturing 2013; Presenter AB Chief Engineer Manufacturing 2011

²¹ See Worrell et al. 2003 and the discussion in Section 4.5 of this thesis for examples.

²² Interviewee CK Sustainability Manager Commercial 2013; Presenter AC Energy Analyst Manufacturing 2011; Presenter AO Director Consultancy Commercial 2011

reflected assumptions about the appropriate time and attention made available to manage energy. Energy management was considered to be an activity that should be undertaken through episodic reviews every few years, rather than as a more frequent, continuous improvement type activity.²³

According to respondents, there were a number of historic reasons why this approach to energy management was considered by many organisations to be the most appropriate way to manage the requirements of the EEO legislation. One of these reasons was that previous government energy management programs had promoted this approach; that is, they typically provided organisations with an external energy consultant who would undertake an energy efficiency assessment^{24,25}. This approach had reinforced the idea that energy efficiency assessments were an appropriate practice and that external auditors with specialised expertise were the most appropriate people to conduct the assessment. This approach had also been incorporated into an Australian and New Zealand standard AS/NZS²⁶ 3598:2000 (Standards Australia/ Standard New Zealand 2000) which, in turn, further reinforced a particular approach to conducting energy efficiency assessments. Additionally, consultants in the energy management field were familiar with the energy audit approach and it was easier and more cost-effective for them to offer similar services to clients based on their own experience, even though their offerings did not necessarily correspond with the compliance requirements of the EEO legislation.²⁷ These underlying assumptions and the traditional ‘energy auditing’ approach that the majority of respondents applied to the first assessments conducted under the EEO

²³ Interviewee CQ Principal Energy Advisor Mining 2013; Interviewee CR Principal Energy Efficiency Engineer Manufacturing 2013; Presenter AP Energy & Sustainability Manager Commercial 2011; Presenter AT Sustainability Analyst Manufacturing 2011

²⁴ Interviewee CR Principal Energy Efficiency Engineer Manufacturing 2013; Interviewee CS Carbon and Energy Manager Mining 2013; Presenter AE Energy Engineer Manufacturing 2011

²⁵ The term ‘energy efficiency assessment’ is often used interchangeably with the term ‘energy audit’ or energy assessment. Within this case study, the term ‘energy efficiency assessment’ has been predominantly used, except in direct quotations made by respondents.

²⁶ This standard was under review at the time of writing

²⁷ Interviewee CM Climate Change & Resource Efficiency Manager Multi Sector 2013; Interviewee CR Principal Energy Efficiency Engineer Manufacturing 2013; Presenter BV Manager Resource Efficiency & Climate Change Manufacturing 2012

legislation exhibited a number of limitations. The first limitation related to the skills and experience of external energy management consultants. They were generally found to be sufficiently skilled and experienced to support the identification of energy savings in equipment that was common to many different types of operations (e.g. pumps, motors and fans and other ancillary²⁸ equipment). However, the energy management consultants did not typically have detailed experience and understanding of site-specific production equipment and operational processes (see Boxes 4 and 5 in Figure 7.4). For example, a resource processing operation uses specialised crushers and grinders to extract ore from the dirt that has been mined. Consultants with *general* energy management experience would be able to identify opportunities associated with the pumps and motors supporting the process, but would not typically have sufficient knowledge of the specialised equipment that would allow them to propose energy efficiency improvement options associated with these core operational processes²⁹.

A further consequence of the focus on ancillary equipment and the limited experience of the energy management consultant would be that the cost benefit analysis would focus on the energy savings associated with a particular piece of equipment (e.g. a motor) without accounting for the influence that such a change might have on the whole production process (see Box 6 in Figure 7.4). For example, in some cases a motor replacement may lead to reduced breakdowns and improved control of the production process. However, such benefits typically would not be identified by the consultant and included in a business case proposal since the primary focus of the energy management consultant would be on identifying the financial savings from reducing energy use, rather than the wider productivity benefits. This means that the complete benefits that would reasonably be expected to accrue from a project would not necessarily be incorporated into a business case

²⁸ The term ‘ancillary’ refers to the energy using equipment that *assists* the main production process. Whilst energy savings in ancillary equipment are important, they may, in many cases, be relatively small when compared to the potential improvement opportunities available within the core production processes.

²⁹ Interviewee CR Principal Energy Efficiency Engineer Manufacturing 2013; Interviewee CS Carbon and Energy Manager Mining 2013; Presenter BV Manager Resource Efficiency & Climate Change Manufacturing 2012; Presenter CF Carbon and Energy Manager Mining 2012

proposal. This had the effect of limiting the quality of the business case proposals that would be presented to management for financial support (see Box 7 in Figure 7.4). Without a complete business case proposal, some projects that may have been considered feasible if they included more than just the energy saving benefits of a project, were potentially left unsupported³⁰ (see Box 8 in Figure 7.4).

A second limitation was that, since energy management consultants did not typically have detailed knowledge of a particular facility, this restricted their ability to communicate with and engage specialist internal staff in the process of identifying and evaluating energy efficiency projects (see Box 9 in Figure 7.4). This limitation is illustrated by a quote from a Carbon and Energy Manager in the mining/resource processing sector:

“It can be very difficult [for the consultant] to be convincing and to really get people to understand the benefits of energy efficiency and to see the possibilities if the consultant can’t talk to staff about their operating process in a detailed way. Often they can only talk about it on a superficial level.”³¹

An attempt to overcome this lack of access to internal staff often led corporate energy practitioners to arrange a half to one day workshop for site personnel and the consultant/s. Typically approached as a ‘brainstorming process’ which encouraged a large number of energy efficiency improvement options to be identified, many corporate energy practitioners found that although a large number of *ideas* were identified in these workshops, they were frequently difficult to quantify and cost. Also, the resources required to scope and evaluate projects was typically outside the consultant’s brief and on-site staff had limited time and inclination to conduct the evaluation, despite attempts by the corporate energy practitioner to allocate responsibility for the evaluation of particular projects (see Box 10 in Figure 7.4). This situation was described by a Principal Energy Advisor in the mining sector as follows:

³⁰ Presenter BT Sustainability Manager Commercial 2012; Presenter CH Manager Environment & Sustainability Mining 2012

³¹ Interviewee CS Carbon and Energy Manager Mining 2013

“We got people from the site involved in the room for a workshop but the consultants were very much controlling it. A lot of the ideas came directly from the consultants. They would say ‘we are here to do an audit and identify all these opportunities and what do you think of this opportunity or that opportunity’. We tried to allocate projects for people to follow up but it just went nowhere.”³²

This finding is significant because it reflects the level of understanding about staff engagement that was widespread across respondents when they first began to conduct energy efficiency assessments under the legislation. That is, they considered that getting personnel together for a workshop would sufficiently engage and involve staff in the process. However, they found that staff engagement required other strategies as well in order to be successful.

This limitation was particularly prevalent in cases where there was limited site management support and personnel had legitimate constraints on the time they could contribute towards the energy efficiency assessment. In cases where the energy efficiency assessment had been commissioned by the engineering or environment department, then the onus would often be put back on those who had commissioned the audit to complete it – particularly in the case where the expectations were that the consultant would ‘do the audit’, including an evaluation of all of the ideas identified.³³

A third limitation that was evident, even in less complex sites (e.g. commercial buildings), was that there was a lack of energy data in a form that could support analysis of the potential costs and benefits of energy efficiency projects (see Box 11 in Figure 7.4). The limited availability of appropriate energy data at the commencement of an assessment is highlighted in the following quote from a GM Carbon and Energy in the mining sector:

³² Interviewee CQ Principal Energy Advisor Mining 2013

³³ Presenter BP Group Sustainability Manager Manufacturing 2012; Presenter BV Manager Resource Efficiency & Climate Change Manufacturing 2012; Presenter CE Energy Manager Mining 2012

“What was hard was for an organisation like ours where this had never been looked at before is that you got a bunch of engineers out on site, engineers love data, it’s all out there but it was everywhere. Data was ... it was fragmented, there were no real processes for it, there were gaps, there were errors, there was duplication...it was, frankly a mess.”³⁴

Faced with limited time and resources to conduct the assessment, consultants would typically only be able to do a limited amount of work in gathering the data. The task would be passed on to the company in the form of a list of the information and data that the consultant required to conduct their analysis. The consultant would complete the energy efficiency assessment based on whatever data the organisation was able to provide, which was often less than that required by the EEO legislation. Working to a limited scope, consultants would use whatever data they could access. Combined with the lack of knowledge about core energy-using processes, lack of availability of internal staff with knowledge of these processes and energy data, consultants would typically focus on the opportunities that they found to be easiest to evaluate.³⁵

The combined impact of the three common limitations (i.e. the consultants’ limited knowledge of core business processes (see Box 4 in Figure 7.4), lack of involvement of site personnel in the energy efficiency assessment process (see Box 9 in Figure 7.4) and limited access to energy data (see Box 11 in Figure 7.4)) was that the potential benefits associated with energy efficiency improvement projects were often not fully realised. The interrelationships between these issues is depicted in Figure 7.4. This figure illustrates how such limitations led to poor quality business case proposals which, in turn, made it difficult to access funding for projects. This appeared to have contributed towards fewer projects being implemented and therefore fewer benefits being obtained (see Box 12 in Figure 7.4). Without significant benefits, there would be little reason for senior management to require or encourage greater involvement of site personnel in energy management.

³⁴ Presenter AA GM Carbon & Energy Mining 2011

³⁵ Presenter AE Energy Engineer Manufacturing 2011; Presenter AI Maintenance Superintendent Transport 2011; Presenter AN Director Consultancy Commercial 2011; Presenter BE Product Manager Mining 2011

Although the EEO legislation provided an important catalyst for change, initial interpretations of the requirements and the tendency for organisations to apply traditional energy management practices limited the effectiveness of the legislation to encourage more effective energy management practices to be developed and applied. This situation is explained by a Carbon and Energy Manager in the manufacturing sector:

“Five years ago when EEO was new, everyone was trying to understand what it was all about. There were consultants who said they could tell you what it meant and what you had to do but in retrospect they didn’t really understand. And there were all sorts of people who thought it involved a lot more complexity than it did. It took us all quite a while to work it out.”³⁶

In particular, corporate energy practitioners with a background in energy and environmental auditing found it particularly challenging to determine the most appropriate approach to meet legislative requirements associated with demonstrating that the right people were involved in energy efficiency assessments and that senior managers supported energy efficiency improvement.³⁷ Underlying attitudes and beliefs within organisations and across industry sectors that energy management was mainly about energy cost saving and should be approached in a way that limits the involvement of internal personnel made it difficult for corporate energy practitioners to meet the requirements of the legislation.³⁸ Further, as Figure 7.4 highlights, the main interaction between corporate energy practitioners and external stakeholders was with the Department of Industry (responsible for the EEO legislation). However, soon after the EEO legislation commenced, growing interest on the part of other government departments, customers and investors provided an opportunity for corporate energy practitioners to challenge the traditional beliefs and practices associated with energy management and to develop practices that would go some

³⁶ Interviewee CS Carbon and Energy Manager Mining 2013

³⁷ Presenter AC Energy Analyst Manufacturing 2011; Presenter AQ Sustainability Manager Commercial 2011; Presenter BC Superintendent Energy Mining 2011; Presenter BH Energy & Carbon Manager Commercial 2012

³⁸ Interviewee CM Climate Change & Resource Efficiency Manager Multi Sector 2013; Presenter BH Energy & Carbon Manager Commercial 2012

way towards addressing the limitations described in this section of the case study.

7.4 The influence of emerging stakeholders on energy management practices

“Energy efficiency has become synonymous with quality and value. It has become much more than simply the value of the energy savings.”

Sustainability Manager, commercial sector³⁹

Respondents explained that energy management had traditionally been promoted as a mechanism to reduce energy costs.⁴⁰ In the decade leading up to 2006, deregulation of previously state-run electricity and gas monopolies contributed to falling electricity and gas prices as newly-established energy retailers sought to build market share. Falling prices and competition in the market meant that it was easier to reduce energy costs throughout this period through the negotiation of energy supply contracts, rather than attempting to influence the way in which energy was actually used in an organisation. Since energy costs were able to be reduced significantly through contract negotiations over the period leading up to 2006, there was little pressure from management in most organisations to improve energy efficiency performance through capital investments or operational changes.⁴¹

Other factors that contributed to a relatively low level of attention to energy management in the period leading up to the introduction of the EEO legislation include the presence of a widely-held perspective that energy efficiency would deliver relatively small financial benefits. This was particularly the case in organisations where energy costs were a relatively small proportion of total overhead costs.⁴² In addition, since energy efficiency requires changes to be made to

³⁹ Interviewee CK Sustainability Manager Commercial 2013

⁴⁰ Presenter AD Principal Greenhouse & Energy Manufacturing 2011; Presenter BN Carbon Policy Manager Manufacturing 2012; Presenter BS Climate Change Manager Multi-sector 2012

⁴¹ Interviewee CK Sustainability Manager Commercial 2013; Interviewee CP Project Manager Energy Efficiency Manufacturing 2013

⁴² Interviewee CL Principal Climate Change and Energy Efficiency Mining 2013; Presenter BQ Senior Environmental Specialist Transport 2012; Presenter BZ Environmental Systems Manager

equipment and processes, it was considered relatively difficult to achieve and it was thought that any changes would also risk disrupting core operating processes. This situation was captured by the Superintendent for Energy in a mining sector organisation who used the term: “if it ain’t broke then don’t fix it”⁴³ – implying that the risk of creating more problems by changing technologies or operational practices typically outweighed the perceived benefits of saving energy. The Project Manager for Energy Efficiency in a manufacturing organisation suggested that the culture of engineers in his organisation had also contributed to the lack of interest in energy efficiency. In his view: “engineers in our organisation are more interested in building things rather than saving things like energy.”⁴⁴

At the time when the EEO legislation commenced, there were few other influences or drivers from stakeholders in the organisational field. However, soon after the introduction of the EEO legislation, actions from influential organisational stakeholders (including government, investors and customers) contributed to and reinforced a changing perception of the value of energy management. This section of the case study examines the emergence of these new business drivers as stakeholders became progressively more interested in the energy efficiency performance of large energy consuming organisations. It also highlights the ways in which corporate energy practitioners both influenced the actions of these new stakeholders and used their influence to build support for energy management within their own organisations.

Manufacturing 2012

⁴³ Presenter BC Superintendent Energy Mining 2011

⁴⁴ Interviewee CP Project Manager Energy Efficiency Manufacturing 2013

7.4.1 Increasing government influence on energy management

“When we started our energy efficiency program the energy costs weren’t as important as the fact that there was a mandatory requirement. Our actions were driven by the legislation first and then reinforced as electricity costs began to rise.”

Project Manager Energy, manufacturing sector⁴⁵

Corporate energy practitioners explained that the introduction of the EEO legislation in 2006 had (for the first time in most organisations) made energy management a business risk associated with legislative compliance, rather than just a cost-saving initiative. Legislative compliance as a business driver for energy management was further reinforced by the introduction of the NGER Act. The new NGER legislation required companies to report their energy use and greenhouse gas emissions annually to the federal government. Since the EEO and NGER legislation involved public reporting of energy data and other information, these legislative drivers also created a potential reputational risk for companies. The purpose of the NGER Act was to underpin the development of a future emissions trading scheme by requiring parties who would potentially have an obligation under a scheme to provide accurate and reliable energy and greenhouse gas data at the level of each site and across the corporation as a whole. At the time of its introduction in July 2007, both major political parties in Australia had policies suggesting that some form of carbon pricing would be introduced, although the design and coverage of such schemes had not yet been developed.

Presenters and interview respondents described a number of government-related key events (see Figure 7.5 for a list of these key events) that occurred over the study period and which influenced their organisational response to energy efficiency. Figure 7.5 is followed by a description of each event and the influence that it had on the energy management practices adopted by organisations.

The top line of Figure 7.5 highlights the timing of the introduction of the EEO and

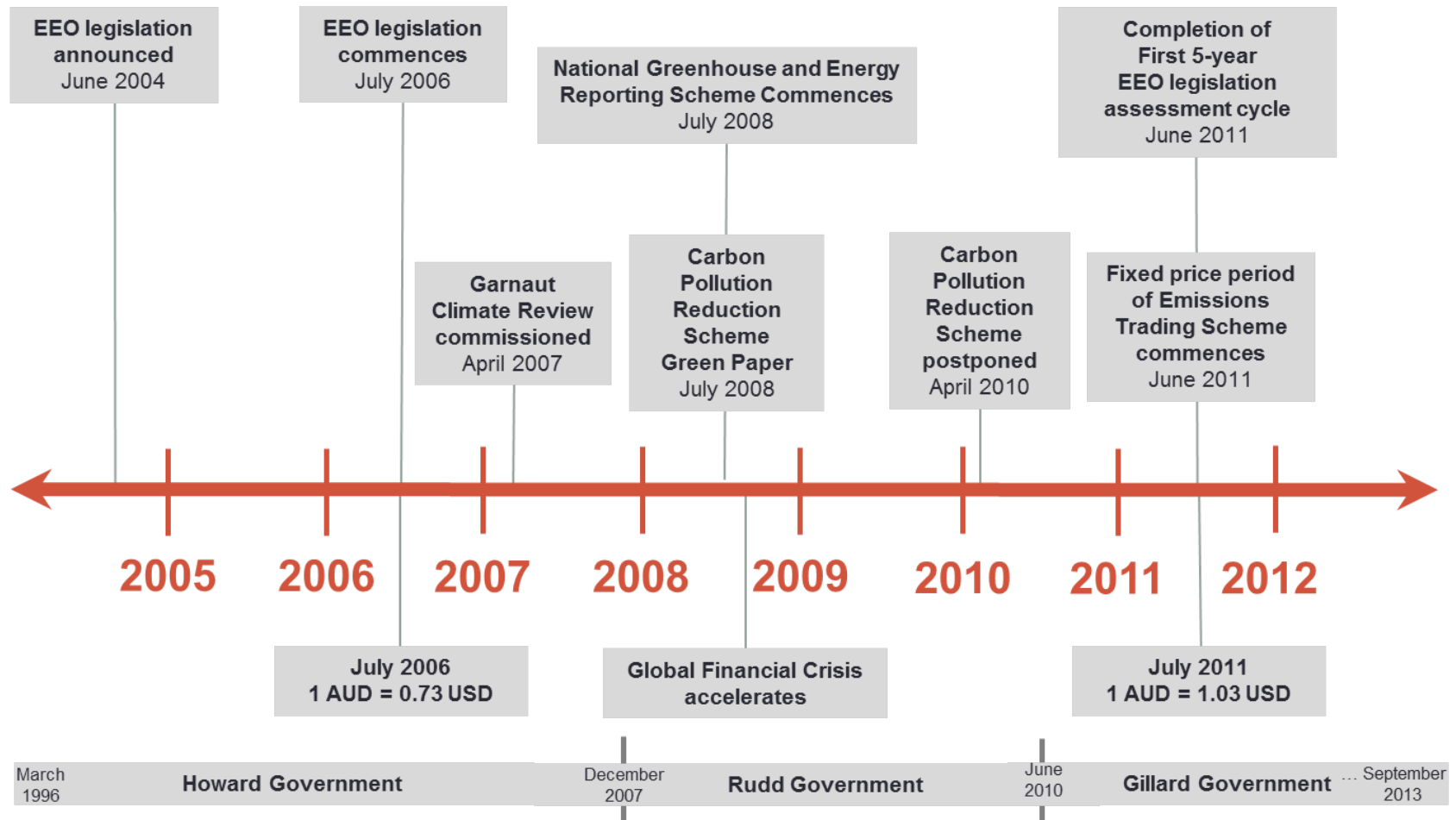
⁴⁵ Interviewee CP Project Manager Energy Efficiency Manufacturing 2013

NGER legislation. The next line highlights key events associated with the introduction of a national carbon pricing scheme. Boxes on the next line in Figure 7.5 provide wider economic context – specifically, the changing value of the Australian dollar. The bottom line outlines the different national government's over the period.

In April 2007, the federal Labor Party (when in opposition) in conjunction with Australian state and territory governments commissioned the Garnaut Climate Change Review (Garnaut 2008). The aim of this review was to examine the impacts of climate change on the Australian economy and recommend appropriate policy frameworks to address them, including carbon pricing. In the same year, and in response to growing community interest in the issue of climate change and reducing greenhouse gas emissions, the Howard Government announced a plan to introduce an emissions trading scheme (ETS) by 2011.

In December 2007, the incumbent government lost the election and the new Labor Government, led by Kevin Rudd, was elected. One of the first acts of the new government was to ratify the Kyoto Protocol at the Bali United Nations Framework Convention on Climate Change (UNFCCC) in December 2007. This was a highly symbolic gesture since it contrasted with the previous government's policy not to ratify. At this time, survey research suggested that public awareness of climate change was very high with a majority of Australians agreeing that Australia should take action to reduce greenhouse gas emissions (Leviston & Walker 2011). The initial proposal for an ETS (called The Carbon Pollution Reduction Scheme (CPRS)) failed to pass through the Senate in Parliament. This was because the government needed the support from the Greens Party and/or the opposition party and such support was not forthcoming. In the meantime, the tumultuous and uncertain character of the debate about introducing an ETS continued.

Figure 7.5: Timeline of key events in the organisational field that influenced energy management practices



A leadership spill resulted in Prime Minister Rudd being replaced by Julia Gillard. An election was later held in June 2010, the result of which was a hung parliament. The Gillard Government secured the support of the Australian Greens and three independents in order to form government. Part of this negotiation included an agreement to establish an ETS. Legislation to introduce an ETS with a three-year fixed-price period passed parliament in 2011. This scheme commenced operation on 1 July 2012.

Other policies that would impact on large energy consumers included the Renewable Energy Target Scheme legislation (Renewable Energy (Electricity) Act 2000 (Cth)), which had been established in 2000 as a market-based policy mechanism designed to create demand for renewable energy. In 2009, the target was expanded by nearly five times to meet the government's policy commitment that at least 20% of Australia's electricity would be sourced from renewable energy by 2020 (Climate Change Authority 2012). The Renewable Energy Target Scheme legislation had already impacted on electricity prices and the increase in the target meant that electricity prices would be expected to rise further.

According to respondents, the changing political environment contributed towards a broadening of their role as corporate energy practitioners. Many began to play a role in reviewing energy and climate change-related government discussion papers, reports and draft legislation on behalf of their organisations. Corporate energy practitioners typically provided internal briefings to management and coordinated submissions to government outlining the impact of proposed energy and climate change-related legislation and its potential impact on their organisations. Practitioners were often involved in public fora which were designed to offer organisations an opportunity to provide input into draft legislation.⁴⁶

⁴⁶ Presenter AF Group Environment Manager Mining 2011; Presenter AM Head of Sustainability Commercial 2011; Presenter BI Greenhouse & Energy Advisor Mining 2012; Presenter BT Sustainability Manager Commercial 2012; Presenter BW Environmental Advisor Commercial 2012; Presenter CD Environmental Sustainability Manager Commercial 2012

The government also played a role in supporting capacity building and skills development. For example, the Department of RET developed a National Training Strategy for the Development of Energy Efficiency Assessment Skills (Lund et al. 2010). It has also developed case studies and guidance materials and has hosted annual conferences with the aim of sharing information that organisations can use to meet their obligations and maximise the business benefits from energy efficiency. Direct funding and loan schemes have also been developed to support organisations that have identified projects, but do not have the funds to implement them. This includes a range of programs covering grants, loan financing, tax incentives and mandatory obligation schemes (e.g. the New South Wales Energy Savings Scheme) which required electricity providers to purchase energy savings certificates.⁴⁷ In 2012, the Clean Energy Finance Corporation was established with AUD10b to:

“... overcome market barriers that hinder the financing, commercialization and deployment of renewable energy, energy efficiency and low emissions technologies”.⁴⁸

Through their interactions with government and other organisations, corporate energy practitioners and the organisations that they represented were influential in shaping the design of government legislation through a recursive process.⁴⁹ This process was articulated by the Carbon Policy Manager from an energy generation sector⁵⁰ organisation in the following way:

“There was a little bit of resistance in the generation sector to the introduction of the EEO legislation. So we did quite a lot of work together with the department. The department then decided to set up some trial assessments in order to get some further information as to how the EEO legislation could actually be applied to the sector. We have also set up an energy efficiency working group ... and I think we finally have

⁴⁷ <http://www.ess.nsw.gov.au/Home> accessed September 2013

⁴⁸ <http://www.cleanenergyfinancecorp.com.au/energy-efficiency.aspx> accessed September 2013

⁴⁹ Presenter AU Infrastructure Capability Manager Manufacturing 2011;

Presenter AT Sustainability Analyst Manufacturing 2011;

Presenter BM Greenhouse & Energy Advisor Manufacturing 2012;

Presenter BT Sustainability Manager Commercial 2012

⁵⁰ The EEO legislation was extended to electricity generation organisations from 1 July 2011

got a really good approach, a very practical approach to be compliant with the EEO legislation and yet to achieve good outcomes for our organisations.”⁵¹

Table 7.3 briefly summarises the key legislation introduced over this period and highlights the different business risks associated with each piece of legislation from the perspective of respondents. A risk management perspective is included here because some government legislation had a direct impact on the organisations with obligations under the EEO legislation. Legislation also influenced the expectations of key organisational stakeholders, such as investors and customers. Therefore, the combination of legislation and expectations presented more than just a risk of non-compliance; it also presented potential reputation and market risks for organisations. These issues relating to the legislation were used by corporate energy practitioners to frame the growing importance of energy efficiency within their organisations,⁵² which, in turn, supported the development of new energy management practices (as described in Chapter 8).

Table 7.3: Key legislation introduced between the years 2006–2012

| Legislation | Requirements | Risk management perspective |
|---|--|--|
| <i>Energy Efficiency Opportunities Act 2006 (Cth)</i> | <ul style="list-style-type: none"> • Large energy consumers are required to conduct energy efficiency assessments and provide annual public reports on the outcomes of these assessments • In 2006, 199 corporations registered • By May 2012 there were a total of 319 corporations registered (RET 2012a) | <ul style="list-style-type: none"> • Legislative compliance risk • Reputational risk |

⁵¹ Presenter BN Carbon Policy Manager Manufacturing 2012

⁵² Interviewee CN Business Development Manager Transport 2013; Presenter AA GM Carbon & Energy Mining 2011; Presenter BB Energy Champion Manufacturing 2011; Presenter BN Carbon Policy Manager Manufacturing 2012; Presenter BU GM Sustainability Commercial 2012; Presenter CE Energy Manager Mining 2012

| Legislation | Requirements | Risk management perspective |
|---|--|--|
| <i>National Greenhouse and Energy Reporting Act 2007 (Cth)</i> | Report annually for site and corporation: <ul style="list-style-type: none"> • total energy consumption • scope 1 greenhouse gas emissions • scope 2 greenhouse gas emissions Information at corporation level reported publicly on government website. In 2011/12 reporting year, 833 Registered Corporations | <ul style="list-style-type: none"> • Legislative compliance risk • Reputational risk |
| <i>Renewable Energy (Electricity) Act 2000 (Cth) extended in 2009</i> | Extension of the target expected to increase electricity prices | <ul style="list-style-type: none"> • Financial risk (due to rising electricity costs) |
| <i>Building Energy Efficiency Disclosure Act 2010 (Cth)</i> | An up-to-date Building Energy Efficiency Certificate (BEEC) needs to be disclosed to prospective buyers and tenants (in most cases) when office space of 2,000 square metres or more is offered for sale, lease or sublease. | <ul style="list-style-type: none"> • Legislative compliance risk • Market risk |
| <i>Clean Energy Act 2011 (Cth)</i> | A price on carbon including a fixed price period for three years starting at AUD23/tonne in July 2011 before reverting to a price established by the market | <ul style="list-style-type: none"> • Compliance risk • Financial risk (rising energy costs and costs associated with direct liability for self-generation) |

7.4.2 Growing investor interest in climate change and energy efficiency

“In around 2010 at one of the regular briefings with our investors our CEO was asked about what the average NABERS Energy rating of our portfolio was and where was it going to go. I think the interest from investors is not so much that an efficient building means additional value – but that an inefficient building raises alarm bells in terms of the investment required to get it up to scratch.”

Manager Sustainable Building Operations, commercial building sector⁵³

Development and, ultimately, the introduction of a carbon price in Australia was a contributing factor in the increasing interest and awareness of investors about how companies were addressing the risks associated with associated with energy use and greenhouse gas emissions. Respondents explained that over the study period their organisations were increasingly being asked to complete investor questionnaires that requested information about the organisation’s energy and greenhouse gas performance.⁵⁴ Questions were incorporated into sustainability-related financial indices such as the Dow Jones Sustainability Index (DJSI) and FTSE4Good Index for example. Organisations also faced mandatory reporting under the EEO legislation. Around one quarter of the respondents were responding to surveys and reporting under the Carbon Disclosure Project (CDP) as well as through their own public sustainability reports.⁵⁵ The CDP is a non-profit organisation backed in 2013 by more than 722 institutional investors representing more than USD87trillion in assets (CDP 2013).

Government reporting programs that sought increasing transparency of energy and greenhouse performance were improving the accessibility of information to investors. For example, in the property sector a star rating system for the operational

⁵³ Interviewee CK Sustainability Manager Commercial 2013

⁵⁴ Case DH GPT Group Commercial Sector 2012; Presenter BC Superintendent Energy Mining 2011; Presenter BD Energy Coordinator Mining 2011; Presenter BI Greenhouse & Energy Advisor Mining 2012; Presenter BM Greenhouse & Energy Advisor Manufacturing 2012

⁵⁵ Case CX Thiess Mining Mining Sector 2010; Presenter AF Group Environment Manager Mining 2011; Presenter AT Sustainability Analyst Manufacturing 2011; Presenter BE Product Manager Mining 2011

energy performance of buildings had first been introduced as a voluntary scheme in the early 2000s. In 2010, NABERS became mandatory for larger commercial properties when the *Building Energy Efficiency Disclosure Act 2010 (Cth)* was introduced.

Investors now have access to information that they can use to assess the energy performance of buildings which can also provide a proxy indication of issues, such as building obsolescence, since energy efficiency performance is increasingly linked to building quality.⁵⁶ In this way, energy efficiency has become of growing relevance to investors. The first annual aggregated report by the regulator of NABERS showed that, by July 2013, three quarters of Australia's commercial office buildings had received NABERS ratings (NSW OEH 2013).

Investor interest has been particularly strong in the commercial sector. However, in the mining and other sectors, companies face risks associated with cost containment as electricity prices increase due to spending on energy infrastructure, as well as the impact of legislation (e.g. legislation relating to the carbon price).⁵⁷ Mining is one of the sectors that will be most impacted by a carbon price. It is also the sector with rapidly-growing energy intensity as mines are deeper and the quality of ore decreases, meaning that more transport and greater processing are required – both of which are energy intensive.⁵⁸

Growing interest by investors also meant that practitioners were able to use the interest by investors in climate change and energy efficiency by increasing disclosure of their performance beyond compliance requirements.⁵⁹ For example, one practitioner found that greater transparency of a building's energy performance

⁵⁶ Case DJ National Australia Bank Commercial Sector 2012; Interviewee CK Sustainability Manager Commercial 2013; Presenter BT Sustainability Manager Commercial 2012

⁵⁷ Interviewee CQ Principal Energy Advisor Mining 2013; Presenter AA GM Carbon & Energy Mining 2011

⁵⁸ Presenter AG Manager Energy & Emissions Projects Mining 2011; Presenter BF Senior Consultant Mining 2011; Presenter CJ Senior Consultant Mining 2012

⁵⁹ Presenter AK Manager Climate Change & Environment Commercial 2011; Presenter AQ Sustainability Manager Commercial 2011; Presenter AS Chief Financial Officer Commercial 2011

to external stakeholders could motivate the decision-makers in his own organisation more than he would be able to do by communicating the issues directly to those decision-makers himself. The General Manager for Sustainability in the commercial sector explained that:

“Disclosure [of the energy performance of our buildings] has motivated the fund managers and the people at the investment level in the group who were very unhappy about the idea that [our premium grade office building] might be losing some of its edge – as indicated by its poor energy performance. This is one of our flagship buildings so it is really important that the building has a good reputation. The capital works are underway now, the business cases have got through the system and we’re spending several million dollars just on the building automation system.”⁶⁰

In this case, the practitioner had been active in encouraging his organisation to go beyond the disclosure required by legislation about energy efficiency and the overall sustainability performance of their buildings. As this quote highlights, the strategy of encouraging external disclosures helped to encourage internal stakeholders to improve the energy efficiency performance of the building.

This provides an example of a corporate energy practitioner using a strategy that involves actively engaging *external* stakeholders in order to influence the organisation’s *internal* stakeholders whose support the corporate energy practitioner requires to further the organisation’s energy efficiency improvement program. Table 7.4 summarises the key mechanisms encouraging interactions between investors and large energy consuming organisations on energy efficiency (discussed above).

⁶⁰ Presenter BU GM Sustainability Commercial 2012

Table 7.4: Interactions between investors and organisations on energy efficiency

| Mechanism | Actions |
|---------------------------------|---|
| Investors briefings | Investors request information from organisations about how they are managing risk associated with energy use. ⁶¹ |
| Organisational public reporting | Organisations provide information to stakeholders about their environment and/or sustainability performance on a voluntary basis. This may include energy efficiency information. EEO reports are provided to the public in order to meet the obligations under the EEO legislation. ⁶² |
| Government reporting | NGER Scheme data is aggregated by the government and made available publicly, as required under the legislation. ⁶³ |
| Investor indices | E.g. DJSI and FTSE4Good. Organisations participate in these measures to build their reputation and to attract and maintain investors. ⁶⁴ |
| Investor surveys and reports | E.g. CDP. Organisations complete surveys highlighting climate change-related risks and the actions they are taking to manage them. ⁶⁵ |

⁶¹ Interviewee CK Sustainability Manager Commercial 2013; Presenter AQ Sustainability Manager Commercial 2011

⁶² Case DM Foster's Group Manufacturing Sector 2012; Presenter AT Sustainability Analyst Manufacturing 2011

⁶³ Presenter AA GM Carbon & Energy Mining 2011; Presenter BV Manager Resource Efficiency & Climate Change Manufacturing 2012

⁶⁴ Presenter BT Sustainability Manager Commercial 2012

⁶⁵ Case CX Thiess Mining Mining Sector 2010; Case DH GPT Group Commercial Sector 2012; Presenter AF Group Environment Manager Mining 2011; Presenter AT Sustainability Analyst Manufacturing 2011; Presenter BE Product Manager Mining 2011

7.4.3 Rising customer demand for energy efficiency

“We proactively educate our clients. We go to them and acknowledge that they are an exposed industry with the carbon price coming in and energy costs going up. We then explain that we have done a lot of projects that involve minimizing carbon and energy use. This approach gives us an extra “feather in our cap” when we are tendering for projects.”

(Manager Greenhouse & Sustainability, Mining in the mining sector)⁶⁶

Growing awareness across the Australian economy regarding the drivers for and benefits associated with effective energy management, presented an opportunity for some organisations to promote their energy management programs, enhance their reputation, differentiate themselves from competitors, and even develop new product and service offerings for their customers.

Corporate energy practitioners described a diverse range of ways in which their organisations were using energy management to position their organisations in the marketplace. For example, a large contracting organisation that provides mine operation and construction services had developed a set of energy measurement and management tools, which allowed them to track and report energy used in mining trucks on a shift-by-shift basis. This organisation actively promotes their use of these tools to their existing and potential clients as a way of demonstrating their commitment to innovation, reducing costs and managing environmental impact. This helps to increase their competitiveness when bidding for new customers – even if these potential clients do not explicitly request energy management services.⁶⁷

The Environmental Sustainability Manager in a firm in the commercial sector explained that his organisation found that by demonstrating tangible outcomes from energy management programs they managed with their existing customers, they were able to give other clients greater confidence in their ability to deliver the same

⁶⁶ Presenter AH Manager Greenhouse & Sustainability Mining 2011

⁶⁷ Presenter AH Manager Greenhouse & Sustainability Mining 2011

outcomes in their buildings.⁶⁸

As well as being proactive in promoting their organisations' energy management approach, corporate energy practitioners report that they have seen an increasing number of requirements for information about the energy management-related services they can provide.⁶⁹ A Business Development Manager in the transport sector explained that, within the past 18 months, he had seen tenders that explicitly requested information from contractors about the systems and processes they would use to measure and report on energy use and greenhouse gas emissions. Another tender had requested information about how energy efficiency would be optimised and what options could be provided to offset any remaining greenhouse gas emissions.⁷⁰ In this way, the customers themselves were actively influencing the market of service providers.

The Head of Sustainability within a financial services firm had built support for energy management within the organisation by presenting energy management as an opportunity for the organisation to learn about the benefits and difficulties associated with providing lending products for energy efficiency projects. By developing that experience and knowledge within the organisation, it was expected that it would provide insights and reduce the risk associated with developing new lending products to meet the growing demand for financing energy efficiency projects. In this way, energy management was viewed as a low-risk approach to developing and marketing new products at the same time as it reduced the firms operating costs and developed their corporate reputation.⁷¹

Organisations have also developed collaborative relationships with customers to create new and innovative approaches to energy management. For example, a transport organisation worked closely with a customer and an equipment supplier to

⁶⁸ Case DI Spotless Commercial Sector 2012

⁶⁹ Interviewee CN Business Development Manager Transport 2013; Presenter CD Environmental Sustainability Manager Commercial 2012

⁷⁰ Case DT Ron Finemore Transport Sector 2012

⁷¹ Presenter AM Head of Sustainability Commercial 2011

design a larger trailer to transport grain. This improved the amount of fuel required to transport each tonne of grain and created a range of other benefits, such as reducing truck movements on public roads, increasing productivity and reducing maintenance and other costs.⁷²

In the commercial building sector, a tenant in an office building worked collaboratively with the building owner to retrofit the building in order to deliver significant energy savings as well as other financial and environmental benefits. Typically, there is a misaligned incentive between the owner and the tenant in a building, since the owner pays for the upgrade and the tenant receives the benefits in reduced energy costs. However, in this particular case, the owner and the tenant negotiated an arrangement that achieved a positive outcome for both parties. The project highlighted that – through negotiation – the owner and the tenant were able to identify shared benefits from a building upgrade. As a result of this process, the productivity of the office space has been increased, even as operational energy use and environmental impact has been reduced.⁷³

In summary, corporate energy practitioners described three different ways in which their organisations are using their energy management programs as a commercial opportunity:

1. active marketing
2. tenders, and
3. product development (see Table 7.5).

⁷² Case DT Ron Finemore Transport Sector 2012

⁷³ Case DJ National Australia Bank Commercial Sector 2012

Table 7.5: Interactions between organisations and their customers

| Approaches | Actions |
|-----------------------|--|
| Active marketing | Energy management can enhance the organisation's reputation, differentiate it from competitors and demonstrate commitment and ability with regard to innovation. |
| Competitive tendering | Increasingly tenders require service organisations to describe their approach to and tools for energy management. This may be needed to meet the core requirements of a tender or may be requested as an optional 'value add'. |
| Product development | Organisations are increasingly using their internal energy management programs as a means to develop new products and services, which they subsequently offer to their customers. These may be developed through collaboration with customers and other stakeholders, such as equipment suppliers. |

7.4.4 **The implications of changing activity in the organisational field**

At the same time as organisations were involved in conducting energy efficiency assessments as part of the first five-year cycle of the EEO legislation, the organisational field associated with energy management was experiencing a period of dynamic change. New stakeholders were entering the field and the level of interest and influence of existing stakeholders was expanding. The changing interests and influence of key stakeholders (including government, investors and customers) had the effect of raising the profile of energy management within and external to organisations as well as influencing perspectives of the benefits that effective energy management could deliver to organisations. From an activity that had previously been defined as primarily an energy cost-savings initiative, the emergence of new stakeholders broadened the perceived value of energy efficiency to include managing compliance risk, enhancing reputation, attracting and retaining new customers and even towards supporting business growth through the development of new products and services.

Changes in the organisational field did not occur in isolation from the influence of large energy consuming organisations. Through the work of corporate energy practitioners and other staff, they attempted to influence the perspective of external stakeholders in a number of ways. Government policy and legislation could be influenced through formal consultation mechanisms that were established around the release of consultation papers and draft legislation. Organisations also worked through industry associations to present their particular interests. Corporate energy practitioners were also active in promoting their achievements through government-sponsored conferences and written case studies. By adopting a leadership role and promoting their achievements, corporate energy practitioners helped shape the wider industry perspectives on the appropriate practices associated with energy management, even as they were in the process of creating legitimacy for such practices within their own organisations.

Investor and customer interest in energy management has been influenced by the increasing volume of government legislation – particularly the introduction of a price on carbon, as well as rising energy prices. Investors seek information from organisations through surveys and briefings. Responding to investor surveys and briefing investors provided organisations with an opportunity to highlight their own performance, which in turn could put pressure on their competitors to do the same. Corporate energy practitioners have also influenced customers by actively promoting their energy management approach (including specific products and services) by responding to tenders and developing new products – often in collaboration with customers and other stakeholders (e.g. equipment suppliers). Rather than operating in isolation from one another, these changes can be seen to have reinforced one another. This process can be characterised as one in of self-reinforcement – creating growing legitimacy for energy management as a means of addressing business risk and obtaining benefits.

7.5 Summary

This chapter has:

- provided background information on energy use in Australia and the considerations that informed development and commencement of the EEO legislation in 2006
- explained the traditional and established (i.e. institutionalised) energy management practices applied by large energy consuming organisations as they first began to respond to their obligations under the EEO legislation, and
- presented an analysis of the emerging interests and influence of three key stakeholder groups:
 1. government
 2. investors, and
 3. customers over the study period (2006–2012).

In Chapter 8, these findings will be further expanded through analysis of four key energy management practices areas in which significant changes were observed over the study period.