CLIMATE CHANGE AND THE AUSTRALIAN WORKPLACE

Final Report for the Australian Department of Industry

on State of Knowledge on Climate Change, Work and Employment

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GLOSSARY

ACA Australian Coal Association. Coal mining industry employer group.

ACCI Australian Chamber of Commerce and Industry. Employer group representing primarily small and medium sized businesses.

ACF Australian Conservation Foundation. Environmentalist lobby group.

ACTU Australian Council of Trade Unions. Australian peak union body.

AEU Australian Education Union. Federal level union representing primary and secondary school teachers.

Ai GROUP Australian Industry Group. Employer group representing a range of industries and business sizes.

AMMA Australian Mines and Metals Association. Mining and resources industry employer group.

AMWU Australian Manufacturing Workers Union. Federal level union primarily representing workers in the manufacturing sector.

AWU Australian Workers' Union. Union representing workers in a range of traditional 'blue collar' sectors, including manufacturing and resources.

BCA Business Council of Australia. Employer group representing Australia's largest businesses.

CFMEU Construction, Forestry, Mining and Energy Union. Australian union representing workers in these sectors, particularly noted in construction and mining.

CSIRO Commonwealth Scientific and Industrial Research Organisation. Commonwealth government agency for scientific research.

EPA Generally refers to Environmental Protection Agency, federal body for environmental regulation in the United States. May refer to Australian State level Environmental Protection Authorities depending on context.

EUROPEAN COMMISSION Executive body of the European Union.

EMCO Employment Committee of the European Commission.

EUROFOUND European Foundation for the Improvement of Living and Working Conditions. An agency of the European Union.

EUROPEAN TRADE UNION CONFEDERATION Represents workers and trade unions at the Europe-wide level.

ILO International Labor Organisation. United Nations agency which develops and promotes international labour standards and the wellbeing of workers generally.

MBA Master Builders Australia. Employer group for the Australian construction industry.

MCA Minerals Council of Australia. Australian mining and resources industry employer group.

NECA National Electrical and Communications Association. Australian employer group representing businesses in these industries.

NTEU National Tertiary Education Union. Australian union representing primarily university academic staff.

OECD Organisation for Economic Cooperation and Development. International forum for promotion of economic development. Membership consists of countries with primarily market-based economies.

SCCC Southern Cross Climate Coalition. Coalition of Australian organisations for the promotion of climate change mitigation policies. Members include the ACTU, Australian Conservation Foundation, the Australian Council of Social Service, the Australian Green Infrastructure Council, The Climate Institute, the Australian Institute of Superannuation Trustees, and the Property Council of Australia.

TUC Trades Union Congress. Union peak body for the United Kingdom.

TWU Transport Workers Union. Australian union representing workers in a range of transport-related jobs, including road transportation, public transport and aviation.

UNEP United Nations Environment Program. United Nations agency responsible for helping to develop and promote environmentally sustainable practice.

VTA Victorian Trucking Association. Australian State level employer group for trucking and logistics companies.

EXECUTIVE SUMMARY

1. Introduction

Climate change and public policy measures to mitigate its impact are likely to lead to significant shifts in the composition of the labour market through the decline and expansion of certain jobs and industries. It is also likely to have an impact on employment relations and job quality. While the growth potential of certain green jobs, skills and industries has been analysed, there is little hard evidence of how this potential is translating into practice at the workplace level.

Workplaces generally are one of the greatest sources of carbon emissions, and so it seems reasonable to expect the labour market actors (employers, employees and their representatives) to have an interest in working together in this sphere, which affects productivity, quality of work, and workforce development. To this extent, forms of employee engagement, such as collective bargaining, represent a potentially important strategic mechanism for the labour market actors to identify the appropriate response to climate change at the workplace-level.

This report investigates the impact of climate change and the impetus for carbon reduction across the economy on work and employment. There are four components of our analysis:

- A review of the existing academic and non-academic literature on work and climate change in Australia and other advanced economies (Section 2);
- A content analysis of the policy positions and public statements of 25 labour market actors and key organisations in sectors that are affected by or play a significant role in carbon reduction (Section 3);
- An analysis of the environmental clauses contained in 1280 enterprise bargaining agreements registered across all sectors in Australia from 2009 to 2012. This involves an examination of the incidence and sectoral spread of agreements with clauses relating to climate change and assesses the nature and substance of these clauses. These findings are used to generate conclusions regarding the viability of collective bargaining as a mechanism for allowing organisations to respond positively to the challenges of carbon reduction (Section 4).

- An analysis of employer responses to climate change based on a survey of 682 organisations; including 466 medium-large businesses and 216 government agencies. Organisations were surveyed about their emissions reduction practices and the motivations for these practices. Findings are used to assess the level and nature of engagement by organisations in a range of carbon emissions reduction behaviours, their reasons for doing so, and their engagement with employees on the issue (Section 5).
- Finally, we draw some overall conclusions about the attitudes and motivations of employment relations actors, the practice of carbon emissions reduction and the effects of policy, and employment engagement (Section 6).

2. Review of the Literature on Work and Climate Change

The impact of climate change on work and employment is an emerging area of research. This section reviews the findings of existing research from academic scholarship and the 'grey literature', drawing on less scholarly sources where this is necessary to provide up-to-date context for what is a dynamic area. It focuses particularly on the Australian experience while situating this within a global context.

- '***Green jobs'*** created by or contributing to climate change mitigation are difficult to define and measure. Definitions clearly matter for our ability to make sense of and accurately gauge the impact of climate change and climate change mitigation on work and employment. Debates particularly concern whether 'green' jobs should be defined according to the qualitative nature of the job, whether the job directly contributes to climate mitigation or is simply 'greener' than comparable jobs, or whether jobs should be defined by whether they are created by 'green' activities and policies. The transition to a low-carbon economy is believed to affect employment in four ways:
    1. New kinds of jobs will be created;
    2. Some employment will be substituted;
    3. Some jobs will be eliminated without replacement;
    4. Many existing jobs will simply become qualitatively greener.
- Efforts to mitigate climate change are constrained by ***political considerations***. The political debates around climate change have been influenced by concerns about the economic and employment effects of climate change and climate mitigation policies, and there is ongoing uncertainty in regard to policy both within Australia and internationally. The European Union has had a functioning emissions trading scheme since 2005, and adopted ambitious targets for emissions reduction, renewable energy and reduction in energy usage in 2007. However, Australia has been both less ambitious with targets and has had greater and ongoing political disagreement over how to meet targets. Resistance to carbon pricing in the community intensified following effective mobilisation against government intervention from high emission industries and by the Liberal/National Coalition. The new Liberal/National Coalition government has pledged to repeal carbon pricing mechanism in operation since

2012 and replace it with its own 'Direct Action Plan'; which has a fixed budget irrespective of its ability to meet the stated emissions reduction targets. Its campaign focused particularly on the perceived employment effects of the 'carbon tax'.

- The creation of 'green jobs' is likely to require ***active government policy*** to promote them.

  The global financial crisis seems to have eroded public support and the political resolve for government action on climate change, but green stimulus packages (targeted largely at improving energy efficiency) were introduced in a number of advanced economies, including Australia, in direct response to the downturn as a way of sustaining economic activity while assisting low carbon industries in the process. Both Commonwealth and State governments in Australia have also emphasised investment in skills development as part of the transition to a greener economy. However, the ongoing status of these programs is uncertain given the overall political uncertainty of policy.

- Both ***unions and employers*** have concerns about the nature of the transition to a low-carbon economy. For many, support is conditional on no loss in jobs or 'competitiveness' from climate mitigation policies. The International Labour Organisation (ILO) and other international agencies are largely supportive of climate action, but are focused on securing a 'just transition' with both support for workers and opportunity for worker input to the process. The increasing importance of resources in the Australian economy in recent years presents particular challenges for Australia's climate mitigation.

- There is some evidence that employers and unions are working together to promote carbon mitigation at the enterprise-level. This is particularly prevalent in the European Union. The 'just transition' approach emphasises a role for ***employee voice*** and ***collective bargaining***. The United Kingdom (UK) and Germany largely lead the way in this regard, however, there is little sign that collective bargaining over climate change is widespread even in the European Union. Collective bargaining in the Australian context is further hindered by the ambiguous status of climate change-related bargaining under the Fair Work Act.

- The overall impact of climate change mitigation on ***work and the labour market*** remains uncertain. Many assessments predict a 'double dividend' of climate mitigation and job creation. However, many also contend that this assessment is naive, that there will be little net job creation, particularly without specifically directed government policy. Nor are there any guarantees that emerging jobs will be qualitatively better than the jobs they replace, and certainly they are likely to present their own challenges. Moreover, few if any assessments predict a painless transition, with some industries, such as construction and manufacture of carbon-saving technologies, benefiting and others such as coal mining potentially suffering. The ability to take advantage of emerging jobs and to adapt to changes in the nature of existing jobs also heavily depends on skills development, with the effect on skills predicted by some to be much greater than on careers and job security.

3. An Analysis of the Work and Climate Change Policies of Labour Market Institutions

This section of the report reviews the climate change policy positions of important labour market institutions relating to work and employment. We focus particularly on employer associations and trade unions representing the sectors considered most likely to be affected by government policies to reduce carbon emissions, namely Construction, utilities, Mining, Manufacturing and Transport. The policies of labour market actors in the Education and Public Administration sectors, which play a key role in shaping the behaviour of firms in these energy-intensive sectors, are also examined. While our focus is mainly on employer associations and trade unions, we also look at the policies and practices of significant commercial and public organisations in these sectors, including AGL (Utilities), Linfox (Transport) and TAFE NSW (Education).

Employment and business opportunities and costs

An interesting (but not necessarily surprising) feature of the policy review is that trade unions tend to be more optimistic than employer associations of the business and employment impacts of climate change. Unions largely contend that strong action on climate change will result in significant overall job creation in a number of sectors, particularly where carbon pricing is combined with activist government investment and industry policy. Both unions and employer groups largely agree, however, that negative employment effects can be anticipated in the absence of substantial government investment and industry assistance. Employer groups in particular have also expressed concern that many businesses are not able to pass on increased costs, and that this may inhibit business expansion.

Changes to work and business practices

There appears to be a reasonable amount of innovation at the enterprise level to reduce carbon emissions. Various labour market actors and key organisations, particularly in the Transport and Energy sectors, have indicated the actual or potential impact of changes to business practices as an important issue in this respect. However, this has been somewhat inconsistent in application and the extent to which low-carbon business and work practices have been adopted, and the actual results of these changes, remains unclear. Government

organisations at both the State and Commonwealth level have also modified operations in an attempt to 'lead by example' in carbon emissions reduction. An emphasis on skills and training is also evident among some stakeholders, with TAFE's 'Green Skills' initiative emblematic of this, but others such as the ACCI have expressed scepticism as to the importance of new skills development.

Employee and stakeholder engagement

Several actors and organisations have promoted employee engagement as one way of helping business to identify energy efficiency savings. Unions support measures to promote employee engagement, including through the creation of joint committees to allow employees to have input into management decision-making on environmental issues, as well as employee rights to information regarding workplace emissions and new technological adoption, and the use of enterprise bargaining as a means for workers to have input. In addition, the transport and logistics company Linfox has engaged through creation of 'sustainability teams'. A number of organisations, particularly in the Education sector, have also established representative committees on the environment issue and have sought to engage with communities and customers on climate change.

Initiatives to reduce organisational footprint

The adoption of policies by labour market actors and key organisations to reduce their own carbon footprints is another theme emerging from the policy review. A number of government organisations, unions and companies in transportation and energy have adopted measurable emissions targets and in some cases publish progress on these targets. The company Linfox is particularly notable in this regard, having reduced emissions by 36 per cent between 2007 and 2012.

Responses to government climate change policy and international perspectives

A widespread belief that government policies influence the business and workforce impact of climate change is a strong undercurrent emerging from our review. Calls for greater government support for industries with the potential to flourish (such as renewable energy industries) and/or government assistance to those that may struggle to survive in a low carbon economy (such as high users of carbon intensive energy) have been made by various trade unions and industry associations. While unions are generally supportive of carbon pricing and have expressed positive views about the Gillard Labor government's industry

assistance, industry groups have been more negative in their assessment of the enterprise-level impact of these policies. In particular, industry groups have characterised industry assistance as inadequate and have criticised the carbon-pricing scheme for imposing costs on businesses to a level not faced by international competitors. These contrasting judgements could possibly reflect party political factors, since unions are traditionally more supportive and have relatively more capacity to influence the policy decisions of Labor governments than Liberal/National (Coalition) governments. With the exception of the ACTU, few Australian labour market institutions have developed strong perspectives, let alone undertaken active interventions, on the international institutional aspects of climate change policy. The ACTU has advocated for climate action at various global forums.

4. An Analysis of Environmental Clauses in Enterprise Bargaining Agreements

This section presents an analysis of enterprise agreements containing environmental clauses from the periods 2009-2010 and 2011-2012, obtained through the Workplace Agreements Database administered by the Commonwealth Department of Employment. Due to changes in sampling by DoE between the two periods the data is not directly comparable between them (the latter period is more inclusive). Additionally changes in composition due to bargaining cycles must be taken into account when comparing the data across time. Nonetheless, the data provides some insight into collective bargaining over climate change and the form that such bargaining is taking. A qualitative coding framework was used to analyse not only the rate of such agreements but also their content.

Coverage

Of all agreements made in 2009-2010, 1.7 per cent, covering 8.7 per cent of all employees covered by an agreement (a total of 184,590 employees), contained environmental clauses according to the narrow criteria for that period; while 6.7 per cent of agreements covering 11.3 per cent of employees covered by an agreement (219,150 employees) for 2011-2012 contained environmental clauses using the more inclusive criteria. In the 2009-2010 period, the Education and Training sector, primarily universities, was highly represented, accounting for 46 per cent of all employees covered by agreements with environmental clauses in that period (30.8 per cent of the total Education and Training workforce covered by agreements made in that period); though agreements in this sector made up only 6 per cent of all agreements in this period. Public Administration and Safety was also highly represented in both periods, with this sector accounting for 38 per cent and 64.7 per cent of all employees covered by agreements with an environmental clause in the 2009-10 and 2011-12 periods respectively. By contrast, such agreements covered no more than 13.5 per cent of the workforce covered by agreements made in either period in any other sector, including more carbon intensive sectors, and no other sector accounts for more than 9.5 per cent of all employees covered by such agreements in either period (see Tables 4.1-4.2). Union involvement is also strongly correlated with the presence of environmental clauses in agreements.

Level of Detail

Most agreements with environmental clauses overall were quite vague and made little in the way of substantial commitment to carbon emissions reduction. A large proportion of the most vague agreements were in carbon-intensive industries. Many agreements, particularly on major construction projects, had identical clauses with minimal detail. Some agreements simply committed employees to promote the environmental credentials of the industry and/or company. Around 48 per cent of the 2009-2010 agreements and 21 per cent of the 2011-2012 agreements had environmental clauses that included discussion of more specific workplace behaviours or objectives to effect environmental mitigation, including recycling, waste reduction, increased energy and other environment-related efficiency, modifying or utilising capital in an environmentally friendly manner, and other practices including commitment to continuous improvement. Very few agreements – 31 for 2009-2010 and 36 for 2011-12 – used language that clearly indicated climate change mitigation specifically as a matter for consideration (e.g. mentioning climate change, global warming, greenhouse gases or carbon). Electricity companies did not account for any of these agreements. Again, university agreements for 2009-2010, and to a lesser extent government agreements for both periods, stood out in terms of qualitatively making more substantial and specific commitments, including being more likely to mention climate change specifically.

Employee Engagement, Skills and Participation

Around 20 per cent of 2009-2010 agreements and 13 per cent of 2011-2012 agreements with environmental clauses made some commitment to training in relation to environmental goals or skills. Often such agreements linked this training to occupational health and safety (OHS)-related training, and a number of other agreements included environmental issues among those to be covered at orientation sessions. Few such provisions elaborated at all on the kinds of skills or knowledge to be taught. A small proportion of agreements linked achievement of environmental objectives to incentive schemes, though a slightly greater number linked environmental concerns to disciplinary procedures. Around one in four agreements for both periods, nearly all with unions as a party, made some provision for consultation with employees on environmental matters. Most simply included environmental concerns among a range of issues which could be discussed through existing JCCs or OHS Committees, though a small number (24 total)

included dedicated environmental committees. Again, the Public Administration and Tertiary Education sectors were notable for having a particularly high rate of provisions for consultation and also for having qualitatively more substantial consultation arrangements than those generally found in other sectors; including being more likely to have a dedicated environmental committee charged with mitigating climate change. Such organisations appeared to give a substantial and ongoing role for employee voice in increasing organisational sustainability.

5. Climate change, work and employment - a survey of medium/ large businesses and government agencies

This report presents the findings of a national survey of Australian medium and large businesses along with government agencies. The survey measured carbon emission reduction practices and related issues including work practices. The survey was conducted by telephone in August 2013, among a total sample of n= 682 organisations, including n= 466 businesses and n= 216 government agencies. Where relevant and possible, the person most responsible for HR was interviewed. Failing that, in most cases a senior manager or the manager of the particular site was interviewed (e.g. CEO/ Managing Director/ Director/ General Manager/ store manager/ facility manager). In a smaller number of instances, a business owner or senior finance person was interviewed, and in a handful of cases, operations managers.

Prevalence of emissions reduction practices

Although measuring carbon emission reduction practices among organisations appears straightforward, the picture is complicated by the fact that some organisations undertake *behaviours* which reduce carbon emissions, but they do not *think* of these behaviours as taking steps to 'reduce carbon emissions' *per se*. So, while 63 per cent of organisations surveyed are undertaking actions which they consciously link to climate change mitigation, around 94 per cent of organisations surveyed are engaging in some kind of behaviour which is likely to have the effect of improving ecological sustainability; including reducing energy consumption (77 per cent), recycling (78 per cent) and reducing the amount of waste material produced (71 per cent). A higher proportion of government organisations, 73 per cent, than businesses, 62 per cent, explicitly claim to have taken steps to reduce or offset emissions. It is also notable that the Education sector features particularly highly among businesses which have explicitly linked behaviours to carbon emissions reduction, with 92 per cent of businesses in this sector having done so. Most organisations that have taken steps to reduce or offset carbon emissions say they took their initial steps within the last five years, since 2008, with one-in-five starting some time before that. About one-in-five organisations say they have a written formal policy about reducing carbon emissions.

Specific emissions reduction practices

A significant minority of organisations, 40 per cent, claim to have introduced new equipment to cut emissions, and 28 per cent say they have introduced new technology. Changed work practices are claimed by 39 per cent, and related to this 24 per cent report having undertaken staff training/skills development to reduce emissions, with 9 per cent changing the mix of skills in their workforce. Changes to product/ service formulation to cut emissions is reported by 16 per cent, with 12 per cent saying they have changed the physical packaging of a product. About one-in-five say they have made a change to their supply chain, and 4 per cent say they have bought carbon credits to offset emissions. Government agencies are more likely than businesses to have reduced energy consumption, introduced new technology or changed the formulation of a product or service to cut emissions. In common with government agencies, the largest businesses employing 200 or people are more likely than others to have reduced energy consumption and introduced new technology to cut emissions. They are also the most likely of all organisations to have introduced new work practices. The Education sector was also more likely than most others to engage in a range of specific climate mitigation behaviours, including changes to products/services (40 per cent), introduction of new technology (70 per cent) and work practices (68 per cent), and training and developing its workforce to update skills (48 per cent).

Motivations/triggers for reducing emissions

Reducing costs is the most common reason for organisations to reduce emissions, cited by 82 per cent of those businesses that have explicitly reduced emissions. Sixty-nine per cent also claim it is because of a **corporate social responsibility** policy (CSR) they have – though only 18 per cent claim to have a formal written policy to reduce carbon emissions, and only 7 per cent cited ethical or environmental responsibility as a motivation. The **carbon tax** was a motivator for 27 per cent of organisations, and this is significantly more prevalent among businesses (27 per cent) than government agencies (15 per cent); 45 per cent of businesses in Agriculture, Forestry and Fishery and Mining cited this as a motivation. Interestingly, 20 per cent say **requests from employees** influenced their organisation to take steps to reduce emissions – and this is far more prevalent among government agencies (41 per cent) than

businesses (20 per cent). Among businesses, this reason was particularly prevalent in the Education and Training sector (46 per cent), and 19 per cent of businesses in this sector reported requests from unions as a motivating factor (vs. 1 per cent for all businesses).

Impacts

Most businesses that have explicitly tried to reduce emissions claim little or no impact on operations, with around a third claiming moderate impact and a tiny minority (3 per cent) major impact. Little or no impact on staff numbers was observed.

Employee Engagement and Participation

Among organisations that have taken steps to reduce emissions, **employee team meetings** are the most prevalent way staff can have a say about emission reduction practices, at 84 per cent incidence. About 30 per cent of organisations report staff can have a say through a **Joint Consultative Committee** (JCC), including 9 per cent with a JCC dedicated to environmental issues. Engagement through a JCC on carbon emissions was particularly prevalent in Wholesale Trade (79 per cent) and Education and Training (66 per cent); with Education and Training also a particular outlier in regard to dedicated JCCs (29 per cent). Around 11 per cent claim to have an environmental clause in their collective enterprise agreement.

6. Conclusions: A Synthesis

The Climate for Change: Attitudes and Motivations

Overall, this report presents evidence that the attitudes and motivations of employment relations actors with regard to action on climate change are complex, and in some areas perhaps even contradictory. Both unions and employer groups have expressed nominal support for action on climate change, and even for carbon pricing as the form of such action. However, this support has often been heavily moderated by concern for the more traditional goals of such organisations: the pay, conditions and employment opportunities of workers for unions; and the costs, competitiveness and profits of businesses for employer groups. Overall, unions have been more optimistic about the potential employment effects of the former Labor government's climate change policies and, indeed, the transition to a low carbon-economy generally; though in advocating more generally for action on climate change they may also be motivated by the values of members regarding climate change. Employers and employer groups, on the other hand, have expressed concerns about the increased energy costs inherent in carbon pricing, emphasising particularly the competitive effects of carbon pricing in the absence of a global carbon price. Ironically, however, cost appears to be currently the most important motivator for emissions reduction behaviours. The perspectives of both parties may also have been moderated by more persistent political affiliations which go beyond the specific issue of climate change.

Practice, Policy and Jobs

The report provides evidence that there is some degree of engagement with carbon emissions reduction practices at a range of workplaces at a majority of Australian workplaces (at least among organisations of a medium size or larger). The extent of these practices, and to what extent these practices have been successful in measurably reducing carbon emissions, is less clear. There are signs from all sections of this report that new work practices, equipment and training are being adopted by a number of firms, though these are yet to emerge at anything approximating a majority. Overall, however, the evidence suggests that there has been so far little effect on employment of either climate mitigation practices or government policies. Net employment gains or losses should not necessarily be expected. However, the literature largely suggests that if substantial climate mitigation is to

be achieved, more substantial change is likely to be needed, including shifts in the industrial composition of the economy and substantial transitional support and activist policy and clear leadership from governments. There is little sign that this has yet begun in earnest, and the future long-term effects of this gap remain unclear.

Employee Participation

As previously noted, employee participation represents a potentially important mechanism for labour market actors to identify opportunities for carbon emissions reduction at the workplace, and substantial representative participation has been an important part of climate mitigation efforts in the European Union. However, while our survey showed that a majority of Australian organisations surveyed report some mechanism for employee participation in carbon emissions reduction, this is for the most part through team meetings and other direct forms of participation at the task or job level. Only a small minority of businesses overall provide opportunities for representative consultation through joint consultative committees and the like at a more strategic or organisation-wide level. Moreover, a much smaller proportion of businesses are engaging in collective bargaining over climate change. However, there are notable exceptions. Government agencies and businesses in the Education and Training sector feature higher rates of both consultation and collective bargaining, as well as more substantial collective bargaining clauses than found in other sectors. The company Linfox is also exceptional in creating dedicated 'sustainability teams' and also being among those with climate-related clauses in their EBAs. Not coincidentally, these organisations are more likely than others to engage in a range of emissions-reducing behaviours. The fact that these practices are not widespread represents a lost opportunity for public policy initiatives to encourage carbon reduction at the workplace.

1 INTRODUCTION

Climate change and public policy measures to mitigate its impact are likely to lead to significant shifts in the composition of the labour market through the decline and expansion of certain jobs and industries. It is also likely to have an impact on employment relations and job quality. While the growth potential of certain green jobs, skills and industries has been analysed, there is little hard evidence of how this potential is translating into practice at the workplace level.

Workplaces generally are one of the greatest sources of carbon emissions, and so it seems reasonable to expect the labour market actors (employers, employees and their representatives) to have an interest in working together in this sphere, which affects productivity, quality of work, and workforce development. To this extent, forms of employee engagement, such as collective bargaining, represent a potentially important strategic mechanism for the labour market actors to identify the appropriate response to climate change at the workplace level (Eurofound, 2011).

However, research on the impact of climate change on work and employment in Australia has been relatively slow to emerge. Much of the existing research in the academic and non-academic literature relates to the factors that constitute a 'green' job (Crowley, 1999; Ehmcke et al., 2009), the potential and actual impact of climate change on employment, skills and the labour market (ACF-ACTU, 2008; Hatfield-Dodds et al., 2008; Masterman-Smith, 2010); the implications of State and Commonwealth government climate change mitigation and adaptation policy for these issues (Goods, 2010; Rafferty and Yu, 2009; Stillwell and Primrose, 2010; Thomas et al., 2010; UNEP, 2008), and how labour market actors and institutions are responding to climate change at the industry and regional level (Goods, 2011; Pearce and Stilwell, 2008; Snell and Fairbrother, 2011).

This report investigates the impact of climate change and the impetus for carbon reduction across the economy on work and employment at the workplace level. There are four components of our analysis:

1. A review of the existing academic and non-academic literature on work and climate change in Australia and other advanced economies (Section 2);

2. A content analysis of the policy positions and public statements of 25 labour market actors and key organisations in sectors that are affected by or play a significant role in carbon reduction (Section 3);
3. An analysis of the environmental clauses contained in 1280 enterprise bargaining agreements registered across all sectors in Australia from 2009 to 2012. This involves an examination of the incidence and sectoral spread of agreements with clauses relating to climate change and an analysis of the nature and substance of these clauses. These findings are used to generate conclusions regarding the viability of collective bargaining as a mechanism for allowing organisations to respond positively to the challenges of carbon reduction (Section 4).
4. An analysis of employer responses to climate change based on a survey of 682 organisations; including 466 medium-large businesses and 216 government agencies. Organisations were surveyed about their emissions reduction practices and the motivations for these practices. Findings are used to assess the level and nature of engagement by organisations in a range of carbon emissions reduction behaviours, their reasons for doing so, and their engagement with employees on the issue (Section 5).

In brief, the findings of the report are:

1. The review of academic and non-academic literature suggests that responses to climate change are likely to alter the nature of jobs and skills sets in a range of industries, including those with low levels of carbon emissions, though net employment effects are uncertain. Labour market actors have been actively engaged in influencing government climate change policy, but have been less focused on engagement to develop mitigation strategies at the workplace. The more substantial extent of workplace-level engagement on climate change in Europe is potentially instructive for policymakers and labour market actors in Australia (Section 2).
2. The review of the labour market actors' policy positions suggests that climate change and associated policies have had a varied impact on work and employment in Australian workplaces to date. There appears to be some increased demand for renewable and efficient energy usage, but not to the extent projected by several actors. Employer organisations have focused on the costs of government carbon

abatement policies, claiming that high users of carbon-intensive energy have been placed under pressure. Unions, on the other hand, have focused on jobs, and have been largely satisfied with the impact of industry assistance policies accompanying government carbon abatement policies. Trade union policy at the peak body level of the ACTU is also more developed than that of employer organisations (Section 3).

3. Employee engagement represents a potentially fruitful way for business to identity carbon savings and to develop energy efficiency strategies. But despite the potential advantages that enterprise bargaining offers in this regard, the use of this mechanism to achieve greater workplace sustainability has been very limited in Australia. This is especially the case for workplaces in high carbon intensive industries, but less so for low carbon intensive industries. Evidence from enterprise bargaining in the Public Administration and Tertiary Education sectors suggest that employee engagement can play an important role in improving organisational sustainability at the workplace-level (Section 4).
4. Sixty-three per cent of organisations surveyed are undertaking actions which they consciously link to climate change mitigation, though as many as 94 per cent of organisations surveyed are engaging in some kind of behaviour which is likely to have the effect of improving ecological sustainability (whether or not they link this to climate change). Cost appears to be far and away the most important motivator for such actions. However, evidence for the extent of these behaviours is inconsistent, with only a minority of businesses changing work practices or investing in training; and most practices having only a minor effect on business operations. The evidence on employee participation is also mixed. Most businesses have mechanisms for participation on emissions reduction. However, this is mostly through direct forms of participation, such as team meetings and informal discussions with managers, rather than more substantial representative forums. The survey data also confirms that there is limited evidence of collective bargaining on climate change. As with the data in Section 4 on collective bargaining, however, government organisations and businesses in the Education and Training sector are an exception to this trend, making greater use of representative mechanisms, while simultaneously having a higher proportion of engagement on a range of other emissions reduction behaviours (Section 5).

Finally, in Section 6, we draw some overall conclusions about the attitudes and motivations of employment relations actors, the practice of carbon emissions reduction and the effects of policy, and employment engagement. The attitudes and motivations of actors are complex, with support for climate action and even for carbon pricing moderated by concerns for job security and employment among unions, and concerns about costs among employers. The differing positions are also motivated by different assessments of the effects of mitigation policies, and the party affiliations of actors. While most evidence shows a significant proportion of organisations engaging in emissions reduction practices, the character and extent of such practices is less clear. Moreover, the general evidence on the employment effects of climate change mitigation policies and the transition to a low carbon economy remains predictive and largely equivocal. This suggests that further research is required on a case study basis to fully ascertain the nature of transition processes, and the impact of public policy, at a workplace level. Finally, while opportunities for employee participation among Australian organisations have so far been limited, the exceptions to this rule provide evidence that such participation may be associated with higher levels of engagement with climate change mitigation. This indicates a missed opportunity for public policy initiatives to encourage carbon reduction at the workplace.

2 REVIEW OF THE LITERATURE ON WORK AND CLIMATE CHANGE

2.1 Introduction

The impact of climate change on work and employment is an emerging area of research. This section reviews the findings of existing research from academic scholarship and the 'grey literature', drawing on less scholarly sources where this is necessary to provide ;up-to-date context for what is a dynamic area. It focuses particularly on the Australian experience while situating this within a global context . We use the themes outlined in the Work in a Warming World Research Programme's (2010) review of the existing research on the impact of climate change on work and employment in Canada as a reference point, while also drawing on themes from other Australian and international research. With this in mind, the following issues are explored:

- Debates about what constitutes a 'green' job
- The impact of political challenges on the work and climate change debate;
- Existing attempts at policy intervention and coordination by government and industry;
- How labour market actors and institutions are responding to climate change at the industry and regional level;
- The role of collective bargaining and other mechanisms for employee input in addressing climate change;
- The prospects for the growth of green industries, jobs and skills - and the existing evidence

An analysis of the main questions and issues emerging from existing research on the impact of climate change on work and employment are discussed in the conclusion.

2.2 Definitional Issues

There is significant uncertainty over what constitutes a ‘green job’ within academic debate and among labour market actors. A large number of studies acknowledge that ‘green jobs’ created by or contributing to climate change mitigation are difficult to define and measure (Bowen, 2012; EMCO, 2009; Pearce and Stilwell, 2008; UNEP, 2008). Definitions clearly matter for our ability to make sense of and accurately gauge the impact of climate change

and climate change mitigation on work and employment. Obtaining broad agreement over what constitutes a green job has potential implications for planning future skills needs and workforce development strategies.

Some have attempted to define 'green jobs' in a way which goes beyond ecological considerations to include broader notions associated with sustainability. In a report for the joint 'Green Jobs Initiative', the United Nations Environment Programme (UNEP) defined 'green jobs' as 'work in agriculture, industry, services and administration that contributes to preserving or restoring the quality of the environment while also meeting requirements of decent work - adequate wages, safe conditions, workers' rights, social dialogue and social protection' (UNEP, 2008:35-36). Works associated with the International Labour Organisation (ILO), also involved in the 'Green Jobs Initiative', have tended to adopt this definition (eg. ILO, 2012:6; Raffery and Yu,. 2009:5; Strietska-Ilina, Hofmann, Haro and Jeon, 2011:4). The social elements of this definition reflect the values of labour organisations and the ILO. The European Commission (2013:170) also contends that: 'Transitions to greener activities will only be successful if the quality of jobs in terms of working conditions and pay is ensured.' However, these social elements may also present challenges if they mean the exclusion of jobs fairly clearly linked to climate change mitigation. Doubts have emerged about whether jobs in emerging sectors such as renewables and recycling are likely to meet these criteria (UNEP, 2008, European Commission, 2013), but this does not reduce their importance in mitigating climate change.

Another approach is that suggested by Pollin, Garrett-Peltier, Heintz and Scharber (2008). They adopt a typology premised on what they see as the job-creation effects of policies and of increased 'spending' generally. *Direct* effects include, for example, employment of construction workers through an investment in retrofitting homes with energy efficient or low carbon technologies. *Indirect* effects include jobs created in those industries which support the directly effected ones, and *Induced* effects would extend to include jobs created by the increased spending power of the other kinds of workers (Pollin *et al,* 2008:10). This approach is useful in emphasising the effects of green policies when counting 'green jobs'. However, their approach seems restricted to evaluation of fiscal stimulus rather than regulatory policies such as emissions trading schemes or fuel standards. Moreover, this kind of approach 'allows jobs to be counted as 'green' if they are created by 'green' policies, even

if they are in sectors with no obvious direct relationship to environmental objectives (e.g. tobacco processing)...' (Bowen, 2012:9-10).

A number of studies use Crowley's (1999) taxonomy of 'deep', 'mid' and 'light' green jobs, which differ according to their relationship between production and nature. The main objective of 'deep green' jobs is to achieve ecological sustainability rather than economic growth, but in a manner that creates (rather than undermines) employment opportunities. 'Mid green' (or 'ecologically modernist') jobs are a 'pragmatic middle path' between deep and light green jobs that 'ecologises rather than jettisons the growth economy' by restructuring industry to make it more ecologically sound. And 'light green' jobs remedy ecological decline rather than preventing it, whereby new jobs are essentially 'after thoughts that are created by cleaning up and rehabilitating the mess we have made of the environment' (Crowley, 1999: 1017; cf. Goods, 2011: 54-55; Stilwell and Primrose, 2010: 16). While not adopting this taxonomy explicitly, another study suggests that light and mid green jobs should not be considered less important or significant than deep green jobs, because many jobs (by definition) cannot fall into the latter category:

> Green jobs in technology, renewables and energy efficiency, and water futures are demonstrably green in nature—they directly serve our urgent objective of carbon emission reduction. Jobs in the managerial and Education sector may be less visibly green in terms of skills and activities, but they involve managing and directing workers in green jobs, making forward estimates, and educating the labour force across the board (Thomas et al., 2010: 3798).

Ehmcke and colleagues define jobs according to accepted occupational, industry and skills classification frameworks in developing a more technical taxonomy. But like Crowley's study, this technical taxonomy also incorporates subjectivity about their inherent 'sustainability' into its criteria (see Appendix I) (cited in Rafferty and Yu, 2009). This signifies a potential problem in the debate over the definition of green jobs (and green skills and green industries for that matter). Indeed, theorising of the 'greening' of work within a framework of delineating 'green jobs' from other jobs seems likely to prove increasingly problematic as environmentally friendly practices become embedded in business and work systems. The transition to a low-carbon economy is believed to affect employment in four ways (European Commission, 2010; Martinez-Fernandez et al., 2010; UNEP, 2008). The first

is that certain new kinds of jobs will be created; for example, as a result of increased demand for the manufacture of carbon reduction technologies or consultancy services specialising in carbon management. Secondly, some employment will be substituted; for example, through shifting from fossil-fuel based (high emissions) forms of energy production to renewable (low-emissions) forms. Thirdly, some forms of employment may be eliminated without replacement. It is unclear if coal mining would be included in this category, given uncertainty over the viability of clean coal technology. And finally, many existing jobs, particularly trades, will 'simply be transformed and redefined as day-to-day skill sets, work methods, and profiles are greened' (UNEP, 2008: 3).

This last consideration is where the attribution of 'green jobs' becomes especially blurry. This is reflected in the views of an Australian Workers' Union (AWU) official, cited by Goods, that the recyclable nature of steel should result in the industry being classified as 'green', despite the carbon-intensive nature of steel manufacturing (Goods, 2011). As Goods suggests, 'defining a green job is clearly complex, and the simple act of classifying a job as green does not ensure ecological benefits, create long term equitable job opportunities or transform existing jobs into environmentally sustainable well-paid jobs of the future' (Goods, 2010: 6). However, such a task may be a secondary consideration to the challenges to climate change mitigation and adaptation that have emerged since 2008.

2.3 Political challenges to climate change mitigation and adaptation - and how this is shaping the impact on work and employment

Efforts to mitigate climate change are constrained by political considerations. Lipsig-Mummé's (2010: 24) observation that, in Canada, 'setting climate policy is a starkly political process' applies equally to many other parts of the world. The political debates around climate change have been influenced by concerns about the economic and employment effects of climate change and climate mitigation policies; and there is ongoing uncertainty in regard to policy both within Australia and internationally.

The politics of climate change mitigation in the United States have been tumultuous. As early as 2007, a movement to have greenhouse gases regulated under the existing Clean Air Act appeared to gain momentum when the Supreme Court ruled that these constituted an 'air pollutant' under the Act, and that the Environmental Protection Agency had a duty to

determine whether they therefore threatened human health or welfare. While such a determination was delayed under the Bush administration (Daniels, 2011: 1904-1908), under the later Obama administration the EPA would issue new fuel efficiency standards and other regulations of greenhouse gases under these provisions of the Act (Daniels, 2011: 1911; U.S. President, 2011: 130). In the 2008 Presidential elections, both Republican candidate John McCain and Democratic candidate Barack Obama were strong proponents of a cap-and-trade system (Daniels, 2011: 1902, 1908), with Obama also emphasising the potential for 'green' investment to stimulate the economy and facilitate recovery from the financial crisis (Vezirgiannidou, 2013: 601). In the early stages of Obama's presidency, $90 billion was allocated to investments in clean energy and climate mitigation measures in the American Reinvestment and Recovery Act 2009; and this was said to be linked to saving or creating as many as 720,000 'job years'[1] (U.S. President, 2010: 243-246).

The United States commitment to a 17 per cent reduction on 2005 levels by 2020 is conditional on an international agreement (UNEP, 2012). Officially the United States has no unilateral target for greenhouse gas emissions, however, President Obama has signalled an intention to act within his power to attempt to meet the 17 per cent target, apparently without waiting for an international treaty. In June 2013 he signalled a new plan using the EPA to issue new emissions standards for power plants (Goldenberg, 2013). However, moves for further action on climate change have been hindered by strong resistance through industry and political lobbying. Many within the Republican Party in particular have expressed scepticism regarding the science of climate change, with Representative Michelle Bachmann (who would go on to contest for the Republican presidential primaries) going so far as to call it 'all voodoo, nonsense, hokum, a hoax' (cited in Daniels, 2011: 1916); and contend that Obama's measures will destroy jobs (Goldenerg, 2013). Subsequently, Republicans have explicitly moved against the EPA's ability to regulate greenhouse gases (Daniels, 2011: 1924-1932). While the current President still advocates market-based solutions such as a cap-and-trade scheme (U.S. President, 2013: 197), with Republican

[1] One job year = one job for one year.

control of the House of Representatives as of 2010, further action on this is likely to prove difficult.

By comparison, climate action within the European Union has been relatively uncontroversial. The EU has had a functioning emissions trading scheme since 2005 (European Environment Agency, 2013). In 2007, it formally adopted its '20/20/20' targets, including a 20 per cent reduction in emissions compared to 1990 levels by 2020; and commitments to 20 per cent renewable energy and a 20 per cent reduction in primary energy use by this time. In addition, the EU has committed to up to a 30 per cent reduction by 2020 conditional on a broader international agreement (European Commission, 2010). While there are also more localised national policies, and there have been some concerns raised about the operationalisation of achieving climate goals (Groen and Niemann, 2013), there appears to be relatively little mobilisation in Europe either against climate science or against its emissions trading scheme, in spite of the ongoing economic turmoil there.

In 2007, the Australian Commonwealth and State governments commissioned economist Ross Garnaut to assess the costs and benefits of Australian government intervention to mitigate the harmful and preventable effects of climate change. In accordance with the findings of a similar review conducted by Nicholas Stern at the request of the UK government (which focused on the global economy), the original Garnaut Review released in September 2008 concluded that the costs of inaction were greater than the costs of intervention and 'that it was in Australia's national interest to do its fair share in a strong global effort to mitigate climate change' (Garnaut, 2011: ix). The Commonwealth Treasury, reached similar conclusions in its 2008 report *Australia's Low Pollution Future - The Economics of Climate Change Mitigation*: 'the business-as-usual scenario of unabated climate change would be both ecologically and economically disastrous' (Rafferty and Yu, 2009: 17-18).

Garnaut used scientific research to inform his assessment of the economic impacts of climate change. His modelling of the impact showed that 'the growth rate for Australian national income in the second half of the 21st century would be higher with mitigation than without'. While Garnaut was an economist, rather than a climate scientist, he

> accepted the central judgments from the mainstream science about the effects of changes in greenhouse gas concentrations in the atmosphere on temperature, and

> about the effects of temperature changes on climate and the physical earth. I formed the view that the mainstream science was right on a balance of probabilities (Garnaut, 2011: ix).

The Commonwealth government commissioned an update of the original Garnaut review, released in May 2011. This reflected on criticisms of the findings of the 2008 report, the 'intense scrutiny' imposed on climate science and the impact of the global economic downturn on the climate change policy debate. The 2011 Garnaut Review found that advances in climate science since the first report 'broadly confirmed that the earth is warming, that human activity is the cause of it and that the changes in the physical world are likely, if anything, to be more harmful than the earlier science had suggested. This has led me to shift my judgment about the reputable science from being right “on a balance of probabilities” to “beyond reasonable doubt”' (Garnaut, 2011: ix-xii). The Garnaut Reviews, like the Stern Review in Canada (Lipsig-Mummé, 2010), had little to say directly about the relationship between climate change on work and employment. Nevertheless, the Garnaut Reviews shaped the nature of the former Labor government's adaptation and mitigation strategies, which have strong labour market implications.

Disagreement between the major parties on how to achieve a reduction in carbon emissions has been a source of near-constant uncertainty over the direction of Australian energy policy since 2007. The former Labor government and now the Liberal/National coalition government have both pledged to achieve a 5 per cent reduction of Australia's 2000 carbon emissions by 2020 (with up to 25 per cent in the event of an international agreement), but have favoured different strategies for reaching this target. The former Labor government tried to pass legislation that would have introduced an emissions trading scheme (without a transitory fixed-price period) in 2009. However, this was rejected twice in the Senate, both by the Australian Greens, who felt that the provisions were too weak, and by the Liberal/National coalition. The Coalition had initially indicated (negotiated) support for the scheme, until a leadership change led to a change of strategy and it rejected the Bill out of hand (Bailey, McGill, Passey and Compston, 2012; Woodward, 2010).

After elections and winning leadership of a minority government in 2010, Labor then introduced a pricing mechanism on carbon emissions, which included a period of a fixed price from 2012-2015. This gained the support of the Greens as well as the independents

whose support was needed in the House of Representatives, and this has been in effect since July of 2012. However, this was characterised as contradicting comments made by then-Prime Minister Julia Gillard during her election campaign that ruled out a ‘carbon tax’, as the fixed-price mechanism was described (Crowley, 2013). A move to an emissions trading scheme with a floating price was planned for July 2015, though towards the end of Labor’s time in minority government the reappointed Prime Minister Kevin Rudd indicated that he would seek to bring this forward by one year (AAP, 2013) .

Community support for government intervention to assist the transition away from carbon-intensive industries, which opinion polling suggests was high (63 per cent support) as recently as September 2009, was undermined partly by the economic downturn precipitated by the global financial crisis. This intensified the extent of disagreement between the major parties. According to Spies-Butcher and Stilwell, 'policies that would increase the cost of emissions, because these are seen as likely to exacerbate economic downturn, meet predictable political resistance'. Resistance to carbon pricing in the community also intensified following effective mobilisation against government intervention from high emission industries (Spies-Butcher and Stillwell, 2009: 112-115) and by the Liberal/National Coalition. There has been particular emphasis on alleged negative employment effects, with dire predictions of job losses from the ‘carbon tax’ a major concern raised during the lead up to the 2013 election.

The Liberal/National Coalition, in government as of September 2013, made a pledge to repeal the ‘carbon tax’ as major part of their election campaign. Indeed, the now Prime Minister Tony Abbott characterised the election as a ‘referendum on the carbon tax’ (Griffiths, 2013). The Coalition government proposes to replace the ‘carbon tax’ with what it describes as a ‘direct action plan’, a fund to provide incentives for businesses to reduce carbon emissions and increase use of renewable energies (Coalition, 2010). However, it is worth noting that it has indicated that its spending on this plan is fixed irrespective of whether the aforementioned agreed upon targets are met. The government still needs both to repeal the ‘carbon tax’, seen as a primary priority, and separately to enact their ‘Direct Action Plan’; and there have been signs from minor party Senators holding the balance of power that while they support the repeal of the former program they will not necessarily support the new one (Taylor, 2013).

On a global level, disagreement is likely to contribute to continuing uncertainty regarding policy approaches to, and targets for, the mitigation of climate change. International agreement on climate mitigation beyond the Kyoto protocol has so far proved elusive, with the 2009 Copenhagen Climate Summit in particular concluding with disappointing outcomes (Groen and Niemann, 2013). This has further fed into concern about actions by nation states, and in Australia in particular arguments against action have at least partly been informed by the notion of the futility of unilateral action in the absence of global action.

This uncertainty will in turn contribute to how businesses and workers will respond to climate change, which will have implications for work and employment. Rafferty and Yu place a caveat on their conclusion regarding the importance of skills and infrastructure in enabling a successful transition to a low-carbon economy. A stable market for green skills, jobs and industries will only emerge in the context of certainty among business and workers around the stability of the regulation, policy settings and government support for such a market (Rafferty and Yu, 2009: 28-29, 57-59).

2.4 Government and industry initiatives

This discussion on the politics of climate change policy underscores the significant role that the state plays in Australia and elsewhere in shaping the behaviour of businesses, workers and labour market actors and institutions. The Canadian Stern Review argues that 'under most scenarios of climate policy to slow global warming, job losses and job movement will be considerable, projected job gains depends on politics, and interventionist policies are essential' (Lipsig-Mummé, 2010: 29). This finding is echoed in a number of studies. According to Crowley, 'green jobs don't happen by themselves, but require proactive environmental policy; and specific measures must mitigate the loss of jobs in any transition to ecological sustainability' (1999: 1018). Similarly, Stillwell and Primrose claim that 'green jobs are not natural, inevitable phenomena that arise from laissez-faire market principles. Rather, their growth is facilitated by government policies that support the restructuring of economic and industrial processes to achieve ecological ends' (2010: 13-14).

While the global financial crisis seems to have eroded public support and the political resolve for government action on climate change, green stimulus packages (targeted largely

at improving energy efficiency) were introduced in a number of advanced economies (in the US, South Korea and Germany, to name but a few) in direct response to the downturn as a way of sustaining economic activity while assisting low carbon industries in the process (Goods, 2010: 11; Masterman-Smith, 2010: 317). As previously stated, in the United States the American Reinvestment and Recovery Act 2009 allocated $90 billion to programs designed to assist the transition to a lower carbon economy (though around $18 billion of this is for improvements to transit such as investment in high speed rail). Around $5 billion of this was allocated to a program which subsidised 'energy efficient retrofits' up to an amount of $6,500 in low income homes; and the total allocation for improvements in energy efficiency amounted to $19.9 billion (U.S. President, 2010). Investments in renewable energy totalling $26.6 billion, mainly through tax credits and funding new loan guarantees, were made with a goal of increasing the proportion of non-hydroelectric renewable energy generation from 3 to 7 per cent of total energy by 2012 (U.S. President, 2010: 244). This target appears to have been met or exceeded, though a large proportion of the increase has come from use of biofuels and other biomass (U.S. President, 2013: 203). Additonally, around $3.5 billion was invested in 'innovation and job training'; $3.5 billion into carbon capture and storage, $6.1 billion into developing less carbon intensive vehicles and fuels; $10.1 billion in 'grid modernisation' and $1.6 billion in 'clean energy manufacturing' to assist the development of new technologies (U.S. President, 2010: 245-246). As previously mentioned, the EPA is also playing an important regulatory role in enforcing emissions standards for new vehicles and, from 2013, new power plants.

While the European Union's carbon trading scheme is its principal mechanism for emissions reduction, member states have issued their own supportive policies. These have included energy and tax schemes in a number of member states, including Germany, the UK, Denmark, Sweden, Norway, and The Netherlands. These have predated and now complement the European-wide emissions trading scheme (Speck, 2008). Both the German scheme, introduced in 1999, and the UK's 'Climate Change Levy' introduced in 2001, see most revenues 'recycled' into lower social security taxation and contribution, a plan theorised to stimulate employment (Karapin, 2012: 7; Pearce, 2006: 152-153).

As in other parts of the world, member states also sought to make 'green' spending a key component of recovery packages in the wake of the financial crisis. Measures include energy

efficient building policies and incentives, promotion of renewable energy and eco-innovation, investment in public transport and infrastructure, and other fiscal and tax incentives (European Commission, 2009). In the UK around £500 million of a £3 billion stimulus was allocated to so-called 'green' inititatives in 2008, though £300 million of this was allocated to improved rail capacity, an indirect measure. Later measures under the Conservative government included £1 billion for development of carbon capture and storage, £200 million in other low carbon technologies, and the establishment of a 'green' investment bank with £3 billion to invest in environmentally friendly business projects, in addition to other green subsidies under a so-called 'Green Deal' (Russel and Benson, 2013: 13-14). However, cuts to support for renewable energy have also been a feature of many of the 'austerity' measures taken in the EU as the economic focus has shifted to public debt levels (European Commission, 2013).

In Australia, the former Labor government sought to assist in the transition away from carbon- intensive industries. As well as introducing a carbon price, the Labor government sought to boost employment creation and skills development in green occupations and industries. This activity mainly came in the form of incentives offered by government for private investment. In Australia, the financial crisis provided the impetus for an extensive policy package announced by the Commonwealth government in the 2009/2010 budget. The package aimed to stimulate growth in new green industries, to green existing ones by reducing their energy and carbon emissions output, and to improve training and increase the supply of jobs requiring green skills (Goods, 2010: 3-5; 2011: 56-58; Stilwell and Primrose, 2010: 16- 17). Numerous initiatives were introduced as part of the package, including:

- Investments in low-carbon industries, such as urban public transport ($4.6 billion) and solar power ($1.5 billion).
- The Energy Efficiency Home Package, which aimed to reduce household energy waste and promote renewable and green industries through the Home Insulation Program to retrofit 2.7 million uninsulated homes with ceiling insulation and the Solar Hot Water Rebate Program ($3.8 billion).

- The creation of the Green Car Innovation Fund for the manufacture of low-emissions vehicles ($1.3 billion) and the Cleaner Car Rebate to encourage consumers to trade in their old cars for new fuel efficient vehicles ($430 million).
- A multi-pronged Clear Sustainable Skills Package, which aimed to create 50,000 new employment opportunities, apprenticeships and traineeships. This consisted of the Green Skilled Apprenticeships scheme that integrated green trades skills into existing vocational education and training courses, the National Green Jobs Corp providing six months of training and work experience for 10,000 long-term unemployed 17 to 24 year olds to work in green industries (such as trades supporting the retrofitting of homes to improve energy efficiency and environmental protection and revegetation), the Local Green Jobs initiative that placed 6,000 workers from specified disadvantaged communities into these green industries, and new training places for 4,000 workers as insulation installers in support of the Home Insulation Program ($94 million).
- The Climate Ready program to provide matched funding for private sector research and development into green innovation ($75 million).
- The Skills for the Carbon Challenge Initiative for the Education sector to adopt green skills qualification courses and increase the supply of graduates ($26.9 million).

Political controversies led a number of these schemes to be later abandoned or curtailed. The Home Insulation Program was terminated following problems with lax monitoring of health and safety standards and the death of four workers; it was later replaced by the Renewable Energy Bonus Scheme. A large portion of the money allocated to the Green Car Innovation Fund was withdrawn (and reallocated to assist with the cost of recovery from the Queensland floods in January 2011) following criticism from within the government that it was an unsound investment in an economically unviable industry. Some disappointment was also expressed from the academic research community that the government's green jobs and skills package was essentially 'light green' in nature because it did not substantially deter investment in high carbon industries, seek to prevent further environmental degradation or encourage the expansion of renewable energy industries to any significant degree (Eren et al., 2010; Goods, 2010: 13).

The newly elected Coalition government is moving to remove the carbon pricing scheme altogether and replace it with its 'direct action plan'. At writing, the details are yet to be released and a Bill yet to be tabled. However, broadly the 'direct action' primarily involves the Commonwealth government giving businesses the opportunity to 'sell' emissions reductions to the government under a 'reverse auction' scheme where only the lowest cost emissions are bought. Additionally, there are subsidies for renewable and low-carbon energy technologies, a tree-planting program, and (as yet undefined) penalties for businesses that increase their emissions above an estimated 'business as usual' baseline (Coalition, 2010). The scheme in total is capped at some $2.9 billion, regardless of whether the 5 per cent target is achieved, though the new minister for the environment, Greg Hunt has expressed confidence in the scheme's ability to achieve the target (Bowden, 2013).

Lynch argues that the role of the state in assisting the transition to a low-carbon economy and labour market goes beyond intervention of the kind undertaken by the former Labor government through the 2009/2010 budget. She contends that playing a coordinating role is necessary for encouraging local actors to be engaged in the transition process and develop their own solutions to micro problems in the context of a macro policy framework, which will help to engender 'permanent culture change' and minimise opposition (Lynch, 2008: 16).

The need for state coordination is evident from the varied response to climate change in terms of labour market policy at the State government and industry levels. According to Rafferty and Yu,

> there has been a proliferation of responses at the State levels, and this has produced a fragmented system of different State government and industry-led initiatives targeting emissions-reductions, improved energy efficiency, and promotion of renewable energy alternatives… The lack of coordination at the Federal level has underpinned years of often innovative but poorly integrated State and private sector initiatives, a system that has resulted in overlapping programs, fragmented objectives, and unclear signals for students, consumers, businesses and industries considering the 'green skills' imperative (Rafferty and Yu, 2009: 8).

State governments have played an important role in the creation and skilling of green jobs and in 'identifying and planning to overcome the labour deficits and bottlenecks' (Spies-Butcher and Stillwell, 2009: 117). The Green Skills NSW Strategy (launched in 2008) has aimed to promote environmentally sustainable business initiatives and workforce developments. Through its $340 million Climate Change Fund, the New South Wales (NSW) government allocated $20 million for providing energy efficiency training to trades and professional workers. The Queensland government has developed a comprehensive set of policies, which is a reflection of its status as the 'state most at risk in terms of mitigation and adaptation to climate change', due to its decentralised population and the high carbon intensity of industries located in Queensland, such as mineral mining and processing, agriculture and tourism. The initiatives launched by the Queensland government include:

- An Industry Development Skills Policy developed as part of the 2006 Queensland Skills Plan to support and provide access to skills among the industries, regions and workers most likely to be adversely affected by carbon pricing.
- The Sustainable Energy Skills Formation Strategy established in 2008 to encourage collaboration between the State government, industry groups and the Education sector around the development of workforce planning in the energy efficient built environment industry and other sustainable energy industries. The strategy aims to identify longer-term skills and labour requirements at the industry level, as well as accompanying training, standards accreditation, licensing and safety issues, in order to facilitate the expansion of these industries.
- The Queensland Cleantech Industry Development Strategy launched in 2011 with the aim of encouraging the growth of green technologies and innovation among businesses.
- A Carbon Outlook Project that provided training in preparation for the introduction of carbon pricing to 50 small and medium businesses across seven industries. This training was developed as a result of the 'significant shortage in some of the generic skills required to take better account of the environmental impacts of business activity, such as those relating to carbon reporting and advice on mitigating the potential flow-on effects of a carbon price on a firm's supply chain' (Rafferty and Yu, 2009: 13-15).

As with green jobs, 'the supply of green skills, in response to fragmented support for the markets which they feed, has likewise been fragmented along state and institutional lines', according to Rafferty and Yu (2009: 58). But there are signs that this fragmentation is being addressed. At the industry level, several Industry Skills Councils (ISCs) have played an important role in driving environmental sustainability initiatives within their particular industries, including the Construction and Property Services, Agri-foods, Electrocomms and Energy Utilities, Service Skills and Innovation and Business Skills ISCs and Government Skills Australia (Rafferty and Yu, 2009: 32-33).

The establishment of two initiatives by the Council of Australian Governments (COAG) since 2009 signifies improved coordination of activity among Commonwealth and State governments and industry groups. The National Green Skills Agreement aims to ensure that the training and delivery of industry-relevant sustainability skills are integrated into all State- based vocational education and training courses. To this end, the State governments agreed to incorporate standards for sustainability skills into the national regulatory framework, provide training to improve the capacity of vocational education teachers to facilitate the uptake of sustainability skills among students, engage the ISCs to comprehensively review and revise the national training and qualifications standards so that they incorporate sustainability skills, and develop sustainability skills among vulnerable members of the workforce. A Green Skills Agreement Implementation Group was also established consisting of Adult Learning Australia, the Australian Chamber of Commerce and Industry, the Australian Council of Private Education and Training, the Australian Council of Trade Unions, the, Australian Industry Group, TAFE Directors Australia, Universities Australia and Commonwealth and State government representatives. In addition, the National VET Sector Sustainability Action Plan agreed by COAG aims to improve the coordination of green skills development programs across State governments and industries through collaboration between the ISCs, industry and employer associations, unions, registered training organisations and State government training agencies.

The emphasis on green skills among the policy initiatives of Commonwealth and State governments and the ISCs reflects a widely-held view that investment in such skills is an important precondition for the expansion of green jobs and industries. The 2011 Garnaut Review asserts that Australia has 'many natural advantages for low-emissions energy, but

their commercial emergence will require technological innovation, skills and investment' (2011: 172). Skills development is a critical part of this, according to Thomas and colleagues, because green jobs 'will not eventuate unless people are trained, or retrained, so that they have the skills needed to undertake their jobs; and in these jobs people will increasingly be required to demonstrate a range of skills in addition to specific knowledge and technical skills' (Thomas et al., 2010: 3804).

2.5 The regional and industry impact of climate change adaptation and mitigation: How labour market actors are responding

Both unions and employers have concerns about the nature of the transition to a low-carbon economy. Many employer organisations in Australia and internationally claim to support action on climate change and to favour a carbon pricing mechanism as an efficient means of climate change mitigation. However, employer organisations are also concerned about factors such as maintaining a so-called 'level playing field' internationally, as well as ensuring adequate support for industry (European Commission, 2013). While resistance among European employer organisations has generally diminished in favour of participation and support for climate change mitigation (European Commission, 2013; SustainLabour, 2013), the largest Australian employment organisations have opposed the introduction of carbon pricing on the premise that it would damage local industry given the absence of a 'global' carbon price (e.g. ACCI, 2011; Australian Trade and Industry Alliance 2011; BCA, n.d.).

International trade union organisations are largely seen to be supportive of climate change mitigation and have focused primarily on facilitating a 'just transition' to a low-carbon economy for workers. First developed by the Canadian Labour Congress in 2000, the 'just transition' approach strongly advocates a role for co-determination, employee voice and the protection of workers' rights as central features of climate change mitigation policies (Goods, 2011; UNEP, 2008). The just transition approach also encompasses protection measures for employee jobs, which has been extended by the European Trade Union Confederation to support for import taxes on goods from countries that have not made similar climate mitigation commitments (UNEP, 2008). The ILO (2011) has also advocated income support, assistance with relocation and the provision of retraining opportunities as

essential to ensure that workers' interests are protected during the low-carbon transition. The positions of the Australian Manufacturing Workers' Union (AMWU) and Australian Council of Trade Unions (ACTU) are largely consistent with this approach. However, while opportunities to directly influence policy are largely restricted to lobbying in countries like Australia and the United States, tripartite consultation between employers, unions and governments has also become a feature of the approach to climate mitigation in many European countries (European Commission, 2013; SustainLabour, 2013).

The challenge for reducing carbon emissions in Australia is relatively high by international standards, due to its economic reliance on carbon-intensive industries. The 2011 Garnaut Review claims that Australia stands out as 'the developed country whose anticipated business-as-usual emissions growth bucks the general trend of developed countries, largely as a result of the expansion of the relative role of resources in the economy. Existing policies leave exceptionally high anticipated growth in emissions to 2020' (Garnaut Report, 2011: 32). Indeed, while greenhouse emissions remained relatively stable among OECD economies at an average of 10 mega tons per capita between 1990 and 2004, in Australia there was an increase from 16.5 mega tons to 19 meta tons per capita over the same period. 'The historical development of industry in the energy and emissions-intensive agricultural and resource markets, and a dominance of coal used for electricity generation, has underpinned Australia's disproportionately high level of carbon emissions per capita', according to Rafferty and Yu. Around 40 per cent of Australia's energy consumption comes from electricity generation fuelled from brown and black coal, with renewable energies accounting for only around 5 per cent (Rafferty and Yu, 2009: 6-7).

According to the Garnaut Review, the high carbon nature of national industrial output and energy consumption patterns 'strengthens the reasons for Australia making sure that it has a strong and flexible economy based on a well-educated and adaptive people' (Garnaut Report, 2011: 101). But these patterns also mean that, paradoxically, the economic challenge of reducing carbon emissions are intertwined with the political challenges outlined earlier. The transformation of emissions-intensive electricity generation 'has to be at the centre of Australia's transition to a low-emissions economy'. This will produce ripple effects for other industries 'because the lowest-cost path to reducing emissions in the

transport, industrial and household sectors involves greater use of low-emissions electricity'. (Garnaut Report, 2011: 149).

The industries and communities centred on brown coal mining and electricity generation and aluminium production are most likely to be negatively impacted by the transition towards low-emissions energy, as these are the most energy and emissions intensive (Garnaut Report, 2011: 158). Accordingly to Pearce and Stilwell, retail and local services industries in these communities could also suffer as a consequence unless low-carbon industries emerge in their place. But this depends on how workers and businesses in these communities (and also in other regional economies that may affected by changing energy prices, such as those based around tourism) respond to changing circumstances. The highly regionalised nature of the energy generation industry poses particular challenges for planning how existing workers can be retrained or redistributed effectively into newer jobs and industries. The changes to the energy labour market will largely be dependent on the kinds of alternate energy solutions that Australia adopts (Pearce and Stillwell, 2008: 126).

There are a number of alternative low-emissions energy sources in Australia that could be used, such as natural and coal seam gas, wind, hydro, solar, geothermal and uranium. The Garnaut Report claimed that there is significant growth potential in Australia for carbon capture and storage in connection with the minerals sectors and biofuels and biosequestration with the land sector, given the major advances already made in research and development and commercialisation in these industries. For instance, the Gorgon Carbon Dioxide Injection Project for the capture and sequestration of liquefied natural gas in Western Australia will represent the largest geosequestration project in the world upon its completion. There is also potential for Australia to apply technologies developed abroad to facilitate growth in the solar energy industry and low-carbon forms of transportation, such as electric vehicles and high-speed trains. The potential for innovation in financial and insurance markets to promote adaptation to climate change has also been noted (Garnaut Report, 2011: 102-104, 115-130, 164-165).

The Garnaut Report warns that the likely shift from high-emission to low-emissions means that industries such as agriculture and coal mining are faced with a choice: either to reap the significant long-term opportunities of adopting new green technologies, or bear the major costs of not adapting (Garnaut Report, 2011: 135-136). Unions have played a key role

in helping local and regional communities based around carbon-intensive industries, such as the coal mining and steel manufacturing communities of regional NSW and Victoria, in adapting their local economies towards new areas of green growth. In their study of union activism on green issues, Snell and Fairbrother claim that 'convincing local union members and political leaders that ‘dirty regions’ can become a base of a new ‘green economy’ will be no easy task, but for unions in these communities it has become a more palatable, desirable, and, in some cases, more popular option' (2011: 99-100).

With an economy structured around the brown coal mining and power generation, the shift away from high-emissions energy will have a significant impact on the communities of the Latrobe Valley. The Gippsland Trades and Labour Council and its affiliated unions have been important actors in the development of a transition plan for the region. They formed the Gippsland Greenhouse Alliance with local businesses, environmental groups, community groups and government representatives to investigate ways of supporting clean-technology start-ups, develop a regional 'zero emissions' energy strategy and deliver environmental training to workers. In a similar development, the South Coast Labour Council has played an instrumental role in the development of the Green Jobs Illawarra Project. With support from the regional chamber of commerce, the Australian Industry Group, the University of Wollongong and state and local government, the initiative has sought to promote the Illawarra region of NSW, long associated with the coal and steel industries, as an ideal investment opportunity for sustainable industrial development (Snell and Fairbrother, 2011: 93-96).

The Mining and Energy Division of the Construction, Forestry Mining and Energy Union (CFMEU) has been a leading advocate for public and private investment in the research and development of geosequestration and carbon capture and storage (CCS) technology. This has formed an important part of the CFMEU's strategy for helping the communities in the Hunter Valley reliant upon the black coal mining industry to make a successful transition towards a low-carbon economy. The CFMEU has taken a progressive position on climate change, by supporting the introduction of carbon pricing, while also seeking to protect the livelihoods of its members and their communities. It does not want to see a cessation of coal mining, as some environmental groups would have it, but rather the transformation of the industry into one that produces 'clean coal' (Snell and Fairbrother, 2011: 88-89; cf.

Pearce and Stilwell, 2008: 126-129). To this end, the union's advocacy has been relatively successful thus far. According to Rafferty and Yu:

> It may seem paradoxical, but employment prospects in the coal industry in Australia are extremely good even in the light of acknowledged climate change demands. If anything, a shortage of skilled labour exists in (especially the export) coal industry. New mines, and the expansion of existing mines, will see the mining workforce grow, while CCS represents a new industry stream, with new skills demands (2009: 23).

The Australian Manufacturing Workers' Union (AMWU) is similarly strident in its defence of its members' interests, while at the same time taking a progressive stance of the need to shift towards a more sustainable economy. The immediate impact of the transition to low carbon on the Manufacturing sector is likely to be adverse. Nevertheless, the union has adopted a policy position focused on government intervention in the form of a carbon tariff to be imposed on imports, financial support to help green industrial development and assist workers adversely affected by carbon pricing, and for legal changes to allow unions to negotiate environmental standards into collective agreements. These positions have been informed by the views of its members towards climate change and government policy, which the AMWU has also sought to evaluate and educate through extensive membership engagement. The union played a key role in the development of the Green Car Innovation Fund and government support for the development of low-emissions vehicles by the major automotive manufacturers (Goods, 2011: 59-60; Snell and Fairbrother, 2011: 90-91).

Not all unions have taken entirely proactive or progressive positions on climate change. The Australian Workers Union (AWU) has said that it would not support a carbon tax if it meant the loss of ‘a single job’ and cautioned against such a policy in the absence of a global agreement. The union has called for protection and compensation for affected workers and businesses and for the introduction of 'carbon insurance scheme'. However, the AWU has also sought to work with major steel, aluminium production and mining companies to find ways of reducing their emissions (Goods, 2011: 60-61; Snell and Fairbrother, 2011: 87-88).

The AWU’s position is symbolic of the 'considerable caution, if not resistance, in some sections of the union moment to embracing a comprehensive ‘green jobs’ agenda' (Spies-Butcher and Stilwell, 2009: 120). Similar to the manner in which business groups have supported climate action on the condition that it causes them no disadvantage, many

unions have specified no job losses as a precondition of their support for climate action. For instance, the Canadian Auto Workers' Union has been a vocal advocate for action on climate change mitigation, but explicitly rejects any measure which they believe could threaten job prospects for their members (even though automotive vehicles remain a large emitter of carbon gas) (Hrynshyn and Ross, 2011). In their comparative study utilising interviews with senior peak-body officials from around the world, Rathzell and Uzzell (2011) found that unions consistently prioritise job security where they perceive a trade-off with climate change mitigation. The CFMEU is emblematic of tensions within the union movement over climate change. While CFMEU's Forestry Division has actively opposed climate change mitigation, its Mining and Energy Division has been a longstanding and strident supporter of public policies and business strategies to reduce carbon emissions (Goods, 2011).

2.6 Employee voice and bargaining in the transition to a low-carbon economy

There is some evidence that employers and unions are working together to promote carbon mitigation at the enterprise-level. This can include consultation arrangements and joint labour-management committees which collaboratively develop workplace-oriented policies for carbon reduction. Expanding the functions of health and safety committees and building on an established record of workplace collaboration have been part of co-determination strategies used in Germany, Belgium, France and the chemical industry in Italy (Dupressoir, 2009; European Commission, 2010; UNEP, 2008). The training and promotion of 'environmental delegates' and employee participation have also been features of Argentina's approach to climate mitigation (UNEP, 2008). In the United Kingdom, a 'green workplaces' campaign by the Trades Union Congress has resulted in organisations training 'green representatives' to conduct audits, identify energy savings, and represent workers on workplace environmental committees (TUC, 2013; TUC, 2010; European Commission, 2010; Eurofound, 2011; UNEP, 2008). By contrast, in Germany a 2001 revision of the Works Constitution Act enshrined in law the right of work councils to co-determination of environmental issues in corporations (European Commission, 2010; Eurofound, 2011).

Collective bargaining has also been described as essential to meaningful democratic participation in climate mitigation (Olsen, 2009). Germany largely leads the way in this regard: its companies and unions have concluded agreements on environmental matters

since the 1980s, which has been further boosted by the revision of its Works Constitution Act and the country's efforts to combat climate change at the national level (Olsen, 2009). In Argentina, a 'framework environmental agreement' between unions and the government encourages workers and managers to include environmental clauses in workplace collective agreements (UNEP, 2008). Belgium's 'eco-vouchers' system, where vouchers for environmentally friendly products are used as a form of incentive-based pay, is implemented through collective bargaining agreements (Eurofound, 2011). Collective bargaining has also occurred over environmental matters among firms involved in the UK's 'green workplaces' initiative (TUC, 2013; European Commission, 2010).

Even in the relatively supportive environment of Europe, collective bargaining over climate change remains relatively rare. The European Commission concludes that 'there is little sign of the 'mainstreaming' of the low-carbon economy into "standard" industrial relations' (European Commission, 2010: 156). At this stage, there is little reason to believe that the emerging low carbon industries are likely to change this situation. Businesses in the emerging renewable energy and 'green' biotechnology sectors are reported to have low levels of union representation, minimal provision for employee decision making, and low collective bargaining coverage (UNEP, 2008, European Commission, 2013).

The Australian context also presents some additional challenges. Where in Europe ambitious targets and policies for climate change mitigation have broad support from labour market actors at the industry and organisational level (Eurofound, 2011), in Australia the ongoing uncertainty and controversy over the future of climate policy may not lend itself to prompt action and commitment. Moreover, the provisions of the Fair Work Act do not give clear support for bargaining on climate change issues. In fact, there appears to be explicit prohibition on the inclusion in enterprise agreements of terms that would require an employer to 'commit to climate change initiatives' (Commonwealth of Australia, 2008: 673). This is based on a premise that such measures do not 'pertain to the employment relationship' as required by the Act. It should be noted that clauses which impose an environmental obligation on employers (for instance, the meeting of a particular target) have generally been rejected more readily than those which impose obligations on employees. However, there does seem to be some allowance in both theory and practice for the creation of consultation clauses regarding environment issues and climate change

mitigation, because these deal with decision making processes rather than substantive commitments. Environmental issues that can be clearly linked to safety or business efficiency also appear to be permitted in enterprise agreements under the provisions of the Act (Lambropoulos, 2009). Clearly, however, the law does not conceive of climate mitigation as a part of the employment relationship.

2.7 The potential and actual impact of climate change on work and labour market

Although there has been relatively little research on how the shift towards a green economy has impacted on work and employment, there appear to be some potential risks. According to Masterman-Smith, many of the green jobs created thus far have been of low quality in terms of pay and conditions and employment security. She also cautions against the possibility that new green businesses in Australia could follow the example of some of their counterparts in the US, which 'have gone to considerable lengths through restructurings, sell-offs and the use of captive labour to remove union influence from their operations and reduce wage costs' (Masterman-Smith, 2010: 323-325).

Assessment of the longer-term impact of climate change mitigation policies have, however, tended to be more positive. The more optimistic assessments contend that well-designed policies may offer a 'double dividend' of climate change mitigation and job creation (Crowley, 1999; Goods, 2010; ILO, 2011; OECD, 2012; Orlov et al., 2013; Schneider, 1997; UNEP, 2008), which could potentially fuel a 'green recovery' in carbon-intensive economies badly affected by the global financial crisis (European Commission, 2010; Labor Network for Sustainability, 2011). A large number of studies contend that renewable and low-carbon energy is likely to have a greater labour intensity, and thus a higher jobs potential, than more carbon intensive sources (Bowen, 2012; Martinez-Fernandez et al., 2010; OECD, 2012; Rosemberg, 2010; UNEP, 2008). Others suggest there is significant potential for so-called 'green jobs' to fill labour market gaps vacated by sectors tied to carbon-intensive energy production, many of which are already experiencing employment decline due to increased productivity, lower labour intensity, and declining production unrelated to climate mitigation (Donaldson et al., 2009; Fankhaeser et al., 2008; Martinez-Fernandez et al, 2010; Pearce and Stilwell, 2008; UNEP, 2008).

Such optimism must be treated with caution. Positive assessments of the impact of climate change mitigation on the labour market are often qualified, with activist fiscal policies including direct labour-market interventions and investment in skills commonly cited as preconditions for significant employment creation (Ashford et al., 2012; Babiker and Eckaus, 2007; Barrett et al., 2002; Bowen, 2012; EMCO, 2009; Pearce and Stilwell, 2008). This line of reasoning implies that policies aimed at penalising carbon emissions, such as carbon pricing, are unlikely to result in positive outcomes without government intervention to offset the potential negative impacts of such policies on employment. Indeed, the European Commission (2013: 164) seems largely to have abandoned optimism about a 'double dividend', concluding that, 'it is now generally assumed that overall there will be little net gain in the number of jobs'.

The Australian Council of Trade Unions (ACTU) has been a progressive advocate for the transition to a green economy, but its policy positions have been criticised for their naivety. A report by The Australia Institute took issue with the ACTU's support for the original incarnation of the government's carbon pricing policy on the grounds that the package would not have created many green jobs nor significantly reduced carbon emissions (Eren et al., 2010: 14). Similar criticisms could perhaps be made of the highly optimistic scenario for employment and business growth in low-carbon industries that the ACTU presented in a joint report published with the Australian Conservation Foundation (ACF) in 2008. The report found that up to 500,000 additional jobs (above baseline projections) could be created by 2030 in renewable industries such as energy efficiency (with a growth potential of 75,000 new jobs), sustainable water systems (66,000), biomaterials (33,000), green buildings (230,000) and waste and recycling (50,000). These industries were said to have the greatest potential because of their strong projected demand (both domestically and internationally) and an existing industrial and research and development base (ACF-ACTU, 2008).

The ACF/ACTU report was not a projection of then existing government policy, but rather an indication of the maximum growth potential if a comprehensive policy package was implemented, as Pearce and Stillwell point out (2008: 124). Specifically, the report's growth assessment was conditional upon the introduction of a carbon pricing scheme, the creation of a national energy efficiency strategy, major investment in the retrofitting of housing and

infrastructure and installation of rainwater tanks and solar panels, and a large increase in training and infrastructure investment (ACF-ACTU, 2008: 10-11). A policy package as comprehensive as this seems further from being realised and the report made little comment about the challenges of managing the decline or transition of high carbon industries.

A 2008 report by the CSIRO of the employment impacts of the shift towards a low-carbon economy also presents a positive outlook. It earmarks the energy, construction, transport and logistics, agriculture (specifically crop and livestock production) and nutrition industries - which together account for around three-quarters of total emission and resource use - as requiring 'a fundamental change in the organisation, design and actual activities'. The report found that 'a rapid transition to sustainability would have little or no impact on national employment' in overall terms and would in fact create between 230,000 and 340,000 new jobs based on its projections. This would include above-trend employment growth in various sectors currently characterised as high-emissions, with large increases in Construction and Transport, and below trend growth in Manufacturing. Employment fluctuations within sectors are also likely. For instance, within Transport there would be a movement in employment away from road freight and towards public modes of transport. However, these outcomes as a whole would occur only with a wholesale shift away from carbon-intensive industries such as coal toward renewable energy, from cars to public transport, extensive retrofitting of insulation and uptake of solar energy among households, a change in eating habits away from meat consumption and a decline in minerals extraction (Hatfield-Dodds et al. 2008: 1, 12-15).

More certain than any counts of net job effects is the fact that any transition will involve qualitative changes in the composition of employment. There are few if any assessments predicting a completely painless transition to a low carbon economy. On the one hand, employment creation is likely to be seen in employment associated with renewable energy sources on a range of levels including the manufacture, instalment and operation/maintenance of these technologies. The Construction sector is also seen as likely to benefit from the shift, as are industries such as water and waste treatment. On the other hand, manufacturing of less ‘green’ products is likely to be an area where employment declines, in addition to jobs in more carbon intensive energy generation. (EMCO, 2009:6).

In addition to these changes in the types of jobs available will be changes in the ways existing jobs are performed. The European Commission (2013:163) reports that 'the vast majority of jobs... will have to become "greener", i.e. generating less environmental impact, and this will require new skills and attitudes'. The likely transformation of a broad range of jobs in response to climate change means that even those with jobs not traditionally considered 'green' will often require new 'green skills'. The European Commission (2013) has contended that the skills effects from the transition to a low-carbon economy will be more significant than the impact on careers and job security. Indeed, skills development programs have been a key feature of employer-initiated climate mitigation programs across much of Europe (SustainLabour, 2013). On-the-job training, as well as new qualifications and course programs, are likely to play a significant role in meeting the needs for new 'green skills' from industry (Rafferty and Yu, 2010).

In this vein, the CSIRO report also specifies that 'achieving the transition to a low carbon sustainable economy will require a massive mobilisation of skills and training - both to equip new workers and to enable appropriate changes in practices'. It lists a number of new skills that will be particularly important in facilitating the transition, including planning and design, green trade skills, marketing and communication and managerial skills (e.g. leadership, project management, procurement) (Hatfield-Dodds et al. 2008: 22-24). Other studies have identified new skills that will be required among engineers, financial and legal professionals and educators owing to the shift towards a more energy-efficient economy (Thomas et al., 2010: 3805).

The transition to greener economies presents additional challenges in regard to health and safety. Emerging industries and activities are likely to create new hazards. The recycling 'industry' is particularly notable for poor health and safety conditions (UNEP, 2008; Schulte and Chun, 2009). The ILO (2011) has also speculated that increased employment in Construction may pose a challenge given the industry's poor safety record. Changes in the operations of existing industries may create additional safety challenges. While some studies find no difference in risk between 'green' and 'non green' buildings (Rajendran et al., 2009), others identify new risks for employees working on sustainable building projects (Fortunado et al., 2012). On the other hand, workplace health and safety may be improved by practices designed to reduce carbon emissions, in for example Coal Mining,

Manufacturing and Road Transport, although the literature does not substantially address this potential.

While it almost seems a moot point given the likely repeal of the 'carbon tax', there have been some attempts to gauge its impacts during its first year of operation. A study commissioned by the Institute for Energy Research (Robson, 2013), an energy industry think tank, draws heavily on anecdotal evidence of companies which have related closure decisions to the carbon tax either directly or indirectly (for example, citing energy prices, even if rises mentioned precede the 'carbon tax' introduction), to allege negative employment effects. In contrast, a report for Tourism Accommodation Australia (AEC Group, 2013: 16) admitted that 'At this stage there appears to have been little discernible direct impact from the carbon tax on official unemployment levels'; though it does point to an increase in business costs of 0.5-0.9 per cent of total business costs in the accommodation sector (ibid: 28). The Australian Industry Group (Ai Group) conducted surveys after the implementation of this package which found that carbon pricing had led to increased energy prices across the economy, with many businesses unable to pass on their costs to their clients and customers. The Ai Group said that policymakers had largely anticipated these effects on energy prices, but found that the negative impact was greater than expected for businesses in certain industries, such as food manufacturing. It also qualified its criticisms by claiming that 'the high profile of the carbon tax appears to have led to some over-estimation by businesses of the specific impact of the carbon tax on energy prices' (Ai Group, 2013). However, more rigorous analysis of employment effects as such is yet to emerge.

Overall, there is so far little evidence on how the shift towards a green economy has impacted on the labour market in Australia (aside from The Climate Institute's study on employment growth in renewable energy projects (cited in Stilwell and Primrose, 2010: 18)). At this stage, there is simply a lack of available data, according to the CSIRO, the Workplace Research Centre and other studies (Hatfield-Dodds et al. 2008: 18-19; Rafferty and Yu, 2009: 29-31; Thomas et al., 2010: 3800). Pearce and Stillwell summarise the problem for researchers in the following terms:

> The information that we currently have about potential areas of employment growth is incomplete, anecdotal and inconsistent… There is a lack of information about

> where new jobs might be concentrated and on the industries and regions that are vulnerable to job losses… More research is needed on the occupational, industrial and regional impacts of industry restructuring; the prospects for 'green jobs' in industries other than energy generation; local and regional policy challenges relating to labour redeployment and skills development; and the capacity of the organisations of business, labour and government to strategically manage the processes of transition (Pearce and Stilwell, 2008: 121, 135-136).

2.8 Conclusions

By way of conclusion to this section, it is worth noting that several of the themes outlined in the Work in a Warming World Research Programme's (2010) analysis of the Canadian research, are also relevant with respect to the Australian research. This preliminary review has identified the following issues as particularly important in informing policy and academic debates on the relationship between work and climate change in Australia particularly and globally more generally:

- Conceptualisations of 'green jobs', 'green skills' and 'green industries' are complex and contested.
- Political uncertainty is impacting on the work and climate change debate, resulting in the precise impact of climate change on work and employment at an occupational and industry level being shaped by political factors, as well as environmental and economic ones.
- Governments have an important role to play in helping labour market actors to adapt to a warming world and mitigate the effects of climate change, which is already evident at the Commonwealth and State government levels. Governments need to play a coordinating role as well as an interventionist one.
- Much of the Australian research has focused on work and employment in the regional economies characterised by heavy industries where the impact of climate change is likely to be most visible. But there is little research on its impact in urban

economies characterised by service industries, where the impact on individual jobs and workplaces is likely to be less visible.

- Among the main labour market institutions in the Australian context, unions have been a central focus of the literature, but there has been relatively little research on the role of business and industry associations. This is in contrast to the emphasis placed in research produced by the European Union on the interactions between unions and industry association. More information on the activities of State governments and ISCs is also required.
- There are some signs of climate-friendly interactions between industrial relations actors through formal collective bargaining processes and other mechanisms for employee input in organisations, but these remain exceptional and moderated by government policies.
- Any transition towards a low carbon economy is likely to lead to significant shifts in the composition of the labour market through the decline and expansion of certain jobs and industries. It is also likely to have an impact on employment relations and job quality.
- Qualitative changes in a wide range of jobs beyond those which might otherwise be considered 'green' can be expected in any transition. This has particular implications for skills needs.
- While the growth potential of certain green jobs, skills and industries has been analysed, there is little hard evidence of how this potential is translating into practice. Notions of a 'double dividend' of climate mitigation and higher employment must be treated with caution.

It seems that much work is still to be done in assessing the impact of climate change on work, employment and the labour market in Australia in particular. We require a clearer picture of what businesses and workers are doing in the process of transitioning to a low emissions economy and how jobs, skills and industries are being created, destroyed and transformed. Uncertainty remains about the impact of existing government and industry initiatives in the workplace. The large research gap about the impact of climate change on work and employment in the Australian labour market makes for a comprehensive research agenda.

3 AN ANALYSIS OF THE WORK AND CLIMATE CHANGE POLICIES OF LABOUR MARKET INSTITUTIONS

3.1 Introduction

This section of the report reviews the climate change policy positions of important labour market institutions relating to work and employment. We focus particularly on employer associations and trade unions representing the sectors considered most likely to be affected by government policies to reduce carbon emissions, namely Construction, utilities, Mining, Manufacturing and Transport. The policies of labour market actors in the Education and Public Administration sectors, which play a key role in shaping the behaviour of firms in these energy-intensive sectors, are also examined. While our focus is mainly on employer associations and trade unions, we also look at the policies and practices of significant commercial and public organisations in these sectors, including AGL (utilities), Linfox (transport) and TAFE NSW (education).

Several themes emerge from our review. The policies of labour market actors in the sectors examined concentrate on a range of work and employment issues relating to the transition to a low-carbon economy:

- the employment and business opportunities and costs
- changes to work and business practices (including training)
- employee engagement initiatives (including enterprise bargaining)
- stakeholder engagement initiatives
- practices to reduce organisational footprint

In addition to these issues, there is considerable focus in the policy positions of labour market actors on Commonwealth government efforts to reduce carbon emissions across the economy. The actual and anticipated impact of government initiatives on business and employment issues have strongly influenced the climate change policies of employer associations, trade unions and other key organisations. Accordingly, we examine the labour market institutions' statements of support (or otherwise) for government climate change policies, insofar as they relate to work and employment. Our research approach has involved a systematic review of the policy statements, submissions and media releases of 25

labour market actors and key organisations (see Appendix I), as well as relevant media coverage of these their policy positions. The analysis also incorporates comments from representatives of these actors and organisations that were interviewed for this project.

3.2 Employment and business opportunities and costs

An interesting (but not necessarily surprising) feature of the policy review is that trade unions tend to be more optimistic than employer associations of the business and employment impacts of climate change. In its climate change policy adopted in 2012, the Australian Council of Trade Unions (ACTU) states its endorsement for analysis that over 770,000 additional jobs could be created by 2030 across the economy, including in carbon intensive sectors such as Manufacturing and Mining, if 'strong action' is taken immediately to reduce carbon emissions. Such an outcome is contingent upon the implementation of 'a price on carbon pollution, a more active industry policy, additional funding for research and development, improved regulatory settings and increased public and private investment' (ACTU, 2012; 2011a).

ACTU policy in this area has a relatively substantial history dating from 1991. In 2007 the ACTU convened a national Union Forum on Global Warming and Sustainable Energy and published its 'Principles and Policy on Global Warming', linking climate change solutions with creation of decent jobs and raising living standards (ACTU, 2008; Burgmann, 2013. A longstanding general environmental committee developed a more specific sub committee on climate change and jobs, jointly chaired by the ACTU president (Ged Kearney since 2010) and Tony Maher (General President of the Mining and Energy Division, Construction, Forestry, Mining and Energy Union). Tony Maher was also a member of the Climate Commission established in 2011 by the Labor government to disseminate climate change science to the public, until its disbanding in 2013 by the incoming Coalition government.

As with all ACTU committees, the climate change committee was open to representatives from all affiliates, but the key participants have represented a cross section of blue and white collar unions, notably the Construction, Forestry, Mining and Energy Union (CFMEU), Australian Manufacturing Workers' Union (AMWU), Australian Workers' Union (AWU), National Tertiary Education Union (NTEU), Australian Education Union (AEU), Australian

Services Union (ASU), Australian Nurses' Federation (ANF) and other public sector unions (ACTU Interview).

In the wake of the global financial crisis in 2008, the ACTU released a joint statement under the banner of the Southern Cross Climate Coalition (SCCC)[2] outlining the potential positive economic impact of a 'green stimulus' package. The SCCC argued that 'combining strong climate policy settings with focused economic stimulus can sustain the great opportunity for green jobs growth in Australia'. The report anticipated that such a policy would create increased demand for building retrofitting and sustainable infrastructure, leading to job creation in the building construction, public and freight transportation and public utilities sectors (SCCC, 2008). In the same year the ACTU and the Australian Conservation Foundation (ACF) jointly released *Green Gold Rush* (ACF/ACTU, 2008), a report which estimated that by 2030 with the right policy settings an additional 500,000 new 'green jobs' could be created in renewable energy, energy efficiency, sustainable water systems, biomaterials, green buildings, and waste and recycling. In 2009 the ACTU and ACF also launched Union Climate Connectors, an accessible online forum for participation by union members in climate change action and providing training and resources (Burgmann, 2013). Since then the ACTU has provided a number of other documents and fact sheets on its website as resources for unionist climate change activists. A widely distributed 2011 pamphlet, *Climate Change Is Union Business*, argued that 'job creation and action on climate change are closely connected' (ACTU, 2011b).

The ACTU's affiliates also claim that climate change has had an actual or likely positive impact in the Construction, Manufacturing and Mining sectors. According to the Construction Division of the CFMEU greater demand for more energy efficient buildings has already led to changing business and employment practices in the Construction industry, with further employment opportunities likely to be created if investment in building retrofitting increases (CFMEU Construction, 2011a).

[2] Other members of the SCCC include: the Australian Conservation Foundation, the Australian Council of Social Service, the Australian Green Infrastructure Council, The Climate Institute, the Australian Institute of Superannuation Trustees, and the Property Council of Australia.

Although largely negative in their assessments of the business impact of climate change policy, Master Builders Australia (MBA) indicates that the value of existing building stock with potential for retrofitting to reduce their carbon intensity stands at $6 trillion (MBA, 2012).[3] The MBA also claims that appropriately attuned government policy could produce 'sweeping changes throughout the building and construction industry supply chain to bring Australian buildings up to green standards' (MBA, 2008).

Positive assessments of the potential workforce and business impact of climate change has been made by actors in the Manufacturing sector. For example, the AMWU claims that increased investment in and government support for clean energy technology would deliver employment growth and business innovation in the Manufacturing sector (AMWU, 2011). The AWU, representing workers in the steel, aluminium and glass manufacturing industries (among others), has argued that 'significant green job opportunities' could be created in renewable energy and carbon abatement industries (such as clean coal, geothermal energy and carbon capture and storage) 'through a combination of ETS [Emissions Trading Scheme] transition policies, investment in carbon neutral energy resources, energy efficiency measures and energy demand management, and tax credits' (AWU, 2009). According to an AWU policy officer interviewed, the incentives for organisations to reduce energy and wastage created by carbon pricing and rising energy prices has led to greater investment by many large manufacturing firms in energy efficient technology (AWU Interview).

While these actors emphasise the potential positive impact of climate change on business and job creation, others point to innovations that are already occurring. The Mining and Energy Division of the CFMEU says that there has been growth in algae farming using the exhaust gases of power stations, arising from efforts to offset carbon emissions (CFMEU Mining and Energy, 2010). AGL also indicates the benefits that are being delivered by its development of low-emission and renewable sources of energy generation, however this growth appears to be coming at the expense of declining investment in the development of new coal-fired power stations (AGL, n.d.).

[3] In another statement, the MBA says that the value of existing building stock is $3 trillion (MBA, 2009). Given the improbability that the national building stock would double in value within three years, one of the figures that the MBA cites is likely to be inaccurate.

Against these positive assessments, labour market actors also highlight the potential costs of climate change to business and employment. The AWU claims that government policies designed to increase the cost of carbon emissions, without adequate protection or assistance policies, would impact adversely upon business and employment in emissions intensive manufacturing and resources industries. This is especially the case for trade-exposed industries that cannot easily pass on the costs to customers (such as steel, aluminium, glass, cement, paper and plastics manufacturing, and oil, gas, petrochemicals, bauxite and iron ore mining and exploration) (AWU, 2009). The Australian Industry Group (Ai Group) has also claimed that the competitiveness of trade-exposed industries, especially in the Manufacturing sector, are likely to be damaged by emissions-reduction policies that do not include assistance measures, because these industries have less capacity to pass on the costs to their customers (Ai Group, 2011). An Australian Chamber of Commerce and Industry representative interviewed claimed that small and medium-sized firms that were not able to pass on higher energy prices to customers had to absorb the costs themselves. In some cases these pressures had adversely impacted on firm performance and discouraged them from further expanding their operations (ACCI Interview).

Unions and employer groups have made similar arguments in relation to the building construction and mining industries. For example, the CFMEU Mining and Energy says that any attempt to reduce carbon emissions without transitional support for the carbon-intensive forms of coal mining 'would cause major social and economic dislocation in certain regions and [is] not acceptable in terms of winning and retaining widespread community support for emissions reduction' (CFMEU Mining and Energy, 2010; cf. AMMA, n.d.; MBA, 2011). According to the MBA, the application of similar policies to the building and Construction sector could have a negative impact on other actors in the supply chain, including small businesses and customers (MBA, 2011). The Transport Workers' Union (TWU) has said that, unless supplemented by compensation, rising fuel costs could have an adverse impact on working conditions and business arrangements in the Road Transport sector (Scott, 2011).

3.3 Changes to work and business practices

There appears to be a reasonable amount of innovation at the enterprise level to reduce carbon emissions. Various labour market actors and key organisations have indicated the actual or potential impact of changes to business practices as an important issue in this respect. The four employer surveys conducted by the Ai Group highlight some of the changes that have occurred at the enterprise level. In a survey of 392 CEOs in the Manufacturing, Construction and Services sectors conducted in 2009 (in partnership with KPMG), the Ai Group found that a majority had planned to change business practices to reduce their carbon footprint. This was especially the case among large businesses, which were 'overwhelmingly' more likely to change their practices compared to small and medium businesses. Manufacturing firms were found more likely to take action than services and construction firms. Other key findings of the report include:

- Around 38 per cent of businesses have already taken steps to reduce their direct emissions, reduce their energy overheads; or to reduce their energy inputs per unit of production…
- Close to 70 per cent of businesses have taken steps or plan over the next three years to change their operational practices as part of their management of their carbon footprints…
- More than 60 per cent of businesses have taken steps or plan over the next three years to invest in 'cleaner' capital equipment as part of their management of their carbon footprints…
- Around 15 per cent of businesses have no plans over the next three years to reduce their direct emissions, energy overheads or per unit energy use (Ai Group/KPMG, 2009).

Rather than examining changing business practices, the main focus of the Ai Group's three surveys subsequently conducted in 2012 and 2013 largely focused on the extent to which businesses have passed onto their customers the costs imposed by the carbon pricing scheme introduced by the Gillard government in July 2012 (Ai Group, 2012, 2013a). However, the Ai Group's survey published in June 2013 reported that, for several reasons, 70 per cent of firms had not reduced their energy emissions in response to the introduction

of carbon pricing in July 2012. Of the remaining firms that had managed to reduce their carbon intensity, 77 per cent had achieved this by improving the energy efficiency of their business practices, 38 per cent by improving the energy efficiency of their products or services, and 20 per cent by investing in more energy efficient equipment (Ai Group, 2013b).

Changes to business practices to reduce carbon emissions are evident among several of the actors and organisations studied. The Victorian Trucking Association (VTA) has established a 'sustainability covenant' with the Environmental Protection Authority (EPA) Victoria to encourage its members in the freight and logistics industry to improve the energy efficiency of their business practices. The sustainability covenant is aimed primarily at reducing carbon emissions but also covers waste reduction and improving resource efficiency. The VTA and the EPA identify a range of joint initiatives to achieve these outcomes, for example, by exploring the opportunities for low-emissions innovation and working together with VTA members to reduce their carbon footprints (VTA, n.d.).

Also in the road transportation industry, Linfox has adopted more energy efficient work and business practices, including the greater use of 'green energy', more efficient use of electricity, improvements to vehicle design and tyre technology, optimisation of supply chain practices and vehicle use, the adoption of an 'Eco Driving' training program to educate its drivers on more sustainable driving methods, and the creation of a 'green workplace culture' (Linfox, 2012; Linfox Interview). The 'Green Fox' strategy complements a commitment to safe driving practices, which dovetails with the TWU's Safe Rates strategy for improving pay and safety for tuck drivers. Consequently, the TWU has cooperated strongly with Linfox, and the VTA and Road Transport Association in this area. (TWU Interview; TWU 2013a; Rawling and Kaine, 2012). In addition, the National Heavy Vehicle Regulator, with NSW and Commonwealth government support, in 2013 began developing a Five Star Trucking Safety rating/accreditation system, which links safety and environmental considerations (TWU Interview; NHVR 2013).

An AWU representative interviewed claims that the creation of new jobs in renewable energy industries has also led to employment growth indirectly in other industries, citing the example of increased demand for steel manufactured products generated by the production of wind turbines (AWU Interview). For the gas and electricity retailer AGL, the shift in its business profile towards renewable and more efficient forms of energy has not substantially

altered the nature of jobs within the organisation, but it has required workers in varying roles (for example, engineers and customer-facing employees) to acquire new skills and knowledge, according to one manager interviewed (AGL Interview).

As part of their efforts to encourage Australia's transition to a low-carbon economy, Commonwealth and State governments have played a proactive role in reforming work and business practices across the public sector. The Australian Government has incorporated mandatory standards into its procurement practices relating to the environmental performance of ICT goods purchased by government departments and agencies. This policy, known as the ICT Sustainability Plan, aims to promote 'more environmentally responsible products and services, improve product stewardship, avoid unnecessary demand and consumption, and assess ICT products on a life cycle impact basis', in order to reduce the carbon footprint of the Commonwealth's ICT operations (Commonwealth of Australia, n.d. (a)).

Similar policies adopted by the NSW Government are emblematic of state government efforts to reduce the carbon intensity of their own business practices. The Sustainability Policy represents the NSW government's attempt to 'lead by example' in reducing carbon emissions and other areas of sustainable practice, such as procurement, waste management and water and energy use. It contains specific targets to reduce carbon emissions in building energy use, minimise usage of green energy power, reduce potable water consumption, include green lease scheduling in all new and negotiated leases of government tenanted building, improve performance measurements under the National Australian Built Environment Rating System and the Minimum Energy Performance Standards Scheme, achieve a 20 per cent reduction in the carbon emissions of government fleet, and increase use of recycled content (such as paper). The policy is mandatory for all NSW Government agencies and its adoption is 'strongly encouraged' among local government and public trading enterprises (NSW Government, n.d.).

According to labour market actors representing other industries, the changes to business practices adopted in response to climate change have been rather limited. The university sector was identified by one NTEU official as a major carbon emitter, especially because of use of electricity, as well as paper. Real savings could be made in measures designed to reduce electricity usage, which would reduce costs and lend support to universities as good

corporate citizens. More extensive use of videoconferencing would also have a major impact because of the substantial travel involved within multi-campus universities for meetings, and for national and international academic conferences (NTEU Official).

The CFMEU Mining and Energy Division has argued that carbon capture and storage (CCS) technology is a viable mechanism to offset carbon intensity and thereby allow the coal mining, electricity generation, oil and gas extraction industries to adapt to a low-emissions economy. The union says that the level of investment in CCS technology by business and institutional investors is relatively insubstantial and much smaller than the amount necessary to substantially reduce carbon output in these industries. In the absence of effective price signals to penalise high-emissions forms of power generation and incentivise low-emissions forms, 'there is no commercial or business rationale whatsoever for pursuing CCS technologies', according to the union (CFMEU Mining and Energy, 2010).

Another new technology which is being adopted in the sector as a result of the carbon price is the drainage and flaming of methane gas, instead of allowing it to seep into the atmosphere. In some instances it has been used for power generation, and in other cases old workings have been sealed to prevent seepage. For miners, of course, methane is an important issue because of health and safety implications in the potential for explosions. However, low concentrations of methane that are commonly breathed in mines may now be separated and burnt by voxidisers, involving new technology partially funded by the Commonwealth Labor government in its carbon package (CFMEU Interview).

The Australian Coal Association, representing black coal producers, supported a carbon trading scheme for ten years until it was subsumed into the more broadly based Minerals Council of Australia in August 2013. Although the Association's support for carbon trading was conditional on it not costing anything for producers, in 2003 it also established the COAL21 initiative, bringing together the coal and electric power industries, unions, Commonwealth and State governments, and research organisations. Supported through a voluntary company levy, the fund committed $1 billion to support research, development and demonstration of low-emissions coal technologies in a number of projects (ACA, 2013; CFMEU Interview).

3.4 Skills and training

Skills and training has been another focus of attempts to make work and business practices more energy efficient. Institutional support for training is one area where this is relevant. The ACTU has said it will 'support training to make existing and new jobs environmentally sustainable' (ACTU, 2012), although whether this support is more substantial than simply giving support for government training policy and initiatives is unclear.

Training is an important part of the NSW Government's policy to support workers and businesses transition to a low-emissions economy. Its Industry Partnership Energy Efficiency Training Resources aim to 'help managers and staff to make business operations, products and services more energy efficient and less carbon intensive'. Around 30 training projects have been developed and delivered under this scheme in partnership with various universities, TAFEs, institutes and industry associations. Specific accredited and non-accredited training courses are offered to the following sectors: business services and professions (including small business, hospitality and clubs), manufacturing and engineering, building and construction, retail services, renewables, and telecommunications. Courses are tailored to the needs of each industry, with the topic areas covering key concepts, workplace sustainability, staff engagement, efficient energy practices, energy management, renewable energy usage (NSW Government, n.d.).

Beyond its central role in delivering these training programs, TAFE NSW has developed a broad agenda to assisting firms improve their internal carbon management capabilities. TAFE NSW's Green Skills initiative is focused on helping businesses to design and deliver sustainable workforce development plans incorporating training relating to energy efficiency, new technology, resource usage and sustainable management practices (TAFE NSW, n.d.). Industry associations have established training similar programs aimed at encouraging their members to develop low-carbon business practices. For example, the EcoSmart Electricians program created by the National Electrical and Communications Association (NECA) delivers accredited training to electrical contractors in the use and installation of energy efficient products and technology (NECA, n.d.). One university, Deakin, has also introduced an environmental unit taught across all degrees (NTEU Official). However, some organisations such as the ACCI are more sceptical about the growth of green skills, with one representative claiming that the roll-out of new equipment and

technology associated with renewable energy generally requires the use of existing skills rather than the development of new ones (ACCI Interview).

Notwithstanding these activities among labour market actors and key organisations, the extent to which low-carbon business and work practices have been adopted remains unclear. Some organisations have conducted membership surveys to address this knowledge gap. For example, in its 2009 employer survey, the Ai Group found that 55 per cent of firms did not have the adequate internal capabilities to respond to a carbon pricing scheme, and that 60 per cent of firms intended to take steps to improve the capabilities of their staff to this end. Training and skills investment is one potential avenue to achieve this objective, although this avenue is not specifically mentioned in the survey. Around 45 per cent of respondents said they would use external assistance to improve carbon management capabilities, which could possibly be used as an alternative (but also a complement) to increased staff training. The survey found that large firms were far more likely than medium and small firms to consider improving their staff capabilities (and also to seek external advice), but that these intentions did not vary significantly by sector (Ai Group/KPMG, 2009).

3.5 Employee engagement initiatives

Several actors and organisations have promoted employee engagement as one way of helping business to identify energy efficiency savings. Linfox has created 16 ‘sustainability teams’ across its organisational structure to monitor progress around the adoption of energy efficiency goals relating to supply chain management, green energy, vehicle usage and technology, among other issues (Linfox, 2012). The use of more sustainable forms of energy at AGL has made it a more attractive organisation to work for and led to increased commitment among younger employees, according to one manager interviewed (AGL Interview).

The ACTU’s climate change policy includes formal support for measures to promote employee engagement, including through the creation of joint committees to allow employees to have input into management decision-making on environmental issues, as well as employee rights to information regarding workplace emissions and new

technological adoption. The ACTU also supports the use of enterprise bargaining as a mechanism for workers and managers to jointly develop energy efficiency and waste management strategies (ACTU, 2012).

The National Tertiary Education Union (NTEU) formally supports the creation of 'sustainability committees' to give university employees (and also students) the opportunity to discuss environmental issues with management and to assess the implementation of sustainable business initiatives. Branch climate change committees were established from 2006, as well as a national committee, and the Victorian State Division dedicated an officer to the issue. Kits were distributed to university branch 'champions' to communicate on climate change, and a regular newsletter was devoted to it for a period. Much of this activity has faded more recently, however, because of resource constraints and emergence of other policy priorities (NTEU Official).

Advancing energy efficient practices has been a key priority of the NTEU's enterprise bargaining agenda in recent years. The union has relied extensively upon this process to negotiate for the creation of sustainability committees in universities' enterprise agreements (NTEU, 2010). At a leadership level the NTEU drove this approach in enterprise bargaining in 2009-10 because the union identified universities as major carbon emitters (NTEU Interview). However, insertion of environmental commitments into enterprise agreements was often resisted by universities, who often considered that they were already acting in this area or that it was not important, and feeling in some NTEU branches was similar. University resistance was particularly strong over the inclusion of enforceable clauses in agreements. Consequently, many of the clauses in NTEU enterprise agreements contain general commitments rather than specific measures regarding committees and other structures, consultation and employee voice. Only some agreements contained KPIs regarding carbon emissions. Some universities, such as Deakin and RMIT, also established particularly successful environmental committees, but in some instances these became less effective over time as they became composed of employees with designated roles rather than representatives. In the opinion of one NTEU officer who was interviewed, there is little evidence that the clauses in the enterprise agreements from 2009-10 had achieved much (NTEU Interview). In the current 2013-4 bargaining round in the sector the issue has had much less significance.

The Australian Education Union (AEU), representing public school and vocational education teachers, has also encouraged employee engagement around climate change. It has called for the creation of environmental committees consisting of teaching management, teachers, parents and students, and encouraged its members to elect workplace representatives to engage with schools principals to develop local solutions to environmental problems (AEU, 2010).

The efforts of the CFMEU Mining and Energy Division leadership to engage with its members over the issue have been notable given the leadership role of Tony Maher in the union movement and the community as a whole over climate change, notwithstanding the potential threat to employment for members in the coal industry from reduction of carbon emissions. The union gained members' support by linking the issue to support mechanisms for technological change that would enable jobs growth in an expanding market for Australian coal. Tony Maher addressed numerous workplace and delegates' meetings to explain policy, and in a 2006 plebiscite members voted overwhelmingly in favour of an emissions trading scheme. However, the insertion of environmental clauses in collective agreements has not been a strategy adopted by the CFMEU. At the workplace level local managers also have limited autonomy to engage with employees on measures to address carbon emissions, unless in some cases delegates linked this with reducing methane emissions (CFMEU Interview).

3.6 Stakeholder engagement initiatives

Initiatives to engage clients and customers has been another way that labour market actors and key organisations have sought to reduce their carbon footprints. The Education and Public Administration sectors have been especially active in this area. As noted above, TAFE NSW has worked to engage business and students around sustainable education and skills initiatives. The NSW Government has developed programs to encourage employers to incorporate sustainable practices into their business operations. Furthermore, the Australian Government's Clean Energy Future initiative and the Australian Carbon Trust were created for the explicit purpose of expanding funding opportunities to encourage business investment in new technologies. This is intended to reduce carbon pollution and facilitate job creation in renewable energy industries (Commonwealth of Australia, n.d. (b)).

Student engagement initiatives have been promoted by actors in the Education sector as a way of addressing the challenge of carbon reduction. For example, Universities Australia has highlighted the important role of university teaching programs in imparting knowledge and skills relating to climate change to the current and future workforce. This is achieved through the creation of entire degree programs and course units specialising in carbon management and emissions reduction, the incorporation of environmental issues into existing curricula and course material, and the enrolment of students in higher degree research programs focused on climate change issues (Universities Australia, 2008). These initiatives have in turn required universities adapt their course programs and to engage academic staff specialising in these knowledge areas.

Similarly, the AEU claims to have demonstrated its 'commitment to teaching about environmental concerns and involving students in action for change' and supports the inclusion of environmental education within curriculum. The union has emphasised the importance of the public education system for helping 'to create an environmentally sustainable future' by virtue of its 'key role in helping both students and the community understand both the issues and how both individual and collective behaviour affects the environment' (AEU, 2010).

Initiatives to engage with industry and supply chain partners have been a focus of carbon reduction in initiatives in road transportation. This is reflected in the VTA's establishment of the Sustainability Covenant with the EPA Victoria to encourage the incorporation of sustainability initiatives into business operations among its members and across the industry more generally (VTA, n.d.).

Some organisations have also established multi-stakeholder initiatives to promote dialogue and identify sustainable work and business practices. For example, The VTA encourages 'information sharing in the industry on best practice to achieve sustainability outcomes' among its members (VTA, n.d.). Universities Australia and the NTEU have both organised conferences examining the impact of carbon reduction and to identify the appropriate response among their members, industry stakeholders and policymakers (NTEU, 2011; Universities Australia, 2010). The ACTU has attempted to orchestrate a coordinated response to climate change among its affiliates. For example, it has developed policy affirming 'the union movement's enduring commitment to addressing climate change' that

encompasses the involvement of members in workplace initiatives to reduce carbon emissions (ACTU, 2012). It also established the Union Climate Connectors campaign, in conjunction with the Australian Conservation Foundation and the Australian Council of Social Service, to involve union members in workplace and community initiatives aimed at increasing awareness of sustainability issues. Under the banner of the SCCC, the ACTU has also engaged with civil society organisations in developing unified policy recommendations to assist industries in the transition to a low-carbon economy (SCCC, 2011).

3.7 Initiatives to reduce organisational footprint

The adoption of policies by labour market actors and key organisations to reduce their own carbon footprints is another theme emerging from the policy review. A number of major corporations, including for example the major Australian banks, Unilever, and Proctor Gamble, to mention only a few, have environmental targets. The NSW Government has pledged to become carbon neutral by 2020 through reforms to the energy usage, purchasing and waste and fleet management practices of all government agencies (NSW Government). The requirement of all large Commonwealth agencies to implement an ICT management plan is part of the Australian Government's commitment to improve the carbon management and environmental performance of its own operations (Commonwealth of Australia, n.d. (a)).

TAFE NSW Institutes have improved their sustainable management through various initiatives including resource audits of energy and water usage, the installation of renewable utilities and waste recycling (TAFE NSW, n.d.). In the university sector this has also occurred, together with videoconferencing for meetings in multiple campus universities, encouragement of public transport, bicycle use and car sharing by staff for commuting. (NTEU Official). As part of AGL's commitment to improve carbon efficiency, it publishes the carbon impacts of its operations, investments and supply chain, and benchmarks its energy performance against competitors (AGL, n.d.).

Linfox's program of adoption of sustainable management practices (outlined above) set a target of 50 per cent reduction in carbon emissions by 2015, based on a 2007 baseline; by the end of June 2013, 43 per cent had already been achieved. The Linfox strategy has been driven from the top level of management, because of strong commitment to the

environment as well as identifying these measures as an important part of competitive strategy. Fuel bills have been substantially reduced. (Linfox, 2012; Linfox Interview).

Among labour market actors, the NTEU has adopted policy formally committing to a reduction of its own environmental impact. This is achieved through improvements to waste management and procurement practices, the adoption of sustainable energy sources and reducing the carbon impact of work-related travel among its employees. The aim of this policy is to reduce the NTEU's greenhouse emissions by 60 per cent by 2020 and to improve its use of renewable energy by 30 per cent by 2015 (NTEU, 2010). The AEU has also required all of its branches to develop plans and participate in environmental audits in order to reduce the union's carbon footprint (AEU, 2010).

3.8 Responses to government climate change policy

A widespread belief that government policies influence the business and workforce impact of climate change is a strong undercurrent emerging from our review. The ACTU was particularly forthright in supporting both the Rudd and Gillard Labor governments' policies for reducing carbon emissions, urging even stronger targets (Burgmann, 2013). Calls for greater government support for industries with the potential to flourish (such as renewable energy industries) and/or government assistance to those that may struggle to survive in a low carbon economy (such as high users of carbon intensive energy) have been made by various trade unions and industry associations. For example, the ACTU has advocated significant public investment to help the transport, building construction and energy sectors reform their business practices to become less carbon intensive (ACTU, 2012; Burgmann, 2013). The Business Council of Australia (BCA) has encouraged the adoption of government policy that assists trade-exposed industries and supports research and development in low-emissions technology (BCA, n.d.). According to the MBA, 'policy to ensure existing buildings become more energy efficient is the most effective way of achieving carbon abatement' (MBA, 2012). Positions similar to these have also been adopted by the Minerals Council of Australia (MCA), the Ai Group, the MBA, AEU, AMWU, AWU and the CFMEU Mining and Energy Division.

Several labour market actors have issued formal statements regarding the effectiveness (or otherwise) of government climate change policies in assisting their constituents to adapt to

a low-carbon platform. Unions in the public utilities industries claim that Gillard government's decision to introduce a carbon price had a positive impact on job growth and business practices. According to the CFMEU Construction Division, 'there is no incentive for big polluters to spend the money on new technologies to achieve those goals' in the absence of a carbon price. By contrast, carbon pricing is positively impacting on business practices: 'designers have come up with solutions, manufacturers are already producing the products and workers are being trained to make construction "cleaner" and the buildings healthier for those using them' (CFMEU Construction, 2011b). The Electrical Trades Union (ETU) supported the Gillard government's carbon reduction initiatives for similar reasons: 'by putting a price on carbon while supporting renewable energy targets, opportunities for green industries and carbon reducing initiatives will grow. And with that growth, comes growth for our members in green jobs' (ETU, 2011).

The industry assistance policies of the Gillard government has been effective in neutralising the potential risks of carbon pricing on business and workers in energy-intensive industries, according to some labour market actors. The ACTU supported the Gillard government's Clean Energy Futures package as an appropriate policy for helping workers and businesses adjust to a low-carbon economy (ACTU, 2012; Burgmann, 2013). This package introduced a carbon price with the aim of reducing carbon emissions, which was supplemented by other policies to encourage investment in clean energy technology and to assist emissions-intensive trade-exposed industries. Prior to the implementation of the carbon price, the AWU expressed concern regarding its impact on employment in the steel and aluminium manufacturing industries (AWU, 2011a). However, it was satisfied that Gillard government's accompanying assistance package was broadly effective in supporting firms and workers in these industries (AWU, 2011b). According to an AWU policy officer interviewed, the assistance package provided an appropriate 'balance between protecting jobs and protecting the environment' (AWU Interview). The TWU also claims that the provision of offsets for truck drivers has effectively cushioned the potentially negative impact of carbon pricing on the road transport industry (TWU, 2013b).

Trade unions have thus been responsible for these largely positive assessments of the work and business impact of policies implemented by the Gillard government to facilitate reductions in carbon emissions across the economy. By contrast, industry groups have been

more negative in their assessment of the enterprise-level impact of these policies. The Ai Group gave support to the Gillard government's assistance policies for the Manufacturing sector, but was critical of other aspects of the Clean Energy Future package, such as the 'unnecessarily high start price' of the carbon pricing scheme and 'insufficient upfront support for less emissions intensive businesses' (Ai Group, 2011). The Ai Group's surveys conducted after the implementation of this package found that carbon pricing had led to increased energy prices across the economy, with many businesses unable to pass on their costs to their clients and customers. The Ai Group said that policymakers had largely anticipated these effects on energy prices, but found that the negative impact was greater than expected for businesses in certain industries, such as food manufacturing. It also qualified its criticisms by claiming that 'the high profile of the carbon tax appears to have led to some over-estimation by businesses of the specific impact of the carbon tax on energy prices' (Ai Group, 2013a).

Various industry groups have been less circumspect in their claims that the Gillard government's climate change policy has negatively impacted upon job prospects and business competitiveness in their industries. An ACCI representative interviewed claimed that carbon pricing has increased the cost of energy for small and medium firms, with the burden greatest for those in the Manufacturing sector (ACCI Interview). According to the MBA, the carbon pricing scheme would have a 'substantial, adverse impact' on the Building and Construction sector, especially smaller firms (MBA, 2011). The MCA asserted the design of carbon pricing policy meant that Australian firms faced a higher penalty for generating emissions than their counterparts in other countries where carbon prices are lower or non-existent. As such, 'the carbon tax imposes costs on the minerals industry that none of Australia's resources competitors will face', according to the MCA. 'These same costs also undermine the industry's capacity to introduce the low emissions technologies needed to reduce emissions. The carbon tax is designed to slow the growth of Australia's economy and that means jobs and exports for future generations will be forgone'.

Not all employers have presented negative views about the former Gillard government's pricing scheme, however. Linfox, for instance, was among several business which appeared in a video promoting the 'carbon tax' in August 2011, though the company has since stated that it doesn't support any particular carbon policy (Ireland, 2013).

3.9 International perspective

Few Australian labour market institutions have developed strong perspectives, let alone undertaken active interventions, on the international institutional aspects of climate change policy. In this regard the ACTU is exceptional. In 2009 its president, Sharan Burrow, led a strong delegation of Australian unionists at the Copenhagen Climate Summit (Burgmann, 2013), and she has played a role in climate change activity since becoming secretary of the International Trade Union Confederation in June 2010. The ACTU was active with other unions internationally in negotiations leading to the inclusion in 2007 of a 'just transition' in consideration of workers into the United Nations Framework Convention on Climate Change (UNFCCC), an international environmental treaty negotiated at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from 3 to 14 June 1992 (ACTU Interview). The objective of the treaty is to 'stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'.

International union efforts have also led to the linking of UNFCC with the UN's Millennium Development Goals and the International Labor Organisation's (ILO) Decent Work Agenda. The ILO has also developed a Green Jobs Program in Asia. However, employers at the ILO have generally been skeptical of the need to develop a convention in this sphere (ACTU Interview).

Conclusion

This review of the policy positions of labour market actors and key organisations indicates that the impact of climate change (and relevant government policies) on work and employment has been mixed. The movement towards a low-carbon economy may have generated some increased demand for employment and skills in industries relying on renewable and efficient energy usage, such as building construction and power generation. However, it appears that the highly optimistic projections of job creation in these industries, as supported by actors such as the ACTU and some of its affiliates, have not yet come to fruition. Government initiatives to reduce carbon emissions have placed business (especially small business) in high energy consuming industries under pressure, according to some

employer associations, although it is unclear whether this has contributed to job losses in these industries.

Although employer associations have been largely negative in their assessments of the impact of climate change policies implemented by the Gillard government, trade unions have been broadly satisfied that accompanying assistance packages for affected industries have mitigated potential job losses. These contrasting judgements could possibly reflect party political factors, since unions are traditionally more supportive and have relatively more capacity to influence the policy decisions of Labor governments than Liberal/National (Coalition) governments. Employer groups may become more favourable to the climate change policies of the incumbent Coalition government, given that the influence of these groups over public policy is likely to increase.

Although the precise impact of government climate change policy on employment remains uncertain, the shift towards a low-carbon economy is clearly impacting upon work and business practices at the enterprise level. This is evident in the emissions-reduction practices adopted by organisations such as AGL, Linfox and the Commonwealth government. Many of the labour market institutions examined have tried to lead by example by embracing initiatives to reduce their own organisational carbon footprints. The policies implemented by the NSW government, TAFE NSW, the VTA and NECA also aims to encourage their members and other stakeholders (such as their clients and businesses over which they have an influence) to reduce carbon emissions. As the Ai Group's surveys indicate, a substantial proportion of organisations have adopted more sustainable business and work practices as part of their efforts to become less carbon-intensive.

4 AN ANALYSIS OF ENVIRONMENTAL CLAUSES IN ENTERPRISE BARGAINING AGREEMENTS

4.1 Introduction

This section of the report analyses the incidence of environmental clauses contained in enterprise bargaining agreements registered by the Fair Work Commission between January 2009 and December 2012. The data relating to the incidence of these clauses has been obtained from the Workplace Agreements Database (WAD) maintained by the Department of Employment (DoE).[4] Several broad patterns can be identified from our analysis of this data:

- Overall engagement with environmental issues in enterprise bargaining is extremely limited in Australia;
- Climate mitigation as an enterprise bargaining issue is even more limited, appearing as a small proportion of the low number of agreements with environmental clauses;
- The workplaces in high carbon intensive industries (such as Mining, Manufacturing, Construction, Transport and Energy) lagged behind workplaces in low carbon intensive industries (such as Public Administration and Tertiary Education), both in terms of proportional coverage among agreements and the qualitative content of their environmental commitments;
- The experience of the industries with the greatest commitment to collective bargaining over environmental issues, particularly Tertiary Education, demonstrated that employee voice can play an important role in facilitating ecological sustainability and climate change mitigation at the workplace-level.

This section outlines these findings in more detail. For most of the report, the data is separated into two separate periods: 2009-2010 and 2011-2012. The reason for this relates to a significant change by the DoE in how an 'environmental clause' is defined, making numbers difficult to compare (see below Notes on Samples). This section of the report begins with a discussion of the differences across the samples. It then discusses the

[4] The Department of Employment was known as the Department of Education, Employment and Workplace Relations until 18 September 2013

coverage and general industry characteristics of the samples before discussing how the data was coded and interpreted. Discussion of the coding results for the two periods follows before some final concluding comments.

4.2 Notes on samples

4.2.1 Changes in definition, inclusiveness and comparability

Initially, a sample of 398 agreements was coded, dating from the first quarter of 2009 to the third quarter of 2011. These were obtained through the Workplace Agreements Database (WAD) administered by DoE. However, when subsequent data was provided by DoE, it came with advice that the criteria for selection had changed, and that agreements for 2011-2012 had been reclassified. Some of the agreements were now classified as 'specific', while the inclusiveness of the sample overall had increased to include other (according to DoE criteria) more 'general' environmental commitments. For the original sample an agreement was deemed to contain an environment clause if it met the following criteria: 'An agreement provides a commitment to the environment with regard to company policy and/or legislative frameworks. This provision may include a disciplinary process for dealing with breaches, up to, and including dismissal'.

For the revised sample, however, the two classifications were as follows:

- 'Specific' environmental clause (coded between 2011 and 2012): 'The agreement provides specific environmental policies, measureable targets or other initiatives to reduce the employer's impact on the environment. This provision may include a disciplinary process for dealing with breaches up to and including dismissal'.
- 'General' environmental clause (coded between 2011 and 2012): 'The agreement contains any 'Environmental' provisions (includes any mention of 'specific' clauses above)'.

It should be noted that all agreements in the 2011-12 sample were coded as 'general', with the 'specific' classification being an additional qualifier added to some agreements. The 2009-2010 data included 322 clauses from 1.7 per cent of all agreements covering 8.7 per cent of employees. The 2011-2012 data included 1008 clauses from 6.7 per cent of agreements covering 11.3 per cent of employees. Given the difference in definitions, and

the consequent impact on sample sizes during the two periods, it cannot be concluded with any certainty that the latter period showed an increase in the rate of environmental clauses.

There may be some reason to conclude that agreements in the 'specific' category only may be comparable across the periods. All of the 2009-2010 agreements are coded as 'specific' in the newer version of the database, and these correspond with the 322 agreements for the period in the original sample. Moreover, the 76 agreements (of 376) coded as 'specific' for the period Quarter 1-Quarter 3 2011 in the new sample also correspond with those in the original sample for this period. This would indicate a decline in 'specific' agreements over time, with 322 in the 2009-2010 and 176 for 2011-2012.

However, DoE did indicate that it had 'tightened the definition' for specific codes after 2010. Moreover, no easily detectable pattern is apparent in the differences between the agreements included in the 'specific' category and the broader 'general' agreements, to the extent that some agreements with literally identical environmental clauses have been coded as either 'specific' or merely 'general'. We had developed our own classification for agreements with only a 'vague' commitment to environmental sustainability (see below). While rates of 'vague' agreements are higher among agreements coded as 'general', not all 'general' agreements were deemed 'vague' and some 'specific' agreements were deemed vague. For instance, among those classified as merely 'general', there was one agreement which committed to setting standards and targets in regard to the environment, identified a number of forms of pollution that the parties sought to reduce, and included 'environmental management' among a range of specific areas of employment. Meanwhile, among those coded as 'specific', was one agreement which simply stated: 'All employees have an obligation to ensure that the environment is protected from pollution or contamination resulting from our business'. This suggests that the DoE's classification of agreements into the 'general' and 'specific' categories was somewhat inconsistent. Thus, all that can be conclusively said about the broad data from 2011 onward is that it is more inclusive.

For these reasons, statistical comparisons will be separated across periods, with data for 2009-2010 (using only the older data set) and 2011-2012 (using only the newer data set) compared separately. Moreover, for the period which overlaps between the older data set and the new, broader data set (Q1-Q3 2011), additional comparisons may be made between

the two data sets for this period. The older data set included only 76 agreements for Q1-Q3 2011, while the newer data set for the same period includes an additional 290 agreements (366 total).

4.2.2 Bargaining Cycles

Another element to take into account when comparing the rates of agreements over time is the cycle of enterprise bargaining periods and the lifespan of agreements. Given that enterprise agreements can be registered for periods of up to four years, the total period of agreements analysed covers little more than one bargaining cycle in many cases. Differences across years in the number of agreements with environmental clauses registered may be due to bargaining periods being clustered in particular years for particular industries. For instance, the sample for 2009-2010 features a total of 21 agreements from the university sector to which the NTEU was a party, while the samples for 2011 and 2012 feature only 4 agreements from the sector. Rather than being the result of a decline in environmental bargaining by the NTEU, this seems more likely to be a consequence of the conclusion of the university sector's bargaining period, as a large number of agreements were in operation. This makes it difficult to determine the reasons for changes in the proportion of employees or organisations during different time periods. However, such factors could be identified more easily through an analysis of agreements over a longer time period covering multiple bargaining cycles.

4.2.3 Exclusions

Some agreements – 15 of 322 for the 2009-2010 period and 35 of 1008 for the 2011-2012 period – were excluded from coding. This was because either a clause clearly relating to ecological sustainability could not be found in the agreement as identified by DoE, or because the agreement could not be sourced through the Fair Work Commission. These exclusions apply when discussing statistics in relation to the application of our coding framework, discussed below. They do not apply when discussing the raw data provided by DoE.

4.2.4 Coverage

The data provided through the WAD includes the coverage and industry distribution of the environmental clauses. This encompasses information on the number and proportion of

agreements for each industry sector and the coverage of these agreements in terms of the number and the proportion of all employees represented compared to all agreements registered during each time period. Data is also provided on proportions of agreements where a union is a party.

For the period 2009-2010, 1.7 per cent of all agreements (covering 8.7 per cent of all employees covered by an agreement made in this period, a total of 184,590 employees) contained environmental clauses according to the narrow criteria for that period. The largest number of agreements in absolute terms came from the Manufacturing sector, with 91 of the 322 agreements. These included 3.3 per cent of all agreements and covered 9.1 per cent of all employees in this sector (covered by an agreement made in this period) or 17,488 employees. The Mining sector had the highest proportion of agreements (6.6 per cent of agreements in the Mining sector for this period contained an environmental clause), but a lower proportion of employees than some other sectors (6.7 per cent). The 6 per cent of agreements with environmental clauses in the Education sector covered by far the highest number of employees in both absolute and relative terms – 85,484 employees representing 30.8 per cent of all employees covered by an agreement made in this period. This sector alone accounts for 46 per cent of all employees coded as containing an environmental clause for this period. Most of these were in the university sub-sector. The Public Administration and Safety sector also covered a high proportion of employees – while only 3.8 per cent of all agreements in this sector were identified as containing environmental clauses, these covered 70,065 employees or 26.7 per cent of those covered by an agreement for this period. This represents 38 per cent of all employees covered by agreements containing an environmental clause for this period. Between them, Education and Public Administration and Safety accounted for around 84 per cent of employees covered by agreements with identified environmental clauses for the 2009-10 period.

For the 2011-2012 data, 6.7 per cent of agreements covering 11.3 per cent of employees covered by an agreement (219,150 employees) contained either a ‘general’ or a ‘specific’ environmental clause. The Education sector no longer featured heavily in this sample (only 1.4 per cent of agreements/3.6 per cent of employees), most likely because of the smaller number of university agreements registered in 2011/12 due to the bargaining cycles issue identified earlier. The Construction sector had the highest absolute number of agreements,

with 460 agreements covering 20,168 employees (10.4 per cent of all employees in the sector covered by agreements made in this period). The highest proportion of agreements was in the Electricity, Gas, Water and Waste Services sector, with 12.8 per cent of agreements, though this covered only 7 per cent of employees. The Public Administration and Safety sector was by far the most heavily featured in terms of employee coverage - 11.6 per cent of agreements for this sector covered 44 per cent of employees numbering 141,718. This sector alone accounted for 64.7 per cent of all employees covered by agreements with environmental clauses made in this period.

The 176 agreements coded by DoE as 'specific' for the 2011-12 period represented 1.2 per cent of all agreements for this period and 17.5 per cent of all agreements with environmental clauses for the period. However, employee coverage was disproportionately clustered in this group, with 111,998 employees representing 51.1 per cent of all employees covered by agreements with environmental clauses made in this period. Of these, 91,874 (82 per cent) were in the Public Administration and Safety sector. The Manufacturing sector accounted for the highest number of agreements (49) coded as 'specific', although this represented only 1.9 per cent of agreements and 3.5 per cent of employees in this sector. Again, the highest proportion of agreements was in the Electricity, Gas, Water and Waste Services sector, with 4.7 per cent of agreements, but this covered only 4.3 per cent of employees.

Union involvement is strongly correlated with the presence of environmental clauses. For the 2009-2010 period, unions were party to 225 of the 322 agreements (69.9 per cent) covering 181,988 of the 184,590 employees (98.6 per cent). This represented 2.3 per cent of all agreements with a union as a party and 10.2 per cent of employees covered by such agreements for the period. By contrast, the 97 non-union agreements represented only 1.1 per cent of all agreements made without a union and 0.8 per cent of employees covered by such agreements for the period. For the 2011-2012 period, 867 of the 1008 (86.1 per cent) of agreements covering 215,087 of the 219,150 employees (98.1 per cent) had a union as a party, and these represent 7.6 per cent of all union agreements and 11.8 per cent of all employees covered by such agreements for the period. The 140 non-union agreements represented only 3.9 per cent of all non-union agreements and 3.6 per cent of employees covered by such agreements.

Table 4.1 – Summary of sample, by industry classification and union involvement, 2009-10

Industry	Agreements	Employees	% Agreements	% Employees	Total Agts	Total Emps
Agriculture , Forestry and Fishing	3	77	0.6	0.6	504	12116
Mining	29	1830	6.6	6.7	442	27224
Manufacturing	91	17488	3.3	9.1	2762	192166
Electricity, Gas, Water and Waste Services	21	2673	7.3	10.8	288	24863
Construction	75	1684	1.1	1.4	6604	120658
Wholesale Trade	5	120	1.8	0.9	283	13064
Retail Trade	4	151	0.4	0.1	1087	267309
Accommodation and Food Services	4	284	0.5	0.2	753	163885
Transport, Postal and Warehousing	18	1207	1.5	0.8	1194	145358
Information Media and Telecommunications	0	0	0.0	0.0	165	46690
Financial and Insurance Services	1	1119	0.4	0.7	266	162751
Rental, Hiring and Real Estate Services	1	9	0.4	0.2	265	5158
Professional, Scientific and Technical Services	3	316	1.0	1.7	314	18811
Administrative and Support Services	5	118	0.8	0.2	621	53275
Public Administration and Safety	20	70065	3.8	26.7	523	262386
Education and Training	27	85484	6.0	30.8	448	277176
Health Care and Social Assistance	2	60	0.2	0.0	1327	263348
Arts and Recreation Services	7	1774	2.8	4.3	248	40900
Other Services	6	131	1.9	0.7	314	19273
Grand Total	**322**	**184590**	**1.7**	**8.7**	**18408**	**2116411**
Union?	**Agreements**	**Employees**	**% Agreements**	**% Employees**	**Total Agts**	**Total Emps**
No union	97	2602	1.1	0.8	8498	329300
Union	225	181988	2.3	10.2	9910	1787111
Grand Total	**322**	**184590**	**1.7**	**8.7**	**18408**	**2116411**

Table 4.2– Summary of sample, by industry classification and union involvement, 2011-12

Industry	Agreements	Employees	% Agreements	% Employees	Total Agts	Total Emps
Agriculture, Forestry and Fishing	4	333	2.7	3.8	146	8706
Mining	42	3981	11.4	10.0	369	39669
Manufacturing	177	20168	6.8	12.6	2587	159624
Electricity, Gas, Water and Waste Services	41	3322	12.8	7.0	321	47250
Construction	460	10581	8.5	10.4	5442	101977
Wholesale Trade	25	1106	5.5	2.4	452	46103
Retail Trade	4	755	1.7	0.2	241	323562
Accommodation and Food Services	1	8	0.3	0.0	342	26046
Transport, Postal and Warehousing	56	14701	5.3	13.5	1062	109222
Information Media and Telecommunications	7	32	5.3	0.1	132	41678
Financial and Insurance Services	3	9610	2.6	7.7	117	124975
Rental, Hiring and Real Estate Services	18	601	7.5	8.3	241	7213
Professional, Scientific and Technical Services	39	2880	9.5	9.0	412	31888
Administrative and Support Services	35	1376	6.9	3.9	508	35706
Public Administration and Safety	62	141718	11.6	44.4	535	319262
Education and Training	8	4236	1.4	3.6	570	116511
Health Care and Social Assistance	3	1156	0.3	0.3	1081	346451
Arts and Recreation Services	5	738	3.1	2.5	159	30012
Other Services	17	1848	4.6	7.9	372	23540
Grand Total	**1007**	**219150**	**6.7**	**11.3**	**15089**	**1939395**

Union?	Agreements	Employees	% Agreements	% Employees	Total Agts	Total Emps
No union	140	4063	3.9	3.6	3623	112269
Union	867	215087	7.6	11.8	11466	1827126
Grand Total	**1007**	**219150**	**6.7**	**11.3**	**15089**	**1939395**

While no clear judgement can be made about an overall increase or decrease in coverage from the 2009-2010 period to the 2011-2012 period, a comparison of the data sets indicates that coverage of environmental agreements is greater than that indicated in our original analysis, particularly in the more carbon intensive industries. The previous data set for Q1 2009-Q3 2011 showed 1.4 per cent of workers in Construction, 7.4 per cent of

Manufacturing workers, 4.7 per cent of Mining workers and 3.5 per cent of Transport workers for that period covered under agreements with environmental clauses.

For the new data covering 2011-2012, the proportions are increased to 10.4 per cent for Construction, 12.6 per cent for Manufacturing, 10 per cent for Mining and 13.5 per cent for Transport, Postal and Warehousing. The Electricity, Gas, Water and Waste Services Sector and the Education sector did see substantial decreases, but these may largely be attributed to the multifarious nature of these industry classifications and the related issue of bargaining cycles discussed earlier. However, the new data does show that 2012 did have lower coverage than 2011 both proportionally and in absolute numbers of agreements and employees covered.

4.2.5 Coding framework

As well as assessing the quantitative incidence patterns of agreements containing environmental clauses, we developed a coding framework in order to analyse the qualitative nature and substance of these clauses. The coding framework was devised from a qualitative analysis of the original sample prior to redefinition (i.e. the data set of 398 enterprise agreements registered between Q1 2009 and Q3 2011). This involved locating the agreements on the Fair Work Commission's website and then locating the relevant clauses within each agreement. In order to undertake qualitative analysis of these clauses in a systematic manner, A preliminary analysis of the relevant clauses in a representative sample of 50 agreements by industry and union/non-union breakdown was first conducted, including 15 in the Manufacturing sector; 12 in the Construction sector; four in each of the Education and Training, Utilities (electricity, gas, water and waste services), and Mining sectors; three in the Public Administration and Safety sector; and one in each of the Rental, Hiring and Real Estate services; Retail Trade; Wholesale Trade; Professional, Scientific and Technical Services, and other services sectors. Of these 50 agreements, 35 had a union party

to them, and 15 were non-union agreements, which again was representative of the union/non-union breakdown of all of the agreements with environmental clauses.

This analysis of environmental clauses in a representative sample of enterprise agreements resulted in a coding frame being devised to generate data about the incidence, nature and substance of clauses relating to a specific range of environmental and energy-savings matters in all of the agreements. The coding frame contained various categories covering specific matters identified in the initial analysis of 50 agreements (see Appendix III).

The coding frame was subsequently used to code and capture the environmental clauses of all agreements identified by DoE for the period 2009-2012, now totalling 1280 (after 50 exclusions as identified previously). Additionally, later annotation identified where clauses were identical to others so that a survey of their incidence could be included. This allowed data to be generated relating to the nature and incidence of these clauses.

4.3 Results

4.3.1 Evidence of pattern bargaining

A large number of agreements – 22 of the 307 coded in the 2009-2010 period and 491 (around 50 per cent) of the 973 coded for the 2011-2012 period – had at least one other agreement with an identical or near-identical clause. Most of these related to large (especially greenfields) construction and development projects – for instance the Gorgon Project Barrow Island, the Curtis Island Liquid National Gas (LNG) Project, the Caval Ridge Project and the Gladstone LNG Project. These projects accounted for anywhere from 5 to 30 agreements each with identical clauses. Indeed, even between projects these seemed to have been taken from a template (most likely distributed by a principal contractor or employer group) with very closely related wording and small variation if any. Moreover, the identical nature of the agreements was not restricted to the environmental clauses, but extended to other matters covered in the agreements.

The vast majority of environmental clauses for these projects were very vague and emphasised the employees' need to comply with unspecified environmental procedures and take responsibility for environmental protection generally, with no specifications for behaviour or real indication of employer commitment. The main exception to this was the

Gorgon Project Barrow Island. The project is a large project for the completion of a Liquid Natural Gas plant on Barrow Island, a renowned nature reserve site. The agreements emphasised quarantine arrangements which appeared to be part of regulatory requirements from the site. It made quite specific prohibitions on a range of employee behaviours in this regard, and specified consequences including inability to return to the site, possibly resulting in dismissal.

However, these large projects were not the only ones which showed identical or near-identical clauses across a number of agreements. The Australian Capital Territory Public Service, for instance, appears to have used a template across the various departments. Other companies had smaller numbers of agreements with near-identical clauses across various business units. These other organisation-specific clauses tended to be less vague than the agreements covering the multi-business projects mentioned above. Indeed, one organisation included identical one-page environmental policies in appendices in agreements across a small number of sites.

At least one other example appears, on the face of it, to have been union driven. On a number of agreements where the CFMEU was the sole union and was mentioned in the agreement title, a provision listing environmental issues among matters for the consultative committee to 'monitor, discuss, develop and/or recommend measures or actions in respect of' was observed. While vague, this does imply that environmental issues are something in which employee voice will play some role on an ongoing basis in those organisations.

Table 4.3 – Environmental Clauses in EBAs, Summary of Results

	2009-2010 number	**2009-2010 %**	**2011-2012 number**	**2011-2012 %**
Total Agreements	322		1008	
Excluded	15		35	
Remaining Sample	**307**	**100**	**973**	**100**
Vague	**127**	**41.37**	**704**	**72.35**
Moderately Vague	53	**17.26**	89	**9.15**
Not Vague	127	**41.37**	180	**18.5**
Co-Responsibility/Unspecified	**206**	**67.1**	**535**	**54.98**
Employee	91	**29.64**	420	**43.17**
Employer	10	**3.26**	18	**1.85**
Consultation	**76**	**24.76**	**242**	**24.87**
Mechanism	63	**20.52**	235	**24.15**
Union clearly indicated	36	**11.73**	182	**18.71**
Union a party?	70	**22.8**	238	**24.46**
Dedicated Mechanism or Representative	15	**4.89**	8	**0.82**
Pre-existing policy	**200**	**65.15**	**495**	**50.87**
Linked to OHS (not nec policy)	133	**43.32**	437	**44.91**
ISO/ASNZ Standard	26	**8.47**	25	**2.57**
Specific Behaviours or Objectives	**147**	**47.88**	**208**	**21.38**
Recycling	38	**12.38**	52	**5.34**
Waste/Efficiency	79	**25.73**	128	**13.16**
Technology/Physical Capital	28	**9.12**	22	**2.26**
Management	11	**3.58**	40	**4.11**
Work Practices/Continuous improvement	95	**30.94**	106	**10.89**
Performance	**35**	**11.4**	**41**	**4.21**
Incentive Payments (group)	10	**3.26**	14	**1.44**
Incentives Payments (individual)	2	**0.65**	11	**1.13**
KPIs/Targets	24	**7.82**	24	**2.47**
Performance Reviews	6	**1.95**	3	**0.31**
Disciplinary	45	**14.66**	74	**7.61**
Image/Confidentiality	11	**3.58**	6	**0.62**
Training	61	**19.87**	123	**12.64**
Job Classifications	17	**5.54**	67	**6.89**
Climate Language	36	**11.73**	31	**3.19**
Special Circumstances	12	**3.91**	42	**4.32**
Patterned/Mirrored	42	**13.68**	491	**50.46**

4.3.2 Vague agreements

Agreements were classified as 'vague' when the environment was mentioned as a consideration with no real elaboration on environmental objectives or how they can be achieved (except, perhaps, the existence of a policy). For example, a number of agreements contained the following clause:

> (b) Each employee is accountable to: ...(2) comply with relevant Environmental Safety and Health regulations, procedures and practices and for taking responsibility for personal safety and that of team mates… (4) participate in and comply with the Project's cultural and environmental processes.

Another such agreement simply stated: 'We value our communities and our environment. Our business cares about the world in which it operates'. Some others contained slightly more specific measures but did not expressly relate to ecological objectives, mentioning a vague desire to reduce 'waste' and some mechanisms for this, for instance. Other than specifying the onus of responsibility for environmental issues or specifying a relationship between environmental considerations and occupational health and safety (neither of which tend to indicate a greater level of commitment), agreements classified as 'vague' tended to register only one or two elements of the coding framework.

A large proportion of agreements fell into the vague category – 41 per cent of the agreements for 2009-2010; and 72 per cent (491) of the agreements coded for 2011-2012. As indicated above, a significant proportion of the latter group derived from agreements on large construction projects with similar or identical clauses. Indeed, in the Construction industry itself, 86 per cent (391) of the 455 agreements coded for 2011-2012 were coded as 'vague', and this accounts for 56 per cent of all 'vague' agreements for that period. A number of other carbon-intensive industries – including Mining, Manufacturing and Transport – also had more than half of their agreements classified as 'vague'.

Other agreements were coded as either 'moderately vague' or simply 'not vague'. Agreements which were 'moderately vague' usually related environmental sustainability to a number of elements of the coding framework but may still have been vague overall in terms of environmental commitments – for instance, they may commit to training programs or include the environment among disciplinary processes in addition to the mention of the

organisation's environmental policy. Alternatively, they may have related to one very specific behaviour related to environment. For instance: 'the College encourages staff, for economic and environmental reasons, to maximise their use of public transport and car pooling but recognises that this is not always feasible'. Seventeen per cent of agreements for the 2009-2010 period and 9 per cent of agreements for the 2011-2012 period were classified as 'moderately vague'.

Agreements which were 'not vague' made slightly more substantive environmental commitments or demonstrated substantial evidence of sustainability as a bargaining issue, and usually were coded positively among a number of elements of the framework. The previously coded data had a higher rate of these, with 42 per cent in the 2009-2010 period and 63 per cent in the period Q1-Q3 2011 (with only 23 per cent classified as 'vague'). The new data for 'general' agreements 2011-2012 had around 18 per cent of agreements classified as 'not vague', though the period Q1-Q3 2011 specifically does have a higher rate at 21 per cent. For the 2009-2010 period, the Tertiary Education and Public Administration sectors in particular were notable for having a high proportion of agreements (and employees) in these categories. Agreements registered in these sectors were especially likely to mention climate change mitigation specifically as an organisational objective, and tended to include specific goals and behaviours required by the parties and a role for consultation (elaborated below). Further, while no industry stands out in terms of having a majority of its agreements in this category for 2011-12, the Public Administration and Safety sector does have relatively the highest proportion in this period.

4.3.3 Responsibility and consultation over environmental matters

The language of the agreements appeared to assign responsibility to particular parties. Most agreements assigned co-responsibility to 'the parties'. However, around 30 per cent of agreements in the 2009-2010 period and 43 per cent of general agreements for the 2011-2012 period appeared to place the onus of responsibility on employees. This generally involved an instruction that employees comply with company-developed policies (possibly linked to discipline for noncompliance). Other agreements were less specific, for instance, insisting that 'Employees are expected to carry out their job responsibilities in an environmentally responsible manner, and endeavour to minimize any adverse impact on the environment'. However, in a small number of other agreements, mainly in the Tertiary

Education and Public Administration sectors, the primary onus of responsibility was on management to develop sustainability measures.

A number of agreements made provision for environmental issues to be discussed through consultative processes. For both the 2009-2010 and 2011-2012 data, around 25 per cent of coded agreements included provisions for consultation. The vast majority of these included the union as a party, though only just under half of such agreements for 2009-2010 and three quarters of such agreements for 2011-2012 made explicit provision for union involvement in the consultation process. A small number of agreements (15 for 2009-2010 and 8 for 2011-2012) also made provision for a dedicated environmental committee or representative. The Tertiary Education sector accounted for 10 of the 15 such committees for the earlier period.

Many of these agreements were fairly vague regarding the role of consultative arrangements pertaining to sustainability initiatives. In these instances the agreements merely included the environment among a range of issues to be discussed through consultative mechanisms (as per the aforementioned CFMEU agreements). Others integrated environmental considerations into the mandate of their occupational health and safety (OHS) committees (see next section regarding OHS). However, there were organisations which sought more substantial employee engagement in developing and moderating environmental goals and initiatives. For example, one organisation in the Construction sector appeared to specify quite extensive powers for its 'health, safety and environment committee', including policy development, review and monitoring. The Gippsland Trades and Labour Council also charged its 'green workplace committee' with making recommendations to reduce environmental resource usage in the workplace. Again, the Public Administration and Tertiary Education sectors were notable for having a particularly high rate of provisions for consultation and also for having qualitatively more substantial consultation arrangements than those generally found in other sectors. Such organisations appeared to give a substantial and ongoing role for employee voice in increasing organisational sustainability.

4.3.4 Environmental policies

Many agreements contained clauses referring to the existence of environment-related policies or procedures. Around 65 per cent of agreements in the 2009-2010 data and 51 per cent of agreements for 2011-2012 contained such clauses. Most often, references to an organisation's environmental policies emphasised the need for employee compliance. For example, 'All employees shall ensure they are aware of and comply with all environmental policies, work instructions and directions given by the Company to ensure compliance.' Many such references were vague and did little to expand upon what would be required of employees under such policies and procedures, with the provision 'as varied from time to time' added in some agreements. A small number of explicitly stated that such policies themselves did not form part of the agreement. Clauses relating to environmental policies thus often committed employees to open ended and uncertain work requirements with limited or no commitment from companies as to the nature of such requirements.

A small number of agreements did contain brief 'policies' in an appendix which outlined certain behaviour expected of employees, though these did not necessarily contain more detail than some clauses which did not make reference to 'policies'. Twenty-five agreements for 2009-2010 and 26 agreements for 2011-2012 also linked policies to implementation of the International Organisation for Standardisation (ISO) 14001 standard for environmental management. In the university sector, six agreements also made reference to the Talloires Declaration, an international environmental standard used in the university sector. It was originally prepared and signed at a 1990 international conference in Talloires, France, and currently administered by an organisation named 'University Leaders for a Sustainable Future'. The Talloires Declaration proposes a 10-point policy agenda for universities to improve their environmental sustainability, including reducing their ecological footprint through mitigation policies and propagating 'environmental literacy' as a graduate capability. Agreements that made reference to the Talloires Declaration also tended to outline measures which echoed those contained in the declaration, including the promotion of 'environmental literacy'. It is notable also that employee policy compliance was not emphasised in this sector as much as management's commitment to the development of policy and co-development of policy through consultative process.

Around 48 per cent of the 2009-2010 agreements and 21 per cent of the 2011-2012 general agreements included discussion of more specific behaviours or objectives to affect environmental mitigation, and these did not necessarily coincide with the agreements which made particular mention of 'policies'. The matters contained in these clauses included the following:

- Recycling was mentioned in 12 per cent of 2009-2010 agreements and 5 per cent of 2011-2012 agreements.
- Environment-related waste reduction and increased efficiency, including greater energy efficiency, was mentioned in 26 per cent of 2009-2010 agreements and 13 per cent of 2011-2012 agreements.
- Modifying or utilising physical capital in an environmentally friendly manner, including provisions for energy efficient building design, was mentioned in 28 agreements in 2009-2010 and 22 for 2011-2012.
- Other specific environmentally friendly work practices (including public transport use, telecommuting, use of teleconferencing and, in the Education sector, research agendas) or environmental goals linked to continuous improvement were mentioned in 31 per cent of agreements for the 2009-2010 period and 11 per cent for the 2011-2012 period.

The Electricity, Public Administration, Education and (to a lesser extent) Manufacturing sectors were all notable for frequent inclusions of some or all of these provisions.

A significant number of agreements – whether or not referring to policies or specific behaviours – linked environmental provisions to occupational health and safety, in many cases barely making any attempt to distinguish between the two. Environmental and OHS provisions were linked in 43 per cent of the 2009-2010 agreements and 45 per cent of 2011-2012 agreements. This may indicate that many enterprises view environmental considerations as an additional element of regulatory compliance (or perhaps, more optimistically, stakeholder consideration). It is notable that the Public Administration, Electricity and Education sectors tended not to make such links to OHS.

4.3.5 Disciplinary procedures and performance management

Environmental considerations were linked to disciplinary procedures in approximately 15 per cent of the 2009-2010 agreements and 8 per cent of the 2011-2012 agreements. Failure to comply with environmental policies was often cited as a possible reason for summary dismissal. In two agreements registered in the university sector, discipline was specifically linked to 'avoidable failure to follow research proposals as approved by the research ethics committee, particularly where this failure may result in unreasonable risk or harm to humans, animals or the environment' (these were the only university agreements to link to disciplinary procedures). No particular industry stood out for consistent links to discipline.

A smaller proportion of agreements – 11 per cent of 2009-2010 agreements and 4 per cent of 2011-2012 agreements – included provisions to manage employee and organisational environmental performance in more positive ways. The achievement of environmental objectives was linked to incentive or bonus payments in 12 agreements registered in the 2009-2010 period and 25 in the 2011-2012 period, and 24 agreements in each of the two periods included environmental objectives among key performance indicators (KPIs). However, these provisions generally related to reducing reportable environmental incidences rather than increasing the sustainable and environmentally efficient use of resources. At least one organisation, however, linked KPIs to continued accreditation of their ISO 14001 environmental management system. A total of 9 agreements for the two periods linked environmental objectives to employee performance reviews.

4.3.6 Environmental skills and job classifications

Around 20 per cent of 2009-2010 agreements and 13 per cent of 2011-2012 agreements made some commitment to training in relation to environmental goals or skills. Often such agreements linked this training to OHS-related training, and a number of other agreements included environmental issues among those to be covered at orientation sessions. Few such provisions elaborated at all on the kinds of skills or knowledge to be taught. One clause which appeared verbatim in several agreements simply stated: 'the Environmental Issues will be explained to you at Orientation. Please respect the Environment'.

Around 5 per cent of the 2009-2010 agreements and 7 per cent of the 2011-2012 agreements linked environmental skills or duties to job classifications. A number of such

agreements included tiered levels of duties, for instance ranging from complying with policy to involvement in developing and implementing policy. However, these clauses generally tended to be vague and brief mentions of 'environmental skills' or a specification of environmental procedures as among necessary skills at particular levels of employee (often at the lowest classification level with highest levels assumed or identical). Generally these were adopted for generic jobs, though a few agreements mentioned positions of, for example, 'environmental coordinators'.

4.3.7 Climate change

Very few agreements – 31 for 2009-2010 and 36 for 2011-12 – used language which clearly indicated climate change mitigation as a matter for consideration (e.g. mentioning climate change, global warming, greenhouse gases or carbon). Electricity companies did not account for any of these agreements. Again, universities and public enterprises were disproportionately represented among agreements committing to climate change mitigation. For the 2009-2010 period, 18 of the 31 such agreements were from universities and a further seven were from Public Administration and Safety. For 2011-12, 16 of the 36 agreements with these clauses were from Public Administration and Safety. The other carbon-intensive industries – Manufacturing, Construction, Mining and Transport – had few such agreements despite (with the exception of Mining) having a much greater number of agreements overall. It is particularly interesting that there was no substantial increase in the incidence of clauses directly related to climate change mitigation between the two periods. Given both the greater inclusiveness of the latter sample and the implementation of carbon pricing policy in July of 2012, an increased incidence would have been expected, but this has clearly not eventuated. Whether this is the result of the prevalence of 'scepticism' regarding the concept of anthropogenic climate change among the business community, uncertainty about the political climate in relation to government policy, or simply a wish to limit policy detail in agreements, or some combination, can only be speculated upon.

4.3.8 Agreements with special circumstances

Around 4 per cent of agreements for each period concerned organisations with circumstances which lent themselves inherently to environmental considerations. The Gorgon Project Barrow Island agreements mentioned above were among these. One point of interest is that there were a number of agreements covering organisations which seemed

to be inherently concerned with environmental sustainability issues, but did not have especially substantial provisions regarding engagement with such issues at the workplace level. For instance, the Department of Sustainability's enterprise agreement mentions broad organisational environmental goals and encouragement of sustainable transport. But it is surprising that the agreement makes no mention of the existence or development of a workplace environmental policy, or indeed other measures such as recycling, or energy efficient work practices. The Boroondara City Council Municipal Services relating to Built, Economic and Natural Environment Employees agreement and the Phillip Island Nature Parks agreement both mention broad community goals, but not workplace measures. Agreements in the waste management industry were consistently vague in relation to environmental concerns with little discussion of sustainability, even as an organisational goal.

4.3.9 Corporate image

A total of 17 agreements for the two periods contained provisions exhorting employees to protect the public image of the company or industry. Most such agreements had near identical wording – 'The public image of the industry (or company) is to be promoted and maintained as an environmentally conscious group with practices that enhance and preserve our environment in the most economical manner'. One agreement went further in attempting to create a commitment to confidentiality, stating that 'All parties agree to maintain the confidentiality of any matters raised and discussed by the parties (in relation to environment) which may be of a detriment to the company…' These provisions were contained in agreements registered by companies in the Manufacturing and Construction sectors. Such provisions would seem less an environmental commitment and more a commitment to manage outside scrutiny of environmental performance.

4.3.10 Penalty reimbursements

A number of agreements contained the following clause or one very similar to it in addition to their other environmental provisions:

> 29. REIMBURSEMENT OF EXPENSES
>
> 29.1. The employer will reimburse an employee any expenses reasonably incurred by the employee in the performance of their duties and on behalf of the employer.

> 29.2. The entitlement under this clause will extend to:
>
> ...ii. reimbursement of reasonable legal costs incurred or fines imposed by a competent tribunal under any applicable environmental legislation … provided that the expenses incurred were not due to, or arise from, the employee's personal default (sic) or misconduct.

This could not be coded as an 'incentive' as such, and indeed points to protection for employees regarding environmental failures rather than environmental action.

4.3.11 Ecostation and Project Zero

Two agreements in the Transport sector also made reference to the Ecostation Program. This is a scheme supported by the Victorian Environmental Protection Authority and the Victorian Transport Association involving measurement and improvement of emissions from fuel use. However, the references to the scheme in the agreements are not only scarce but also noncommittal. One agreement states only that it 'may provide for a fuel efficient driver training program conducted in accordance with the Ecostation program'. The other agreement explicitly rejects a TWU proposal for a similar scheme while agreeing only to 'hold discussions with the union about the concept during the term of the agreement'. Another two agreements for Linfox also made mention of what appears to be an industry initiative called 'project zero', which purports to target, among other things, 'zero environmental emissions'.

4.4 Conclusions

The analysis presented in this section indicates that workers and managers have engaged with environmental matters in enterprise bargaining in an extremely limited manner, with the specific issue of climate change mitigation largely absent from enterprise bargaining. Only 67 agreements of the 973 analysed for 2011-12 period included climate change mitigation as an issue. There is little evidence that bargaining over this issue increased compared to the 2009-10 period, despite the implementation of government policies incentivising climate change mitigation during the latter period. Moreover, there is no clear evidence of increasing engagement with sustainability over time; in fact, our analysis suggests that the opposite may have occurred. The new data also reinforces the idea that

carbon intensive enterprises in the private sector are vastly under-represented among those engaging with sustainability and climate change mitigation through enterprise bargaining. This is true both in the proportion of employees covered, and in the qualitative content of provisions where they do appear.

Our analysis strongly indicates that low-emissions workplaces in the Public Administration and Tertiary Education sectors are decidedly leading the way in promoting sustainability and climate change as workplace issues. Quantitative measures show that employees in these sectors make up the vast majority of those covered by enterprise agreements with environmental clauses. Qualitative measures suggest that the commitments made in agreements for these organisations tend to be more substantial than those in other sectors. The contrast between the Public Administration and Tertiary Education sectors, on one hand, and carbon-intensive private sector organisations, on the other, provokes some questions about whether different ownership and corporate governance models are more or less likely to facilitate climate change mitigation.

Our analysis strongly indicates that union-represented workforces and organisations with substantive provisions for employee consultation make up a disproportionately high level of organisations with sustainability clauses. This indicates that role of employee voice is another factor positively influencing organisational commitment to sustainability and carbon reduction.

5 SURVEY OF MEDIUM/LARGE BUSINESSES AND GOVERNMENT AGENCIES

5.1 Background and objectives

This section presents the findings of a national survey in August 2013 of 682 Australian organisations, including 466 medium and large businesses and 216 government agencies. The telephone survey measured carbon emission reduction practices and related issues including work practices.

The overall aim of the research was to explore the impact of climate change adaptation and carbon emission reduction on work practices and employment.

Specifically, the survey measured:

- the nature and extent of carbon emission reduction practices among organisations - whether organisations have a formal written policy in relation to emission reduction, and when organisations began taking steps to reduce emissions;
- the motivations/triggers to reduce emissions, including the influence of employees and trade unions;
- the ways in which employees can have a say about carbon reduction practices;
- the impact of reduction practices on employment and the way in which organisations operate;
- among organisations with trade union members:
    - whether discussions have been held with a union about emissions reduction,
    - the prevalence of collective agreements, and particular collective agreements that contain clauses in relation to the environment,
    - the nature of these clauses – that is, are they a general statement of commitment or do they contain specific requirements,
    - who initiated the clause – the organisation or the union,
    - whether changes had been made to work practices as a result of environmental clauses in collective agreements.

5.2 Method and Sample

The survey was conducted by telephone in August 2013, among a total sample of n= 682 organisations, including n= 466 businesses and n= 216 government agencies. The sampling and weighting approach used is described below.

5.2.1 Businesses

For the business segment, the target population was businesses with 20 or more employees. Data from *ABS Counts of Australian Businesses, June 2012* were used as the population reference. The ABS data show that the target population comprises around 90,000 businesses, but 85 per cent of them employ 20 to 99 people.

The sample was stratified in three employee size ranges shown in Table 5.1: 20 to 99; 100 to 199 and 200+, so that findings could be analysed within these three groups. Consequently businesses employing 100 to 199 and 200+ people were over-sampled

Table 5.1 – Business sample by number of employees

Number of employees	Sample size
20 to 99	215
100 to 199	125
200+	126
Total	466

The survey results were post-weighted by the ABS information so that results from each of the three strata were re-combined in their correct proportions.

To ensure the results were as representative as possible, approximate quotas were set for the number of interviews achieved within each ANZSIC Division within each of the three strata. Consequently fieldwork was managed by controlling 54 individual cells (18 ANZSIC Divisions X three employee size ranges).

Division O, Public Administration and Safety, was excluded from the scope of the business segment of the survey, and for practical reasons, medical specialists, GP's and dentists were excluded from Division Q, Health Care and Social Assistance. This meant that 98 per cent of all businesses employing 20 or more people were in-scope for the business segment. A

Table 5.2 – Business sample by industry, number and weighting

ANZSIC Division	Unweighted sample size n=	Profile %	Population%
A Agriculture, Forestry and Fishing	18	4	5
B Mining	5	1	1
C Manufacturing	55	12	11
D Electricity, Gas, Water and Waste Services	4	1	1
E Construction	33	7	9
F Wholesale Trade	30	6	7
G Retail Trade	56	12	13
H Accommodation and Food Services	71	15	16
I Transport, Postal and Warehousing	21	5	4
J Information Media and Telecommunications	8	2	1
K Financial and Insurance Services	16	3	2
L Rental, Hiring and Real Estate Services	12	3	4
M Professional, Scientific and Technical Services	38	8	9
N Administrative and Support Services	38	8	7
P Education and Training	14	3	3
Q Health Care and Social Assistance	29	6	4
R Arts and Recreation Services	7	2	2
S Other Services	11	2	3
Total	466	100	100

comparison of the overall unweighted business sample profile and the population is tabled below (Table 5.2), and this shows there is a very close correspondence. The final weighting process removed any minor differences from the population profile through weighting by ANZSIC Division within each of the three employee size strata.

The data were also weighted in two other dimensions:

- Geographically by state;
- Within the 20 to 99 segment, an over-representation was noted in relation to businesses employing 50 to 99 employees compared with those employing 20 to 49 people, which was addressed with post-weighting.

The sample frame for businesses was provided by Dun and Bradstreet. The great advantage of this list is that it contains information about the number of employees, and this allows relatively efficient targeting of businesses within strata. Nonetheless, businesses were re-qualified at the time of interview in relation to the total number of full time, part time and casual staff they employed. The Dun and Bradstreet list is also tagged by ANZSIC code.

A quarter of the (weighted) business sample comprised organisations that export products or services, though most of these said less than half of their business was export, as shown in Table 5.3. The survey results were analysed by exporters vs. non exporters and this showed very few statistically significant differences on the issues surveyed.

Table 5.4 shows that in relation to ownership, around 90 per cent of the (weighted) business sample comprised organisations that were wholly or majority Australian owned. The incidence of wholly or majority *foreign* owned businesses was highest among businesses employing 100 or more people.

Analysis of the survey results by ownership is problematic because differences between Australian and foreign owned businesses is heavily influenced by *business size*, because foreign owned businesses tend to be larger businesses. Consequently, analysis by Australian vs. foreign ownership was also undertaken filtered only to businesses employing 100 or more people. This revealed a few noteworthy significant differences that are covered in the body of the report.

Table 5.3 – Business sample by export reliance and number of employees

	Business – no. of employees			
	Total Bus	20-99	100-199	200+
Sample size n=	466	215	125	126
	%	%	%	%
100% export	*	*	1	1
Mainly export	4	4	2	5
Less than half of business export	21	22	11	18
Dont know % of business is export	1	1	1	0
Total export products / services	26	27	15	24
Do not export products/ services	74	73	85	76
*<0.5	100	100	100	100
Total				

Table 5.4 – Business sample by Australian vs. foreign ownership and number of employees

	Business – no. of employees			
	Total Bus	20-99	100-199	200+
Sample size n=	466	215	125	126
	%	%	%	%
100% Australian owned	88	91	73	69
Majority Australian owned	4	3	5	9
Total majority/ 100% Australian owned	92	94	78	78
Exactly 50% Australian, 50% foreign	1	1	2	1
Majority foreign owned	1	*	6	8
100% foreign owned	4	3	10	7
Total majority/ 100% foreign owned	5	3	16	15
Dont know	2	1	4	5
*<0.5	100	100	100	100
Total				

5.2.2 Government agencies

The sample frame for the government sector was provided by A-Z Gov BIZ. This contains listings for 2,000 agencies, including 268 Federal, 1,141 State and 591 local government agencies, and for the purposes of this project, was regarded as the government agency 'population'. Although listings for public schools and hospitals were also available, it was decided these should *not* be included in the scope of the project.

Similar to businesses, only government agencies employing 20 or more people were included in the survey. Unlike the business sector, to the best of our knowledge, there is no readily available, comprehensive information about the *characteristics* of the government agency population, including employment size. Consequently, the size and distribution of the government agency population employing 20+ people is unknown.

As fieldwork proceeded, including the pilot and main surveys, 91 agencies were contacted that employed fewer than 20 people. This is a high ratio compared with the 216 government agencies with 20+ employees that qualified for, and completed the main survey interview. This suggests that quite a high proportion of the 2,000 agencies on the A-Z Gov BIZ list may employ fewer than 20 people, but without interviewing a significant proportion of them, we simply cannot be sure. Consequently it was decided to deduct the 91 agencies *known* to employ fewer than 20 people from the count of organisations on the list, and regard the remainder as the 'population'. On this basis, the population and sample distribution by government sector was as shown in Table 5.5.

Table 5.5 – Government sample by level of government

	'Population'		Unweighted sample	
		%	n=	%
Federal	263	14	35	16
State	1,075	56	117	54
Local	571	30	64	30
Total	1,909	100	216	100

Based on the A-Z Gov BIZ list within each government sector, appropriate quotas were also set by geographic location. The final sample was post-weighted according to the list based on location and government sector.

It is worth noting that because the population of government agencies (around 1,900) is so small compared with the population of businesses employing 20 or more people (around 90,000), survey results among government agencies have very little impact on the weighted total sample results.

5.2.3 Questionnaire

Prior to main fieldwork, the questionnaire was pilot tested on n= 19 organisations, 8 business and 11 government. As a consequence a number of changes were made to the questionnaire design. The questionnaire is provided at the end of this report in Appendix IV.

5.2.4 The respondent

Table 5.6 illustrates the respondent profile. Where relevant and possible, the person most responsible for HR was interviewed. Failing that, in most cases a senior manager or the manager of the particular site was interviewed (e.g. CEO/ Managing Director/ Director/ General Manager/ store manager/ facility manager). In a smaller number of instances, a business owner or senior finance person was interviewed, and in a handful of cases, operations managers.

5.2.5 Statistical significance testing

Statistically significant differences between segments at the 95 per cent level of confidence are identified throughout the report. Statistical significance testing was undertaken by comparing a particular segment or group *with its complement*. For example, results among businesses are compared with all results among those who are *not* businesses, that is, government agencies.

- In charts:
  - segments that are significantly *higher* than others are indicated using blue ‘up’ arrows;
  - segments that are significantly *lower* than others are indicated using red ‘down’ arrows.

- In tables, segments that are significantly *higher* than others are indicated using blue text, and segments that are significantly *lower* than others are indicated using red text.

Table 5.6 – Profile of respondents

	Unweighted profile of respondents						
		Business			Government		
	Total	20-99	100-199	200+	Fed	State	Local
Sample size n=	682	215	125	126	35	117	64
	%	%	%	%	%	%	%
Person most responsible for HR/ personnel	72	53	77	85	91	68	92
CEO/ MD/ Director/ GM/ Other site manager	18	26	16	7	9	27	6
Business owner	2	6	2	2	0	0	0
Finance	6	12	6	4	0	4	2
Operations manager	1	3	0	2	0	0	0
Total	100	100	100	100	100	100	100

5.3 Carbon emission reduction practices and behaviours

5.3.1 Incidence of emissions reduction practices and behaviours

A key part of the project involved measuring carbon emission reduction practices among organisations, along with related issues such as:

- motivations for reducing emissions;
- the impact on organisations; and,
- the ways in which employees can have a say about carbon emission reduction practices.

Although this appears straightforward, it is complicated by the fact that some organisations undertake *behaviours* which reduce carbon emissions, but they do not *think* of these behaviours as taking steps to 'reduce carbon emissions' *per se*.

Consequently practices were measured in a two step process illustrated in Figure 5.1:

Step 1: Respondents were asked if, in recent years, their organisation had done anything to help reduce, or offset its carbon emissions – and if so, which of a list of things they had undertaken. These included reducing energy consumption, reducing waste material, increasing recycling, along with several other possible actions.

Step 2: A follow up question was asked to determine if organisations had undertaken steps to reduce energy consumption, reduce waste material or increase recycling for reasons *not* connected with reducing carbon emissions *per se*. This was asked of:

- those who reported *not* having taken steps to reduce emissions; and,
- those who *had*, but did not report energy, waste or recycling behaviours as part of their emission reduction practices.

This two step approach allowed the research to capture a complete picture of:

1) the number of organisations adopting *behaviours* connected with reducing energy consumption, reducing waste material and increasing recycling, regardless of whether these behaviours were perceived to be carbon emission reduction measures; and,
2) the number of organisations claiming to have taken steps 'to help reduce or offset carbon emissions', and the measures they have adopted to achieve this.

Figure 5.2 shows that just over 60 per cent of organisations say that, in recent years, they have taken steps to reduce or offset carbon emissions. However almost all (94 per cent) have undertaken a *behaviour* that reduces emissions, even if the organisation does not think of it in terms of reducing emissions *per se*. Figure 5.3 illustrates that this includes:

- 77 per cent taking steps to reduce energy consumption;
- 78 per cent increasing the amount of material they recycle; and,
- 71 per cent reducing the amount of waste material they produce.

A higher proportion of government organisations, 73 per cent, than businesses, 62 per cent, claim to have taken steps to reduce or offset emissions, as shown in Figure 5.2, but there was little difference between size of businesses or levels of government agencies.[5]

Along with prevalent behaviours connected with energy consumption, recycling and waste reduction, Figure 5.4 reveals that:

- A significant minority of organisations, 40 per cent, claim to have introduced **new equipment** to cut emissions, and 28 per cent say they have introduced **new technology**.
- Changed **work practices** are claimed by 39 per cent, and related to this 24 per cent report undertaking **staff training/ skills development** to reduce emissions, with 9 per cent **changing the mix of skills** in their workforce.
- Changes to **product/ service formulation** to cut emissions is reported by 16 per cent, with 12 per cent saying they have **changed the physical packaging** of a product.
- About one-in-five say they have made a change to their **supply chain**, and 4 per cent have **bought carbon credits** to offset emissions.

[5] Among larger businesses employing 100 or more people, based on a small sample, those with 50% or more foreign ownership are more likely to have taken steps to reduce or offset emissions (79% vs. 60% among wholly/ majority Australian owned). Base: Employ 100+ Foreign n= 46; Australian n= 194.

Figure 5.1 – Questionnaire summary

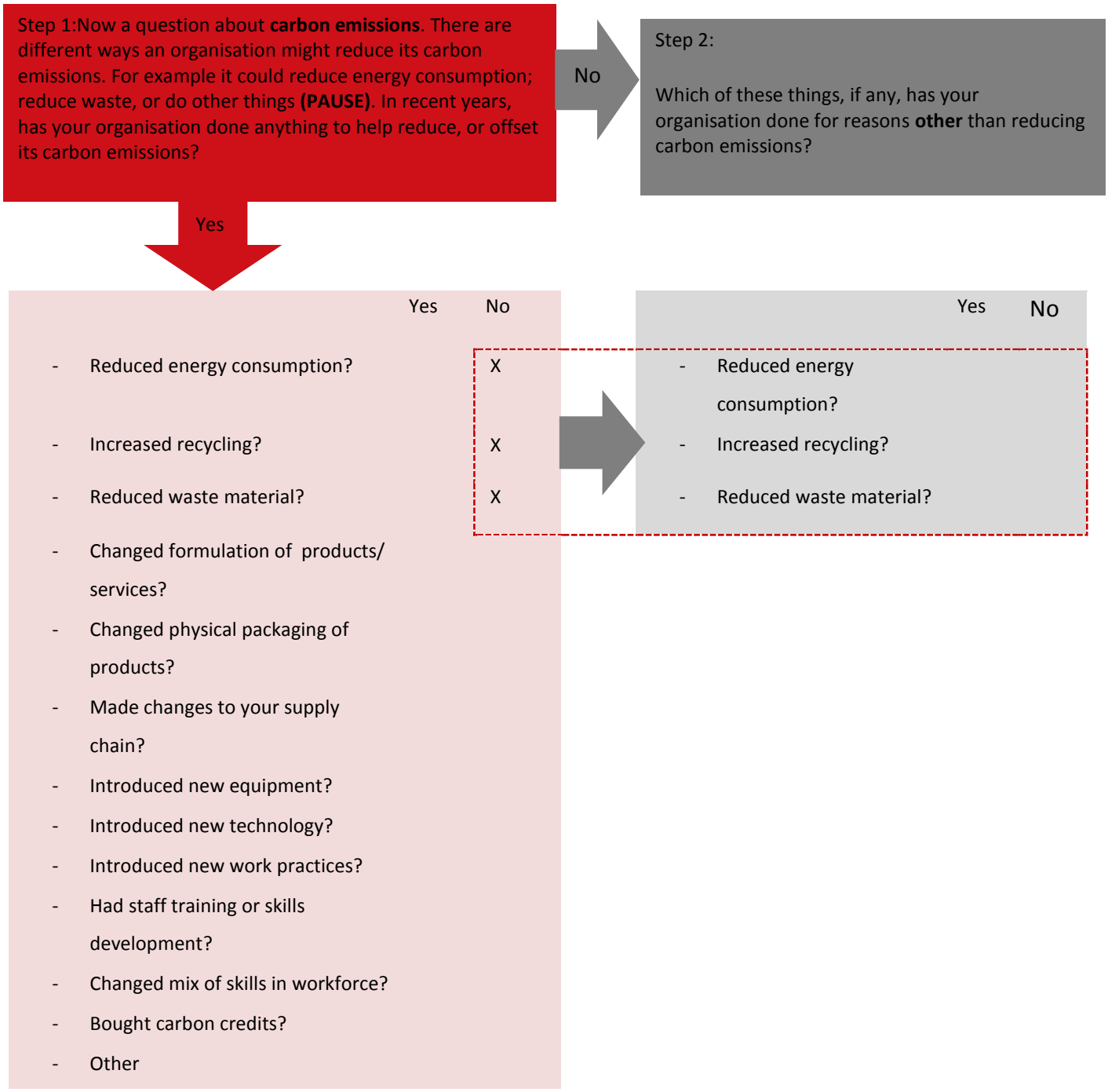


Figure 5.2 – Whether taken steps to mitigate carbon emissions, by business size and level of government

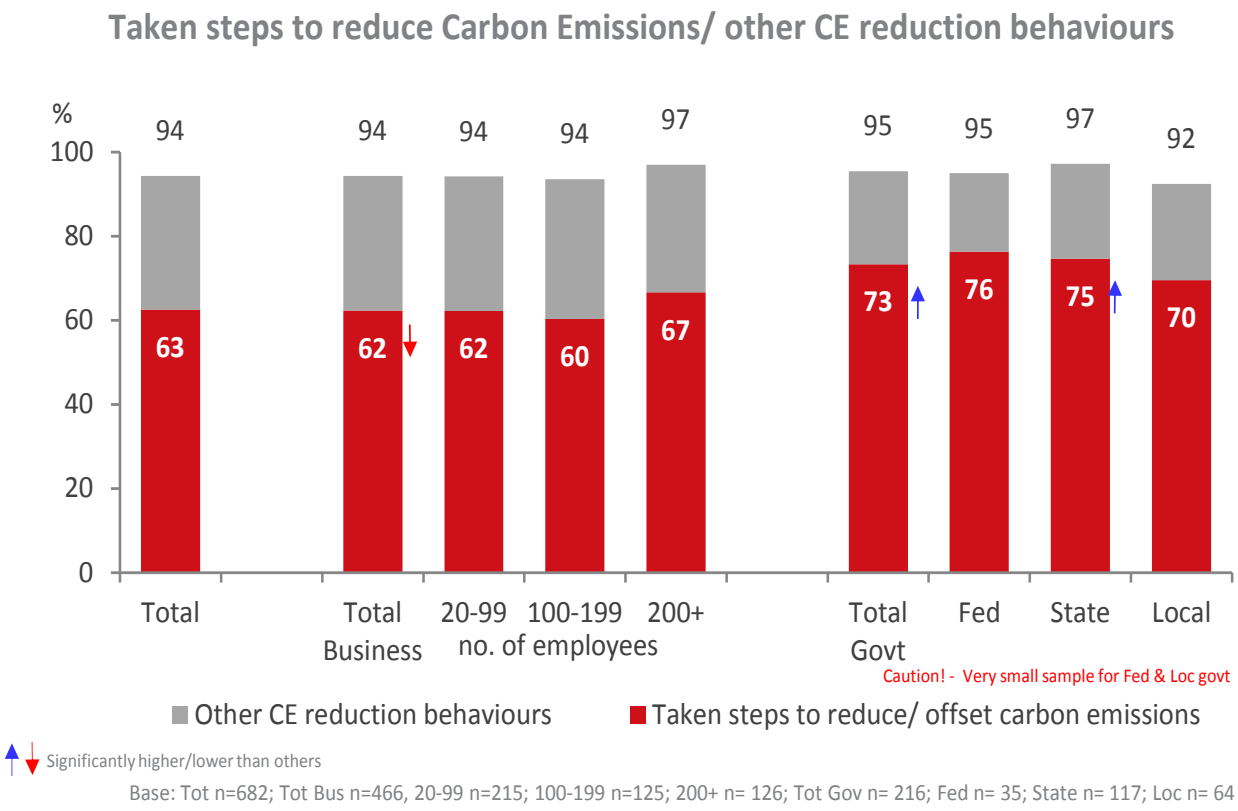
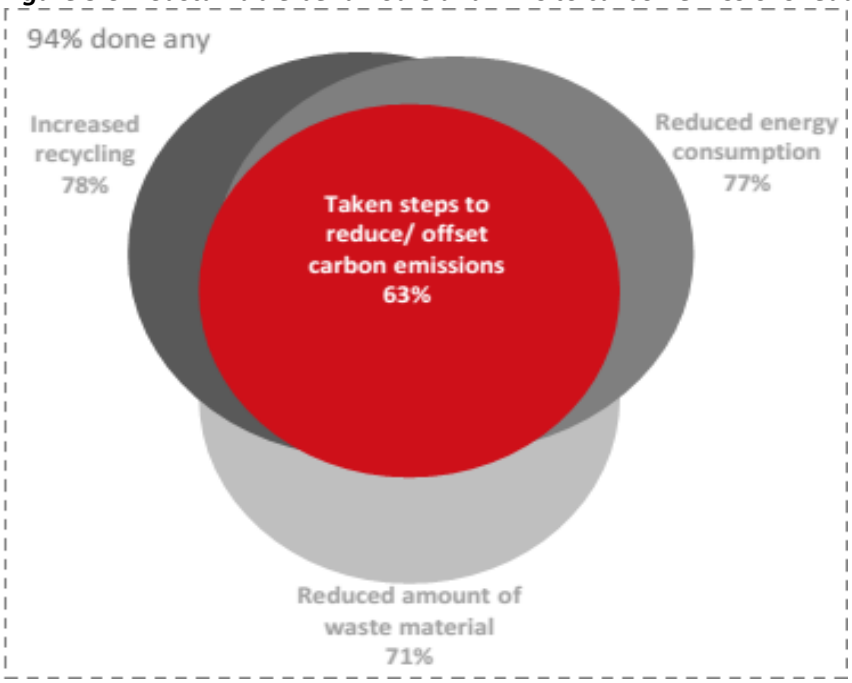


Figure 5.3 – Sustainable behaviours and links to carbon emissions reduction



Apart from these behaviours measured by reading a list to respondents, 12 per cent cited other steps they had taken. However a significant portion of this open-ended feedback related to respondents simply providing more information about the behaviours they had already claimed using the list. For example, a number described what their organisation had done to reduce energy consumption, and these range from the very simple to the very complex:

‘energy saving lighting’;

‘sensor lights in all the rooms’;

‘changing all our lights’;

‘we have signs all around the place to try and reduce electricity usage’;

‘all new buildings are built with green specifications to make them more energy efficient’;

‘30 acres of solar panels’.

Similarly, some examples concerning waste reduction or recycling include:

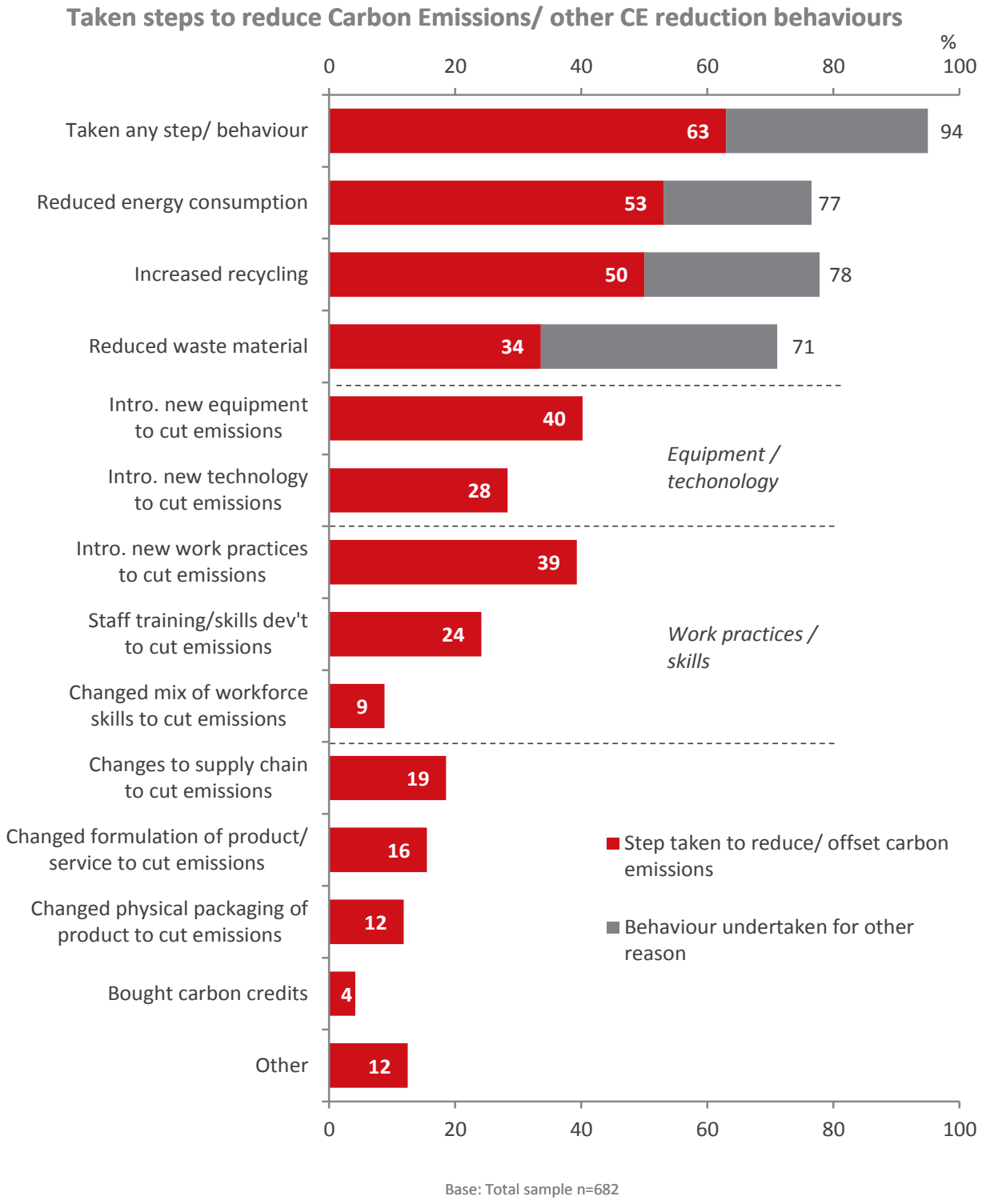
‘less paper usage by emailing electronic notices, so they [staff] read them on the screens - we don't physically print notices anymore; recycle bins’;

‘moving to a paperless office/going to electronic use of records’;

‘we aren't printing as much and emailing instead’;

‘by changing our practices and the way we do things internally/reusing product rather than dumping it’.

Figure 5.4 – Carbon emissions reduction behaviours, by behaviour and whether explicitly linked to carbon emissions reduction



Base: Total sample n=682

These few examples also demonstrate two other important points:

- Taking steps on one issue to reduce emissions can automatically mean a change in another. For example, asking employees to turn off lights or computers at night, or emailing instead of printing means steps have been taken to reduce energy usage and waste, but changes have also been made to **work practices** to reduce emissions.
- The steps organisations take can be very *simple* things.

Analysis of results by segments, in Table 5.7, generally shows a great deal of consistency in the general patterns among both businesses and government agencies, and even by size of organisation.

Nonetheless, government agencies are more likely than businesses to have reduced energy consumption (85 per cent vs. 76 per cent); introduced new technology to cut emissions (44 per cent vs. 28 per cent), and changed the formulation of a product or service to cut emissions (26 per cent vs. 15 per cent).

In common with government agencies, the largest businesses employing 200+ people are more likely than others to have reduced energy consumption and introduced new technology to cut emissions. They are also the most likely of all organisations to have introduced new work practices.[6]

[6] Among larger businesses employing 100 or more people, based on a small sample, those with 50% or more foreign ownership are more likely to have taken steps to reduce or offset emissions generally, and specifically to have introduced new work practices (65% vs. 45% among wholly/ majority Australian owned); had staff training or skills development (40% vs. 25%), and made changes to their supply chain (33% vs. 18%). Base: Employ 100+ Foreign n= 46; Australian n= 194.

Table 5.7 – Total sustainable/emissions reduction behaviours, by business size and level of government

	Total	Business – no. of employees				Government			
		Total Bus	20-99	100-199	200+	Total Govt	Federal	State	Local
Sample size n=	682	466	215	125	126	216	35	117	64
							Caution – very small sample for Fed & Local govt.		
	%	%	%	%	%	%	%	%	%
Total undertaken any steps/ behaviours	94	94	94	94	97	95	95	97	92
Reduced energy consumption (to cut emissions or for other reasons)	77	76	75	77	86	85	84	87	82
Increased recycling (to cut emissions or for other reasons)	78	78	77	85	84	85	87	87	79
Reduced waste material produced (to cut emissions or other reasons)	71	71	71	70	78	76	71	83	67
Introduced new equipment to cut emissions	40	40	40	41	42	44	48	39	50
Introduced new technology to cut emissions	28	28	26	35	42	44	54	39	48
Introduced new work practices to cut emissions	39	39	38	47	50	41	39	42	42
Had staff training or skills development to cut emissions	24	24	23	27	29	28	25	27	32
Changed the mix of skills in your workforce to reduce emissions	9	9	9	6	10	10	6	8	15
Changed the formulation of any products or services to cut emissions	16	15	15	17	19	26	30	25	25
Changed the physical packaging of any products to cut emissions	12	12	12	12	12	16	14	17	14
Made changes to your supply chain to cut emissions	19	18	18	25	15	25	16	26	28
Bought carbon credits to offset carbon emissions	4	4	4	6	6	5	8	7	1
Other	12	12	13	10	9	18	22	15	22

Table 5.8 - Businesses which have explicitly taken steps to reduce emissions, by selected industry grouping

Industry %	Yes \ has	No	Dont know	Total	Column n
Total	62	33	5	100	466
Agriculture, Forestry and Fishing + Mining	70	25	5	100	23
Manufacturing + Electricity, Gas, Water and Waste Services	71	22	6	100	59
Construction	57	40	3	100	33
Wholesale Trade	35	47	18	100	30
Retail Trade	66	29	5	100	56
Accommodation and Food Services	66	32	2	100	71
Transport, Postal and Warehousing	46	43	11	100	21
Info. Media & Telecomms + Financial/ Insurance Services + Rental/Hiring/ Real Estate Services	77	22	1	100	36
Professional, Scientific and Technical Services	53	45	2	100	38
Administrative and Support Services	51	48	1	100	38
Education and Training	92	5	2	100	14
Health Care and Social Assistance	68	29	4	100	29
Arts and Recreation Services + Other Services	64	22	14	100	18

Table 5.8 shows the sectoral breakdown for businesses explicitly taking steps to reduce emissions, Table 5.9 shows the sectoral breakdown for key general sustainable behaviours and whether they are linked with explicit aims to reduce carbon emissions, and Table 5.10 shows the sectoral breakdown for various other specific behaviours. It is notable that the Education sector features particularly highly among businesses which have explicitly linked behaviours to carbon emissions reduction, with 92 per cent of businesses in this sector having done so. This sector was more likely than others to engage in energy reduction (90 per cent), and more likely to link this behaviour to climate change mitigation. It was also more likely than most others to engage in a range of specific climate mitigation behaviours, including changes to products/services (40 per cent), introduction of new technology (70 per cent) and work practices (68 per cent), and training and developing its workforce to update its skills through (48 per cent). By contrast, figures for the Construction industry include 8 per cent for changes to products and services, 28 per cent for new work practices, and 23 per cent for updating skills and training. For Agriculture, Forestry and Fishing and Mining, the figures are 1 per cent, 47 per cent and 23 per cent respectively. The Education sector was also more likely to link recycling and waste reduction programs to carbon emissions reduction.

Particularly low rates of explicitly tackling climate change are noted among the Wholesale Trade (35 per cent) and Transport, Postal and Warehousing (46 per cent) sectors, with the Construction sector also having a below average rate of explicit carbon emissions reduction at 57 per cent. The Transport, Postal and Warehousing sector also had the lowest rate of any sector of engaging in behaviours which directly reduced environmental impact, at 77 per cent; with only 54 per cent of businesses reporting attempts to reduce energy consumption, whether or not for emissions reduction purposes. However, they were the sector most likely to have purchased ‘carbon credits’, with 19 per cent of such businesses having done so.

Table 5.9 - Sustainable behaviours and links to carbon emissions reduction, businesses, by selected industry grouping

Industry %	Total	Agriculture, Forestry and Fishing + Mining	Manufacturing + Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing
Taken steps to reduce energy consumption - E1(a) (explicitly to reduce emissions)	53	65	61	36	27	52	66	45
Taken steps to reduce energy consumption - E8 (not explicitly to reduce emissions)	23	24	20	25	42	25	21	10
Total taken steps to reduce energy consumption	76	89	81	61	69	77	86	54
Increased material recycle - E1(b) (explicit)	50	51	63	51	27	48	52	24
Increased material recycle - E8 (not explicit)	28	22	13	22	56	27	27	48
Total increased recycling	78	73	76	73	82	75	79	72
Reduced amount of waste produced - E1(b) (explicit)	33	39	32	27	12	23	36	35
Reduced amount of waste produced - E8 (not explicit)	38	21	36	37	71	44	40	19
Total reduced waste	71	60	68	64	84	67	75	54
NET reduced energy consumption\ increased recycling\ reduced waste	94	98	94	90	100	91	98	77
Done things to reduce\ offset emissions	62	70	71	57	35	66	66	46
NET ANY	94	98	94	90	100	91	98	77
Total	100	100	100	100	100	100	100	100
Sample n	466	23	59	33	30	56	71	21

Table 5.9 - Sustainable behaviours and links to carbon emissions reduction, businesses, by selected industry grouping (cont)

Industry %	Info. Media & Telecomms + Financial/ Insurance Services + Rental/Hiring/ Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Education and Training	Health Care and Social Assistance	Arts and Recreation Services + Other Services
Taken steps to reduce energy consumption - E1(a) (explicit)	73	37	36	82	51	64
Taken steps to reduce energy consumption - E8 (not explicit)	11	27	25	7	31	31
Total taken steps to reduce energy consumption	83	64	61	90	82	95
Increased material recycle - E1(b) (explicit)	63	45	49	66	53	42
Increased material recycle - E8 (not explicit)	17	42	32	16	27	25
Total increased recycling	80	86	82	82	80	67
Reduced amount of waste produced - E1(b) (explicit)	54	27	42	66	53	20
Reduced amount of waste produced - E8 (not explicit)	25	56	23	5	24	45
Total reduced waste	79	83	65	70	77	65
NET reduced energy consumption\ increased recycling\ reduced waste	90	100	91	92	97	99
Done things to reduce\ offset emissions	77	53	51	92	68	64
NET ANY	90	100	91	100	98	99
Total	100	100	100	100	100	100
Sample n	36	38	38	14	29	18

Table 5.10 - Specific sustainability behaviours, businesses, by selected industry grouping

Column %	Total	Agriculture, Forestry and Fishing + Mining	Manufacturing + Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing
Changed the formulation of any of your products or services to cut emissions	15	1	15	8	18	8	31	22
Changed the physical packaging of any products to cut emissions	12	9	29	5	5	7	17	21
Made changes to your supply chain to cut emissions	18	19	26	6	6	21	26	27
Introduced new equipment to cut emissions	40	48	45	36	25	43	48	30
Introduced new technology to cut emissions	28	41	33	26	10	34	23	22
Introduced new work practices to cut emissions	39	47	49	28	26	30	49	39
Had staff training or skills development to cut emissions	24	23	37	23	16	20	31	14
Changed the mix of skills in your workforce to reduce emissions	9	8	10	3	4	5	17	0
Bought carbon credits to offset its carbon emissions	4	0	0	2	0	2	7	19
Net unprompted 'others'	**12**	**27**	**20**	**8**	**0**	**10**	**16**	**2**
Fleet management incl change to hybrids/ diesel/ smaller cars	0	0	0	0	0	0	0	0
Energy consumption related measures	6	1	7	3	0	9	11	2
Recycling related measures	1	11	0	0	0	0	0	0
Waste reduction related measures	0	0	0	0	0	0	0	0
New equipment related measures	1	0	6	0	0	0	0	0
Staff training/ skills development related measures	0	0	0	0	0	0	0	0
Or, have you reduced emissions by doing something else	7	26	19	8	0	1	6	0
None \ dont know	1	0	1	0	8	0	0	0
Total taken steps to reduce\ offset carbon emissions	62	70	71	57	35	66	66	46
Not done things to help reduce or offset carbon emissions	33	25	22	40	47	29	32	43
Dont know if done things to help reduce or offset carbon emissions	5	5	6	3	18	5	2	11
Total	100	100	100	100	100	100	100	100
Column n	466	23	59	33	30	56	71	21

Table 5.10 - Specific sustainability behaviours, businesses, by selected industry grouping (cont)

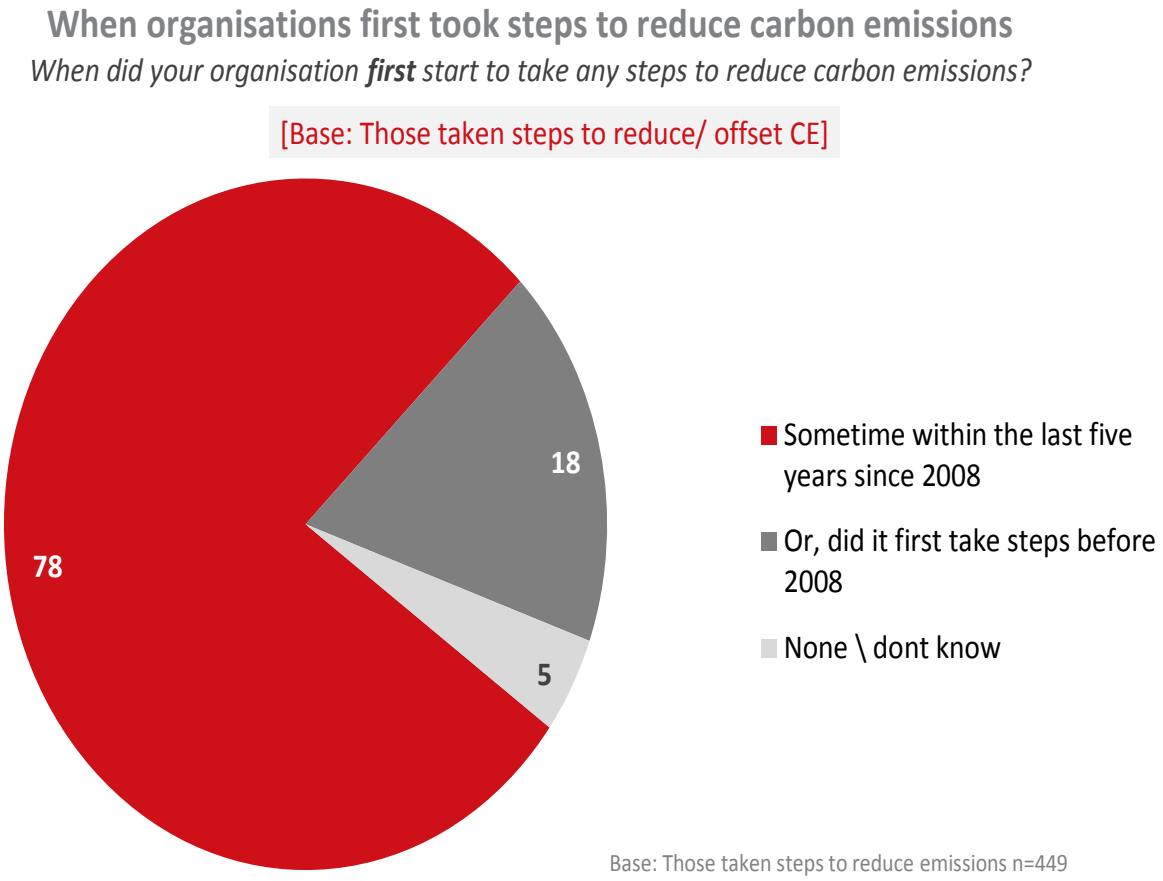
Column per cent	Total	Agriculture, Forestry and Fishing + Mining	Info. Media & Telecomms + Financial/ Insurance Services + Rental/Hiring/ Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Education and Training	Health Care and Social Assistance	Arts and Recreation Services + Other Services
Changed the formulation of any of your products or services to cut emissions	15		4	23	11	40	14	5
Changed the physical packaging of any products to cut emissions	12		9	0	7	22	3	15
Made changes to your supply chain to cut emissions	18		26	7	23	27	18	1
Introduced new equipment to cut emissions	40		66	28	18	46	13	60
Introduced new technology to cut emissions	28		46	18	27	70	14	15
Introduced new work practices to cut emissions	39		45	39	31	68	52	18
Had staff training or skills development to cut emissions	24		24	13	21	48	34	4
Changed the mix of skills in your workforce to reduce emissions	9		18	1	11	22	10	5
Bought carbon credits to offset its carbon emissions	4		13	8	2	0	0	0
Net unprompted 'others'	**12**		**18**	**10**	**9**	**20**	**4**	**10**
Fleet management incl change to hybrids/ diesel/ smaller cars	0		0	0	0	2	1	0
Energy consumption related measures	6		17	0	1	18	2	10
Recycling related measures	1		0	0	0	18	0	0
Waste reduction related measures	0		0	0	0	18	0	0
New equipment related measures	1		0	2	0	0	0	0
Staff training/ skills development related measures	0		0	1	0	0	0	0
Or, have you reduced emissions by doing something else	7		1	7	9	0	1	0
None \ dont know	1		0	0	0	8	0	0
Total taken steps to reduce\ offset carbon emissions	62		77	53	51	92	68	64
Not done things to help reduce or offset carbon emissions	33		22	45	48	5	29	22
Dont know if done things to help reduce or offset carbon emissions	5		1	2	1	2	4	14
Total	100		100	100	100	100	100	100
Column n	466		36	38	38	14	29	18

5.3.2 When organisations first took steps to reduce carbon emissions

Most organisations (78 per cent in Figure 5.5) that have taken steps to reduce or offset carbon emissions say they took their initial steps within the last five years, since 2008, with one-in-five starting some time before that.

There are no significant differences on this issue between businesses and government agencies, nor by size of business.

Figure 5.5 – When first taken steps to explicitly reduce emissions, organisations which have explicitly taken steps to reduce emissions



5.3.3 Motivations/ triggers to reduce emissions

Figure 5.6 provides an overview of motivations for reducing carbon emissions for all organisations, and Table 5.11 provides a breakdown on a sectoral basis for businesses. **Reducing costs** is the most common reason for organisations to reduce emissions, cited by 82 per cent of businesses and 80 per cent of government agencies which explicitly reduced emissions. Businesses in the Education and Training (100 per cent), and Agriculture, Forestry and Fishing and Mining sectors (98 per cent) were most likely to cite cost reduction as a key motivation, with the Health Care and Social Assistance (96 per cent), Accomodation and Food Services (95 per cent), and Retail Trade (90 per cent) sectors also particularly likely to cite this as a reason. Interestingly, only 40 per cent of businesses in the Transport, Postal and Warehousing sector that had reduced carbon emissions cited cost reduction as a key motivation.

A large majority of 69 per cent of all organisations also claim it is because of a **corporate social responsibility** policy (CSR) they have. Government agencies have a higher level of 77 per cent that attribute their motivation to a CSR policy. Businesses in Professional, Scientific and Technical services (86 per cent), Administrative and Support services (86 per cent), Education and Training (82 per cent), Manufacturing and Utilities (82 per cent), and Transport, Postal and Warehousing (80 per cent) were those most likely to cite CSR as a motivation for carbon emissions reduction. Businesses in Retail Trade were least likely to cite this as a reason (47 per cent). Interestingly, only 7 per cent of businesses cited ethical or environmental responsibility as a motivation.

A significant minority of around 40 per cent say emissions reduction practices can be used as part of their **marketing strategy**. In the Education and Training sector 73 per cent of businesses, and in the Wholesale Trade 65 per cent linked carbon emissions reduction to a marketing strategy. Businesses in Health Care and Social Assistance (20 per cent), Transport, Postal and Warehousing (29 per cent) and Construction (31 per cent) were least likely to cite this as a motivation.

About 30 per cent of businesses have taken steps to reduce carbon emissions in order to **meet the requirements of other organisations** they supply products or services to. Businesses in Construction (57 per cent), Wholesale Trade (57 per cent) and Manufacturing and utilities (51 per cent) sectors were most likely to cite this as a motivation.

The **carbon price ('tax')** was a motivator for reducing carbon emissions for 27 per cent of organisations, and this is significantly more prevalent among businesses (27 per cent) than government agencies (15 per cent).[7] Businesses in Professional, Scientific and Technical Services (3 per cent), Transport, Postal and Warehousing (6 per cent), Health Care and Social Assistance (8 per cent), and Administrative and Support Services (9 per cent) were least likely to cite the carbon tax as a key motivation, while 45 per cent of businesses in Agriculture, Forestry and Fishery, and Mining cited this as a motivation.

Interestingly, 20 per cent of all respondents reported that **requests from employees** influenced their organisation to take steps to reduce emissions. This is far more prevalent among government agencies (41 per cent) than businesses (20 per cent). Among businesses, this reason was particularly prevalent in the Education and Training sector, where 46 per cent of businesses cited this as a reason. Businesses in Wholesale Trade (0 per cent), Arts and Recreation and Other Services (4 per cent), Agriculture, Forestry and Fishing and Mining (6 per cent), Transport Postal and Warehousing (6 per cent) and Accommodation and Food Services (7 per cent) were least likely to be motivated by requests from employees.

Only 1 per cent of businesses report **requests from unions** as being a contributing factor.[8] However, this figure was much higher in the Education and Training sector, with 19 per cent of these businesses reporting requests from unions as a motivating factor.

Almost one-in-five businesses and 31 per cent of government agencies offered further unprompted comments about other contributing factors for their organisation, the key components of which were:

- a social conscience and wanting to do the right thing by the environment, 7 per cent of businesses. This reason was particularly prevalent in Wholesale Trade businesses (22 per cent);

[7] Among larger businesses employing 100 or more people, based on a very small sample, those with 50% or more foreign ownership are more likely to cite meeting the requirements of other organisations (51% vs. 33% among wholly/ majority Australian owned); and the carbon tax (52% vs. 29%). Base: Employ 100+ and taken steps to reduce offset emissions: Foreign n= 35; Australian n= 117.

[8] 4% among organisations with staff who are members of a union. There is no significant difference between organisations with or without union members reporting requests from employees as an influence.

- among government agencies:
  - a government requirement/ policy or directive was cited by 11 per cent;
  - customer requests/ community demand or expectations, 4 per cent, with 15 per cent among local government agencies; and,
  - to be a leader/ set a good example/ being seen to do the right thing, 3 per cent.

Figure 5.6 – Overview of motivations to reduce emissions

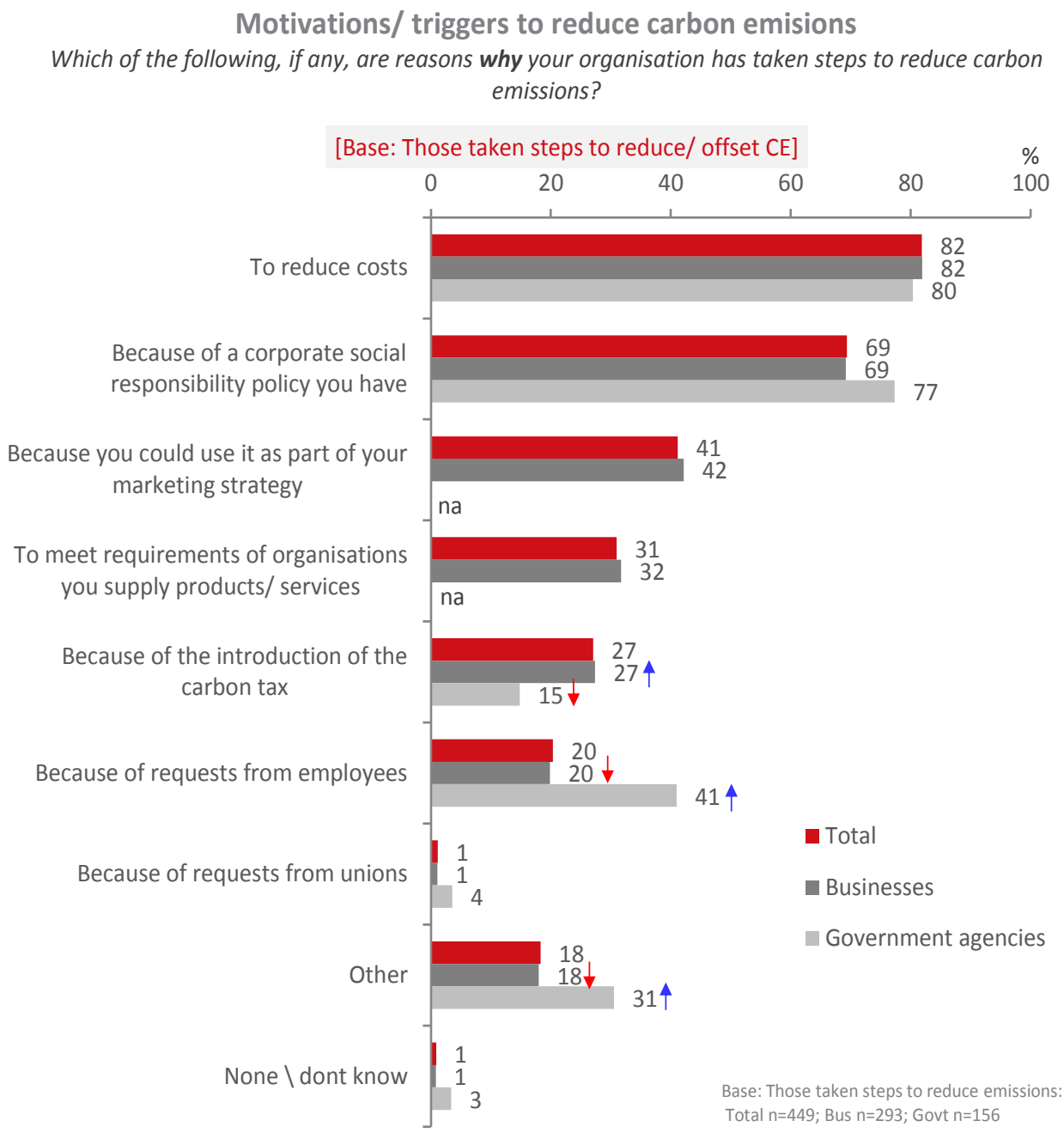


Table 5.11 - Reasons for reducing emissions among private sector businesses explicitly linking behaviours with carbon reduction, by selected industry grouping

Industry %	Total	Agriculture, Forestry and Fishing + Mining	Manufacturing + Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing
To reduce costs	82	98	80	74	63	90	95	40
Because of the introduction of the carbon tax	27	45	34	28	39	38	38	6
To meet requirements of other organisations you supply products or services	32	43	51	57	57	20	31	18
Because of a corporate social responsibility policy you have	69	65	82	59	72	47	66	80
Because you could use it as part of your marketing strategy	42	39	50	31	65	35	42	29
Because of requests from unions	1	0	0	0	0	0	0	0
Because of requests from employees	20	6	24	16	0	32	7	6
Total unprompted 'other' reasons	18	15	21	27	23	13	11	13
Government policy/ requirement/ initiative/ directive/ legislation	1	2	1	0	0	0	0	0
Ethical reasons / social conscience / want to do the right thing / be environmentally responsible	7	12	12	10	22	7	1	13
Customer requests / community demand / expectations	1	0	0	0	0	0	1	0
Request by management / management initiative	1	0	3	0	1	0	0	0
Required for acceditation / certification	1	0	9	0	0	0	0	0
To be a leader / set a good example / want to be seen an doing the right thing	0	0	0	0	0	2	0	0
Or, some other reason + Requests from other individuals	8	1	2	17	0	3	10	0
None \ dont know	1	0	0	0	0	0	5	0
Total	100	100	100	100	100	100	100	100
Sample n	293	16	40	19	14	37	46	13

Table 5.11 - Reasons for reducing emissions among private sector businesses explicitly linking behaviours with carbon reduction, by selected industry grouping (cont)

Industry %	Info. Media & Telecomms + Financial/ Insurance Services + Rental/Hiring/ Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Education and Training	Health Care and Social Assistance	Arts and Recreation Services + Other Services
To reduce costs	83	50	75	100	96	79
Because of the introduction of the carbon tax	11	3	9	37	8	23
To meet requirements of other organisations you supply products or services	16	34	20	24	3	16
Because of a corporate social responsibility policy you have	70	86	86	82	54	78
Because you could use it as part of your marketing strategy	50	38	42	73	20	46
Because of requests from unions	3	0	0	19	2	0
Because of requests from employees	28	21	35	46	23	4
Total unprompted 'other' reasons	34	20	11	18	25	0
Government policy/ requirement/ initiative/ directive/ legislation	0	4	0	0	0	0
Ethical reasons / social conscience / want to do the right thing / be environmentally responsible	0	0	2	14	9	0
Customer requests / community demand / expectations	0	2	5	0	0	0
Request by management / management initiative	11	0	0	0	1	0
Required for acceditation / certification	0	1	0	0	0	0
To be a leader / set a good example / want to be seen an doing the right thing	0	1	0	0	0	0
Or, some other reason + Requests from other individuals	23	12	5	5	15	0
None \ dont know	0	0	0	0	0	1
Total	100	100	100	100	100	100
Sample n	24	19	23	11	19	12

5.3.4 Formal written carbon emissions policies

About one-in-five organisations report having a **written formal policy** concerning carbon emission reduction, including 18 per cent of businesses and 23 per cent of government agencies, as shown in Figure 5.7. These figures are much lower than the 69 per cent of organisations that reported a CSR policy as a motivation for reducing carbon emissions (see above).

The penetration is significantly higher among businesses employing 200 or more people, and obviously it is higher among organisations that have taken steps to reduce emissions, at 27 per cent.[9] Amongst Federal government agencies the incidence of formal policies is also somewhat higher than for local government. Table 5.12 shows that the existence of such a policy was most prevalent in Agriculture, Forestry and Fishery and Mining (35 per cent). Interestingly, despite low representation on a number of other measures, the Transport, Postal and Warehousing sector had the second highest rate of formal carbon emissions policies at 29 per cent, with Education and Training third at 24 per cent. Of businesses in Retail Trade, 90 per cent confirmed that they had no such policy.

[9] Among larger businesses employing 100 or more people, based on a small sample, those with 50% or more foreign ownership are more likely to have a formal policy (42% vs. 21% among wholly/ majority Australian owned). Base: Employ 100+ Foreign n= 46; Australian n= 194.

Figure 5.7 Existence of formal written carbon emissions policy, by business size and level of government

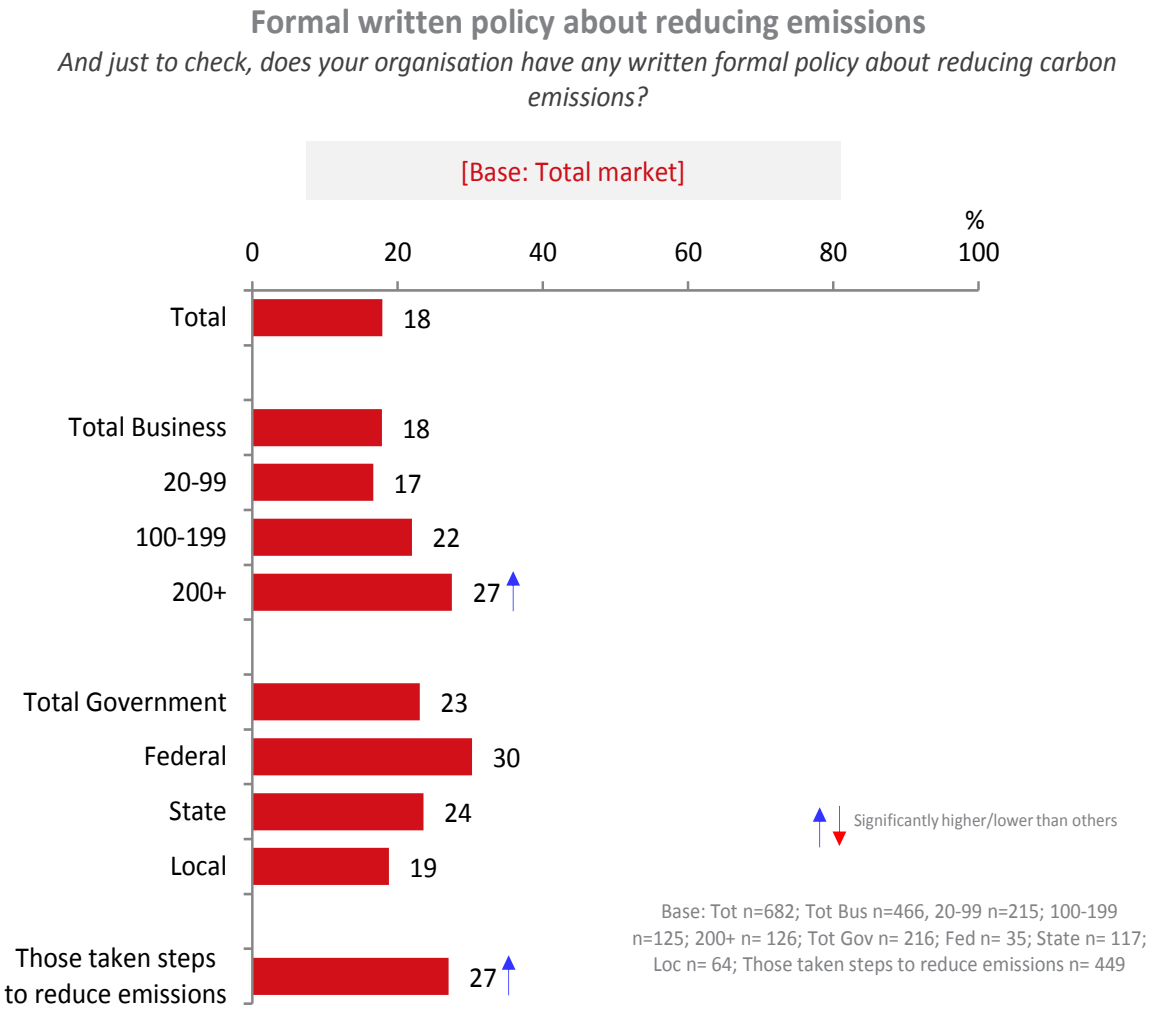


Table 5.12 – Existence of formal written policy on carbon emissions reduction, by selected industry grouping, businesses

Industry	Yes \ does	No	Dont know	Total	Column n
Total	18	77	5	100	466
Agriculture, Forestry and Fishing + Mining	35	60	5	100	23
Manufacturing + Electricity, Gas, Water and Waste Services	19	78	3	100	59
Construction	20	78	1	100	33
Wholesale Trade	19	75	6	100	30
Retail Trade	4	90	7	100	56
Accommodation and Food Services	21	69	11	100	71
Transport, Postal and Warehousing	29	71	0	100	21
Info. Media & Telecomms + Financial/ Insurance Services + Rental/Hiring/ Real Estate Services	12	86	1	100	36
Professional, Scientific and Technical Services	20	78	2	100	38
Administrative and Support Services	23	72	6	100	38
Education and Training	24	76	0	100	14
Health Care and Social Assistance	18	77	5	100	29
Arts and Recreation Services + Other Services	0	95	5	100	18

5.3.5 The impact on the organisation and staff numbers

The vast majority (92 per cent) of organisations that have taken steps to reduce emissions report it has made no difference to their **staff numbers, as shown in Figure 5.8**. A small number, 4 per cent, say it has lead to a *reductio*n in staff numbers and these are matched by an equal number, 3 per cent, who say it has *increased* their staff numbers. However, a larger proportion (47 per cent) of businesses in Wholesale Trade attributed staff reductions to efforts to reduce carbon emissions, though this was from a small sample. The only noteworthy significant difference by segment, albeit based on a small sample, is among local government agencies, with 14 per cent reporting an increase in staff numbers, compared with 7 per cent reporting a decrease.

Nonetheless, **Figure 5.9** shows that a third of organisations report that their steps to reduce emissions have had some impact **on the way their organisation operates** – though this is mostly a 'moderate' impact (31 per cent) rather than a 'major' impact, 3 per cent. There are no significant differences by number of employees or between government agencies and businesses. Not surprisingly organisations reporting a major/ moderate impact, are more likely to have undertaken most of the carbon emission reduction behaviours surveyed, as shown in Figure 5.10. In absolute terms, the behavioural difference is particularly pronounced in relation to introducing new work practices, training or skills.

Figure 5.8 – Overview of impact on staff numbers of explicit carbon emissions reduction action

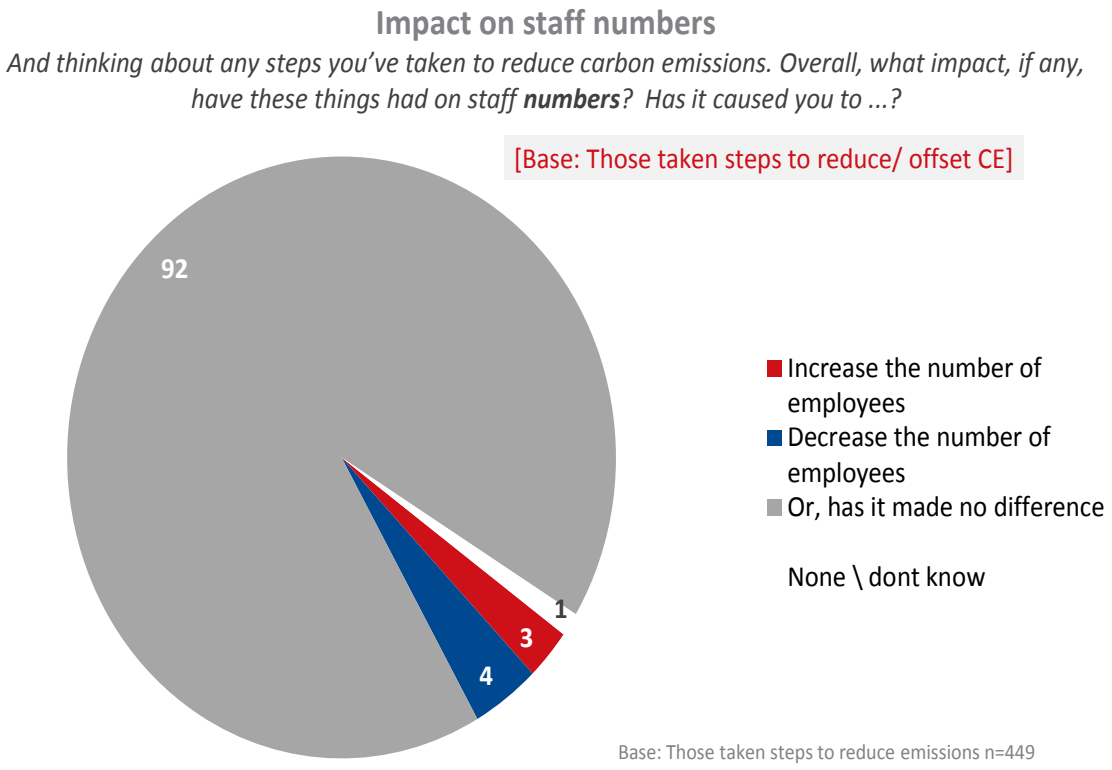


Figure 5.9 – Overview of impact on operations of explicit carbon emissions reduction action

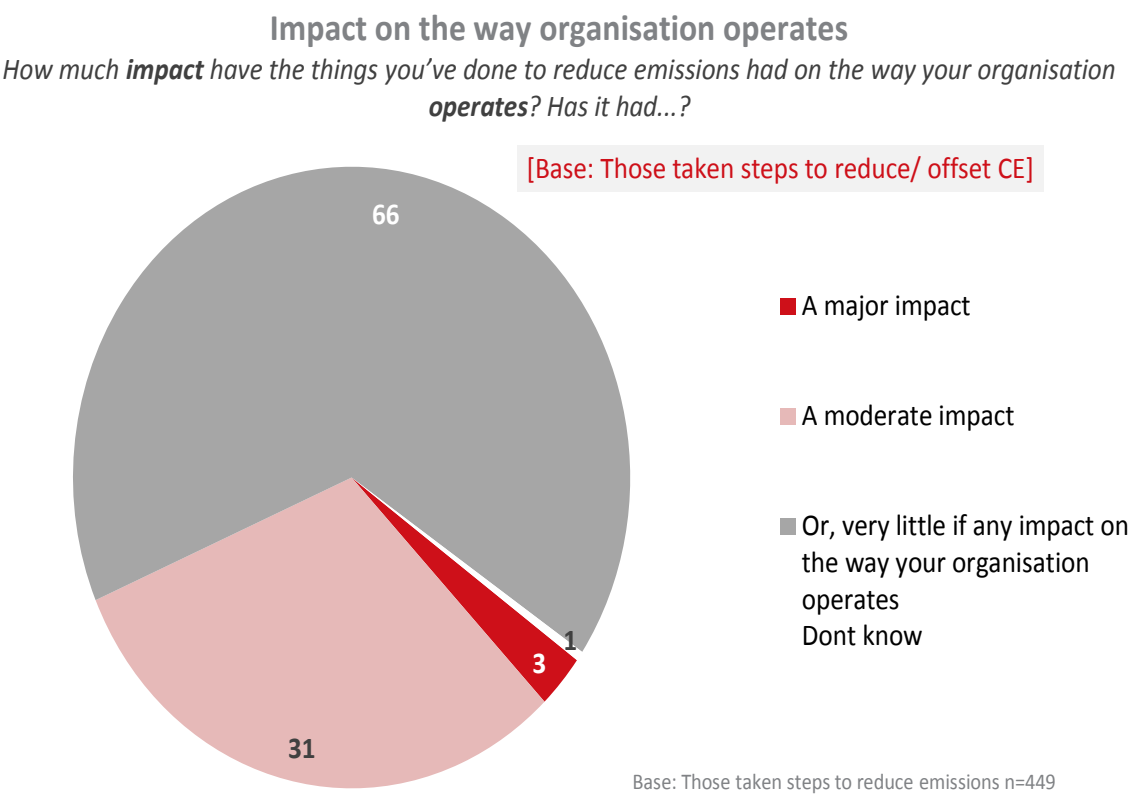
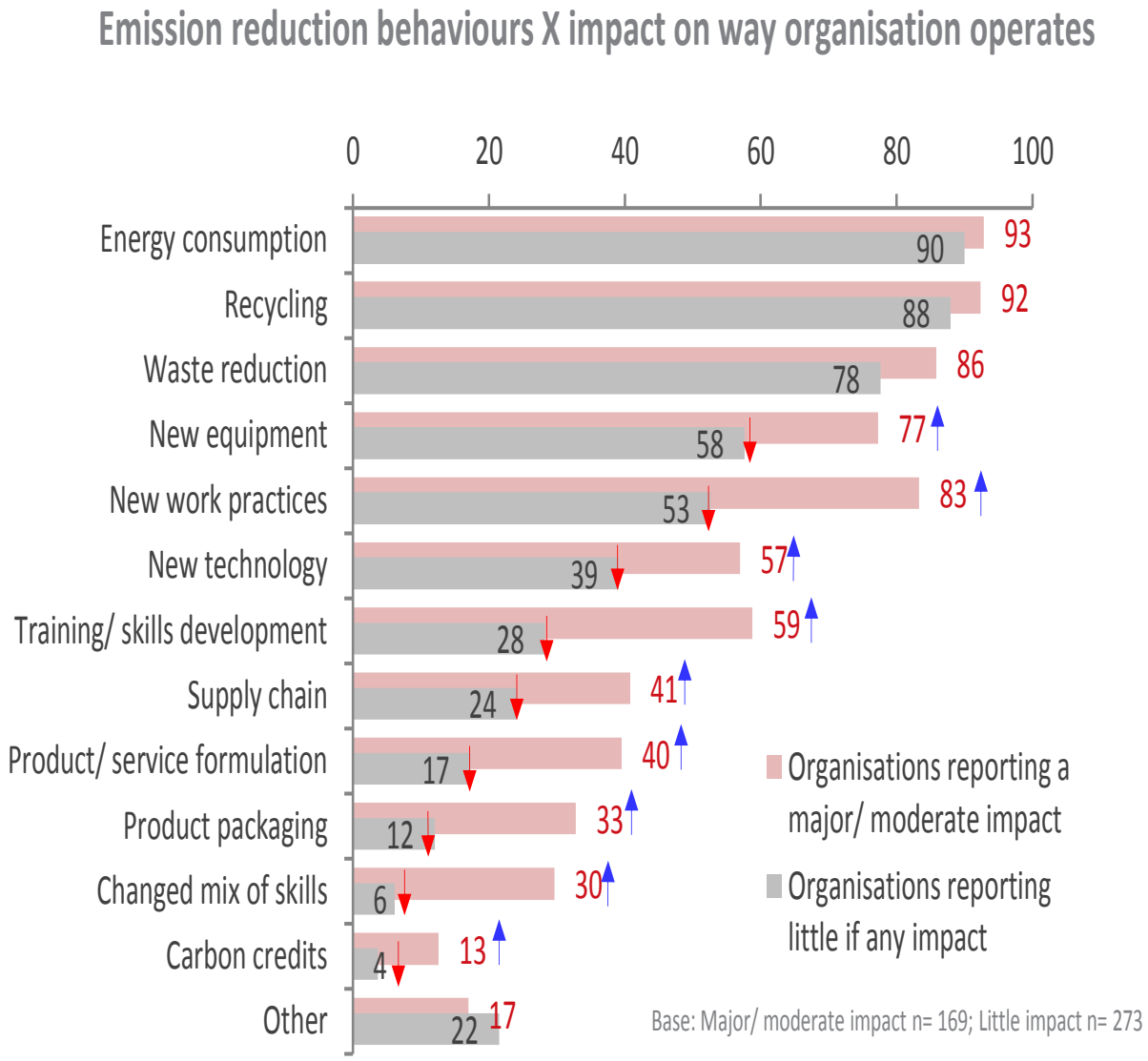


Figure 5.10 – Behaviours and impact on operations



5.4 Implementation and employee participation

5.4.1 Ways employees can have a say about carbon emission reduction practices

Figure 5.11 provides an overview of means adopted by organisations to enable employee participation or voice in steps to reduce carbon emissions. Tables 5.13 and 5.14 provide a breakdown of this response on the basis of business size and government sector, and industry sector among businesses.

Figure 5.11 indicates a significant degree of employee voice among organisations that have taken steps to reduce emissions. The greatest incidence of employee voice is, however, related to direct forms of participation, i.e., job or task related, rather than representative forms that are more likely to address strategic or even tactical issues across the wider organisation. Hence, **employee team meetings** are the most prevalent way staff can have a say about emission reduction practices, 84 per cent. This method is particularly prevalent, as Table 5.13 shows, among businesses in Health Care and Social Assistance (99 per cent), Arts, Recreation and Other Services (97 per cent), and least prevalent in Administrative and Support Services (66 per cent) and Construction (69 per cent).

Quality Circles are another potential direct form of employee voice among 29 per cent of all organisations. Businesses in Education and Training (50 per cent), Manufacturing and utilities (48 per cent) and Wholesale Trade (45 per cent) were among businesses most likely to use Quality Circles, while only 7 per cent of businesses in Transport, Postal and Warehousing and 10 per cent in Administrative and Support Services used these.

About 30 per cent of organisations report staff can have a say through a **Joint Consultative Committee** (JCC), including 9 per cent with a JCC dedicated to environmental issues, and 15 per cent report their staff have a dedicated **green/ sustainability employee representative**. Engagement through a JCC on carbon emissions was particularly prevalent in Wholesale Trade (79 per cent) and Education and Training (66 per cent); with Education and Training also a particularly high outlier in regard to dedicated JCCs (29 per cent) (compared to 3 per cent for Wholesale Trade and 14 per cent for the next most prevalent in Health Care and Social Assistance). When taken together, larger businesses (employing 100 to 199 or 200+) are far more likely than smaller businesses to have JCCs or quality circles. There are also

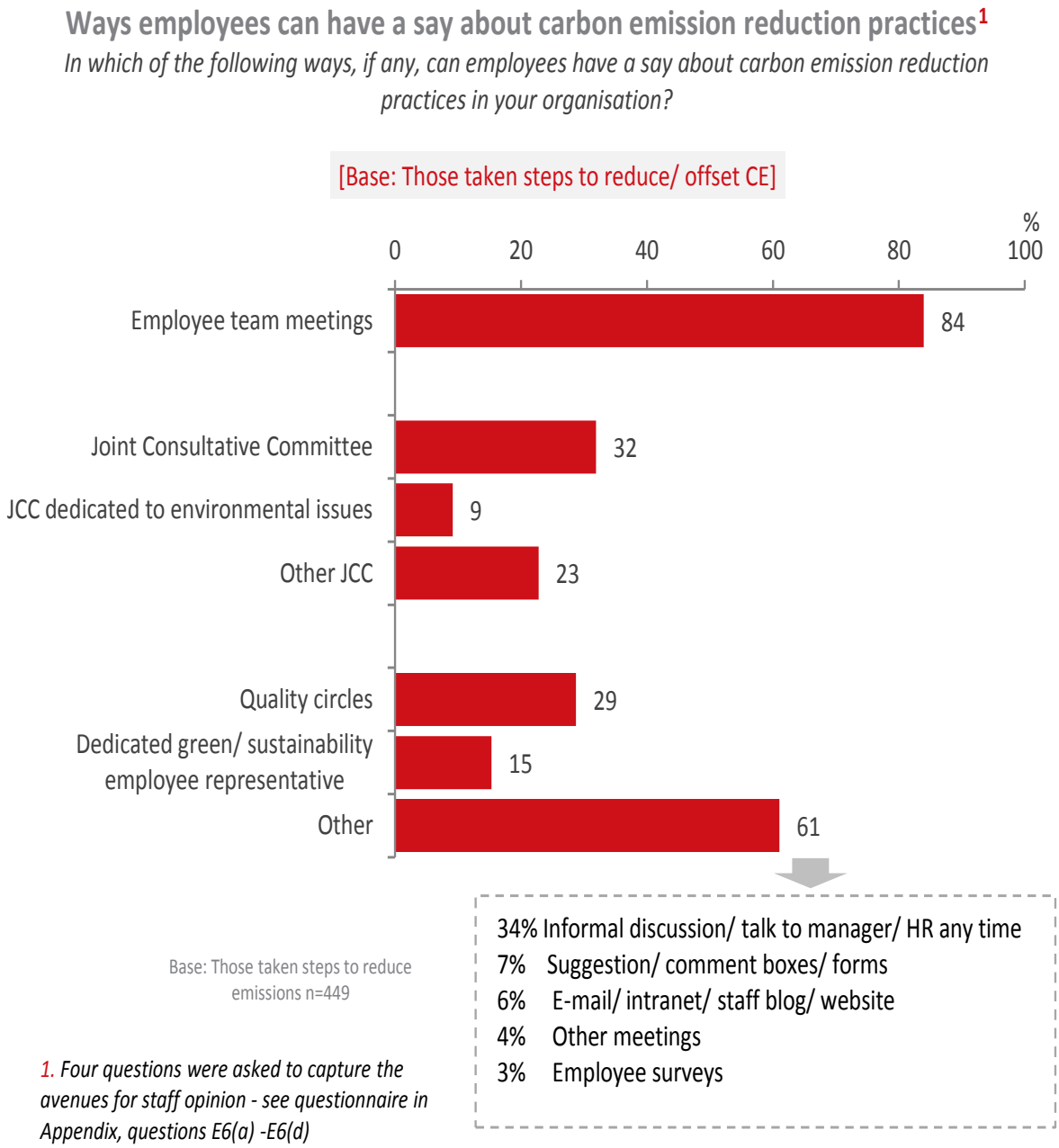
differences by segment, with JCCs being more prevalent among government agencies, particularly at federal level, than businesses.

There was a large volume (61 per cent) of unprompted 'other' ways for staff to have a say offered by respondents, including:

- informal discussions, or being able to talk to a manager/ HR at any time, 34 per cent
- suggestion or comment boxes/ forms, 7 per cent
- e-mail/ intranet/ staff blogs or website, 6 per cent
- other meetings, 4 per cent
- employee surveys 3 per cent.

These may also be classified as direct forms of participation. However, among the *unprompted* responses, representative OHS committees are mentioned as a forum by 4 per cent of government agencies, and based on a very small sample, local government agencies are more likely to say they have dedicated environmental/ sustainability committee or green team meetings.

Figure 5.11 – Overview of means of employee participation in behaviours explicitly linked to carbon emissions reduction



1. Four questions were asked to capture the avenues for staff opinion - see questionnaire in Appendix, questions E6(a) -E6(d)

Table 5.13 – Means of employee participation in behaviours explicitly linked to carbon emissions reduction, by business size and level of government

	Total	Business – no. of employees				Government			
		Total Bus	**20-99**	**100-199**	**200+**	**Total Govt**	**Federal**	**State**	**Local**
Sample size n=	*449*	*293*	*134*	*75*	*84*	*156*	*26*	*86*	*44*
	%	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Employee team meetings	84	84	85	80	79	85	81	92	72
Total Joint Consultative Committee	32	31	29	47	44	63	75	59	64
JCC dedicated to environmental issues	9	9	7	23	16	15	23	16	10
Other JCC	23	22	22	23	27	48	52	43	54
Quality circles	29	29	27	39	39	25	11	36	11
Dedicated green/ sustainability employee rep	15	15	14	22	25	20	24	17	24
Total unprompted "other" ways	61	61	60	67	60	71	68	68	79
Informal discussion / talk to manager/ HR any time	34	34	35	29	25	31	34	34	22
Suggestion / comment / ideas boxes / forms	7	7	6	11	10	8	0	7	13
E-mail/ intranet/ blog/ staff website	6	5	5	2	9	9	14	10	5
Other meetings	4	4	4	6	3	5	0	4	9
Employee surveys	3	3	3	4	7	7	4	8	7
Dedicated environ. / sustainability committee / green team meetings	2	2	2	3	3	7	10	2	17
Tool box meetings / talks	1	1	1	1	1	2	0	0	5
OH&S committee	0	0	0	2	0	4	3	3	4
Other	8	8	8	16	6	10	15	8	11
None/ dont know	4	4	4	5	6	3	4	1	7

Table 5.14 – Means of employee participation in behaviours explicitly linked to carbon emissions reduction, businesses, by selected industry grouping

Industry %	Total	Agriculture, Forestry and Fishing + Mining	Manufacturing + Electricity, Gas, Water and Waste Services	Construction	Wholesale Trade	Retail Trade	Accommodation and Food Services	Transport, Postal and Warehousing
Joint Consultative Committee dedicated to environmental issues	9	10	13	18	3	3	10	4
Other Joint Consultative Committee	22	13	25	13	76	16	8	36
Total Joint Consultative Committee	**31**	**23**	**38**	**31**	**79**	**19**	**18**	**40**
Quality circles	29	30	48	24	45	33	16	7
Employee team meetings	84	83	89	69	74	85	89	72
Dedicated green\ sustainability employee representative	15	2	12	2	36	6	16	4
Total unprompted 'other' ways	**61**	**61**	**54**	**53**	**69**	**78**	**68**	**12**
Employee surveys	3	10	0	1	3	0	5	0
Informal discussion / can bring it up anytime / directly anytime/ open door policy (but no mention of mgmt)	20	1	8	43	6	32	34	0
Just approach manager/ management/ HR directly/ any time (must mention mgmt)	14	18	13	0	0	23	15	0
Net mention informal approach	34	19	21	43	6	55	49	0
Suggestion / comment / ideas boxes / forms	7	11	21	1	36	2	4	0
Via dedicated environmental / sustainability committee / green team meetings	2	0	1	0	36	1	0	0
Any mention of other meetings	4	1	1	0	22	14	0	4
E-mail (any mention)	1	0	0	0	0	1	2	0
Other online methods / via intranet / blog / staff website	4	0	1	0	1	0	1	0
NET online methods	5	0	1	0	1	1	3	0
Tool box meetings / talks	1	1	5	5	0	0	0	0
OH&S committee	0	0	1	0	0	0	0	0
Some other way for staff to have say about carbon emissions	8	19	4	4	0	5	9	9
None\ dont know	4	0	0	2	0	4	4	28
Total	100	100	100	100	100	100	100	100
Sample n	293	16	40	19	14	37	46	13

Table 5.14 – Means of employee participation in behaviours explicitly linked to carbon emissions reduction, businesses, by selected industry grouping (cont)

Industry %	Info. Media & Telecomms + Financial/ Insurance Services + Rental/Hiring/ Real Estate Services	Professional, Scientific and Technical Services	Administrative and Support Services	Education and Training	Health Care and Social Assistance	Arts and Recreation Services + Other Services
Joint Consultative Committee dedicated to environmental issues	3	3	7	29	14	0
Other Joint Consultative Committee	11	37	6	38	34	52
Total Joint Consultative Committee	**14**	**40**	**13**	**66**	**48**	**52**
Quality circles	18	37	10	50	38	18
Employee team meetings	86	80	66	89	99	97
Dedicated green\ sustainability employee representative	15	29	34	53	17	1
Total unprompted 'other' ways	**54**	**55**	**61**	**51**	**82**	**48**
Employee surveys	1	0	10	0	18	0
Informal discussion / can bring it up anytime / directly anytime/ open door policy (but no mention of mgmt)	8	12	18	5	21	26
Just approach manager/ management/ HR directly/ any time (must mention mgmt)	22	37	3	0	15	2
Net mention informal approach	30	49	21	5	36	28
Suggestion / comment / ideas boxes / forms	3	2	3	0	10	2
Via dedicated environmental / sustainability committee / green team meetings	1	0	0	0	2	0
Any mention of other meetings	0	0	0	13	3	0
E-mail (any mention)	1	9	2	0	0	0
Other online methods / via intranet / blog / staff website	0	4	25	0	28	19
NET online methods	1	13	27	0	28	19
Tool box meetings / talks	0	0	2	0	0	0
OHS committee	0	0	0	0	0	0
Some other way for staff to have say about carbon emissions	19	7	2	33	1	1
None\ dont know	13	0	8	2	0	2
Total	100	100	100	100	100	100
Sample n	24	19	23	11	19	12

5.4.2 Trade union membership

Trade unions are another form of representative employee voice. One quarter of organisations surveyed report having employees that are members of a trade union, as shown in Figure 5.12.

There is a large difference in union presence between government agencies at 86 per cent, and businesses, at 24 per cent. However, about half of the businesses employing 100 or more say they have union members.

Figure 5.13 shows that compared with government agencies, businesses with trade union members are more likely to have either a *small* proportion of staff who are members or a *large* proportion. For example, 37 per cent of businesses but only 19 per cent of government agencies say 10 per cent or less of staff are members. On the other hand, 17 per cent of businesses but only 6 per cent of government agencies report having three-quarters or more of their staff as union members. However, it is important to note that a relatively high proportion of government agencies (particularly Federal and State agencies) are unable to report the number of staff who are trade union members - and this missing information could be distorting the picture among public sector organisations.

Figure 5.12 – Union membership, by business size and level of government

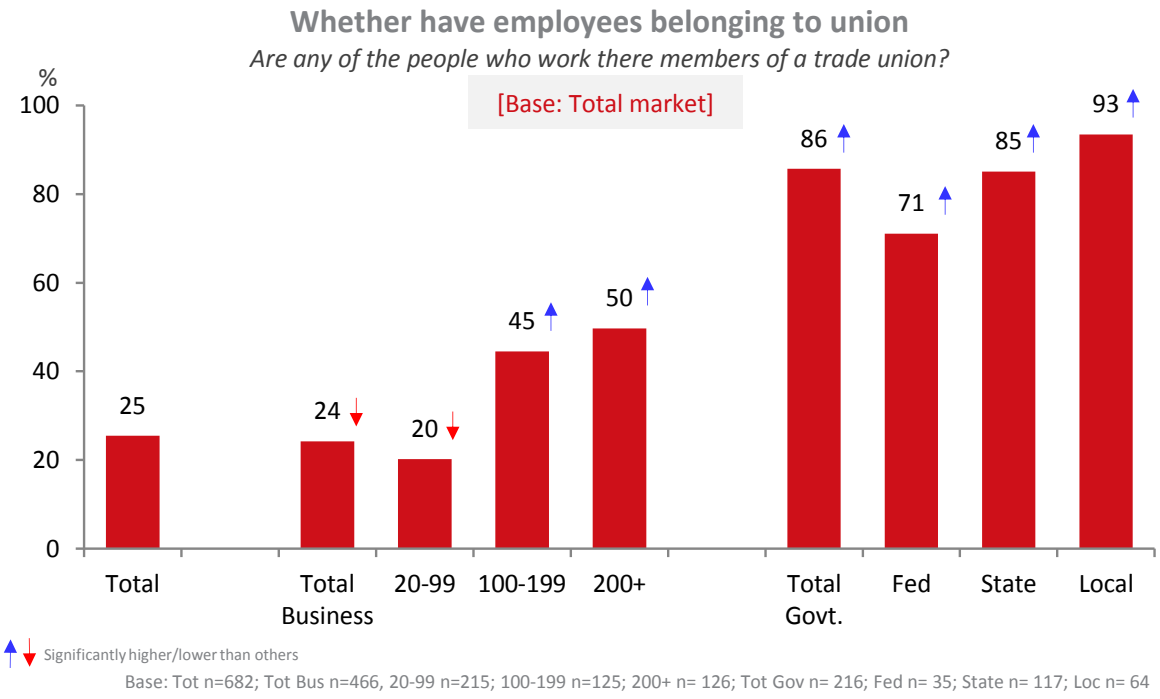
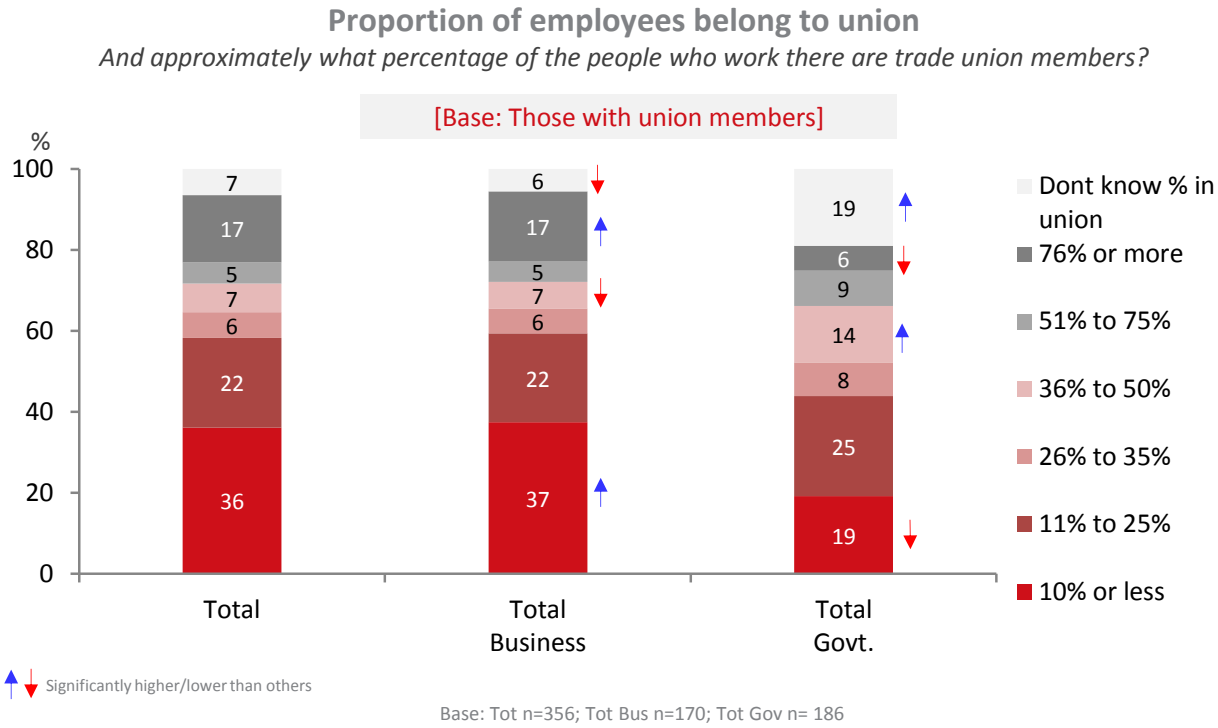


Figure 5.13 – Proportion of union membership, business vs government



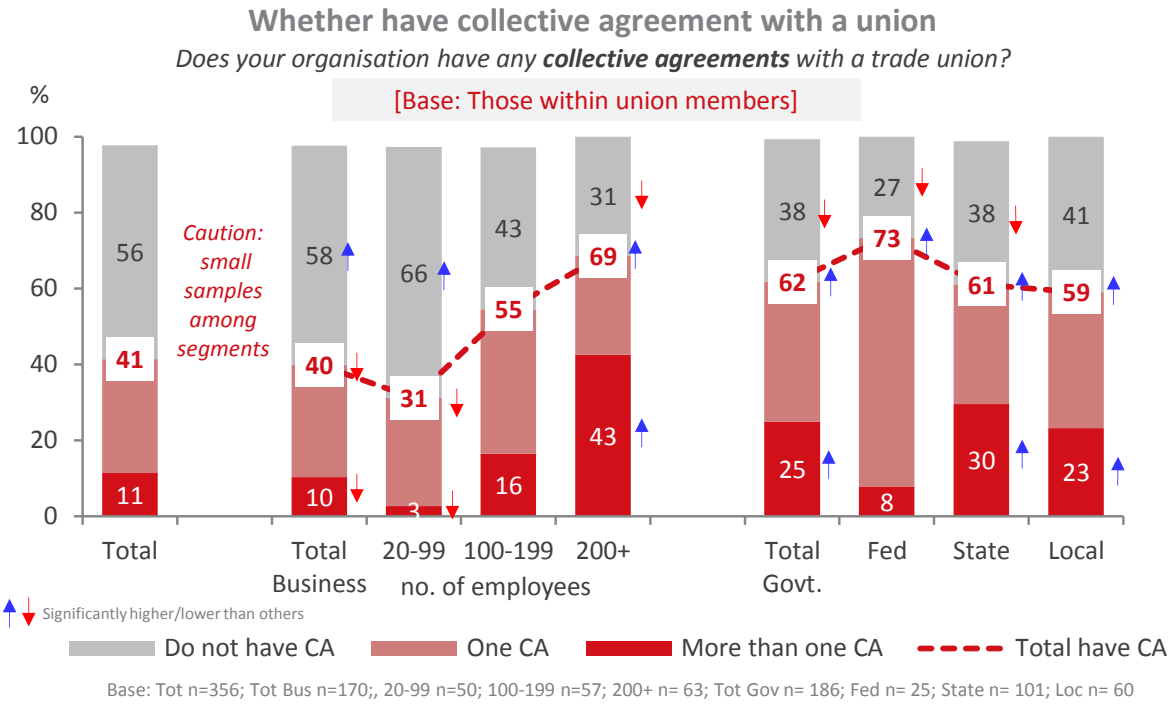
5.4.3 Collective agreements

Among organisations with union members, Figure 5.14 shows that 41 per cent say they have a collective agreement with a union, including 11 per cent with *more than one* agreement because they have multiple unions representing their employees.

Collective agreements are more frequent among government agencies with union members, 62 per cent, than among businesses with union representation, 40 per cent. Although based on small samples, collective agreements are common among larger businesses employing 100 to 199 or 200+ employees (55 per cent and 69 per cent respectively).

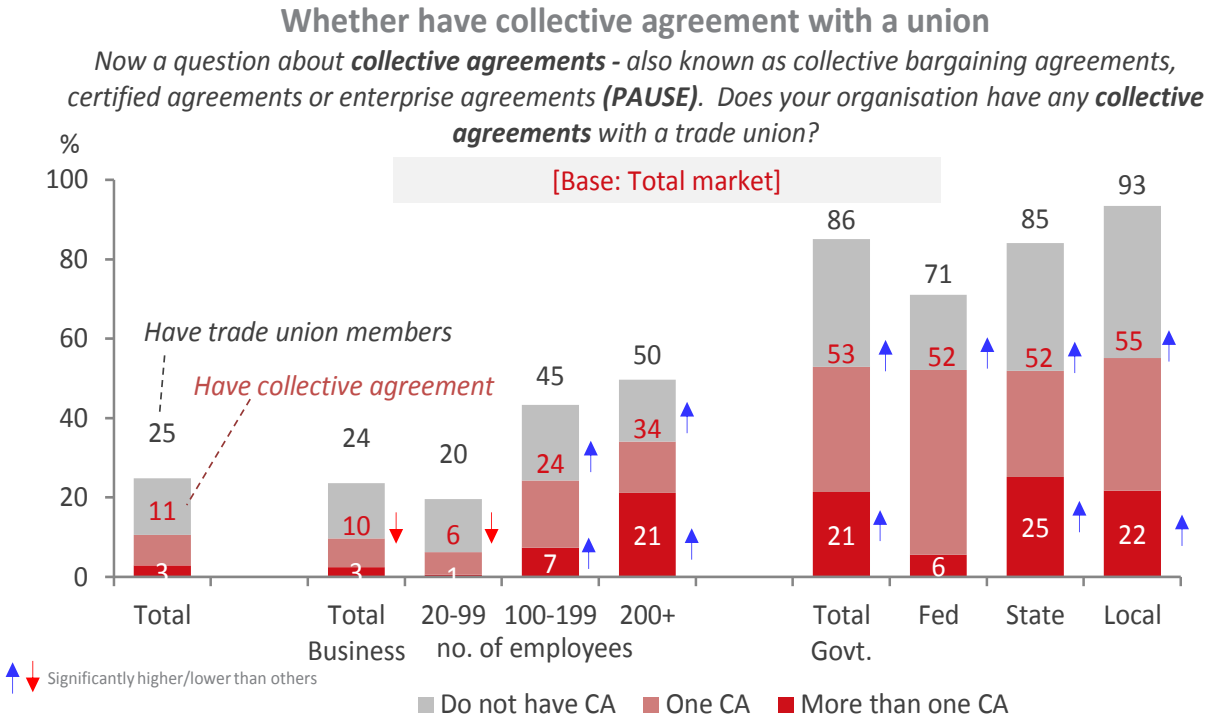
Expressing these results as a proportion of the total survey population (total market) in Figure 5.15, 11 per cent of organisations report having a collective agreement with a union, including 10 per cent of businesses and 53 per cent of government agencies. Among the largest businesses employing 200+ staff, the penetration is about one third.

Figure 5.14 – Existence of union collective agreement among organisations with union membership, by business size and level of government



Base: Tot n=356; Tot Bus n=170;, 20-99 n=50; 100-199 n=57; 200+ n= 63; Tot Gov n= 186; Fed n= 25; State n= 101; Loc n= 60

Figure 5.15 – Existence of union collective agreement among all surveyed organisations, by business size and level of government

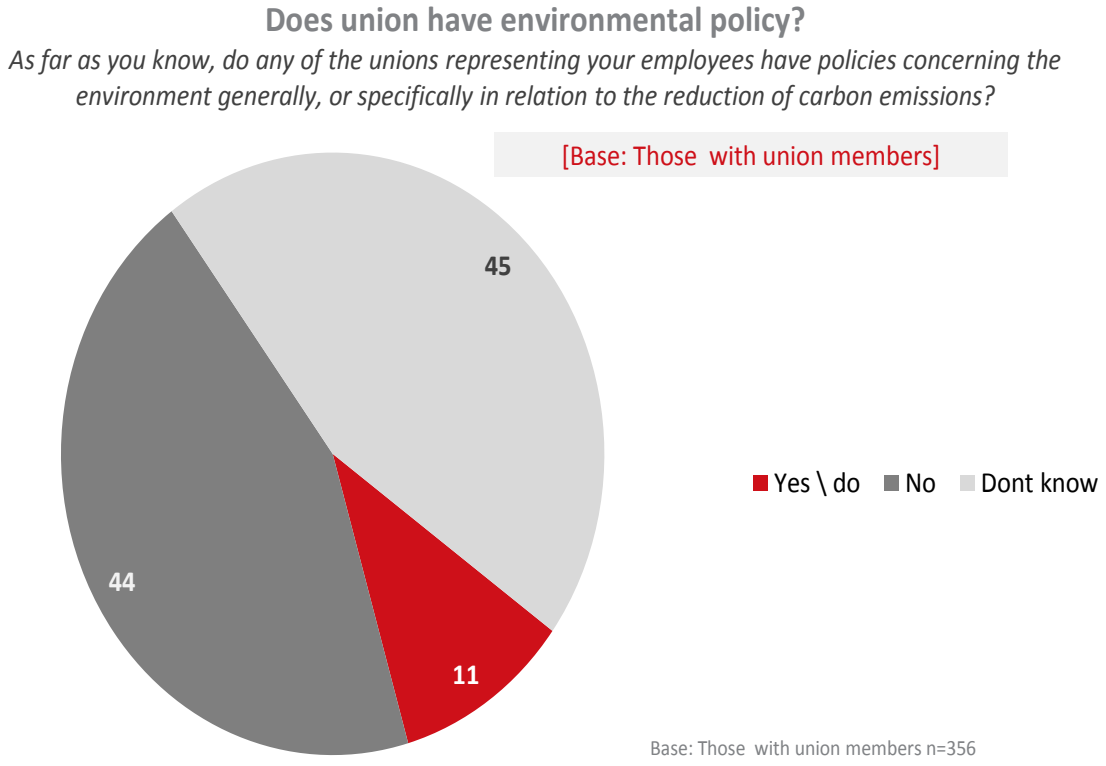


Base: Tot n=682; Tot Bus n=466, 20-99 n=215; 100-199 n=125; 200+ n= 126; Tot Gov n= 216; Fed n= 35; State n= 117; Loc n= 64

5.4.4 Unions having environmental polices

Figure 5.16 illustrates that only one-in-ten organisations with union members say that the union has an environmental policy - but importantly almost half of the organisations surveyed simply do not know. There are no noteworthy significant differences between businesses and government agencies, nor by size of business.

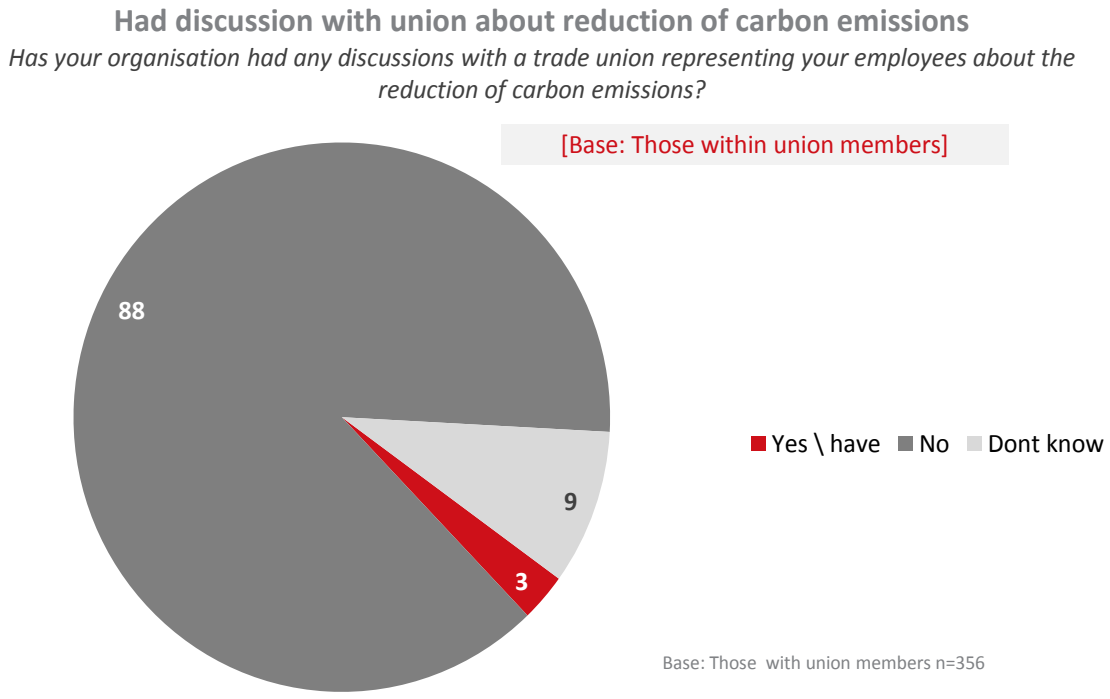
Figure 5.16 – Whether union known to have environmental policy, organisations with union members



5.4.5 Discussions with unions about environmental issues

Very few organisations, 3 per cent, report having had discussions with a union about the reduction of carbon emissions, indicated in Figure 5.17. The only significant difference, based on a *very* small sample, was among Federal government agencies, with 14 per cent reporting union discussions about emission reductions.

Figure 5.17 – Whether organisation has discussed carbon emissions reduction with unions, organisations with union members



5.4.6 Environmental clauses in collective agreements

One-in-ten organisations with a collective agreement say it contains a clause in relation to the environment, though 15 per cent of respondents did not know if the agreement contained an environmental clause. There are no noteworthy differences by segment shown in Figure 5.18– but the segment results need to be treated with caution because of small sample sizes.

Putting these results in the context of the total survey population (total market), Figure 5.19 reveals that only 1 per cent of organisations have a collective agreement with an environmental clause (1 per cent of businesses and 3 per cent of government agencies). Although based on a small sample, the penetration of agreements with environmental clauses appears to be higher among Federal government agencies, at 14 per cent.

Figure 5.18 – Whether collective agreement contains an environmental clause, by business size and level of government, organisations with collective agreements

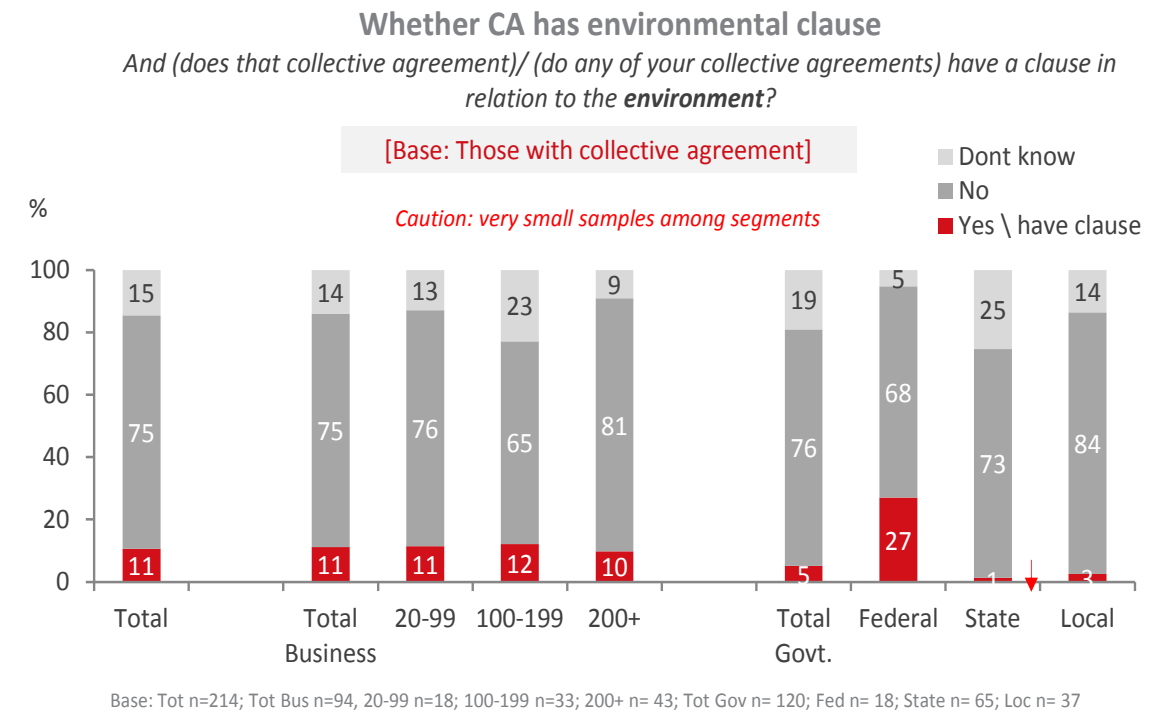
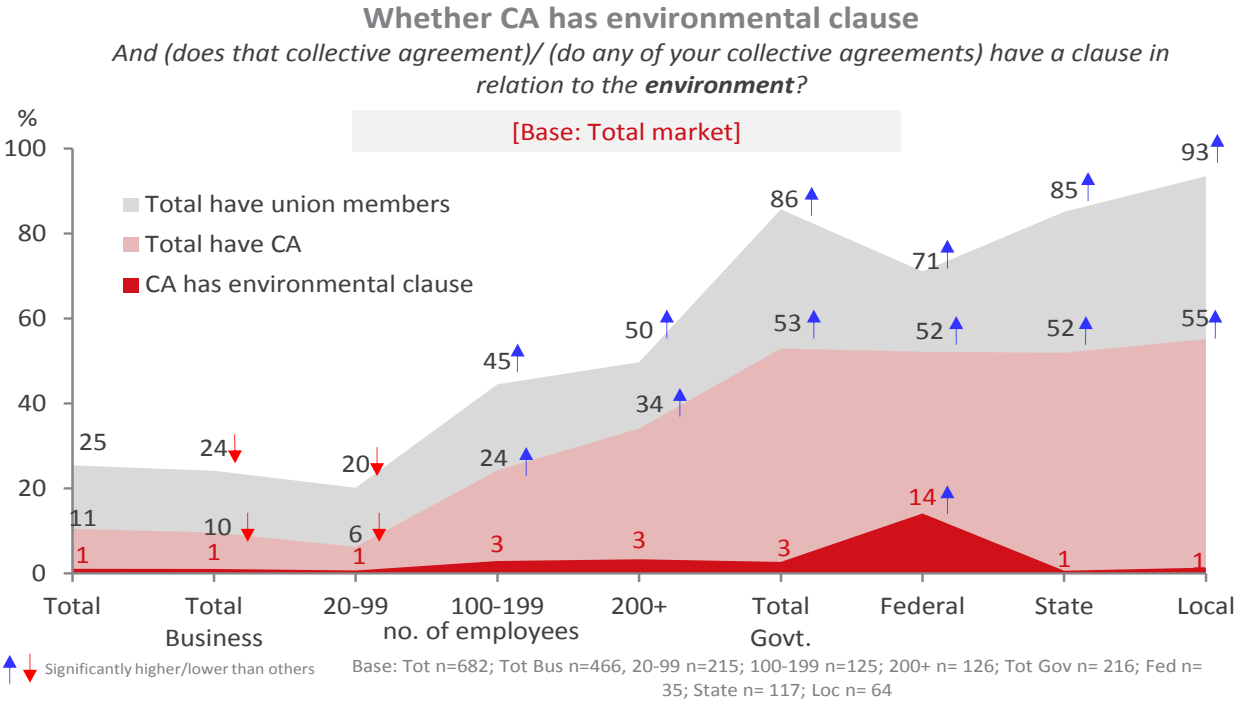


Figure 5.18 – Whether collective agreement contains an environmental clause, by business size and level of government, all organisations



Because of the tiny penetration of agreements with environmental clauses, only n= 16 survey respondents qualified to answer questions about their environmental clause/ clauses. Consequently the results are, at best, indicative:

- The respondents surveyed reported their clauses were largely **general statements of commitment** (99 per cent) rather than containing **specific requirements**.
- Half were unable to say who **initiated** the environmental clauses, and for the balance:
  - 10 per cent said they were initiated by the organisation
  - 27 per cent said the union initiated the clauses
  - 12 per cent reported a mix, with the clause in some agreements initiated by the organisation, and some by the relevant union.
- About 60 per cent reported that **changes had been made to work practices** as a result of the environmental clause in their agreement.

Table 5.15 – Detail and origination of carbon emissions commitments in CAs

Statement of commitments vs. specific requirements	
Sample size n=	16
	%
Clause/ all clauses in CA's are general statement of commitment	99
Clause / all clauses in CA's have specific requirements	0
Have mix of clauses in CA's - some general statement of commitment/ some have specific requirements	1
Total	100
Who initiated environmental clause in the agreement(s)?	
Sample size n=	16
	%
Clause/ all clauses initiated by organisation	10
Clause/ all clauses initiated by union	27
Some initiated by organisation/ some by union	12
None/ don't know	52
Total	100

5.5 Conclusions

An overview of the survey data provides some reason for cautious optimism. Over 90 per cent of organisations are engaging in behaviours which are 'environmentally friendly' and increase ecological sustainability, and a large majority of 63 per cent have linked environmentally friendly behaviours to carbon emissions reduction. Given this, it does appear that almost all organisations are taking steps to mitigate climate change, whether or not this is their intention. Moreover, it does not so far appear that steps taken have had a significant negative impact on levels of employment overall.

However, given the challenge presented by climate change, a number of areas of concern remain. Firstly, while a majority of businesses explicitly engaging in carbon emissions reduction are partly motivated by a corporate social responsibility policy or concern for the environment, these are in the minority among all businesses surveyed. This is reinforced by the fact that only 18 per cent of businesses have a formal climate change policy. While on the one hand this provides some promise that 'normal' cost and marketing-based business concerns may provide some impetus for carbon mitigation even in the absence of carbon pricing; on the other hand it may also indicate that many businesses do not acknowledge any responsibility for the mitigation for climate change *per se*, except to the extent that this coincides with relatively short term profit objectives. The relatively low but not insignificant rate of attribution of the 'carbon tax' is also worth noting (27 per cent); though it is unclear whether this low rate reflects a reluctance to attribute changes to a policy unpopular among businesses. The fact that this figure was as high as 45 per cent for the crucial Agriculture, Forestry, Fishery and Mining sectors suggests that the 'carbon tax' may not be unimportant in stimulating carbon emissions reduction. Certainly, if cost reduction is the most prevalent motivation, then the data overall seems to support the notion that increases in unit costs of carbon emissions may increase motivation for emissions reduction.

Secondly, there is little indication that those steps being taken are comprehensive. While a majority of businesses have engaged in a number of behaviours likely to mitigate climate change, few appear to be using a full range of behaviours necessary for carbon emissions reduction. Given the challenges highlighted in the review of the literature (Section 2), the fact that a minority of businesses in the survey who have deliberately reduced emissions have changed work practices (39 per cent), engaged in staff training and development (24

per cent) or changed the mix of skills in the workplace (9 per cent) as part of climate change mitigation is particularly troubling. This is further reinforced by the idea that the majority of businesses engaging in climate change have seen little or no impact on their operations, with only 3 per cent showing major impact. This points to the need for further research into whether the steps being taken to reduce emissions are resulting in actual emissions reductions or even declines in emissions intensity at the enterprise level.

The survey data provides mixed results in regard to the role being played by employee participation. On the one hand, a majority of businesses seem to have some means for employees to 'have a say' in regard to carbon emissions reduction. However, these are nearly all direct participation means. For the most part this appears to involve vaguely enabling employees to raise issues in meetings which may or may not otherwise raise the issue of carbon emissions. The use of more substantial representative mechanisms such as joint consultative committees, or indeed of dedicated mechanisms, remains very much in the minority, even among businesses explicitly reducing carbon emissions. The low rate of use of these may limit the extent to which employee input on carbon emissions mitigation is actively sought and acted upon, and certainly limits the strategic or wider organisational input of employee. The survey data also largely confirms the findings of the analysis of enterprise agreements in Section 4 that there is limited willingness to bargain over climate change, though a slightly higher rate of agreements in this sample are said to contain environmental clauses.

The sectoral differences highlighted in Section 4 are also largely replicated in the survey data. Education and Training and government organisations consistently feature more prominently on a range of measures of climate engagement than other kinds of businesses. Perhaps not surprisingly, they are also more likely than most businesses to be motivated by concerns raised by employees or, in the case of Education and Training, unions, and to make use of joint consultative mechanisms, especially dedicated carbon-related joint consultation mechanisms. In the case of government organisations the current study confirms a higher rate of collective bargaining over climate change than that undertaken by businesses. Again, this may indicate that more substantial input from employees and unions may contribute to more substantial engagement with climate change.

Finally, the fact that most emissions reduction practices began after 2008 is interesting. This year coincides with two important events, with different implications for motivations and for policy. The first is the election of the Rudd Labor government with what was then a clear mandate for action on climate change; the second is the precipitation of a global financial crisis and subsequent economic downturn. The survey data suggests that the latter may have been more important, perhaps increasing pressure on businesses to find ways to cut costs to remain solvent and competitive. However, the effect of anticipation of political and regulatory action on climate change should not be discounted.

6 CONCLUSIONS: A SYNTHESIS

6.1 The Climate for Change: Attitudes and Motivations

Overall, this report presents evidence that the attitudes and motivations of employment relations actors with regard to action on climate change are complex, and in some areas perhaps even contradictory. Both unions and employer groups have expressed nominal support for action on climate change, and even for carbon pricing as the form of such action. However, this support has often been heavily moderated by concern for the more traditional goals of such organisations: the pay, conditions and employment opportunities of workers for unions; and the costs, competitiveness and profits of businesses for employer groups. They may also have been moderated by more persistent political affiliations which go beyond the specific issue of climate change.

Unions generally seem to present a more positive perspective on the potential and actual effects of climate change action generally - and, in the Australian context, of the climate change policies of the former Labor government specifically - than do employers and employer groups. This has, in part, been motivated by an optimistic assessment of the employment effects of climate change action. Active government policy – in terms of industry assistance, skills development, and other measures – is generally emphasised, and while more assistance is generally called for, Australian unions have generally seen measures currently being taken as sufficient if not ideal. A number of Australian unions, in particular the peak body the ACTU, appear to have bought into the 'double dividend' hypothesis of climate mitigation policies stimulating increases in employment opportunities while simultaneously helping the climate; and in this they are largely in line with some of their international counterparts.

A number of unions both in Australia and internationally, as well as the ILO, have gone beyond advocating on the form of climate policy and commenting on potential employment effects, to active lobbying for urgent action on climate change action generally. To what extent labour organisations are in this respect motivated by the ideology and values of their membership is difficult to gauge. The fact that as many as 20 per cent of the businesses surveyed in section 5 which had deliberately engaged in carbon emissions reduction had received, and were partly motivated by, requests from employees, may lend some credence

to this notion. To the extent that this is the case, it would seem to reflect a concern about climate change itself, rather than simply the effects of mitigation policies.

However, any such concern does seem to be moderated by more immediate material concerns for jobs and job security. This seems particularly true where the upheaval required for transition to a low-carbon economy is likely to lead to a decline in certain industries over time. Where there is a perception that job security is threatened, particularly where the adequacy of government assistance for the transition is not perceived to be adequate, tension between concern for job security and concern for climate mitigation arises. In such instances, it appears that concern for the former often takes priority, at least for some relevant unions.

The trade off between climate action and more immediate material concerns is even more apparent among employers and employer groups. Nominally, major Australian employer groups acknowledge the need to mitigate climate change, and have generally proposed that carbon pricing is the most efficient means of mitigation. In practice, however, they have lobbied forcefully against Labor's carbon pricing scheme; and provided tacit or explicit support for the replacement of Labor with the Abbott-led Coalition government, which proposes to repeal carbon pricing.

Much of the criticism has focused on the fact that the 'carbon tax' has increased energy costs. Given the nominal support for carbon pricing, this is interesting in that this is exactly how a carbon pricing mechanism is supposed to work, by increasing the relative price of high-carbon energy and activity. Ironically, the survey data supports the idea that cost is far and away the most important motivator for businesses to cut emissions, in spite of the low direct attribution to the 'carbon tax' as such. This is reinforced by the fact that around a third of businesses which had engaged in emissions-reducing behaviours did not associate this with carbon emissions reduction – though most were motivated by a desire to reduce costs. So, while carbon pricing may not have been the proximate cause of many initial efforts to reduce emissions; by increasing costs it seems to increase the intensity of such efforts.

Beyond the general opposition to cost increases is the contention that carbon pricing imposes costs not faced by international competitors. Despite the functioning pricing mechanism operating in the European Union, and the general lack of opposition to it there,

the current lack of momentum for global action does appear on the face of it to be contributing to hesitancy on the part of Australian businesses and business groups. However, it must be noted that the EU and UK represent a significant proportion of countries with economies and living standards comparable with Australia's; and there is little reason to believe that the US government's intention to regulate carbon pollution through the Clean Air Act, if successful, would necessarily be less costly for businesses than a more direct cap-and-trade scheme.

Beyond the issues themselves, the political affiliations of the actors on this issue must also be taken into account. As discussed in section 3, the differing positions of Australian unions and employer groups on climate change policies is likely to at least partly reflect their relationships with, and perceived ability to influence, the political parties that have developed these policies.

6.2 Practice, Policy and Jobs

The report provides evidence that there is a significant degree of engagement with carbon emissions reduction practices at a range of workplaces. Indeed, both the policy review and the survey (sections 2 and 5 respectively) indicate that a majority of Australian workplaces (at least among businesses of a medium size or larger) are taking steps, or plan to take steps, to reduce emissions. This has included not only the most direct means through reduction of energy consumption, but also other areas of improving ecological sustainability through waste reduction and recycling. However, engagement with carbon emission reduction strategies is heavily influenced by business size, and more research may be needed to ascertain strategies to encourage engagement by smaller businesses.

The extent of carbon emissions reduction practices, and to what extent these practices have been successful in measurably reducing carbon emissions, is less clear. Certainly, if Linfox' estimates of a 36 per cent reduction in carbon emissions between 2007 and 2012 (section 3) are both correct and indicative, the challenge of achieving the emissions reductions necessary to avert climate change may be more readily met than some have proposed. There are signs from all sections of this report that new work practices, equipment and training are being adopted by a number of firms, though these are yet to emerge as

anything approximating a majority. The fact that the majority of firms in the survey (section 5) indicated that emissions reduction had had minimal effect on operations, and that nearly all other firms indicated more moderate effect, may indicate that what is currently being undertaken is far from comprehensive. Certainly, the kind of comprehensive program being implemented by Linfox remains very much the exception. It may also not be coincidental that Linfox was one of the few companies who came out in support of Labor's carbon pricing scheme in 2011 and has expressed concern for the climate in terms which go beyond traditional business priorities.

Regarding the impact of carbon emissions reduction policies, the evidence is necessarily equivocal given the short period for which the 'carbon tax' and accompanying policies have operated. On the one hand, in spite of employer complaints of higher business costs, there is little sign of the dire employment effects predicted by some. Whether this is because such cost increases, which employer groups admit they have been largely unable to pass on to consumers, were insufficient to precipitate a decline in business activity (and have instead simply been subtracted from profit); or because the assistance packages and stimulus measures enacted by the former Labor government have been sufficient to offset such increases; or simply because, as some employer groups might claim, the policies have had insufficient time to damage the Australian economy, is unclear.

Nor, however, is there much sign of a 'double dividend' or indeed the widespread net creation of new 'green' jobs. The survey data in particular strongly indicates that the job market effects of climate mitigation practices by businesses are so far negligible. And if there is little bad news in regard to the effect of the carbon tax on the economy, nor is there good news that the economy has widely benefited thus far. Indeed, all of this is in line with the assessment of the European Commission which suggests that little net gain or loss in jobs can be expected from carbon mitigation. There is some sign of qualitative 'greening' of work, with a substantial minority of Australian organisations in the survey claiming to be changing their work practices in response to climate change. Far fewer organisations, however, have invested in new training or changed the skills mix of their workforces; suggesting that such changes have so far been relatively minor. The Ai Group's identification of a lack of carbon reduction capabilities (section 3) is also worthy of note, and to what extent this has been corrected or is likely to be in the future is unclear.

Overall, therefore, the evidence so far suggests some engagement by industry with climate mitigation in workplaces, with few negative outcomes from climate mitigation policies. The literature almost universally suggests, however, that if substantial climate mitigation is to be achieved, more substantial change is likely to be needed. This will almost certainly include changes to the industrial composition of the Australian and global economy and the kinds of jobs available, regardless of the net effects. The literature is also consistent in insisting that labour outcomes in such a transition are highly dependent on active government support, not only for industries generally but specifically for workers, jobs and skills. The transition is still in its early stages and the future effects on work and employment remain uncertain.

The more primary evidence presented in sections 3-5 of this report may also not wholly account for businesses created particularly to serve new markets created by efforts to reduce emissions; or indeed existing businesses which, while not reducing there own emissions, have benefitted from such opportunities. Such businesses seem likely to have been the beneficiaries of much of the former government's green stimulus spending.

Sectoral differences must also be noted. Evidence from throughout the report suggests that government organisations are attempting to 'lead by example' with ambitious programs aimed at reducing omissions. Unions have also adopted practices to reduce their own emissions, with the NTEU particularly notable in this respect, and the Education and Training sector is also notable for more substantial on average commitments to carbon emissions reduction. The latter two facts may well be related (see below).

6.3 Employee Participation

As previously noted, employee participation represents a potentially important mechanism for labour market actors to identify opportunities for carbon emissions reduction at the workplace level. The evidence from Europe suggests that substantial representative participation mechanisms have played an important role in national and organisational responses to climate change there. Such employee participation is also an important feature of the 'Just Transition' approach advocated by the ILO, UNEP and other international agencies. Collective bargaining, while not as widespread, has also been a feature of climate change mitigation efforts in many parts of Europe and elsewhere, most prominently the UK.

Unfortunately, the evidence presented in this report does not support the notion that such practices are widespread among Australian organisations. Nearly all (96 per cent) of the 63 per cent of organisations surveyed that had explicitly engaged in carbon emissions reduction report some mechanism for employee participation in this process, but this is for the most part through team meetings and other direct forms of participation, with little indication of a substantial role for employee input at strategic or organisation-wide levels. Only 31 per cent of this 63 per cent (around 20 per cent of the total business sample) included opportunities for more substantial engagement through Joint Consultative Committees, and only 9 per cent had a JCC dedicated to climate change or other environmental issues. There is also little evidence that 'sustainability teams' of the kind created by Linfox are a mechanism in widespread use. It is also notable that employee requests figured in the motivations of only 20 per cent of those business respondents to the survey who had explicitly taken steps to reduce emissions.

Both the analysis of enterprise bargaining agreements in section 4 and the survey data in section 5 also suggest that collective bargaining over climate change mitigation is fairly scarce. Of agreements for 2011-12 6.7 per cent were coded by DoE as containing environmental clauses, while the survey data suggests that 11 per cent of collective agreements (covering 3.6 per cent of the total sample of businesses) contain carbon reduction-related clauses. It is also worth noting that only a tiny proportion of the 2009-2012 collective agreements containing environmental clauses made explicit reference to climate change as such; and that the clauses in these were largely somewhat vague and insubstantial, with some notable exceptions.

At this stage, it is difficult to speculate with certainty on why this lack of engagement through participative mechanisms may be the case. It seems likely that a large part of the reason is that employers simply wish to retain hegemony over determination of business practices, without reference to employees. The NTEU's contentions regarding the hesitancy of universities to bargain and engage with employees may reflect this. Certainly, a reluctance to negotiate bilateral agreements on climate change may not come as a surprise; particularly where unions have not strongly advocated for it or otherwise lack the negotiating power to ensure it. In regard to collective bargaining, the tenuous legal status of bargaining over climate change may also play a role; but this is a limited constraint in

practice given the apparent legitimacy of including climate-related consultation clauses in enterprise agreements.

However, when the exceptions to this rule – government organisations, the Education and Training sector, and indeed the particular example of Linfox (which, in addition to its 'sustainability teams', did have small emissions-related clauses in its EBAs) – are considered in concert with the aforementioned European examples, there is some reason to conclude that this may represent an overall lack of engagement by business in substantial climate change mitigation. This report presents evidence that these organisations have featured higher rates of engagement with a number of climate mitigation behaviours than other organisations. Not coincidentally, in addition to the previously mentioned participation efforts of Linfox, both governments and the Education sector, had higher rates of consultation on climate change through consultative committees, higher rates of dedicated committees, and particularly in the case of universities, not only higher rates of collective bargaining on climate issues than other kinds of organisations but often qualitatively more substantial commitments made in EBAs.

In the case of the Education sector and universities particularly, this at least partly represents the results of strong advocacy by unions and the NTEU in particular (the NTEU's caution about the implementation of measures notwithstanding). This is reflected in the higher rates of both employee requests and requests from unions as motivators for change in this sector. While the NTEU claims to have had to overcome reluctance on the part of university employers, the relationship between Linfox and the TWU also appears to represent a more cooperative model; with the company, union, employer group and regulator working together to improve environmental outcomes.

This has important implications both for organisational practice, union action, and public policy. From an individual organisational perspective, it represents a missed opportunity for businesses to increase their ability to find sources of emissions savings; which is not only important for adapting to or taking advantage of whatever government emissions reduction policy is enacted, but can ultimately be a proxy for savings on energy and other resource costs even in the absence of a carbon price. It also suggests that union action can be effective not just at the policy advocacy level but at the workplace level; whether it be using its negotiating power to encourage greater action than is currently being undertaken, or

cooperating with enlightened employers to develop and implement effective climate mitigation. Finally, from a public policy perspective, it suggests that more needs to be done to facilitate employee (and union) participation in carbon emissions reduction. Beyond the price-and-compensate model of Labor or the uncertain 'Direct Action' of the Coalition, encouraging, incentivising or even compelling organisations to engage with their employees on climate change represents an important opportunity for facilitating efficient emissions reduction and the achievement of national or future international emissions targets.

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APPENDIX I: TAXONOMY OF GREEN JOBS

Figure 1a- Australian Taxonomy of Green Jobs

Environmental / Sustainable

E Mostly environmental
ES Both environmental and sustainable
S Mostly sustainable

Occupation

1 Managers
2 Professionals
3 Technicians and trades workers
4 Community and personal service workers
5 Clerical and administrative workers
6 Sales workers
7 Machinery operators and drivers
8 Labourers

Skills Levels

1 Degree
2 Diploma
3 Certificate III with experience or Certificate IV
4 Certificate II or III
5 Certificate I or Semi-skilled

Industry

A Agriculture, Forestry and Fishing
B Mining
C Manufacturing
D Electricity, Gas, Water and Waste Services
E Construction
F Wholesale Trade
G Retail Trade
H Accommodation and Food Services
I Transport, Postal and Warehousing
J Information Media and Telecommunications
K Financial and Insurance Services
L Rental, Hiring and Real Estate Services
M Professional, Scientific and Technical Services
N Administrative and Support Services
O Public Administration and Safety
P Education and Training
Q Health Care and Social Assistance
R Arts and Recreation Services
S Other Services

Source: Ehmcke et.al. (2009)

Figure 1b- Australian Taxonomy of Green Jobs – an example

Job Description	Sust / Env	Occupation Code	Skills Level	Industry Code	Code
Electrical engineer with a university degree working for a power utility on policy issues	S	3	1	D	S31D
Construction worker helping build a government-funded solar power facility for a remote community	E	8	5	E	E85E
Director of an environmental consultancy advising organisations on lowering their carbon footprint	ES	1	1	M	ES11M
Sustainability manager helping senior management in a credit union devise their environmental strategy	S	2	2	K	S22K
Sustainability manager helping to transform the culture of the organisation to become more sustainable	S	2	2	Depends on industry	S22x
Lawyer specialising in sustainability and/or environmental issues.	S	2	1	M	S21M
Journalist writing about environmental issues for a major newspaper (or an Internet newsletter)	ES	2	1	J	ES21J
Manufacturer's or retailer's technician installing solar panels or insulation in people's homes	E	3	4	M	E34M
Market researcher analysing green issues for corporate clients	S	2	1	M	S21M
Transport company OH&S officer confirming compliance with environmental standards	S	3	2	I	S32I
Dairy farmer struggling with reduced water allocations and climate change	E	1	3	A	E13A
High school teacher teaching students about green issues	ES	2	1	P	S21P

Source: Ehmcke et.al (2009)

APPENDIX II – LIST OF LABOUR MARKET ACTORS AND KEY ORGANISATIONS EXAMINED

Peak bodies

1. Australian Council of Trade Unions (ACTU)
2. Business Council of Australia (BCA)
3. Australian Chamber of Commerce and Industry (ACCI)

Construction

4. Construction, Forestry, Mining and Energy Union(CFMEU) – Construction and General Division
5. Master Builders Australia (MBA)

Education

6. National Tertiary Education Union (NTEU)
7. Australian Education Union (AEU)
8. TAFE NSW
9. Universities Australia

Utilities

10. Electrical Trades Union (ETU)
11. AGL
12. National Electrical and Communications Association (NECA)

Manufacturing

13. Australian Manufacturing Workers' Union (AMWU)
14. Australian Workers' Union (AMWU)
15. Australian Industry Group (Ai Group)

Mining

16. Construction, Forestry, Mining and Energy Union (CFMEU) – Mining and Energy Division
17. Australian Mines and Metals Association (AMMA)
18. Minerals Council of Australia (MCA)

Public administration

19. Public Service Association (PSA) of NSW

20. Community and Public Sector Union (CPSU)
21. State government – NSW Office of Environment and Heritage
22. Commonwealth government – Department of Sustainability, Environment, Water, Population Communities

Transport

23. Transport Workers Union (TWU)
24. Linfox
25. Victorian Trucking Association (VTA)

APPENDIX III – CODING FRAME USED TO ANALYSE THE CONTENTS OF ENVIRONMENTAL CLAUSES IN ENTERPRISE AGREEMENTS

1. Agreements contains only a vague overall commitment to environmental improvements
2. Does the onus of responsibility for environmental improvements rest with employees, management or co-commitment?
3. Consultation over environmental matters
a. Agreement contains mechanisms for consultation over environmental matters (e.g. committees, formal meetings)
b. Agreement mentions employee consultation without actual mechanism
c. There is expressed provision for union/representative involvement in environmental consultation
d. Agreement provides for the of a dedicated environmental representative
e. Agreement provides for the existence/creation of a new committee specifically for environmental consultation
4. Pre-existing environmental policies
a. Reference to an existing environmental policy/procedure
b. Actual policy is included in EBA
c. Environmental commitments tied to OHS commitments
d. Mention of ISO environmental standards
5. Clauses relating to specific goals or employee behaviours on environmental matters
a. Recycling
b. Waste reduction/efficiency
c. Use of technology
d. More efficient work practices (e.g. continuous improvement)
e. Commitment to improved management behaviours
6. Links to performance relating to environmental improvements
a. Incentives and bonuses (group)
b. Incentives and bonuses (individual)
c. KPIs/targets
d. Performance reviews
7. Disciplinary procedures for employee non-compliance with environmental procedures
8. Employees responsible for maintaining corporate image regarding environmental matters
9. Training for environmental knowledge, procedures or skills
10. Inclusion of environmental skills in job descriptions
11. Explicit mention of climate change related language (e.g. carbon, greenhouse)
12. Clauses relating to special environmental circumstances of the site or project

APPENDIX IV – SURVEY QUESTIONNAIRE

NEWSPOLL

Macquarie University Business and Government survey - MAIN

NEWSPOLL JOB NO. 130729
To be fielded no later than
Fri Aug 30, 2013

INTRODUCTION

PROG NOTE: DISPLAY IF "BUSINESS" OR "GOVERNMENT" BASED ON SAMPLE SOURCE

PROG NOTE: DISPLAY ORGANISATION NAME FROM SAMPLE

PROG NOTE: IF BUSINESS, DISPLAY NO. EMPLOYEES FROM SAMPLE

Good morning \ afternoon \ evening. My name is .... (**NAME**) from Newspoll in Sydney calling on behalf of Macquarie University. May I please speak to the manager who is most responsible for Human Resources or Personnel there?

IF ASKS REASON We're conducting research on behalf of Macquarie University about work practices and environmental issues among both businesses and government agencies.

RE-INTRODUCE AS NECESSARY Good morning \ afternoon \ evening. My name is .... (**NAME**) from Newspoll in Sydney, and we're conducting research on behalf of Macquarie University in Sydney about work practices and environmental issues among businesses and government agencies. The project is being conducted for Professor Ray Markey, Dr Chris Wright and Dr Joe McIvor at Macquarie. (For this particular study I need to speak to the person most responsible for Human Resources or Personnel in your organisation - would that be you?)

The survey should take around....(x) minutes depending on your answers - is it OK to do now?

Just to let you know this call may be monitored for quality and coaching purposes. Please be assured we are **not** selling anything, and your answers will be used **only** for research purposes. All responses are confidential and will be completely anonymous in the aggregate data collected. If there's anything you'd prefer **not** to answer, please let me know.

IF NOT YET IDENTIFIED Could I please start with your first name?

INTERVIEWER RECORD RESPONDENT NAME FROM INTRODUCTION

PROG NOTE: ASK ALL RESPONDENTS

Q1 **HIDDEN QUESTION: STORE SECTOR IN Q1**

1	Business (Dun & Bradstreet list)
2	Government (A-Z Gov BIZ list)

Q2 **HIDDEN QUESTION: STORE AREA IN Q2**

1	Brisbane
2	Rest of QLD
3	Sydney
4	Rest NSW / ACT
6	Melbourne
7	Rest of Vic
8	Adelaide
9	Rest SA
10	Perth
11	Rest WA
12	Tas
13	NT

PROG NOTE: ASK IF <u>BUSINESS SECTOR</u> IE CODE 1 IN Q1. CODE 2 IN Q1 GO TO Q5

Q3 **HIDDEN QUESTION: STORE 2 DIGIT ANZSIC DIVISION FROM DUN & BRADSTREET SAMPLE IN Q3**

_ _

Q4 **HIDDEN QUESTION: STORE DUN & BRADSTREET ESTIMATED EMPLOYEE SIZE RANGE**

1	20-99
2	100-199
3	200+

PROG NOTE: ASK IF GOVERNMENT SECTOR IE CODE 2 IN Q1. CODE 1 IN Q1 GO TO NEXT SECT

Q5 **HIDDEN QUESTION: STORE GOVERNMENT TYPE IN Q5**

1	Federal - super department
2	Federal - other
3	State – super department
4	State - other
5	Local

BUSINESS SITUATION

SECTION A - **PROG NOTE: ASK IF <u>BUSINESS SECTOR</u> IE CODE 1 IN Q1. OTHERS GO TO NEXT SECT**

A1 So that I ask you the most **relevant** questions, I just need to understand a little about your organisation's situation. Firstly, is your organisation part of, or involved with a **franchise** operation? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ part of franchise operation
2	No \ not
3	Don't know

PROG NOTE: ASK IF PART OF <u>FRANCHISE OPERATION</u> IE CODE 1 IN A1. CODE 2-3 GO TO A4

A2 Which one of the following **best** describes your organisation? Is it...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	One of the franchise operators **within** the franchise network
2	**Or**, is your business the franchis**or** that **owns** the rights to the franchise in Australia
3	**DO NOT READ** Neither \ don't know

PROG NOTE: ASK IF IDENTIFIED AS FRANCHISE OPERATOR <u>OR</u> FRANCHISOR IE CODE 1-2 IN A2. CODE 3 GO TO A4

A3 For the rest of the survey, when I ask you questions about your organisation, I'm only referring to (**PROG NOTE: IF CODE 1 IN A2 INSERT:** "your own particular business there - **not** the whole franchise network" **IF CODE 2 IN A2 INSERT:** "your business there as the franchis**or** - **not** the whole franchise network"**)**. **HIT "ENTER" TO CONTINUE**

PROG NOTE: ASK IF <u>NOT</u> IDENTIFIED AS FRANCHISE OPERATOR <u>OR</u> FRANCHISOR IE CODE 2-3 IN A1 OR CODE 3 IN A2. CODE 1-2 IN A2 GO TO NEXT SECT

A4 Just thinking about **(PROG NOTE: INSERT NAME OF ORGANISATION FROM SAMPLE)** itself. In Australia, does it...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Operate from only **one** office, location or outlet
2	Or, does it have **more** than one office, location or outlet in Australia
3	**DO NOT READ** Don't know

PROG NOTE: ASK IF HAVE MORE THAN ONE LOCATION IE CODE 2 IN A4. CODE 1,3 IN A4 GO TO NEXT SECT

A7 For the rest of the survey, when I ask you questions about your organisation, I'm referring to **(PROG NOTE: INSERT NAME OF ORGANISATION FROM SAMPLE)** including **all** of the different offices, locations or outlets you have in Australia. **HIT "ENTER" TO CONTINUE**

GOVERNMENT ENTITY SITUATION

SECTION B **- PROG NOTE: ASK IF GOVERNMENT SECTOR IE CODE 2 IN Q1. OTHERS GO TO NEXT SECT**

PROG NOTE: ASK IF FEDERAL OR STATE SUPER DEPARTMENT IE CODE 1,3 IN Q5. OTHERS GO TO B2

B1 For this survey I'll be asking questions about environmental issues and work practices in your organisation – that is, the **(PROG NOTE: INSERT ORGANISATION NAME FROM SAMPLE)**.

The Department may cover multiple different government agencies. But for the purpose of this survey, when I ask about your organisation, I **just** mean the central part of the **(PROG NOTE: INSERT ORGANISATION NAME FROM SAMPLE)** itself – **not** including any other government agencies that are part of The Department **(PAUSE)**. So firstly... **HIT ENTER TO CONTINUE**

IF NECESSARY USE THE FOLLOWING EXAMPLE:
For example in the Federal Government, the Department of Broadband, Communication and the Digital Economy covers a number of other agencies, for example the ABC, Australia Post and NBN Co. In that example, the organisation we'd be interested in is the central part of the Department of Broadband, Communication and the Digital Economy itself, **not** the other agencies.

PROG NOTE: ASK IF FEDERAL-OTHER OR STATE-OTHER IE CODE 2,4 IN Q5. OTHERS GO TO B3

B2 For this survey I'll be asking questions about environmental issues and work practices within your organisation. By your organisation, I just mean **(PROG NOTE: INSERT ORGANISATION NAME FROM SAMPLE)** itself **(PAUSE)**. So firstly... **HIT ENTER TO CONTINUE**

PROG NOTE: ASK IF LOCAL GOVERNMENT IE CODE 5 IN Q5. OTHERS GO TO NEXT SECT

B3 For this survey I'll be asking questions about environmental issues and work practices in your organisation. By your organisation, I mean your particular local council there **(PAUSE)**. So firstly... **HIT ENTER TO CONTINUE**

NO. OF EMPLOYEES AND OTHER BUSINESS CHARACTERISTICS

SECTION C - **PROG NOTE: ASK ALL RESPONDENTS NOT TERMINATED**

C1 Including any full time, part time or casual staff, currently how many people, **including yourself,** does your organisation employ? **READ SCALE AS NECESSARY**

IF UNSURE Just your best estimate would be fine
IF NECESSARY REMIND RESPONDENT THAT IT INCLUDES THEMSELF

PROG NOTE:
- SINGLE RESPONSE

1	Under 20
2	20 to 49
3	50 to 99
4	100 to 199
5	200 or more
99	**DO NOT READ** Don't know \ refused

PROG NOTE: ASK IF DON'T KNOW \ REFUSED NO. OF EMPLOYEES IE CODE 99 IN C1. OTHERS GO TO C2(b)

C2(a) I'm sorry, but for this survey, we need the number of employees so we can analyse our survey results properly, so I'll have to finish the interview there. But thank you very much for your time. **TERMINATE NE2**

PROG NOTE: ASK IF NO. OF EMPLOYEES UNDER 20 IE CODE 1 IN C1. OTHERS GO TO C3

C2(b) I'm sorry, but for this survey, we are only talking to organisations with 20 or more employees, so I'll have to finish the interview there. But thank you very much for your time. **TERMINATE NE3**

PROG NOTE: ASK ALL <u>BUSINESS SECTOR</u> NOT TERMINATED IE CODE 1 IN Q1 AND CODE 2-5 IN C1. OTHERS GO TO NEXT SECT

C3 And is your organisation...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE
- ROTATE BETWEEN 1,2,3,4,5,99 AND 5,4,3,2,1,99

1	100% Australian owned
2	Majority Australian owned
3	Exactly 50% Australian, 50% foreign
4	Majority foreign owned
5	100% foreign owned
99	**DO NOT READ** Don't know

C4(a) Does your organisation **export** any products or services? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ export
2	No \ don't know

PROG NOTE: ASK IF EXPORT IE CODE 1 IN C4(a). CODE 2 GO TO NEXT SECT

C4(b) And is your business...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	100% export
2	Mainly export
3	Or, is less than half of your business export
99	**DO NOT READ** None \ don't know

CARBON EMISSIONS

SECTION E - **PROG NOTE: ASK ALL RESPONDENTS NOT TERMINATED**

E1 Now a question about **carbon emissions**. There are different ways an organisation might reduce its carbon emissions. For example it could reduce energy consumption; reduce waste, or do other things **(PAUSE)**. In recent years, has your organisation done anything to help reduce, or offset its carbon emissions? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes\ has
2	No
99	Don't know

PROG NOTE: ASK IF TAKEN STEPS TO REDUCE EMISSIONS IE CODE 1 IN E1. CODE 2-99 GO TO E7

E1(a) And which of these things, if any, has your organisation done to help reduce its emissions? Has it...?
READ OUT

PROG NOTE:
- MULTI RESPONSE
- IF 1-2 SELECTED CANNOT SELECT 99

1	Taken any steps to reduce energy consumption
2	Bought carbon credits to offset its carbon emissions
99	**DO NOT READ** None \ don't know

E1(b) Next I'm going to read some **other** things organisations could **potentially** do to reduce carbon emissions – and I'd like you tell me which, if any, you've done **(PAUSE)**. Please **only** include things you've done **specifically** as a way to reduce carbon emissions **(PAUSE).** So, firstly, have you...? **READ OUT**

PROG NOTE:
- MULTI RESPONSE
- SHOW 1-2 FIRST, THEN RANDOMISE 3-10 THEN 11-99 LAST, MAINTAINING GROUPS 3-4, 6-7, 8-10
- IF 1-11 SELECTED CANNOT SELECT 99

1	Increased the amount of material you **recycle** in order to cut emissions
2	Reduced the amount of **waste** material you produce to cut emissions
3	Changed the formulation of any of your products or services to cut emissions
4	Changed the physical **packaging** of any products to cut emissions
5	Made changes to your supply chain to cut emissions
6	Introduced new equipment to cut emissions
7	Introduced new technology to cut emissions
8	Introduced new work practices to cut emissions
9	Had staff training or skills development to cut emissions
10	Changed the **mix** of skills in your workforce to reduce emissions
11	Or, have you reduced emissions by doing something else (**SPECIFY)**
99	**DO NOT READ** None \ don't know

E2 And which of the following, if any, are reasons **why** your organisation has taken steps to reduce carbon emissions? Firstly...? **READ OUT**

PROG NOTE:
- MULTI RESPONSE
- SHOW 1-2 FIRST, THEN RANDOMISE 3-6 THEN 7-99 LAST
- IF 1-9 SELECTED CANNOT SELECT 99

1	To reduce costs
2	Because of the introduction of the carbon tax
3	**(PROG NOTE: DISPLAY IF BUSINESS SECTOR IE CODE 1 IN Q1)** To meet requirements of **other** organisations you **supply** products or services
4	Because of a corporate social responsibility policy you have
6	**(PROG NOTE: DISPLAY IF BUSINESS SECTOR IE CODE 1 IN Q1)** Because you could use it as part of your marketing strategy
7	Because of requests from unions
8	Because of requests from employees
9	Or, some other reason **(SPECIFY)**
99	**DO NOT READ** None **** don't know

E3 And thinking about any steps you've taken to reduce carbon emissions. Overall, what impact, if any, have these things had on staff **numbers**? Has it caused you to ...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	**Increase** the number of employees
2	**Decrease** the number of employees
3	Or, has it made **no difference**
99	**DO NOT READ** None \ don't know

E4 How much **impact** have the things you've done to reduce emissions had on the way your organisation **operates**? Has it had...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	A major impact
2	A moderate impact
3	Or, very little if any impact on the way your organisation operates
99	**DO NOT READ** Don't know

E5 When did your organisation **first** start to take any steps to reduce carbon emissions? Was it...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Sometime within the last five years since 2008
2	**Or**, did it first take steps **before** 2008
99	**DO NOT READ** None \ don't know

E6(a) Now a question about Joint Consultative Committees. A Joint Consultative Committee has representatives from both management and staff. The committee meets to have **formal** discussions before decisions are made that affect employees **(PAUSE).** Does your organisation have any Joint Consultative Committees? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ does
2	No
99	Don't know

E6(b) Thinking now about employees. In which of the following ways, if any, can employees have a say about carbon emission reduction practices in your organisation? Firstly...? **READ OUT**

PROG NOTE:
- MULTI RESPONSE
- IF 1-4 SELECTED CANNOT SELECT 99

1	**(PROG NOTE: DISPLAY IF CODE 1 IN E6(a)):** Through a Joint Consultative Committee
2	Quality circles
3	Employee team meetings
4	Or, some other way for staff to have a say about carbon emissions **(SPECIFY)**
99	**DO NOT READ** None \ don't know

PROG NOTE: ASK IF EMPLOYEES HAVE SAY THROUGH JOINT CONSULTATIVE COMMITTEE IE CODE 1 IN E6(b). OTHERS GO TO E6(d)

E6(c) And do you have a Joint Consultative Committee that is **specifically** dedicated to discussions about environmental issues? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ do
2	No
99	Don't know

PROG NOTE: ASK ALL TAKEN STEPS TO REDUCE EMISSIONS IE CODE 1 IN E1

E6(d) Employees sometimes have a designated 'green' or sustainability representative. This representative passes on employee opinions and information about environmental matters to **management (PAUSE)**. Do your employees have a **dedicated** 'green' or sustainability representative? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ do
2	No
99	Don't know

PROG NOTE: ASK ALL RESPONDENTS NOT TERMINATED

E7 And just to check, does your organisation have any written formal policy about reducing carbon emissions? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ does
2	No
99	Don't know

PROG NOTE: ASK IF NOT REDUCED ENERGY CONSUMPTION \ INCREASED RECYCLING \ AMOUNT OF WASTE IE NOT (CODE 1 IN E1(a)) OR NOT (CODE 1 OR 2 IN E1(b)). OTHERS GO TO NEXT SECT

E8 Which of these things, if any, has your organisation done for reasons **other** than reducing carbon emissions? Has it taken any steps...? **READ OUT**

PROG NOTE:
- MULTI RESPONSE
- ONLY SHOW 1-3 NOT SELECTED IN E1(a)/(b)
- IF 1-3 SELECTED CANNOT SELECT 99

1	To reduce energy consumption
2	To increase the amount of material it **recycles**
3	To reduce the amount of **waste** it produces
99	**DO NOT READ** None \ don't know

UNIONS

SECTION F - **PROG NOTE: ASK ALL RESPONDENTS NOT TERMINATED**

F1 Are any of the people who work there members of a trade union? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes
2	No
99	Don't know

PROG NOTE: ASK IF ANY TRADE UNION MEMBERS IE CODE 1 IN F1. CODE 2-99 GO TO NEXT SECT

F2 And approximately what percentage of the people who work there are trade union members? Would it be up to 50%, or more than 50%? **UNFOLD**

IF UNSURE Your best estimate would be fine

IF UP TO 50% And would it be 10% or less, 11 to 25%, 26 to 35%, or 36 to 50%
IF MORE THAN 50% And would it be 51 to 75%, or 76% or more?

PROG NOTE:
- SINGLE RESPONSE

1	10% or less
2	11% to 25%
3	26% to 35%
4	36% to 50%
5	51% to 75%
6	76% or more
99	**DO NOT READ** Don't know

F3 As far as you know, do any of the unions representing your employees have policies concerning the environment generally, or specifically in relation to the reduction of carbon emissions? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ do
2	No
99	Don't know

F4 Has your organisation had any discussions with a trade union representing your employees about the reduction of carbon emissions? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ have
2	No
99	Don't know

F5(a) Now a question about **collective agreements -** also known as collective bargaining agreements, certified agreements or enterprise agreements **(PAUSE)**. Does your organisation have any **collective agreements** with a trade union? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ does
2	No
99	Don't know

PROG NOTE: ASK IF HAVE COLLECTIVE AGREEMENT IE CODE 1 IN F5(a). CODE 2-99 GO TO NEXT SECT

F5(b) And do you have...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Only **one** collective agreement with a trade union
2	Or, do you have **more** than one collective agreement
3	**DO NOT READ** Don't know

F6(a) **(PROG NOTE: IF CODE 1 IN F5(b) INSERT:** "And does that collective agreement" **ELSE INSERT:** "And do any of your collective agreements"**)** have a clause in relation to the **environment**? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ do
2	No
99	Don't know

PROG NOTE: ASK IF HAVE MORE THAN ONE COLLECTIVE AGREEMENT <u>AND</u> HAVE ENVIRONMENT CLAUSE IE CODE 2 IN F5(b) AND CODE 1 IN F6(a). OTHERS GO TO F7(a)

F6(b) And do you have...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Only **one** collective agreement with an environmental clause
2	Or, do you have **more** than one collective agreement with an environmental clause
99	**DO NOT READ** Don't know

PROG NOTE: ASK IF HAVE ENVIRONMENT CLAUSE IE CODE 1 IN F6(a). CODE 2-99 IN F6(a) GO TO NEXT SECT

F7(a) I'd like you to think about two types of environmental clauses **(PAUSE)**. One type is just a general statement of commitment for better environmental outcomes **(PAUSE)**. The other type has one or more **specific requirements**, for example specific environmental targets or measures; or specific operational practices or work practices. **HIT ENTER TO CONTINUE**

PROG NOTE: ASK IF HAVE <u>MORE THAN ONE</u> ENVIRONMENT CLAUSE IE CODE 2 IN F6(b). OTHERS GO TO F7(c)

F7(b) So, which one of the following **best** describes **your** situation? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	**All** of your collective agreements with environment clauses **only** contain a general statement of commitment
2	**All** of your collective agreements with environment clauses have **specific** environmental requirements
3	**Or**, you have a **mix** of those - some agreements with just a general statement of commitment, and other agreements that have specific environmental requirements
4	**DO NOT READ** None \ don't know

PROG NOTE: ASK IF HAVE ENVIRONMENT CLAUSE BUT <u>NOT</u> MORE THAN ONE IE CODE 1 IN F6(a) AND <u>NOT</u> CODE 2 IN F6(b). CODE 2 IN F6(b) GO TO F8(a)

F7(c) Is the environmental clause in **your** collective agreement...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Just a general statement of commitment
2	**Or**, does it refer to one or more **specific requirements** in relation to the environment
3	**DO NOT READ** Neither \ don't know

PROG NOTE: ASK IF HAVE <u>MORE THAN ONE</u> ENVIRONMENT CLAUSE IE CODE 2 IN F6(b). OTHERS GO TO F8(b)

F8(a) And who **initiated** the environmental clauses in your collective agreements? Have they…? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	**All** been initiated by the organisation
2	**All** been initiated by unions
3	**Or**, some by the organisation and some by unions
4	**DO NOT READ** Don't know

PROG NOTE: ASK IF HAVE ENVIRONMENT CLAUSE BUT <u>NOT</u> MORE THAN ONE IE CODE 1 IN F6(a) AND <u>NOT</u> CODE 2 IN F6(b). CODE 2 IN F6(b) GO TO F9

F8(b) And who **initiated** the environmental clause in your collective agreement? Was it...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Your organisation
2	Or, the union
3	**DO NOT READ** Don't know

PROG NOTE: ASK ALL HAVE ENVIRONMENT CLAUSE IE CODE 1 IN F6(a)

F9 And have you made any changes to work practices **directly as a result** of **(PROG NOTE: IF CODE 2 IN F6(b) INSERT:** "any of the **environmental** clauses in your collective agreements?" **ELSE INSERT** "the **environmental** clause in your collective agreement") **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ changes in work practices
2	No
3	Don't know

SECTION Z - **PROG NOTE: ASK ALL RESPONDENTS (NOT TERMINATED)**

Z1 Just to finish off, can I please check that the number I rang was **(PROG NOTE: INSERT PHONE NUMBER)**?
DO NOT READ

PROG NOTE:
- SINGLE RESPONSE

1	Yes - correct
2	No - incorrect **(PLEASE TYPE IN CORRECT NUMBER)**

Z2 **RECORD (OR IF NECESSARY ASK) ROLE OF RESPONDENT IN ORGANISATION**

PROG NOTE:
- SINGLE RESPONSE

1	Human Resources \ Personnel
2	**(PROG NOTE: DISPLAY IF BUSINESS IE CODE IN Q1):** Business owner
3	Finance
4	Other manager **(SPECIFY)**

Z3 Just to let you know, the ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you can contact the Committee through the Director of Research Ethics. Would you like their contact details?

IF YES: Telephone (02) 9850 7854; email ethics@mq.edu.au. When you contact them please quote this reference number: 5201300468.

CLOSE Business

Just to remind you I'm ... **(NAME)** from Newspoll. This research was conducted for Macquarie University in compliance with the Privacy Principles.

IF ASK ABOUT PRIVACY OR FOR MORE INFO ABOUT NEWSPOLL READ APPROPRIATE SCRIPT BELOW.

PRIVACY Your organisation's phone number was randomly selected by computer from a list provided by Dun & Bradstreet. Your personal details will be removed from your responses in about two weeks. Within this time, however, you may request that your personal details be deleted.

MORE INFO ABOUT NEWSPOLL If you have a pen and paper handy, you can find more info about Newspoll from:

Newspoll toll free: 1800 646 526
Market Research Society: 1300 364 830
Newspoll website: www.newspoll.com.au

Thank you...**(RESPONDENT NAME)** for your time.

IF RESPONDENT NOT SATISFIED WITH EXPLANATION ABOUT SOURCE OF SAMPLE If you'd like to know more about how your organisation's number was obtained, then I can give you the number to contact Dun & Bradstreet or their website address.

If you have a pen and paper handy, the number is 132333; the website is: dnb.com.au

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CLOSE Government

Just to remind you I'm ... **(NAME)** from Newspoll. This research was conducted for Macquarie University in compliance with the Privacy Principles.

IF ASK ABOUT PRIVACY OR FOR MORE INFO ABOUT NEWSPOLL READ APPROPRIATE SCRIPT BELOW.

PRIVACY Your organisation's phone number was randomly selected by computer from a list provided by a company called "A to Z Gov BIZ". Your personal details will be removed from your responses in about two weeks. Within this time, however, you may request that your personal details be deleted.

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Thank you...**(RESPONDENT NAME)** for your time.

IF RESPONDENT NOT SATISFIED WITH EXPLANATION ABOUT SOURCE OF SAMPLE If you'd like to know more about how your organisation's number was obtained, then I can give you the number to contact "A to Z Gov BIZ" or their website address.

If you have a pen and paper handy, the number is 02 9516 4703; the website is: azgovbiz.com.au

DID THE RESPONDENT WISH TO HAVE THEIR DETAILS REMOVED IMMEDIATELY?

PROG NOTE:
- SINGLE RESPONSE

1	Yes
2	No

I certify that this is a true, accurate and complete interview, conducted in accordance with industry standards and the AMSRS Code of Professional Behaviour (ICC\ESOMAR). I will not disclose to any other person the content of this questionnaire or any other information relating to this project.

PROG NOTE:
- SINGLE RESPONSE

1	Accept
2	Not accept