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A Pre & Post Analysis of the Impact of Carbon Regulation & Ratification of the Kyoto Protocol: An Australian Perspective

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**A PRE AND POST ANALYSIS OF THE IMPACT OF CARBON
REGULATION & RATIFICATION OF THE KYOTO PROTOCOL: AN
AUSTRALIAN PERSPECTIVE**

ABSTRACT

This study examines emission and energy disclosures of 400 randomly selected Australian listed companies in 2005, 2007 and 2009 using a disclosure index derived from the Global Reporting Initiative. The longitudinal nature of this study provides a more comprehensive view of the online emissions and energy disclosures of Australian companies and highlights the impact of the ratification of the Kyoto Protocol and the introduction of carbon regulations, National Greenhouse and Energy Reporting (NGER) and Energy Efficiency Opportunities (EEO). The results were compared between the two periods, it was noted that rate of increase was lower during the latter (2007 to 2009) period. Overall the obtained results suggest that the implemented regulation and ratification of the Kyoto Protocol did not act as a catalyst to increase carbon disclosures, as the emissions and energy disclosures were not accelerating in the compliance period towards the eventual implementation of CPRS and/or a carbon tax regime.

By the State implementing these carbon regulations, Australia was highlighting their commitment to the climate change debate and appeared to be aligning the values of country as a whole to other countries that have ratified the Kyoto Protocol. However, these initial 'regulatory' steps to consolidated climate change policy suggest that the State could be 'suppressing' more significant development of more radical forms of climate change policy as these may have an even greater impact on Capitalism. Additionally, the results obtained in this study reinforces Gray et al (1995, p. 67) summation that it was difficult to use a single theoretical perspective to explain corporate disclosures especially for longitudinal studies and the use of "different levels of resolution could offer other observations"(Gray, Kouhy, & Lavers, 1995a).

1. INTRODUCTION

During the last century there has been an increasing focus on climate related issues (Gentil *et al.* 2009). This added focus on climate change matters has been brought on by the rising levels of greenhouse gas emission which have impacted the earth through higher temperatures. According to Bebbington (2008), these greenhouse gas concentrations are currently greater than they have been at any time in the past 600,000 years. In the last century, the average temperature in Australia has increased by about 1°C (Australia Bureau of Meteorology, 2010)

In response to the climate problem, the Kyoto Protocol of the United Nations Framework Convention on Climate Change was formed in 1997. The Kyoto Protocol sets legally binding targets for industrialised countries to reduce the greenhouse gas emissions to 5% of the 1990 levels for the period between 2008 and 2012 [i]. The importance of climate change is evident in Australian politics. One of the key campaigning issues which resulted in the wining of the federal election by the then opposition party in 2007 was their climate change commitment. The new government ratified the Kyoto protocol on the 3rd of December 2007 with the intention to introduce the Carbon Pollution Reduction Scheme (CPRS) by 2010. However, within six months of this announcement, the CPRS was postponed to 2011 with current discussions centering on the introduction of the Carbon Tax instead of the CPRS.

Although the Australian government has retracted from the commencement of the CPRS, the Australian government were still committed to reduce the greenhouse gas emissions with the ratification of the Kyoto Protocol. This commitment has been highlighted through the introduction of two carbon centred regulations, namely the National Greenhouse and Energy Reporting (NGER) and the Energy Efficiency Opportunities Act (EEO). Under NGER, companies that emit 125 kilotonnes CO₂-e of greenhouse gases or use 500 terajoules of energy must provide information pertaining to the greenhouse gas emissions or energy usage for that year. These corporations must provide their usage data (1 July to 30 June) by the end of October. This information is collated and published on the NGER website the following year[ii]. For the first round of reporting (2008 to 2009), 300 corporations were affected. The EEO (2006) requires companies to make an assessment of energy usage from businesses using more than 0.5 PJ of energy per year are required to conduct a detailed assessment of their energy use,

and to identify opportunities to cost-effectively improve their energy efficiency. The trigger year for EEO (2006) Act was 2005 to 2006 where 199 companies have to make an assessment of their energy usage and determine ways to reduce consumption. During this period, companies are registering to EEO and making an assessment of their energy consumption with the first report being produced in 2008. Collectively, these regulations were introduced to prepare companies for the implementation of the CPRS or the carbon tax regime.

The Carbon Disclosure Project (CDP) is a longitudinal study which has collated corporate responses to climate change that uses a questionnaire survey of carbon disclosures sent to leading companies throughout the world. Overall the analyses of results over the 2006 to 2010 period for the top ASX Australian companies indicates that more Australian companies are including climate change issues within their business plan and does attribute the increased awareness to the new regulations. The results of the longitudinal survey highlight a positive attitude within the sampled companies indicating that “climate change is embedded within many companies’ business management and operational practices” (CDP 2009, p. 21). Overall the survey results were optimistic, highlighting the fact that large Australian companies were forging ahead with carbon disclosures.

The results of the CDP (2006-2010) must be analysed with caution. Firstly, it is difficult to compare the results between the years as comparability of the data has been reduced by modifications to the questionnaire, a limitation highlighted in the review conducted by Kolk *et al.* (2008). Another concern with this survey is that companies were not backing their carbon claims with emission data even though it was requested (CDP, 2009). The information is based on “self reported, non-verified responses” which may not necessarily be an accurate reflection of the company’s actual carbon performance (CDP 2006, p.56). A common issue for the report was that only a small proportion of companies provided their direct and indirect emissions data so the positive responses from the sampled companies towards carbon reporting may not equate to actual carbon reporting practices.

The study by Simnett & Nugent (2007) found that the level of carbon disclosures in annual reports of listed Australian companies was very low with only 139 out of 1485

companies disclosing carbon emission information in their annual reports. Only 7 companies in the sample were found to have full carbon disclosure.

Prado-Lorenzo *et al.* (2009) is an empirical analysis of 101 Fortune 500 companies. The results obtained show a direct relationship between corporate size and the disclosure of Global Reporting Initiative (GRI) indicators on greenhouse gas emissions. The study also found companies located in countries that ratified the Kyoto Protocol had more disclosures than companies located in other countries. The findings emphasize that firms operating in industries related to greenhouse gas emissions disclose on almost all the GRI core indicators. The study also found no relationship between disclosures and companies listed on the Dow Jones Sustainability Index. The authors attributed this to a sampling issue as they had selected companies in the Fortune 500 and so all these companies would already be under scrutiny to disclose greenhouse data for legitimization purposes.

Freedman and Jaggi (2005) focus on analysing the disclosure of greenhouse gas emissions in annual reports, environmental reports and websites from 120 large companies in the chemical, oil, energy, motor vehicle and casualty insurance industries. Their findings indicate a positive association between the index of disclosure regarding greenhouse gas emissions and companies from nations which have ratified the Kyoto protocol. Similarly, larger companies reveal more information on greenhouse gas emissions than smaller organisations.

There are a number of conclusions that can be drawn from the above carbon studies. Firstly most of the studies that have analysed emissions and energy related disclosures have focused on large companies. Climate change is an issue that affects everyone and consequently everyone plays a part in the carbon footprint of a country. Therefore to gain an understanding of what the reporting practices are in relation to emission and energy disclosures, analysis was not restricted to larger companies. Additionally, the regulations introduced in Australia are only applicable to large emitters but with the NGER, the acceptable emission levels are reducing each year. Since there are decreasing emission thresholds set for organisations, it would be of interest to examine how size of the company and the industry it operates affects the level of disclosures and to determine if the emission restrictions imposed by the NGER and EEO regulation plays a role in modifying disclosure patterns of organisations over a longitudinal period. Some of the

above studies have also found that companies operating in countries that have ratified the Kyoto Protocol have higher carbon disclosures. The results from the studies suggest that the ratification of the Kyoto Protocol is a driver for carbon disclosure however cross-sectional studies are not suited to investigate this hypothesis. Other cultural or political factors may be at work or countries may ratify the Kyoto Protocol as a result of their companies being prepared for the consequences of ratification (so ratification follows high disclosure rather than high disclosure following ratification). An alternative way of determining if the Kyoto Protocol is really a driver for carbon disclosures is by analysing disclosures before and after ratification of the Protocol. Therefore, in order to examine the impact of regulations and the ratification of the Kyoto Protocol, this study needs to be longitudinal in nature, focussing mainly on the rate of change from the pre regulation and ratification to the post period.

Two additional variables were investigated in this study. The results from the CDP Global (2007-2009) highlighted that Australian firms were lagging behind their European counterparts. This study will be analysing the difference in disclosures from companies with international influence to companies with only Australian influence. This will enable a detailed examination of the extent of this difference over a longitudinal period, taking into consideration the changes with the ratification of the Kyoto Protocol as well as carbon regulations.

The final variable included in this study is financial auditors. Some may question why financial auditors were analysed when climate change disclosures fall within the ambit of sustainability assurance. The role of the financial auditor in this green revolution is sometimes unclear. Under the NGER regulations, financial auditors are refrained from providing carbon and financial assurance services to the same clients due to conflict of interest. This was done to safeguard the interests of the company and the stakeholders. Although carbon issues have a strong environmental undertone, in reality energy and greenhouse emissions have an even greater impact on the financials of the organisation. Therefore, carbon audits may not be mutually exclusive from financial audits, and as such there are a number of overlapping issues that have to be addressed by both financial and green auditors.

Firstly both the financial and green audits adopt a risk based methodology which includes performing risk assessments by either commissioning a test of systems or using procedures designed to detect misstatements (refer to NGER Regulation, 2008). In addition, the financial auditor will need to assess inherent risk and highlight to their clients when and if their carbon practices or non practices contravenes the competitive or strategic position of the business as this may have going concern implications. It is a requirement for financial auditors to addresses weaknesses in the business and report to management via a formalised process (Mock, Strohm, & Swartz, 2007).

The NGER is the foundation for the Australian Emissions Trading Scheme or the carbon tax scheme and when/if these schemes commence, it will have direct implications on the financial statements of a company. PwC (2007; p.1) raised this concern directly with NGER reporting taskforce stating that the CPRS “will create a new financial market in Australia. This market will value and trade in carbon dioxide equivalent units (CO₂e) as though they were financial assets. Companies will be accounting for carbon transactions through their financial records, and reporting their carbon performance and positions in their audited financial statements.” Additionally, before the CPRS commences, the data obtained by NGER will help determine the price to be charged for the trading permits and if the information is incorrect, it would mean that incorrect values will be allocated to these permits.

Considering the financial implications of climate change, audit firms will feel the pressure to incorporate climate change policies into the services that they provide but also reinforce this importance to their clients to minimise their audit risk exposure. Ultimately, if a client fails to maintain their going concern, the actions and reports of the respective financial auditors come under scrutiny. Therefore in order to provide a full assurance service to their clients, financial auditors would have to be adequately versed in climate change issues. This study posits that bigger audit firms (Big Four) with their vast resources will have a higher level of carbon awareness would in turn advise their clients of the importance of preparing early for climate change regulation and direct them to the appropriate channels for support. For instance, Ernst and Young (EY) identified the importance of climate change by urging their clients to incorporate carbon policies now as a ‘wait and see’ approach is not an appropriate strategy in terms of climate change. By the time companies “can see the approaching carbon juggernaut with sufficient clarity to

take it seriously”; it will be too late, implying substantial financial consequences [11]. Therefore, the aims of the study are twofold:

1. To analyse the state of carbon reporting of Australian listed corporate websites over three points in time, 2005, 2007 and 2009 , focussing on the increase/decrease in disclosures pre (2005-2007) and post (2007-2009) period.
2. To analyse the factors influencing the disclosure of carbon information of Australian listed corporate websites over three points in time, 2005, 2007 and 2009 and focussing on which factors explain the rate of change increase/decrease in disclosures pre (2005-2007) and post (2007-2009) period

This study uses the legitimacy theory as the underlying theory. There has been widespread use of legitimacy theory within environmental accounting research (Deegan, 2002). Legitimacy theory states that organisations (as part of a broader social system) are not given rights to operate unless society views them as being legitimate (Gray, 1995; Guthrie & Parker, 1989; Patten, 1991; 1992). Companies maintain their legitimacy by keeping in line with society’s expectations. All organisation operate in society with a valid social contract (Mathews, 1997b).

The social contract binds the actions of the organisation to a level that is acceptable to society. The scope of this ‘social contract’ extends beyond the organisations economic successes but also checks on their social interaction (Deegan, 2002). That concept of social contract defined for companies and society indicate that companies are to perform within the society’s expectation and by doing so will be able to continue their existence. The extent and nature of the media interest to any issues can shape the social contract (Brown & Deegan, 1999; Deegan, Rankin, & Tobin, 2002; O'Donovan, 1999). For example, if the media coverage of an issue is framed negatively, society is likely to view the issue as being important. Reporting entities wishing to respond to unfavourable media coverage undertake a process of legitimation and portray the organisation in a more positive light. For the last few years climate change and carbon emissions have received a significant amount of attention in the media. Within the first six months in 2006, there were 917 citing of climate change in the media compared to 4777 during the same period in 2007 (CDP 2007). Furthermore, the signing of the Kyoto Protocol by Australia in December 2007 implies a greater need for carbon disclosures by Australian companies to maintain their legitimacy. Therefore using legitimacy theory, the results

should highlight an increase in disclosures over the four year period with the rate of increase being higher in the post period from the pre regulation and ratification period.

3. RESEARCH METHODS

This study utilises a random sampling technique to collect the data for the listed companies from the ASX website. The companies in the final sample had a functioning website and the companies had to be registered on the ASX for the duration of the study. The final sample of companies was 400.

This study measured emission and energy/carbon disclosures utilising the Global Reporting Initiative G3 (2006). The GRI was selected on the basis that it met the aims of this study and enable the examination of the content of carbon disclosures (Global Reporting Initiative, 2006). The GRI guidelines have been designed to be suitable for reporting organisations with varying degrees of complexity (Clarkson, 2008). This is essential as the study focuses on a random sample of companies from differing industries. Studies like KPMG (2008) have found that majority of the companies worldwide that provided environmental information, used the GRI as a template for reporting. Furthermore, Adams and Frost (2007), found that Australian companies most commonly used the sustainability guidelines specified in the Global Reporting Initiative. Lastly, by using an index utilising the GRI G3 climate change indicators, it covers a broad spectrum of indicators to measure quantitative and narrative carbon disclosures.

The GRI Guidelines contain core indicators and additional indicators. The GRI defines that the ‘Core Indicators’ are focussed on areas that are of “interest to most stakeholders and are assumed to be material unless deemed otherwise on the basis of applying the GRI Reporting Principles”(GRI,2011). Additional indicators are those identified in the Guidelines that represent emerging practice, or address topics that may be material to some organizations but not generally for a majority.” The carbon disclosure index utilised in this study comprises of ten items identified from the Global Reporting Initiative. The ten items selected from the GRI have been taken from the energy and emissions categories. The ten indicators selected are as highlighted in Table 1. For each of the indicator, a sign of Q (Quantitative) or N (Narrative) is assigned to indicate the nature of information pertaining to each category.

TABLE 1 CARBON INDICATOR CATEGORIES

INDICATORS	Q/N	DESCRIPTIONS
CORE (CC)		ENERGY
EN 3	Q	Direct energy consumption by primary energy source.
EN 4	Q	Indirect energy consumption by primary source.
		EMISSIONS
EN 16	Q	Total direct and indirect greenhouse gas emissions by weight.
EN 17	Q	Other relevant indirect greenhouse gas emissions by weight.
EN 19	Q	Emissions of ozone-depleting substances by weight.
EN 20	Q	NO _x , SO _x , and other significant air emissions by type and weight.
ADDITIONAL (AC)		ENERGY
EN 5	Q	Energy saved due to conservation and efficiency improvements.
EN 6	N	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.
EN7	N	Initiatives to reduce indirect energy consumption and reductions achieved.
		EMISSIONS
EN18	N	Initiatives to reduce greenhouse gas emissions and reductions achieved.

From the above table, it is clear that seven out of the ten carbon categories require numeric data whereas the other four indicators allow for narrative information. Interestingly, all the core indicators depicted by the GRI are quantitative in nature with most of the additional indicators allowing for narrative information.

The disclosure index method was adopted to measure carbon disclosures (refer to Pirchegger and Wagenhofer, 1999; Ettredge et al., 2001; Larraín and Giner, 2002; Marston and Polei, 2004 ; Petersen and Plenborg, 2006). This method of measurement was used as it ties in with the objective of the study which is to analyse the occurrence of carbon information. Although this study intends to analyse both quantitative and narrative disclosures, the main focus of carbon information deemed crucial to calculate the carbon footprint of a company is quantitative in nature as indicated above. Therefore regardless of the number of sentences, words or paragraphs companies uses to present their emission data, the focus is on that numeric data that defines the emission output of the company for that year. Freedman and Jaggi (2011, p.78) echoed this sentiment in their carbon study by stating that “the persuasiveness of the company’s argument is not relevant to this study. Our interest primarily lies in obtaining information on different

pollution categories”. This study acknowledges that there are limitations associated with the use of disclosure index.

A binary coding system was used to determine the level of carbon reporting by Australian companies. The study focus on verifying a set of issues in the information disclosed on websites, using binary values (1: presence of the information sought; 0: absence of the information sought). With the exception of EN 6, EN 7 and EN 18 these indicators require quantitative disclosures so coding as 1 for disclosure and 0 for non-disclosure captures the carbon information crucial to calculate the carbon footprint of a company (see GRI 2006). For the indicators, EN 6, EN 7 and EN 18, companies need to provide details on initiatives that are being implemented to receive a score of 1. For example, general statements such as ‘we are planning to reduce our carbon footprint’ is not adequate as details supporting this statement on how this will be achieved is what will earn them a score. Our major dependent variable is the Total Carbon (TC) index and equals the percentage of these ten indicators disclosed by companies. Subindices denoted Core Carbon (CC) and Additional Carbon (AC) equal the percentage of the core and additional indicators disclosed respectively. It was necessary to analyse the Core Carbon (CC) and Additional Carbon (AC) separately to ascertain the impact of the NGER and EEO regulation on the level of core and additional emission and energy disclosures.

The measurement of the independent variables is summarised in Table 2.

Table 2: Measurement of Independent Variables

Independent Variables	Measurement	References
Size	Logarithm (base 10) of Total Assets in 2009	Patten (2002)
International Influence	1- Multiple Listing 0- Single Listing	Cooke (1989, 1991)
Industry	1- Carbon Intensive Industries 0- Non Carbon Intensive Industries	CDP (2009)*
Auditor	1- Big Four Auditors 0- Non Big Four Auditors	Patton & Zelenka (1997); Xiao, <i>et al.</i> , (2004)

*The sectors viewed as carbon-intensive according to GICS classifications are Energy, Health Care, Industrials, Materials and Utilities (Carbon Disclosure Project, 2009)

The international influence, industry and auditor variables do not change between years for each company. The 2009 measurement for size was used for each company in different years for two reasons. First, companies have very small changes in size, especially compared to differences in size for different companies. Second, using the

same values for the independent variable simplifies analysis and interpretation. For example, regression coefficients for increases in disclosure between two years equal the difference between the regression coefficients for each of the two years. Sensitivity analysis using different measurements of size for each year produced qualitatively similar results.

Averages for the Total Carbon (TC) index and the two subindices Core Carbon (CC) and Additional Carbon (AC) were calculated for the three years 2005, 2007 and 2009 as well as increases over the pre Kyoto period (2005-2007), post Kyoto period (2007-2009) and overall (2005-2009). Paired t-tests are used to test for significant increases over these periods. Regression analysis was used to examine the relationship between the disclosure indices and subindices and the size, industry, auditor and international influence independent variables. Regression results are presented for each year 2005, 2007 and 2009 as well as for the increases over the three periods: pre Kyoto (2005-2007); post Kyoto (2007-2009); and overall (2005-2009).

5. RESULTS

Of the 400 sampled companies 284 were companies in the carbon intensive industry, 182 were audited by one of the Big 4 auditors and 34 had international influence. No companies experienced changes in any of these independent variables over the study period 2005, 2007 and 2009. The sizes of the companies vary little from year to year (correlations between years are all above 0.9).

The correlations between size and auditor were less than 0.3 and statistically insignificant leading to no multicollinearity concerns. The correlation between quantitative independent variables of size and international influence shows a low absolute correlation of 0.375 (p-value = 0.039). Not surprisingly, this indicates that larger companies are more likely to have a greater level of international influence. This correlation, although statistically significantly different to zero, is considered low and not a collinearity problem. Tabachnick and Fidell (1996) note that harmful levels of multicollinearity exist when the bivariate correlation between independent variables are high (0.9 and above). Nevertheless, it should be remembered when analysing the results from both these variables are moderately related.

5.1 TOTAL CARBON RESULTS

Total Carbon disclosures have increased from 15% in 2005 to 28% in 2007 and 34% in 2009 (Table 3). These increases by 13% (pre-KP) and 6% (post-KP) are both statistically significant ($P < 0.001$). This is in line with other longitudinal studies; a result reinforced by the CDP (2009) study. Companies in Australia are becoming more carbon aware, hence disclosing more carbon related information.

TABLE 3 Average Total Carbon (TC) index for each year (left) and increases between pairs of years (right).

2005	2007	2009	Pre- KP 2005-2007	Post- KP 2007-2009	2005-2009
0.15	0.28	0.34	0.13 ***	0.06 ***	0.18 ***

*** statistically significant increase ($P < 0.001$)

The longitudinal nature of this study highlights a positive trend where Australian companies were increasing their carbon disclosures from 2005 to 2009. In 2005, the mean disclosures were only 0.15 and this increases to 0.28 in 2007 and to 0.345 in 2009. The results were consistent with previous literature that has identified increasing levels of carbon disclosures (Choi et al 2010; Cowan & Deegan, 2010, Deegan & Paxton, 2009). The second key observation that was made from Table 4.1 is that total carbon disclosures have increased from 15% in 2005 to 28% in 2007 and 34% in 2009. These increases of 13% and 6% were both statistically significant ($P < 0.001$). This is in line with other longitudinal studies; a result reinforced by the CDP (2009) study. Companies in Australia were becoming more carbon aware, hence disclosing more carbon related information.

The increase in carbon disclosures reinforces the overall applicability of legitimacy theory. This suggests that the legitimating strategies adopted by the sample corporations were, at least, symbolic and attempting to portray the organisation as being ‘consistent with social values and expectations’ (Ashforth & Gibbs 1990). Climate change issues have been made more prominent due to the increasing emphasis on carbon matters by the media. There has been a significant increase in media attention relating to climate change issues in Australia and globally. For instance, the CDP (2007) study found within the “ first six months in 2006, there were 917 citing of climate change in the media compared to 4777 during the same period in 2007”. Ader (1995, p.300) stated that “individuals note the

amount of and distribution of media coverage among issues, and this determines the salience of each issue for the individuals. the media do not mirror public priorities as much as they influence them”. This suggests that media attention given to a particular issue can influence the public agenda (Kok, Goh & Holaday 1999). Therefore in line with legitimacy theory, companies may in turn feel that their social contract with society is evolving, hence they would disclose appropriate levels of carbon information to maintain their social contract (Rankin 2009).

This overall increase in disclosures may also be attributed to regulatory legislation. The ratification of the Kyoto Protocol coupled with the “operation of the NGER (Act) would have lead to greater environmental disclosures” (Choi, 2010, pg. 21). Since the NGER ACT (2007) is the underlying basis for the Carbon Pollution Reduction Scheme, it may have signalled to companies that they should address climate change issues due to its growing importance (refer to CDP Australia & New Zealand 2006 to 2009). Moreover by providing carbon information, Australian companies were reducing their exposure to regulatory risk (Rankin, 2009) (CDP 2007). This will be further investigated when analysing the rate of increase between the 2005 to 2007 period to the 2007 to 2009 period.

Although the level of carbon disclosures is increasing over the four year period, the results of this study highlight an interesting outcome. When analysing the rate of increase, it was observed that the greatest increase in disclosure occurred during the 2005 to 2007 period with the rate of increase dropping in the latter period to almost one third of the first period (from 0.13 to 0.06).

“The plan for an emissions trading scheme and the ratification of the Kyoto Protocol to cut greenhouse gas emissions were central to Labour's election plans in 2007” (Shanahan, 2010). Kyoto Protocol was ratified in December 2007 and this defines Prime Minister Rudd’s “first official act of the new Australian Government, demonstrating ..Government's commitment to tackling climate change..”(Packham, 2010). This would have sent a clear messages to companies about Australia’s new government and their level of carbon commitment. Listed companies “observing a shift in the political agenda” may have increased their disclosures before mandatory guidelines come into place (Rankin, 2009). Therefore, the increase in carbon disclosures during this

period may be seen as a proactive tactic where management viewed regulatory changes as a potential legitimacy threat (O'Donovan 2002; Suchman 1995) (Cowan & Deegan, 2010).

The rate of increase of carbon disclosures declined from 2007 to 2009. These results were interesting in light of the fact that it was during this period, that Australia had ratified the Kyoto Protocol as well as the implementation of EEO and NGER regulation. These results were in line with the findings by Cowan and Deegan (2010) and Lim et al (2010). Cowan and Deegan (2010) highlighted that companies were taking a proactive approach to NPI regulation, whereby the impending regulation were viewed as a legitimacy threat hence companies responded to the issues prior to its implementation. However the longitudinal study by Frost (2007) found that the sampled Australian companies made a progressive increase in environmental disclosures prior to the implementation of s299(1)(f) and a significant increase in the first compliance period which were contrary to the above results. This suggest that the proactive disclosure attitude was not a consistent observation for Australian companies in terms of impending regulation and as such other reasons for this change in reporting attitudes were expounded.

There were micro and macro reasons that could account for the reduced rate of disclosure. The micro reasons were the medium of disclosure. One possible reason for this outcome could be the medium in which companies have to highlight their compliance. s299(1)(f) requirements were for the annual report while the NGER and the EEO, have differing requirements, the data for NGER is submitted and published on the NGER website and the EEO requires companies to include on their website their submissions to the EEO. This may account for the differing results from Frost (2007). Additionally, both the NGER and EEO regulation only pertain to companies with an energy output of 0.5PJ unlike the s299(1)(f) regulation which applies to all companies. Additionally, as these regulations were only applicable to large energy users, and may be viewed as a disincentive for companies to voluntarily disclose carbon information. The government by specifying the emission levels that were critical for disclosure may also be sending a message to companies that if they were below the specified threshold they do not need to be concerned about their carbon footprint.

The Global Financial Crisis (GFC) was also another push factor against climate change issues. The GFC escalated in 2008 and this may have led to decreased societal desire towards environmental issues and which heightened pressures to postpone company measures directed towards climate change. In view of this Global Crisis, the marginal increase in disclosures should be viewed in a more positive light as companies did not regress on their carbon commitments even though they were faced with dire economic and financial market conditions, a sentiment reinforced by the CDP (2009).

In light of the GFC, coupled with the fact that the Senate has repeatedly rejected the implementation of the CPRS bill, may send signals to companies that climate change is not as important as it was initially perceived with the ratification of the KP. Companies may have perceived that they can take their time in incorporating carbon technologies into their business processes. This is further reinforced by the fact that carbon "progress internationally has been slower" (Packham, 2010) and since Australia has been following on the carbon blueprints of the rest of the world, it may have further contributed to the decline in the rate of increase in carbon disclosures.

The following section highlights the levels of carbon disclosures for the sub indices, the Core and Additional Carbon Indicators and these results would provide further insight for the Total Carbon Index.

5.2 CORE CARBON AND ADDITIONAL CARBON RESULTS

Table 4 summarises the disclosure levels for the subindices for core carbon (CC) and additional carbon (AC) during 2005, 2007 and 2009 and increases over these periods.

TABLE 4 Average Core Carbon (CC) and Additional Carbon (AC) subindices for each year (left) and increases between pairs of years (right).

	2005	2007	2009	Pre- KP 2005-2007	Post- KP 2007-2009	2005-2009
CC	10	21	27	11 ***	7***	18***
AC	23	39	43	16***	4***	20***

*** statistically significant increase ($P < 0.001$)

There is a clear trend across all years that companies were disclosing more additional information than core data (CC subindex is significantly higher than the AC subindex in

each year, $P < 0.001$). The additional categories focus on the company's initiative in improving their carbon footprint and disclosures within these categories were able to draw attention of the stakeholders to the company's plans about reducing energy usage as well as their emission levels without necessarily substantiating their claims¹. This was further reinforced by the results obtained by the Carbon Development Project (CDP) which found that companies in Australia and New Zealand were claiming more sophisticated carbon development plans in their questionnaire compared to the actual information that these same companies provided to the CDP.

Both core and additional indicators have a lower rate of increase in the latter period compared to the 2005 to 2007 period.

The NGER Act (2007) influences some of the core indicators, namely EN 3, EN 4 and EN 16 while the EEO Act (2006) impinges on all the additional indicators. The main difference between these two regulations is that EEO Act (2006) required companies to disclose information on the website whereas the NGER ACT (2007) requires companies to provide the information to GEDO. Additionally, the EEO Act (2006) also requires companies to report the status of the energy saving initiatives that they have previously disclosed. Each initiative has to be categorised under one of the five categories: implemented, implementation commenced, to be implemented, under investigation, or not to be implemented.

From Table 4 , it was noted that there was a substantial increase in AC indicators from 2005 to 2007 period (16%) and this rate of increase drops to a quarter (4%) in the latter period. One reason why the rate of increase may have declined may be explained by regulation. The CPD (2007) stated that companies generally venture into new areas of reporting with narrative disclosure, before they step up to the harder disclosures (core). Australian companies may have been using additional indicators to create a favourable impression on carbon issues, by citing ways in which they intend to reduce energy consumption. CDP (2009) and BDO (2009) found a majority of the sampled companies viewed climate change issues as a means to reduce risk and improve their reputation with stakeholders. However, with the implementation of the EEO Act (2006), it may have

¹ Three of the four additional indicators allows for narrative disclosures whereas one of the additional carbon indicator requires quantitative data to support their energy savings.

added a new dimension to these disclosures, accountability as well as rigidity. Accountability was defined as

“true test of an accountable organisation is specific: whether it measures performance quantitatively – with financial and non financial numbers – and reports it publicly to audiences inside and outside the organisation. Anything less than hard numbers, broadly disclosed, reveals an organisation hesitant to commit to full accountability. The act of one party answering to another in qualitative terms alone is not enough. Accountability requires data.” (Epstein and Birchard, 1999, p. 5).

Larger companies that fall just outside the 0.5PJ ambit of EEO regulation may have viewed these additional indicators as PR tools, and now may be less inclined to begin to disclose energy saving initiatives especially since they have to report back to the users what the status of their initiative were. For instance, a company that initially lists three initiatives and later discloses that they implemented none would look less credible than an organisation that says nothing and draw attention to fact that these measures were backed up with ‘hard numbers’. They may have legitimate reasons why these initiatives were not implements bur the negative impact of non performance would still be an issue. Therefore the EEO ACT (2006) may act as a deterrent to these PR related energy saving initiatives rather than a stimuli for large energy users, especially organisations that just fall outside the 0.5P. Additionally, this legislation requires companies to report these initiatives on the corporate website and this may have a negative impact on the appearance of legitimacy to societal goals.

The inferential statistics will further analyse the relationship between company characteristics of size, industry classification, international influence, auditor on total, core and additional carbon disclosures. These results will provide further insight into the results obtained by total and sub- indices. Table 5 summarises regression results for the total carbon disclosure index (TC) for each year 2005, 2007 and 2009 (left) and for the increases in disclosure between pairs of years (right). Two-tailed P-values are provided in parentheses.

TABLE 5: Total Carbon regression coefficients (P-values in parentheses)

	2005	2007	2009	Pre KP 2005-2007	Post KP 2007-2009	Overall 2005-2009
Intercept	-45.3 (.000)	-38.4 (.000)	-16.1 (.117)	6.9 (.327)	.24 (.000)	29.2 (.000)
Size	6.0 (.000)	5.8 (.000)	3.5 (.008)	-0.2 (.840)	-2.3 (.000)	-2.5 (.013)
Industry	5.3 (.000)	6.0 (.021)	4.2 (.118)	0.7 (.713)	-1.8 (.022)	-1.1 (.569)
Auditor	11.0 (.000)	24.8 (.000)	25.9 (.000)	13.8 (.000)	1.1 (.128)	14.8 (.000)
Int Influence	80.3 (.000)	79.7 (.000)	75.6 (.000)	-0.6 (.841)	-4.1 (.002)	-4.7 (.152)
Adj. R Square	.785 (.000)	.544 (.000)	.505 (.000)	.140 (.000)	.108 (.000)	.153 (.000)

Firstly, all variables were significant for all 3 years (except industry in 2009). The total carbon results highlights that more visible companies (larger companies, companies in carbon sensitive industries, companies audited by Big Four auditor and companies with international influence) will disclose more carbon information to show that they were committed to society's social agenda and they were accountable citizens. This is consistent with past studies (Prado-Lorenzo *et al.*, 2009; Freedman and Jaggi, 2005, Patten. 1991; Ashbaugh, 1999).

Secondly, international influence is the most important variable based on the regression coefficients. Companies with international influence have significantly ($P < 0.001$) higher disclosure of carbon information. This reflects the fact that Australia is behind many other countries, in terms of attention on climate change and carbon issues. The results obtained in this study reinforces the PwC report which found that Australian business' response to climate change lags behind that of those in Europe (PwC; 2009). Australian companies listed in these countries were under substantially higher media attention regarding this issue and, as expected by legitimacy theory, disclose more carbon information. The fact that these companies were capable of making these disclosures suggests all Australian companies should be able to make similar disclosures.

Thirdly, the difference in disclosure levels by different types of companies has generally reduced over the years. This is evident from the lower R-squared in later years (79% in

2005 and 50% in 2009) and the changes in regression coefficients were generally negative. For example, the difference in disclosure by large and small companies reduces significantly ($P < 0.001$) from 6.0 in 2005 to 3.5 in 2009. The exception is the auditor.

Fourthly, the difference between disclosure by Big Four audited companies and non Big Four audited companies increases from 11 in 2005 to 26 in 2009 and is the second most important determinant of total carbon disclosures. An analysis of auditor websites revealed that all the Big Four auditors have extensive information regarding climate change issues while mid tier firms had minimal information and this information seemed to be in response to new Australian legislation: The National Greenhouse and Energy Reporting Act. The Big Four auditors on the other hand, seem to be embracing climate change issues and the impact it has on corporate reporting and the opportunities it avails. According to Nguyist (2003) the Big Four auditors have more training and resources available to them than auditors in Non Big Four firms and as such may be more able to assist their client's with carbon related disclosures. This sentiment was reinforced by The Australian Securities and Investment Commission (ASIC) during their annual review of Big Four and Non Big Four auditors concluded that "all the Big Four Firms have the resources and capability to undertake audits of the largest listed entities. They also have the necessary resources to implement effective systems in response to changes to the regulatory framework on a timely basis" (Australian Securities and Investment Commission 2006 p. 4)

Interest in the climate change debate by the Big Four Auditors is also evident by their involvement in the Climate Disclosure Standards Board (CDSB) and the Carbon Disclosure Project (CDP) to create a globally accepted framework for climate change reporting. The purpose of the framework is to develop accounting standards so that carbon disclosures can be included in annual reporting process. The draft version of this framework was released in May 2010. This framework was targeted at companies required to prepare audited financial statements under International Financial Reporting Standards (IFRSs). This is applicable as Australian accounting standards were based on the IFRS.

Tables 6 and 7 provide the corresponding regression results for the subindices core carbon (CC) and additional carbon (AC) to add insights into whether the disclosures (and

changes in disclosure) were predominantly core or additional. Two-tailed P-values were provided in parentheses From these tables several key results were highlighted below.

TABLE 6: Core Carbon regression coefficients (P-values in parentheses)

	2005	2007	2009	Pre KP 2005-2007	Post KP 2007-2009	Overall 2005-2009
Intercept	-35.1 (.000)	-62.0 (.000)	-38.3 (.000)	-26.9(.000)	23.7(.000)	-3.2(.708)
Size	4.1 (.000)	7.9 (.000)	5.3 (.000)	3.8(.000)	-2.6(.000)	1.2(.271)
Industry	5.6 (.000)	10.1(.000)	7.9(.002)	4.5(.000)	-2.2(.012)	2.3(.287)
Auditor	7.1 (.000)	20.3 (.000)	21.3 (.000)	13.2(.000)	1.00(.190)	14.2(.000)
Int Influence	80.2 (.000)	85.9 (.000)	83.2 (.000)	5.7(.075)	-2.7(.061)	3.00(.397)
Adj. R Square	.871 (.000)	.623 (.000)	.566 (.000)	.151(.000)	.097(.000)	.112(.000)

TABLE 7: Additional Carbon regression coefficients (P-values in parentheses)

	2005	2007	2009	Pre KP 2005-2007	Post KP 2007-2009	Overall 2005-2009
Intercept	-69.0(.000)	16.7(.255)	35.7(.013)	85.7(.000)	19.0(.007)	105(.000)
Size	10.3(.000)	0.9(.632)	-0.6(.728)	-9.4(.000)	-1.5(.088)	-11.0(.000)
Industry	4.8(.119)	-3.6(.352)	-4.4(.234)	-8.3(.003)	0.9(.631)	-9.2(.004)
Auditor	20.3(.000)	35.4(.000)	36.6(.000)	15.1(.000)	1.2(.478)	16.3(.000)
Int Influence	80.4(.000)	65.2(.000)	57.9(.000)	-15.2(.001)	-7.3(.014)	-22.5(.000)
Adj. R Square	47.0(.000)	34.2(.000)	33.7(.000)	20.3(.000)	.15(.000)	20.9(.000)

Firstly, the results for core carbon were similar to those for total carbon. Thus the conclusions relating to total carbon also apply to core carbon and hence we concentrate below on additional carbon.

Auditor and international influence were the major drivers of the additional carbon disclosures mirroring the results for total carbon. This reinforces the fact that companies audited by Big Four auditors and companies with international influence were disclosing more carbon information on both the core and additional categories.

Thirdly, the negative coefficients for size, industry and international influence for changes in total carbon noted above were mainly driven by changes in additional carbon rather than core carbon disclosures. For example, the size coefficient for additional carbon is negatively insignificant ($P = 0.728$) in 2009 despite being highly significant ($P < 0.001$) in 2005. Thus in 2009 smaller companies were making slightly higher additional carbon disclosures than otherwise similar larger companies; an unusual result for disclosure studies. This reinforces the earlier speculation that large energy users that were still not caught by the EEO Act may consider reporting on these reduction initiatives due to the added accountability and inflexibility by making these disclosures. This was reinforced by the results obtained by Nik Ahmad and Sulaiman (2004) who found that companies considered the need to pre-empt additional regulations to be the most important considerations in corporate environmental reporting decision. Therefore large energy users still not caught by the regulatory nets of the EEO Act may chose not to

disclose these initiative plans as a pre-emptive measure. Additionally, the interpretation of the results were reinforced by the CDP (2010) questionnaire which found that in 2010,

“Australia’s large-cap companieslag global peers on emissions reduction targets. Only forty-seven per cent (47%) of ASX100 and 24% of ASX200 (ex ASX100) respondents have established emissions reduction targets, compared with 81% of the Europe 300 and 70% of the Global 500..... Seventy-three per cent (73%) of responding ASX200 companies have taken action over the last year to reduce emissions, albeit without setting clear reduction targets. Companies surveyed attribute this directly to the introduction of the *Energy Efficiency Opportunities Act 2006* and the cost savings of reducing energy usage...”

<http://www.igcc.org.au/Resources/Documents/CDP%202010.pdf>

Additionally the results from the CDP (2010) support the supposition that the EEO had impacted on large companies (ASX 200) whereby they were moving away from the initiative disclosures to actual achieving the reduction. The CDP (2010) had cited that companies indicated a change due to the EEO regulation but did not elaborate on why regulation has caused this results and this disclosure trend was uniquely an unexplained ‘Australian phenomenon’. Additionally, they also highlighted that this was an issue with the institutional users who were interested in emission reduction targets data.

6. IMPLICATIONS AND CONCLUSION

The results obtained in this study largely support the applicability of legitimacy theory as a useful explanatory theory for carbon disclosure practices of listed Australian companies (Hedberg & Von Malmborg 2003; O’Dwyer 2003; Brown & Deegan 1998; O’Donovan 1999; Neu, Warsame & Pedwell 1998; Deegan & Gordon 1996; Deegan & Rankin 1996; Patten 1991; Guthrie & Parker 1989). Since this study focuses on carbon disclosures, the questionnaire results provided by CDP (2006 to 2010) highlighting motivations and issues for listed companies to disclose climate change information were included in the following analysis to determine the appropriateness of this theory to this project.

Against the backdrop of increasing worldwide focus on climate change issues, society’s expectation on companies to demonstrate their carbon commitment would imply that Australian companies would use carbon disclosures to as one mechanism to satisfy or manipulate those expectations. Yet, the rate of carbon reporting in Australia was low and legitimacy theory can account for these results. Although there was a global focus on climate change issues, the data provided by this study indicates that carbon disclosures

were not legitimacy/contract issues throughout the four year period, particularly in 2005. These conjectures seem more plausible given that Australia in 2005 had not ratified the Kyoto Protocol and were adamant about the non-ratification status. Additionally, the high coefficients for the International Influence variable reinforce the carbon gap between domestic listed companies and those listed internationally.

Conversely, the significant increases in carbon disclosures for each year reinforces the alteration in perception of the importance of carbon issues to the social contract. These changes in perception may be in line with stimulus such as the increased media attention to climate change issues, the ratification of the Kyoto Protocol in December 2007 as well as regulatory changes in the form of NGER and EEO which came into effect in June and December 2008. The increase in carbon disclosures in 2009 reinforces the applicability of legitimacy theory, such that companies were still increasing their carbon disclosures, arguably at a lower rate, notwithstanding the impact Global Financial Crisis, a point addressed by the CDP (2008).

Additionally, the annual results for company characteristics that drive total carbon disclosures highlight the applicability of legitimacy theory to the study. This holds true for the total carbon and core carbon indicators but the results for the additional carbon indicators were different. The changes in average additional carbon results for the latter period (2007 to 2009) highlighted a decline in the rate of increase compared to the initial period. The inferential statistics found that less visible companies were increasing their additional carbon disclosures at a slightly faster rate than the larger companies and companies in carbon sensitive industries. These results indicate that companies had taken different legitimization tactics to address their position on climate change. Smaller companies may be using the additional disclosures to influence the perceptions of the society about their carbon consciousness while deflecting the attention away from pressing issues as the core indicators which were what's required to analyse a company's carbon footprint (Dowling, 1975; Gray, 1994b). Although increasing disclosures should be viewed positively, these actions should be viewed with some caution as these increasing narrative disclosures about future carbon initiatives may be used only as a legitimating tactic whereby they were trying to alter their image but not modify their behaviour regarding core carbon information (refer to Dowling & Pfeffer 2004).

When the results were compared between the two periods, it was noted that rate of increase was lower during the 2007 to 2009 period. The fact that there was higher rate of change for carbon disclosures prior to the ratification and environmental legislation highlights that the sampled companies had used a proactive tactic as the ratification and regulations may have been viewed as a potential legitimacy threat (O'Donovan 2002) (Cowan and Deegan, 2019). The study by Cowan and Deegan (2010) found similar results in relation to the introduction of the NPI while Frost (2007) obtained results to the contrary for Australian companies and the introduction of s299(1)(F). Although the results obtained in study supports that of Cowan and Deegan (2010), it may be too simplistic to state that companies in Australia respond in this way. This proactive versus reactive reactions to legislation might be related more to the nature of the legislation and how the implementation of the legislation was going to effect the legitimacy of the organisation. Additionally, the results also suggest that the regulatory reforms set up by the state may have had limited success compared to voluntary practices (Adams, 1995; Criado, 2008 ; Larrinaga et al 2002).

Although, the results obtained in this study indicates that there was support for legitimacy theory, the fact that companies were responding to regulation in differing levels and using a proactive/reactive approach to regulation suggest that the role of the Australian government and regulation in the climate change debate needs to be analysed further and this may contextualise some of the obtained results. . Generally, researchers view government as a static variable in accounting studies, hence allowing the focus to be on legitimation process of companies to their social contract (Tilling, 2010). However the differing results of this study suggests that companies may not have conformed to a set of institutionalized beliefs because they constitute reality; companies were strategically doing so because they know they will be rewarded with increased legitimacy, resources, and survival capabilities (Meyer, 1977). To more fully understand the “role of the State vis-a` -vis corporate interests” the results indicate that the “micro-level legitimacy may be intertwined with the macro-level legitimacy of the socio-economic system” (Archel, 2009, p. 1288).

On a macro level, a number of carbon events that occurred in Australia during the period of review, resulted in 2007 being a ‘watershed’ year for climate change in Australia, which commenced with the ratification of the Kyoto Protocol by the newly elected labour

government. Prior to the ratification of the Kyoto Protocol in December 2007, Australia was criticised for their lack of carbon commitment on a global level. However, after the ratification, there was added focus on how Australia was going to achieve the first trajectory targets especially in light of the time it took Australia to ratify the Kyoto Protocol after it was signed. Some may question the importance of climate change issues in Australia, but it played an instrumental role in the election of the Labour Government in 2007 and the also played a key role in the ousting of the former Prime Minister, Kevin Rudd in 2010. Therefore, the focus on the Australian government were on a dual level, first as world player in the carbon debate and second on highlighting the governments own commitment to climate change as well as instilling the importance of climate change issues within carbon players in Australia. Unlike other countries, Australia's stance on climate change was made more difficult with the political discord associated with the climate change issues from the ratification of the Kyoto Protocol to the failed attempts of the implementation of the Emission Trading Scheme, to the potential introduction of the carbon tax.. New Zealand had commenced discussions about the CPRS around the same time as Australia, and had begun discussions with a lower level of public acceptance compared to Australia yet their Emission Trading Scheme has been in operation since July 2010. The CDP(2010) assessment of Australia current carbon position, "a great deal of activity but little progress". The longitudinal results suggest that the strategic legitimacy theory lens needs to be extended to analyse the strategic position of the State thus dispelling the pluralist political assumption making it more akin to critical branch of legitimacy theory or classical political economy theory (Gray et al., 1995, 1996).

With the climate change debate gaining momentum, Australia was not in a position not to participate in global phenomenon. By extending the strategic legitimacy analysis to the classical perspective, the analysis focuses on the "interplay between firm legitimating strategies and state support for such strategies" {Archel, 2009 #396}p. 1284. For instance Gray (1996) stated that

"the growth in environmental disclosures by companies in the late 1980s and early 1990s can be interpreted as an attempt to **as if** in response to environmental pressure groups while, actually, attempting to wrest the initiative and control of the environmental agenda away from these groups in order to permit capital to carry on doing what it does best – make money for capital .."

Therefore, the question centres on whether the climate change policies in Australia merely forms as part of the corporate ideological vehicle to support the legitimacy of the

capitalistic system as a whole (see Cooper and Shearer, 1984 ; Macintosh, 1990). According to Archel et al (2009) the limited success of a regulation requires further insight into role that the State as any “a well-articulated regulation, or at least the threat of it, and a clear will to enforce it” would bring forth legitimization tactics in the form of disclosures by companies. In order to facilitate an understanding about the State’s commitment to climate change and the messages that they were sending to companies, would be indicative of the type of regulations that have been set up and how these regulations were monitored for compliance. The nature of the regulations would also highlight the level of importance the State was placing on these issues and either reinforce or refute the application of the classical perspective of political economy theory for the purposes of the carbon regulation in Australia.

The Australian Government’s Energy Efficiency Opportunities program was implemented on the basis that it would play “ an important role in spreading awareness of energy efficiency among our largest energy consumers, as well as providing practical and real results in reducing greenhouse gas emissions” whereas NGER regulation was implemented to prepare companies for the reporting requirements of the impending CPRS (EEO, 2009; p.2). The CPRS relies on the reporting mechanism in the NGER Act to quantify the extent of an entity's liability to acquire permits.

There were a number of apparent issues with the above regulations. Firstly, if the intention of the EEO was to spread awareness among the big energy users and consequently reduce energy consumption, the State would have mandated that companies implement the carbon initiatives rather than just disclosing plans to reduce carbon emission over a five year period, instead of leaving the decision to implement these initiative open to the companies. Additionally, the fact that regulation was implemented in the hope that companies would incorporate some of the disclosed initiatives after considering the ‘strategic significance’ suggests that State does display a commitment to Australia’s climate change position but it is held within context of their economic objectives . The relaxed nature of the EEP regulation was further accentuated by the verification process undertaken by the EEO to ensure that the status of the assessment and implementation of the initiatives (implemented to not implemented) were accurate . Two hundred and twenty companies were involved in the first round of EEO Act and The Department of Resources Energy and Tourism was said to have

commenced a “process of verification, to determine if and how companies were complying with EEO requirements... approximately 20 companies will be verified per year, commencing in 2009. ” This implies when the data was analysed in 2009, less than 10% of data was verified and taking into consideration the rate of verification, this suggests that this entire process would take another ten years to complete just for the companies involved in the first round of the Act. Moreover, the extension of this Act from 2012 was still unclear as the Act was currently undergoing due diligence to analyse its effectiveness. Overall, the EEO Act seems to work as a guideline for good carbon behaviour, rather than an enforceable regulation. The verification process also reinforces the light handed approach the State has taken to climate change issues. Interestingly, the diverse legitimization tactics used by the large and small companies towards additional indicators reinforces the ambiguity surrounding the regulation (refer to CDP, 2010).

The NGER regulations were also not without issues. Deloitte found ‘the NGER data collection process for many companies was inefficient and requires improvement to become a robust and sustainable business process’ which suggests that there may be errors within the calculation of the energy and emission outputs (Tohmatsu, 2009). This was reinforced by the CDP (2010) which alluded to some errors in the emission figures which partly accounted for the difference in results from 2009 to 2010. Moreover, not all reporting companies had to undergo an audit, so the information or that NGER was publishing could be misleading. Instead, the NGER Act has recognized the regulatory role of the Greenhouse and Energy Data Officer (GEDO) who has specific statutory role in compliance, monitoring and enforcing provisions under the NGER Act. The role of GEDO is outlined below:

“To be an efficient, transparent and proactive regulator accountable to the Australian community for the effective exercise of its powers in support of the objectives of the National Greenhouse and Energy Reporting Legislation”.

The ‘proactive’ terminology associated with the GEDO comes under question when the enforcement processes for the NGER were analysed. GEDO uses an ‘risk based approach to determine if companies were not reporting to their statutory requirements. If companies were found to be ‘non compliant’ then they will be audited by GEDO to verify the information was correct. However,

“Where the GEDO has detected a contravention, the corporation will be informed and given an opportunity to voluntarily comply. To assist the corporation to do this, it will be provided with guidance materials to help it

understand how to meet its obligations as well as contact points within DCCEE for further clarification.”

Similarly with the EEO Act, the NGER Act also seems to be perforated with a ‘laissez faire attitude’ towards compliance. This was reinforced by the Department of Climate Change that stated they work on a ‘benefit of the doubt principle’ when it comes to compliance and that the focus should be on ‘communication, education and training’ and less time would be spent on enforcement.

“While all alleged contraventions will be carefully considered, the GEDO will exercise its discretion in allocating the resources available for investigation and resolution of matters, so as to ensure the greatest overall benefit to the objectives of the NGER Act and balance cost with effective regulation”

There seems to be minimal compliance checks for NGER and EEO data and according to the above statements, there was a strong overlying economical agenda. Although there were relaxed guidelines surrounding the submission and compliance of NGER data, there were strict procedures for the audit function associated with NGER data. Only GEDO approved people can perform an audit function and they have to acquire high indemnity insurance when they were dealing with NGER verification. Additionally, the conflict of interest clause within the audit determination document precludes financial auditors from performing the NGER audit for their financial clients. The concerns regarding the audit rules for NGER was highlighted by The Institute of Chartered Accountants in Australia

“The Institute is of the view that this is a significant oversight. Given that the data will form the foundation for an Australian Emissions Trading Scheme, it is vital that trust and credibility be built into the system from the very beginning. The absence of a robust and rugged assurance requirement to accompany the obligation to report has the potential to impair such a trading scheme. The numerous securities exchanges that currently exist work because participants have confidence in the framework, which is underpinned by an audit / assurance requirement. The public interest is not well served by the absence of the requirement for assurance. It is a matter of considerable importance which the Institute believes should be addressed as soon as possible. It is worth noting that the data used in the emissions trading scheme in place in the European Union requires an annual audit.

<http://www.climatechange.gov.au/government/submissions/reporting/~media/submissions/reporting/64icaa.ashx> (The Institute of Chartered Accountants in Australia, 2007)

Therefore after the analysis of the regulation, the configuration of the policies suggest that these policies serve a dual purpose, first to highlight that the State was taking action

to deal with climate change and also to create a legitimacy gap between companies and society. However, the nature and enforcement of the regulations highlight that the State were incorporating suppression and transformation tactics within their policies (Gray 1992, Bebbington et al , 2001). By the State implementing these carbon regulations, Australia was highlighting their commitment to the climate change debate and appeared to be aligning the values of country as a whole to other countries that have ratified the Kyoto Protocol. However , these initial ‘regulatory’ steps to consolidated climate change policy suggest that the State could be ‘suppressing’ more significant development of more radical forms of climate change policy as these may have an even greater impact on capitalism. Additionally, the contention behind climate change issues within the Parliament may have played a role in downplaying the severity of these guidelines as the Labour government also needs to protect their own political interest within this debate. Therefore, the lower rate of increase in the compliance period could be partly related to the acceptance of the role of the labour government in Australia’s climate change debate.

Companies operating in institutional environments tend to exhibit isomorphism (Zucker, 1987). However the differing results between the two periods of this study suggests that the labour government were still in the process of gaining acceptance from society in regards to climate change and the fact that the institution was not in tune with society, which could account for the lack of homogeneous change to carbon regulation. Therefore, companies may view the changes in the carbon goal post as indicative of lack of commitment on the governments part to address the climate change issues and hence may question the purpose of investing resources to modify behaviour when there was no guarantee that this was really a legitimacy issue that needed to be addressed by Australian companies.

Overall the results obtained in this study reinforces Gray et al (1995, p. 67) observation that it was difficult to use a single theoretical perspective to explain corporate disclosures especially for longitudinal studies and the use of “different levels of resolution could offer other observations about the development of” carbon practices in Australia. This was especially so for environmental disclosures because of the complicated, multi-faceted nature and of the political processes which surround it (Ullmann, 1985).

The analysis above also highlights that these results may have implications for the users of the carbon disclosures. The quasi regulated nature of carbon disclosures suggests that users may also be able to place limited reliance on carbon disclosures obtained from Australian listed corporate websites, further exacerbated by the companies using the materiality concept to reduce information overload. There is no assurance that this materiality concept has been applied correctly and therefore this questions the completeness of the data presented. This was further reinforced by the assessment made by the ICAA in relation to the NGER audit determination and the fact that there were strict guidelines to carry out the NGER and it also limits the role of the financial auditor for this assurance process. The fact that the NGER data does not have to be audited also questions the effectiveness when/if the Carbon Pollution Reduction Scheme gets implemented. This is especially in light of the fact that the EU Emission Trading scheme operates on audited data.

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[i] http://unfccc.int/kyoto_protocol/items/2830.php

[ii] <http://www.nger.com.au/environmental-reporting/nger.html>

[iii] <http://www.pwc.com.au/corporate-responsibility/environment/index.htm>

[iv] <http://www.cdsb-global.org/>