

Towards the development of a best practice guide for the disclosure of organisations' climate change-related corporate governance practices

Abstract

The aim of this study is to develop a disclosure guide for climate-change-related corporate governance (CCCG) practices. Drawing from existing climate change policy guidelines together with content analysis of leading Australian companies' disclosure practices, we develop a best practice index for the disclosure of CCCG practises. The best practice index is further informed, validated and refined by the contribution of experts from a range of stakeholder groups. Our index represents the most comprehensive list generated to date, utilising experts' opinions, in relation to CCCG disclosure practices. This CCCG disclosure index would be useful for companies seeking to provide information in relation their CCCG practices.

Keywords: Climate change; corporate governance; climate change-related disclosure; experts; stakeholders.

1. Introduction

In recent years climate change has attracted increasing attention in the international scientific and policy arenas. As the science of climate change has evolved, increasing evidence of anthropogenic influences on climate change has been found. Correspondingly, the Intergovernmental Panel on Climate Change (IPCC¹) has made increasingly more authoritative reports about the human impacts on the Earth's climate. This has lead to international and national policies being developed to address climate change. A wide range of economic, geographical and political factors have also shaped different countries' climate change-related positions (Kolk and Levy, 2001; Kolk and Pinkse, 2004; Kolk and Pinkse, 2007; Kolk, 2008).

The business community is one of the key contributors to climate change and is exposed to various risks, opportunities and uncertainties associated with climate change. Indeed, climate change and associated risks are increasingly being recognised by corporate managers as one of the most important business challenges (Deegan, 2010).

¹ The IPCC is a scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Programme (UNEP). It provides scientific, technical and socio-economic information in a policy-relevant but policy neutral way. It publishes regular Assessment Reports the findings of which are well publicised and quoted around the world (<http://www.ipcc.ch/>).

There is an increasing demand from various stakeholder groups for companies to publicly report information about their climate change-related business practices (Global Reporting Initiative and KPMG, 2007). At the same time, many large business organisations, being under increasing pressure from stakeholder groups, have been developing numerous climate change-related strategies (Kolk, Levy and Pinkse, 2008) and appear to disclose related information (Kolk et al, 2008; Haque and Deegan, 2009). However, although there is an increasing trend in companies reporting climate change-related information, it remains at fairly low levels. For example, using Australian data, Haque and Deegan (2009) reported that although there is evidence of increasing climate change-related corporate governance disclosure practises by Australian companies across time, the level of disclosure is still quite low. Consistent with Haque and Deegan (2009), Labatt and White (2007) also argued that corporate disclosure on climate change at an international level has historically been “uneven and inadequate” (p.114).

Given that the problem of climate change is directly impacted by business operations, and also creates risks and opportunities for business, it does seem reasonable that various stakeholder groups will be particularly interested in the climate change-related policies and procedures business organisations have in place. That is, to assess the relative risks and opportunities that climate change creates, stakeholders will have a demand for information about the types of policies and procedures an organisation has (or does not have) in place to address climate change. However, currently it is somewhat unclear what types of disclosures stakeholders demand in relation to climate change-related corporate governance policies. In response to this uncertainty, this study seeks to explore stakeholders’ demands for information about climate change-related corporate governance practices. This study represents an important step towards developing ‘best practice’ recommendations relating to the disclosure of information about climate change-related corporate governance policies.

This study develops a disclosure index pertaining to *climate change-related corporate governance (CCCG)* practices. For the purposes of this paper, CCCG disclosures refer to corporate disclosures about the policies and procedures the respective organisations have in place for addressing risks and opportunities associated with the issue of climate change. Reviewing a number of best practice guides, together with a review of corporate disclosure practices, this study has synthesised a list of key reporting

issues. Utilising this list, or index, we send a questionnaire to representatives of different stakeholder groups who are believed to have expertise in the area of climate change. The experts were surveyed to see whether they concur with the various proposed disclosure issues, and whether they believe further issues, not listed within the survey instrument, are of importance. After taking the views of the experts into consideration we then present a comprehensive 'best practice' index for reporting CCCG practices.

The rest of the paper is organised as follow. Section two introduces the significance of the study followed by a brief overview of past studies. Section three presents our research methods. Section four presents the findings of the paper including a brief discussion of the results. The last section provides concluding comments.

2. Significance of the study: why do stakeholders need CCG disclosures?

Climate change represents one of the biggest risk factors facing business (Garnaut, 2008; CERES, 2002). There are differential climate change-related risks business organisations are likely to face. These risks can be categorised into three broad categories: physical, regulatory, and business risks (Labatt and White, 2007; Carbon Disclosure Project, 2008). Physical risks result from the direct impacts of climate change and include extreme weather events; rising sea levels and water shortages; infrastructure damage and associated costs; availability of water and other resources; increased insurance costs; and, business disruptions either directly or via the supply chain. Regulatory risks are a threat to business organisations at three levels of their operations: their own facilities' emissions; indirect emissions from their supply chain; and emissions associated with their products or services (Labatt and White, 2007). Included within regulatory risks are the costs and uncertainties relating to evolving emissions trading regulation; emissions reductions and increased energy efficiency; regulatory uncertainty and duplication; growing compliance costs; and costs associated with mandatory greenhouse and energy reporting. 'Other business risks' include changes in consumer attitudes and demand; damage to reputation; possibility of litigation; and difficulty in attracting investment funds.

All these risks associated with climate change can affect businesses' profitability and value (Rolph and Prior, 2006). To assess potential risks, stakeholders would need to

know the policies and procedures (governance structures) an organisation has put in place to manage the climate change aspects of its performance (climate change-related corporate governance practices) rather than simple output measures (for example, level of emissions). As indicated by Bebbington and González (2008, p. 705):

...in addition to financial information, non-financial information will be needed to provide relevant information about the risks associated with GCC (global climate change). Indeed, in order to reflect a 'true and fair view' of corporate performance and the context of their operations, non-financial reporting will be needed to provide information about the impact of GCC and adaptation to GCC (via changing regulations or via changing corporate activities) on organisations.

Many stakeholder groups are increasingly showing their concerns for the issue of climate change. These stakeholder groups include NGOs, consumers, media, the scientific community, shareholders, suppliers, and professionals (Kolk and Pinkse, 2007; Pleon, 2007). There is a growing demand from these stakeholder groups for organisations to disclose information about climate change-related governance practices as such information "signals a company's seriousness about climate change and provides a gauge of its ability to track and manage emissions" (Esty, 2007, p.30). Reflecting the growing calls from various stakeholder groups for the improvement of the governance and reporting practices of energy use, and greenhouse gas emissions of companies, the CEOs' of two leading Australian superannuation funds, *Public Sector and Commonwealth Superannuation Schemes (PSS/CSS)* and *Catholic Superannuation Fund (CSF)* made a joint statement in a media release (Commonwealth Superannuation Scheme, 2003) that:

Due to rising energy costs, insurance costs, regulatory costs and litigation costs, as well as the tangible risk of reputation and brand image, the management of energy use is no longer the province of environmentalists alone. It is now an area of high and unpredictable risk which impacts the profitability of companies and their long-term shareowner value. In view of the increasing risks associated with energy use, shareowners have a fiduciary duty to take an active interest in this area and company directors have a duty to ensure that sufficient reporting is provided to shareowners. Improved management and disclosure of energy use by companies is a win on two fronts. Firstly, it offers an immediate and measurable reduction in business costs, and thereby improved profits. Secondly, it is a sound approach to long-term risk management....we expect company directors will welcome our long-term investment view in calling for improvement in the governance and reporting of this risk through a three-step process: conducting regular energy audits; implementing any appropriate mitigation strategies; and proactively disclosing energy risk management on an ongoing basis.

Reflective of the demand for information about an organisation's approach to climate change risks, the leading law firm Morgan Lewis (2009, p. 5) states:

Disclosure about greenhouse gas emissions and strategies to reduce such emissions may become an expected part of the analysis of a company's material financial risks from climate change. Rather than having to admit that they have no strategies to analyze and address the effects of climate change, including the effects of greenhouse gas emissions, public companies that face material financial risks from climate change are likely to adopt such strategies. In addition, the companies' disclosures about the roles of their boards of directors concerning climate change and the relationship between officer compensation and environmental performance may lead to demands for similar information from other public companies.

Therefore, public companies should consider adopting these management practices and corporate governance measures if they face material financial risks from climate change. As is often the case, disclosure requirements change behavior—and it can be expected that many companies may in time want to be in a position to favorably disclose their responses to material financial risks from climate change and the incorporation of environmental performance into their business practices and corporate governance approach, including officer compensation decisions.

Hence, it can be argued that to assess future risks, stakeholder groups would not necessarily focus on historical records of performance (for example, 'output measures' such as past emission levels), but rather, would need to know what mechanisms are in place to control and mitigate the climate change implications of the organisation's current and future operations (process measures). As there is a current lack of generally accepted reporting frameworks in relation to climate change-related corporate practises, this study contributes to the existing literature by providing a best practice index for the disclosure of organisations' CCCG practices.

3. Research methods

As already noted, the aim of this study is to develop a disclosure index related to CCCG practices with reliance being placed on the opinions of the experts within different stakeholder groups². As such, the approach being adopted in this paper can be considered to represent a 'decision usefulness' study. Further, within the decision

² Within the social and environmental accounting literature there are a number of studies that have used or developed disclosure indices for the purpose of classifying and measuring corporate social disclosures (for example, see Ernst and Ernst, 1978; Wiseman, 1982; Guthrie and Parker, 1989; Guthrie and Parker, 1990; Gray, Kouhy, and Lavers, 1995; Hackston and Milne, 1996; and Islam and Deegan, 2008). However, a review of these studies indicated that the respective indices used were not sufficiently refined in terms of the specific issue of climate change. Hence, they were not directly useful in terms of developing a 'best practice guide'.

usefulness perspective we are adopting a ‘decision makers’ perspective’ rather than a ‘decision models perspective’. As Deegan (2009, p. 12) explains:

the decision usefulness approach can be considered to have two branches, the decision-makers emphasis and the decision-models emphasis. The decision-makers emphasis relies on undertaking research that seeks to ask the users of the information what information they want. Once that is determined, this knowledge is used to prescribe what information should be supplied to the users of financial statements. Much of this research is questionnaire based. On the other hand, proponents of the decision-models emphasis develop models based upon the researchers’ perceptions of what is necessary for efficient decision making. Information prescriptions follow (for example, that information should be provided about the market value of the reporting entity’s assets). This branch of research typically assumes that classes of stakeholders have identical information needs. Unlike the decision-makers emphasis, the decision-models emphasis does not ask the decision makers what information they want but, instead, concentrates on the types of information considered useful for decision making.

In adopting a ‘decision-makers’ emphasis’ we therefore are not evaluating the merit of the answers given by the respondents. That is, we are not questioning why they demand or require, or whether they ‘should’ require, particular information. We are simply accepting the decisions of the ‘experts’ and developing a disclosure index based on expert opinions. Our results should be considered in this light.

The process involved in the development of our index involved two main stages. Firstly we have developed a preliminary disclosure index. Secondly we then ask experts to evaluate our preliminary index.

3.1 Stage one

Stage one involved the development of a preliminary CCG disclosure index based on two separate steps which are described below:

3.1.1 Step one: Reviewing recognised ‘best practice’ guides

Step one involved reviewing some previous best practice guides released by various NGOs and research associations. We have selected these documents as the basis for our starting point. That is, in obtaining the views of experts we took the decision to provide them with some perceived ‘best practice’ disclosures for them to evaluate and to invite them to offer additional disclosures that may have been omitted from our initial list. We used online research databases to look for climate change-related guidance documents. We searched online (the keywords being climate change-related disclosure guide) that helped us to identify international NGOs and research

organisations that have provided guidelines for business organisations in relation to climate change. Our selected organisations are: Coalition for Environmentally Responsible Economies (CERES), Business for Social Responsibility (BSR), AMP Global Investors, The Carbon Disclosure Project (CDP), Global Reporting Initiative (GRI), KPMG and the Association of Chartered Certified Accountants (ACCA). The rationale for selecting the guides provided by these organisations was that their organisational background makes them widely acknowledged and accepted as experts in issues to do with climate change and associated accountabilities.³ Whilst not necessarily focussing on disclosure, these documents typically identified the types of governance practices that would be expected to be found within organisations that are actively and seriously embracing the climate change agenda. The documents reviewed were:

1. CERES released a document in March 2006 entitled *Corporate Governance and Climate Change: Making the Connection*, which reveals the degree to which major global companies use corporate governance to address climate change risks and opportunities (Cogan, 2006). The report provides a checklist of 14 governance policies that ideally would exist in an organisation tackling climate change issues.
2. BSR released a report in October 2007 entitled *Beyond Neutrality: Moving Your Company Toward Climate Leadership* that identified 27 ‘practices’ that would be expected to exist in a well designed corporate governance system and that companies are increasingly acting on and being measured against.
3. AMP Henderson Global Investors (2002) released a report entitled *Climate Change: Where are Australian Companies Positioned?* that evaluated the extent to which Australian organisations had embraced the climate change agenda. In doing so they investigated whether particular policies and practices had been implemented. These policies and practices were reflective of the extent to which organisations had embraced climate change.
4. CDP, which is the world’s largest collaboration of institutional investors, identifies a number of suggested disclosures. To assess whether organisations were making disclosures in conformity with its recommendations a questionnaire was developed by the organisation in 2002, the latest of which was refined and re-released in 2008 and this questionnaire highlights a number of expected climate change-related policies and procedures.
5. GRI and KPMG developed a guide (2007) to evaluate corporate reporting on the business implications of climate change entitled *Reporting the Business*

³An overview of the prior literature and various media releases (see for example, Reynolds, 1993; Hoffman, 1996; O’Dwyer and Owen, 2005; Kolk et al, 2008; Business for Social Responsibility, 2006; KPMG International, 2008; KPMG, 2009; The Courier, 2003; PR Newswire Association, 2007; Anonymous, 2008; Global Warming Focus, 2008; M2 Presswire, 2008) indicates that these organisations have a history of working with the business organisations and stakeholder groups in relation to environmental, social and sustainability issues. Hence, they do appear to have expertise in the area.

Implications of Climate Change in Sustainability Reports. This document identifies a number of governance related policies that are expected to be disclosed in an informative report.

6. ACCA, UK, developed an instrument to review the climate change related reporting practices of 42 UK companies (2007). Companies' sustainability (or equivalent) reports, annual reports and web-based documentation were analysed using the disclosure criteria.

After reviewing the above guides, we identified a list of CCCG practices comprising twenty-two specific issues. The basis for including a particular issue in our list was that at least two of the six reports must have included the item within their particular recommendations. Whilst this is a relatively arbitrary approach, our view is that given these documents are deemed to be authoritative, then if two documents identify the same issue then it does appear to reinforce the view that the issue is important in terms of developing a sound corporate governance system to address the risks associated with climate change. Also, it again needs to be appreciated that this is a first step and that respondent experts will be able to add additional items to, or delete particular items from, our preliminary list of CCCG disclosure items.

3.1.2 Step two: Reviewing annual and standalone social and environmental reports

Step two of stage 1 involved reviewing annual reports of five major Australian emission-intensive companies' (listed on ASX-100) corporate climate change-related disclosure practices over a period of 16 years (from 1992 to 2007) to identify any additional issue disclosed by the companies but not included in our list. The five companies were BHP Billiton, Caltex, Origin Energy, Rio Tinto and Santos Limited. Apart from annual reports, standalone sustainability (or similar) reports have also been considered as one of the important sources of information since its emergence in the late 90s (Unerman, 2000). Therefore, we also analysed the standalone social and environmental reports (or equivalent) of the five mentioned companies (from 2002 to 2007 for BHP Billiton, Origin Energy, and Rio Tinto; from 2002 to 2004 for Caltex; and 2004, 2006 & 2007 for Santos Limited)⁴. We reviewed the reports using different key words such as "climate change", "global warming", "greenhouse gas",

⁴ Annual reports of these five listed companies are available through the Connect 4 Database. Another database "DatAnalysis" also provides access to annual reports in PDF format for all listed Australian companies. This study has utilised the facilities provided by both databases. The stand-alone reports of these five listed companies were collected from the respective companies' websites.

“emissions”, “EU ETS” “carbon”, “CO2”, “GRI”, “GHG Protocol”, “corporate governance”, “management”, “risk”, “environment”, “pollution”, and “energy”. Companies that mentioned the words “corporate governance”, “management”, “risk”, “environment”, “pollution and “energy” generally, but failed to discuss them in the context of climate change, were not considered to be providing climate change-related disclosure. The reason for considering the reports of these emission intensive companies is that the respective management teams would conceivably have given considered thought to developing appropriate items to report, and would presumably have involved various experts in the reporting process.

A review of the corporate reports indicated that while there are several CCCG issues that have been relatively well disclosed, none of the companies has provided disclosures across all of the issues extracted from the best practice guides we reviewed in stage one. However, we identified a limited number (three) of additional climate change-related disclosure issues reported by our selected companies. The reason for the inclusion of the additional issues is that these issues were disclosed by at least two of the companies within their annual reports and/or sustainability reports. As already indicated, the rationale for including these disclosures in our list was that as the issues were disclosed by the organisations then these organisations must have considered that the issues were likely to be of relevance to particular stakeholders. Drawing from the two sources (best practice guides and annual & standalone reports) we developed a final index of twenty-five specific CCCG issues under eight general categories. The index is shown in *Table 1*. The additional three items identified from the company annual and/or sustainability reports are presented in *italics*.

Table 1: Climate Change-related Corporate Governance Disclosure Index

General Categories	Specific Issues	Labels
BOARD OVERSIGHT	1) An organisation has a board committee with explicit oversight responsibility for environmental affairs.	BDOV1
	2) An organisation has a specific board committee for climate change and greenhouse gas (GHG) affairs.	BDOV2
	3) The Board conducts periodic reviews of climate change performance.	BDOV3
SENIOR MANAGEMENT ENGAGEMENT AND RESPONSIBILITY	4) The Chairman/CEO articulates the organisation's views on the issue of climate change through publicly available documents such as annual reports, sustainability reports, and websites.	MNGRES4
	5) An organisation has an executive risk management team, dealing specifically with GHG issues.	MNGRES5
	6) Some senior executives have specific responsibility for relationships with government, the media and the community with a specific focus on climate change issues.	MNGRES6
	7) <i>An organisation has a performance assessment tool to identify current gaps in greenhouse gas management.</i>	MNGRES7
EMISSIONS ACCOUNTING	8) The executive officers' and/or senior managers' compensation is linked to attainment of GHG targets.	MNGRES8
	9) An organisation conducts an annual inventory of total direct/indirect GHG emissions from operations.	EMSAC9
	10) An organisation calculates GHG emissions savings and offsets from its projects	EMSAC10
	11) An organisation has set an emissions baseline year by which to estimate future GHG emissions trends.	EMSAC11
	12) An organisation sets absolute GHG emission reduction targets for facilities and products.	EMSAC12
	13) An organisation has third party verification processes for GHG emissions data.	EMSAC13
	14) An organisation has a specific policy to purchase and/or develop renewable energy sources.	EMSAC14
	15) An organisation has specific requirements for suppliers to reduce greenhouse gas emissions associated with their operations.	EMSAC15
RESEARCH AND DEVELOPMENT	16) An organisation has a policy of providing product information including emissions reduction information to the customers through product labelling.	EMSAC16
	17) An organisation has a specific policy to develop energy efficiency by utilising/acquiring low-emission technologies.	RND17
POTENTIAL LIABILITY REDUCTION	18) <i>An organisation has a policy of investment to accelerate the research and development of low-emissions technologies and support energy efficient projects.</i>	RND18
	19) An organisation pursues strategies to minimise exposure to potential regulatory risks and/or physical threats to assets relating to climate change.	POTLBRD19
REPORTING/ BENCHMARKING	20) An organisation has specific frameworks to benchmark its greenhouse gas emissions against other companies and competitors.	REP BEN20
	21) An organisation has a policy of compliance with Global Reporting Initiatives (GRI) Guidelines or a comparable Triple Bottom Line format (e.g. GHG Protocol) to report its greenhouse gas emissions and trends.	REP BEN21
CARBON PRICING AND TRADING	22) An organisation has a policy for trading in regional and/or international emission trading schemes	CRNPRTRD22
	23) <i>An organisation has a policy to assist government and other stakeholders on the design of effective climate change policies such as carbon pricing and/or National Emission Trading Scheme.</i>	CRNPRTRD23
EXTERNAL AFFAIRS	24) An organisation has a public policy to support collaborative solutions (e.g. work with the government and other organisations in voluntary emission reduction projects) for climate change.	EXAFF24
	25) An organisation has a policy to promote climate friendly behavior within the community by raising awareness through environmental sustainability education.	EXAFF25

3.2 Stage two: the survey of experts

After developing a preliminary CCCG disclosure index, we then investigated, via an online survey, whether climate change experts from various stakeholder groups consider the issues in our index to be important items of disclosure for assessing organisations' approach to managing climate change risks and opportunities.

Stage two involved five steps: firstly, identifying the stakeholder groups; secondly, selecting the expert participants; thirdly, designing the questionnaire; fourthly, conducting the online survey; and finally, analysing the survey data.

3.2.1 Step one: Identifying the stakeholder groups

Step one involved identifying relevant stakeholder groups. Based on the review of prior literature and numerous media releases and public documents, we identified different stakeholders who focussed on environmental issues, particularly the issue of climate change (Pinske and Kolk, 2007; Freidman and Miles, 2001; Solomon, 2007; Deegan, 2010a; Thompson and Cowton, 2004; ACF, 2006; Hall and Taplin, 2007; Stern, 2006; Garnaut, 2008; Boykoff and Roberts, 2007; CPA Australia, 2007; KPMG, 2008; Preston and Jones, 2006). Our selected stakeholder groups were:

1. **Government bodies** (Australian Greenhouse Office, Bureau of Meteorology)
2. **Institutional investors and banks** (AMP Capital, VicSuper, Sustainable Asset management, Westpac, ANZ, National Australia Bank)
3. **Environmental NGOs** (WWF-Australia, Australian Conservation Foundation, Greenpeace, Friends of the Earth)
4. **Research Community** (CSIRO)
5. **Media** (The Australian; News limited)
6. **Consumer association** (CHOICE)
7. **Accounting professionals** (Institute of Chartered Accountants in Australia (ICCA), CPA Australia, KPMG, Pricewaterhouse Coopers, Ernst and Young)

The above list includes both local-based (Australian) and global organisations, and includes individuals who would arguably appreciate what elements should be present if a corporate governance system is to adequately address the various risks associated with climate change.

3.2.2 Step two: Selecting the expert participants

After identifying our stakeholder groups, we identified the people who have been working on environmental/climate change-related issues within the respective organisations. We identified potential participants from the websites of the respective stakeholder organisations. For example, we selected people in charge of organisations' corporate environmental responsibility, climate change and sustainability services, climate change and risk management, greenhouse and energy reporting taskforce, climate change campaigns, and so forth. The selection of the participants was balanced with individuals from various organisational backgrounds and presumably reflected different perceptions of the issues associated with climate change. What will be of interest is to see whether the diversity in background influences perceptions about the importance of respective disclosure issues. A list of 110 potential participants was compiled and all of them were invited, by email, to participate.

3.2.3 Step three: Questionnaire design

The questionnaire contained two parts. The first segment requested data concerning demographic characteristics in order to obtain a profile of the respondents. The second segment sought respondents' views on CCCG disclosure practices. Subjects were asked to rate each of the issues in our preliminary CCCG index. In this survey we used a five point Likert-scale with one representing unimportant, and five representing very important. In addition, a number of open-ended questions were included in the questionnaire to give each respondent the opportunity to include other important specific issues they believe organisations need to address under each broad category. They are also able to make any additional comments on the issues being covered.

The design of the questionnaire involved two more steps - identifying the survey tool, and piloting the questionnaire. This study utilised an online survey tool called survey-monkey (www.surveymonkey.com). Started in 1999, SurveyMonkey is a US-based company that enables users to create their own online surveys. SurveyMonkey creates a unique URL (web address) for each survey developed. Participants can respond whenever they wish as long as the survey is available. All surveys and data are hosted on the secure server of survey monkey and kept private and confidential.

To ensure the content validity of the instrument, the questionnaire was pre-tested by a number of university academics and researchers knowledgeable about sustainability issues and/or questionnaire and survey development. We invited eight academics and researchers, not involved in the final sample, to comment on the questionnaire with respect to issues such as layout, style, wording and so forth. Each participant of the pilot test was sent an email explaining the aim of the study and the type of information the questionnaire was intended to elicit, and the link to the questionnaire. Following the pilot phase, the survey was revised and minor changes were made.

3.2.4 Step four: Conducting the online survey

After piloting the questionnaire, it was distributed to the participants via a link contained within an introductory email outlining the survey purpose, providing instruction for completion and requesting their participation. The email also addressed issues of possible risks (if any) and benefits for participants, and confirmed the privacy/ protection of anonymity and data security. Records were kept on when participants were contacted, when they agreed to participate, and when they completed the survey. Four weeks after the initial mail-out, a reminder email was sent to all the participants who had either not responded to the initial e-mail or had not completed the entire questionnaire.

3.2.5 Step five: Survey Data Analysis

Step five involved analysing the survey data to develop the CCCG ‘best practice’ disclosure index. A descriptive analysis of quantitative data from the questionnaire was first conducted using SPSS 16.0 software. Qualitative analysis of data from open-ended sections of the questionnaire was conducted. After analysing data, the study then utilised the results of the survey to develop the best practice index.

4. Results and Discussion

4.1 Respondents

We surveyed 110 experts within different stakeholder groups. A total of 50 responses were received. Of these, four respondents filled only the demographic part of the questionnaire, and therefore, were eliminated from the final sample. Two respondents declined to complete the questionnaire. A further two responses were received from individuals who advised they were no longer working in the area of environment/climate change, and three of them advised that they were on extended

leave during the time of survey, and therefore, were unable to respond. This left a sample of 39 (a response rate of 35%). Of these, twenty-four responses were received within the first three weeks of the survey. A further fifteen responses were received after three weeks of commencing the survey once a reminder e-mail was sent. A total response rate of 35% compares favourably to prior related research (Deegan and Rankin, 1997; Deegan and Rankin, 1999). Arguably, the number of responses received was sufficient for the purpose of analysis, as the responses were from those people with knowledge and involvement in this area, hence providing valuable contributions.

The problem of non-response error in this research was tested with late respondents being used as a proxy for non-respondents (Oppenheim, 1992, Deegan and Rankin, 1997, Deegan and Rankin, 1999). If there is no significant difference between early and late respondents, then non-response is less likely to be of concern. In this study we employed the Mann-Whitney U test and found that there was no significant difference in the answers or demographic characteristics between early and late respondents.

The respondents can be divided into seven broad groups. These groups include: accounting professionals, environmental NGOs, environmental consultancies, government bodies, institutional investors, researchers and others (including consumer associations, and media). A dissection of the number of responses received per category of stakeholder groups is provided in *Table 2*. A full listing of all respondents (including position, and organisations with which they are affiliated) is located in *Appendix 1*⁵.

Table 2: Responses by experts within different stakeholder groups

Stakeholder Groups	Frequency	Percent
Accounting professional	8	20.5
Environmental NGO	9	23.1
Environmental consultancy	3	7.7
Government body	2	5.1

⁵ Appendix 1 provides detailed information about the respondents. Whilst it is somewhat uncommon to provide such detail about respondents, because we are developing a ‘best practice’ disclosure index on the basis of ‘experts’ views’ we believe it is useful to provide detailed information about the background of the respondents.

Institutional investor	5	12.8
Researcher	9	23.1
Others (consumer association, media, law firm)	3	7.7
Total	39	100.0

Aggregate responses

The percentage distribution and average score given by all the respondents to the 25 specific CCCG issues under eight general categories are presented in *Table 3*.

Table 3: Aggregate responses of all respondents

GENERAL CATEGORIES	SPECIFIC ISSUES	N	Response (%)*					Mean	Std. Deviation
			5	4	3	2	1		
BOARD OVERSIGHT	BDOV1	39	51.3	35.9	10.3	2.6	0.0	4.3846	.78188
	BDOV2	38	31.6	26.3	31.6	7.9	2.6	3.7895	1.09441
	BDOV3	37	64.9	24.3	8.1	2.7	0.0	4.5405	.76720
SENIOR MANAGEMENT ENGAGEMENT AND RESPONSIBILITY	MNGRES4	39	41.0	33.3	23.1	2.6	0.0	4.1282	.86388
	MNGRES5	39	43.6	35.9	15.4	5.1	0.0	4.0769	1.01007
	MNGRES6	39	17.9	46.2	25.6	7.7	2.6	3.6923	.95018
	MNGRES7	39	41.0	38.5	17.9	2.6	0.0	4.0769	.95655
EMISSIONS ACCOUNTING	MNGRES8	37	35.1	32.4	18.9	10.8	2.7	3.8649	1.10961
	EMSAC9	39	66.7	23.1	7.7	2.6	0.0	4.5385	.75555
	EMSAC10	39	48.7	35.9	12.8	2.6	0.0	4.3077	.79980
	EMSAC11	39	53.8	28.2	15.4	2.6	0.0	4.3333	.83771
	EMSAC12	39	48.7	28.2	15.4	5.1	0.0	4.2051	.92280
	EMSAC13	38	47.4	34.2	13.2	5.3	0.0	4.2368	.88330
	EMSAC14	39	30.8	33.3	28.2	5.1	2.6	3.8462	1.01407
RESEARCH AND DEVELOPMENT	EMSAC15	38	28.9	47.4	21.1	2.6	0.0	4.0263	.78798
	EMSAC16	39	28.2	35.9	28.2	7.7	0.0	3.8462	.93298
	RND17	39	33.3	46.2	12.8	5.1	2.6	4.0256	.95936
POTENTIAL LIABILITY REDUCTION	RND18	39	20.5	33.3	30.8	12.8	2.6	3.5641	1.04617
	POTLBRD19	39	66.7	23.1	5.1	5.1	0.0	4.5128	.82308
REPORTING AND BENCHMARKING	REP BEN20	39	23.1	41.0	33.3	2.6	0.0	3.8462	.81235
	REP BEN21	39	38.5	35.9	23.1	2.6	0.0	4.0026	.85208
CARBON PRICING AND TRADING	CRNPRTRD22	39	17.9	43.6	28.2	5.1	5.1	3.6410	1.01274
	CRNPRTRD23	39	17.9	35.9	30.8	10.3	5.1	3.5128	1.07292
EXTERNAL AFFAIRS	EXAFF24	39	20.5	43.6	23.1	12.8	0.0	3.7179	.94448
	EXAFF25	38	23.1	30.8	30.8	12.8	2.6	3.5897	1.06914

*1= Unimportant; 3= Important; 5= Very important

All twenty-five issues in the CCCG index are perceived as important by the experts with no mean less than 3.5. Of the 25 five-point scale questions, in most cases (17 out of 25) the standard deviation was smaller than 1 thereby providing evidence of the fairly equal ranking of the respective questions. A review of the responses also indicates that there

was a slight variation in responses as the total respondents as a group perceived most of the board, management, emissions accounting, and potential liability related issues (mean score ranged from 3.6 to 4.5) to be relatively more important compared to the issues related to research and development, reporting/benchmarking, carbon pricing and trading, and external affairs (mean score ranged from 3.5 to 4.0).

Responses as individual groups

Further analysis of the rankings allocated to the various CCCG disclosure issues was undertaken, classifying the results under each group of experts and providing the respective mean scores to each specific issue. Table 4 presents the summary of the results.

Table 4: Responses as individual groups

<i>Specific Issues</i>	<i>Mean *</i>							<i>Kruskal-Wallis Test (p value)</i>
	<i>Accounting Professional</i>	<i>Environmental NGO</i>	<i>Environmental Consultancy</i>	<i>Government Body</i>	<i>Institutional Investor</i>	<i>Research Org/Researcher</i>	<i>Others</i>	
BDOV1	4.3750	4.5556	4.3333	3.5000	4.6000	4.4444	4.0000	.411
BDOV2	3.3750	4.1111	4.6667	3.5000	3.8000	3.7500	3.3333	.582
BDOV3	4.5000	4.5000	4.6667	3.0000	4.0000	4.8889	4.6667	.325
MNGRES4	4.0000	4.4444	4.0000	4.0000	3.6000	4.2222	4.3333	.672
MNGRES5	4.1250	4.1111	4.6667	3.0000	3.6000	4.3333	4.0000	.416
MNGRES6	3.6250	4.1111	3.6667	2.0000	2.8000	4.1111	4.0000	.027**
MNGRES7	3.8750	4.2222	4.3333	3.5000	3.6000	4.5556	3.6667	.232
MNGRES8	3.5000	4.3750	4.0000	3.0000	4.0000	3.6667	4.0000	.644
EMSAC9	4.6250	4.5556	4.3333	4.5000	4.2000	4.5556	5.0000	.867
EMSAC10	4.2500	4.1111	4.3333	4.5000	4.0000	4.6667	4.3333	.831
EMSAC11	4.5000	4.5556	4.6667	4.0000	3.4000	4.5556	4.0000	.083
EMSAC12	4.0000	4.4444	4.0000	4.0000	3.6000	4.5556	4.3333	.491
EMSAC13	4.6250	4.4444	4.3333	3.5000	3.8000	4.1111	4.0000	.523
EMSAC14	3.8750	4.1111	3.3333	3.0000	3.6000	4.2222	3.3333	.531
EMSAC15	3.8750	4.3333	3.6667	4.0000	3.8000	4.2222	3.6667	.518
EMSAC16	3.6250	3.8889	4.0000	4.0000	3.2000	4.3333	3.6667	.387
RND17	3.5000	4.0000	4.6667	4.0000	3.8000	4.3333	4.3333	.573
RND18	3.6250	3.8889	2.6667	3.5000	3.0000	3.7778	3.6667	.422
POTLBRD19	4.6250	4.5556	5.0000	4.5000	4.2000	4.3333	4.6667	.845
REP BEN20	4.1250	3.7778	3.6667	3.0000	3.6000	4.2222	3.3333	.278
REP BEN21	4.3750	4.0000	4.3333	3.0000	3.8000	4.4444	3.6667	.292
CRNPRTRD2 2	3.7500	3.6667	2.6667	3.0000	3.4000	4.0000	4.0000	.668
CRNPRTRD2 3	3.3750	3.6667	2.6667	3.5000	3.6000	3.8889	3.0000	.797
EXAFF24	3.7500	3.7778	3.0000	3.5000	3.6000	4.1111	3.3333	.641
EXAFF25	3.3750	3.8889	3.0000	3.5000	3.2000	3.8889	3.5000	.742

* 1= Unimportant; 3= Important; 5= Very important

** significant at p<0.05

The result indicates that there was much consistency in the responses among the experts representing various stakeholder groups regarding the issues within the CCCG index. There was no considerable mean difference in perceptions among the experts with the exception of one group, government body, in relation to one specific item of information i.e. ‘some senior executives have specific responsibility for relationships with government, the media and the community with a specific focus on climate change issues (MNGRES6)’ under the category “senior management engagement and responsibility”. A Kruskal-Wallis one-way ANOVA test⁶ was performed to determine further if there was a significant difference in opinion among the various groups of experts surveyed. With the exception of the issue MNGRES6 ($p < .05$), there was found to be no significant difference in opinions among the experts about all other issues (see *Table 4*). An inspection of the mean ranks of the issue MNGRES6 for the groups suggest that environmental NGOs placed the highest level of importance (mean rank 25.22), with the government body group reporting the lowest (mean rank 5.25). However, government body group accounted for only two observations. Therefore, the limited number of observations may lead to a possible bias in the results. It was interesting to see that there appeared to be little difference in the rankings provided by the different stakeholder groups.

In order to gauge if a difference in views was evident between the groups who responded, a Mann-Whitney U test⁷ was performed. Results are presented in *Table 5*.

⁶ The selection of the appropriate test to apply depends on the characteristics of the underlying data in the respective question responses (Deegan and Rankin, 1999). The Kruskal-Wallis test is the non-parametric alternative to a one-way between-groups analysis of variance. It allows us to compare the scores on some continuous variable for three or more groups (Pallant, 2007).

⁷ Mann-Whitney U test allows us to compare responses between two independent groups (Pallant, 2007).

Table: 5 Difference in perceived importance of CCCG disclosure issues to expert groups

Specific Issues	Mann-Whitney U-test (Sign. 2-tailed)														
	Group 1 & 2	Group 1 & 3	Group 1 & 4	Group 1 & 5	Group 1 & 6	Group 2 & 3	Group 2 & 4	Group 2 & 5	Group 2 & 6	Group 3 & 4	Group 3 & 5	Group 3 & 6	Group 4 & 5	Group 4 & 6	Group 5 & 6
BDOV1	.184	.903	.100	.323	.666	.267	.075	.926	.427	.197	.389	.681	.130	.127	.531
BDOV2	.247	.139	1.000	.646	.626	.534	.381	.609	.419	.128	.253	.163	.829	.681	1.000
BDOV3	.360	.637	.090	.458	.088	.808	.134	.345	.496	.157	.430	.391	.414	.025*	.094
MNGRES4	.376	.915	1.000	.311	.720	.419	.602	.045*	.562	1.000	.514	.694	.676	.801	.155
MNGRES5	.795	.567	.100	.438	.916	.420	.140	.483	.774	.068	.263	.471	.666	.046*	.290
MNGRES6	.244	1.000	.101	.072	.233	.328	.067	.026*	.700	.128	.058*	.269	.334	.028*	.004*
MNGRES7	.604	.588	.411	.311	.224	.763	.205	.097	.399	.361	.269	.825	.823	.090	.027*
MNGRES8	.120	.528	.690	.448	.687	.431	.201	.422	.133	.346	1.000	.842	.343	.351	.779
EMSAC9	.630	.811	.759	.556	.778	.716	.547	.503	.455	1.000	.860	.916	.829	.892	.653
EMSAC10	.959	.741	.665	.640	.192	.690	.704	.778	.234	1.000	.624	.739	.539	.673	.177
EMSAC11	.590	.811	.553	.024*	.865	.808	.454	.018*	.695	.519	.040*	.912	.517	.492	.016*
EMSAC12	.213	.915	1.000	.401	.267	.321	.547	.116	.596	1.000	.520	.304	.666	.509	.045*
EMSAC13	1.000	.409	.455	.067	.243	.461	.492	.130	.353	.761	.334	.768	.842	.617	.525
EMSAC14	.540	.278	.785	.489	.474	.176	.617	.295	.925	1.000	.731	.118	.839	.617	.203
EMSAC15	.201	.471	.836	.876	.350	.135	.441	.200	.466	.564	.870	.211	.752	.690	.310
EMSAC16	.483	.588	.681	.266	.098	1.000	.901	.238	.571	1.000	.168	.549	.334	.703	.013*
RND17	.401	.091	.675	.936	.139	.273	1.000	.572	.504	.519	.156	.471	.838	.703	.224
RND18	.800	.171	.576	.197	.960	.085	.539	.111	.818	.197	.491	.121	.388	.712	.183
POTLBRD19	.630	.236	.759	.556	.658	.394	.547	.503	.396	.221	.237	.182	.829	1.000	.882
REP BEN20	.476	.382	.097	.277	.835	.765	.215	.623	.315	.182	.744	.211	.334	.044*	.155
REP BEN21	.718	.821	.023*	.168	.778	.673	.297	.669	.599	.182	.430	.918	.195	.022*	.125
CRNPRTRD22	.841	.245	.788	.437	.643	.291	.808	.569	.452	.767	.514	.111	1.000	.802	.125
CRNPRTRD23	.728	.465	.894	.878	.483	.291	.903	.887	.641	.564	.327	.170	1.000	.806	.510
EXAFF24	1.000	.278	1.000	.522	.664	.293	.807	.726	.511	.767	.327	.062	1.000	.795	.137
EXAFF25	.453	.601	.894	.642	.450	.248	.707	.248	.927	.767	.731	.165	1.000	.900	.088

* significant at $p < 0.05$

1= Accounting Prof.; 2 = Environmental NGO; 3= Env. Consultancy; 4 = Government Body; 5 = Institutional Inv; 6 = Researchers

Although there are significant differences between the groups' ranking of a few issues ($p < .05$), there is general agreement on most of the issues in our CCCG disclosure index. The issues with statistically significant differences are highlighted (in bold) in Table 5. Among all the issues with significant differences, the level of difference was greater for two issues relative to others. These two issues are MNGRES6 and EMSAC11 (4 times each). The result shows that Environmental NGOs, environmental consultancies and researchers perceived the issue 'some senior executives have specific responsibility for relationships with government, the media and the community with a specific focus on climate change issues' (MNGRES6) to be significantly more important than institutional investors and government bodies ($p < .05$). In addition, institutional investors perceived the issue concerning 'an emissions baseline year to estimate future GHG emissions trends' (EMSAC11) to be significantly less important than accounting professionals, environmental NGOs, environmental consultancies, and researchers ($p < .05$).

In brief, we can conclude that our expert respondents unanimously considered the issues in our index to be at least ‘important’ in assessing organisations’ CCCG practises. Overall, we can find a high level of homogeneity among the experts’ opinions regarding each CCCG disclosure issues. With the exception of a few issues, there appeared no significant differences between the expert groups’ perceptions. However, to develop a comprehensive disclosure index we need to know whether there are any other disclosure issues the experts consider as important to assess organisations CCCG practises.

4.2 Discussion of the findings for each category

The respondents were asked to provide additional issues they perceive as important CCCG disclosures, as well as offer any comments in relation to each category. Consequently, any additional important issues cited by two or more respondents has been included in our CCCG index⁸. As the items were recommended by the climate change-related experts then these experts must have considered that these issues were likely to be of relevance for business organisations to have in their governance practises. The analysis below examines the data in more detail by analysing and discussing the eight broad categories.

4.2.1 Board Oversight

Our first broad category of disclosures related to ‘board oversight’ and consisted of three specific issues. There was consensus among the experts that the board-related issues are important information to be disclosed by business organisations (as shown in *Table 3* the mean ranged from 3.7 to 4.5). One respondent highlighted that it is the board that “should ensure that all potential material climate risks for the organisation are being addressed and disclosed” (environmental NGO). Another respondent from the environmental NGOs group indicated that:

Internally, as we make a transition to a low carbon economy, I would envisage the Board be responsible for final decisions relating to the adoption of energy efficiency technologies and green energy contracts to replace brown energy off the grid.

Other board-related issues suggested by the respondents

An important board-related issue raised by four respondents was that “the board should understand and disclose the potential financial implications of any climate change policy affecting the company (for example, the proposed Carbon Pollution

⁸ In total 20 respondents out of 39 provided suggestions/made additional comments in our survey.

Reduction Scheme)”. Consequently, we incorporated this information item in our CCCG disclosure index.

4.2.2 Senior Management Engagement and Responsibility

In this category, five senior management-related items were rated. The mean ranged from 3.6 to 4.1 out of 5 (see *Table 3*), reflecting the importance of the senior management engagement and responsibility in climate change issues and related disclosure. As stated by one respondent from the accounting professional group:

The executive should be ensuring that environmental issues are incorporated into business decision making. In relation to climate change, this means factoring the costs of the CPRS (Carbon Pollution Reduction Scheme) into decision making.

Other management-related issues suggested by the respondents

Three respondents, however, took a broader view related to the issue **MNGRES8**, linking the general environmental targets with the management remuneration policy. Their views are reflected in the following quote:

Please note, even though I believe the executive officers and senior managers’ compensation should be linked to the attainment of GHG targets, I believe this should be linked to broader environmental targets; otherwise a perverse distortion could occur.

Consequently, we incorporated this information item in our CCCG index i.e. disclosure in relation to “the executive officers’ and/or senior managers’ compensation is linked to attainment of environmental goals”.

4.2.3 Emissions Accounting

Our next category, ‘emissions accounting’, consists of 8 specific issues. The mean score for this category ranged from 3.8 to 4.5 out of 5 (see *Table 3*), which indicates a high level of importance associated with each disclosure issue. Respondents also perceived that adopting these policies and disclosing these items of information should be transparent. As indicated by one respondent:

Offsets’ from projects should be within Australia and be completely transparent so that companies cannot buy their way out of emission reductions by purchasing cheap overseas credits. Emission reductions from energy savings, shifting to renewables and from halting deforestation ought to be transparent. Companies should also disclose their investments in all GHG intense activities/projects, for example in my view the meat and livestock industry is not being focused on enough at present. (Environmental NGO)

While the respondents acknowledged the need for disclosing the amount of GHG emissions, they also highlighted that companies need to calculate total emissions rather than emissions per tonne of product, or emissions per dollar of sales. One respondent highlighted that “energy efficiency may be more appropriate than expenditure or investment in renewable energy”.

Other emissions accounting-related issues suggested by the respondents

Two respondents raised the issue of having standards for GHG product-labelling. As one of the experts from an environmental NGO stated:

It’s important that in any product information provided there is a standard form of communication which is accredited, otherwise this risks confusing consumers. Also, GHG emissions shouldn’t be the sole lens through which product choice is evaluated. Other environmental impacts are just as, if not more, important in some products, and ignoring them can lead to perverse outcomes.

Therefore, we added another issue in our disclosure index, this being. “an organisation has an accredited labelling standard for providing information about the environmental impacts of the products.”

4.2.4 Research and Development

All the issues under this category are considered as at least important rated from 3.5 to 4.0 (see *Table 3*). According to one of the respondents from the accounting professional group “R&D is becoming a real opportunity for companies’ long term sustainability”. However, another respondent argued that “it is the actual investment in and implementation of successful new low emissions technology” that should be counted. In this regard, government also need to play a role, which is illustrated by one of the respondents from environmental consultancy:

I believe that if an organisation’s core competency lies outside the area of climate change and GHGe mitigation, then it is reasonable for that organisation to not have a policy for investment in clean technology. This is the role of government to provide R&D incentives for businesses to investment in clean technologies. However, for an institutional investor, I rate this as very important, given that it is ultimately responsible for directing the flow of capital from carbon-heavy to carbon-light assets and services.

4.2.5 Potential Liability Reduction

Respondents rated the issue of pursuing ‘strategies to minimise exposure to potential regulatory risks and/or physical threats to assets relating to climate change’ as very

important (mean 4.5). As companies are moving towards an emerging regulatory economy, it would put companies at risk not to take action now. This view was reflected in the following statement:

Some companies are placing themselves at risk in the longer term by their lack of action today when it may be argued in the future that there was adequate evidence that action was required despite ongoing uncertainties (we will never have perfect knowledge, but this does not deny the need for prudence and flexibility). Liabilities may relate to failure to prepare for changed environmental conditions, changed energy futures, or the allowance of the dominance of ideologically-based and vested interests over more responsive, community-relevant action. (Climate change consultant)

Other liability-related issues suggested by the respondents

A new issue was highlighted by the respondents related to 'legal liability'. This issue was mentioned by three of the respondents. As indicated by one of the respondents from the environmental NGO:

Climate risk due to both the direct impacts of a changing climate as well as regulatory risks due to the inevitable imposition of carbon pricing. In addition there are legal liability risks which have not yet been realised but will be in the future as the scientific relationship between emissions and climate impacts becomes clearer.

Another respondent stated that:

Legal liability should be minimised which includes the possibility of litigation being brought against a company for its impact on climate change (climate change consultant).

Therefore, we added this issue in our index. We refer to it as “an organisation pursues strategies to minimise the possibility of litigation being brought against for its impact on climate change”.

4.2.6 Reporting/Benchmarking

This category consists of two issues, rated as 3.8 and 4.0 (see *Table 3*), thus considered as important. One respondent argued that reporting guidelines such as GHG Protocol and Australian National Greenhouse and Energy Reporting (NGERS) Act legislation are more important for companies rather than GRI, whereas others argued that mandatory reporting should be triggered for the large GHG emitters.

Other benchmarking-related issues suggested by the respondents

An important concern arising from the comments of the experts is that benchmarking should come from the industry association and should evolve overtime. As one respondent stated that:

This should be the role of an industry association to undertake international benchmarking activities on behalf of the sector. Sector or industry benchmarking should evolve over time. Possible funding by Commonwealth for industries that are comprised primarily of SMEs” (Environmental Consultancy).

Consequently we included a new disclosure issue about industry benchmarking in the index i.e. “an organisation employs industry benchmarking standards (if any) of reducing GHG emissions.”

4.2.7 Carbon Pricing and Trading

The mean score of two issues under this category ranged between 3.5 and 3.6 (see *Table 3*). One of the respondents argued that having a carbon trading policy is not enough, therefore “it is important that the organisation understands and applies trading practices” (Accounting professional). Respondents also perceived that companies can play a role to create future government stance in this issue, considering it as an opportunity.

Carbon trading is but one of many mechanisms that will be required to change emissions profiles globally and nationally. To concentrate on the trading scheme alone would be a big mistake. Intervention will emphasise energy efficiency, alternative energy sources, or behavioural change. All of these offer opportunities for companies if they are forward thinking, and threats if they are not. In some cases, these options are not in the control of the company but they can play a part in the formulation of government positions on change. (Climate change consultant)

4.2.8 External Affairs

The two issues under this category were rated between 3.5 and 3.7 (see *Table 3*). Although rated as important, respondents generally considered these issues as normative and argued that reporting on these issues, whilst important, is not easy for the companies because of lack of proper guidance. As argued by one of the respondents:

These are noble things but when stated in company reports are usually shallow/lip service. Very difficult to provide clear guidance on how a company can or should report on these things. For an organisation with a retail interface undertaking issue 25 (i.e. An organisation has a policy to promote climate friendly behavior within the community by raising awareness through

environmental sustainability education) would be reasonably easy (e.g. Woolworths) but for someone without this interface (e.g. Cochlear) any stakeholder awareness raising activity is almost “philanthropic”... i.e. it’s not directly adding value to the company’s brand. (Env. Consultancy)

Other external affair-related issues suggested by the respondents

One additional issue emerged from the comments of the three respondents this relating to reporting about political lobbying on climate change (to ensure transparency).

Positive contributions by business to public policy development is critical, but businesses never report on the full scope and nature of their lobbying activities. (& membership in industry groups that do serious lobbying). When they do report, it is usually a hopelessly skewed version. Every business says that they “support collaborative solutions”, but in practice this is a vacuous claim, devoid of any real content. (Env. NGO).

Its policy position needs to be consistent with its political lobbying. Many organisations can make a public statement about their collaboration to support solutions, however, their political lobbying is contrary to this. So a statement about their political lobbying may be beneficial. (Environmental NGO)

Therefore, our CCCG disclosure index added an additional issue i.e. “an organisation should disclose information about its climate change-related political lobbying to ensure transparency”.

4.2.9 Additional comments

Respondents were invited to make any other comments at the end of the questionnaire. And a number of other factors were raised from their comments including: entities’ nature and size, GHG intensity, material exposure to climate change risk and leadership. Typical here was one respondent from the institutional investor group who perceived that the importance of disclosure of the issues “depends on the materiality of the issue to the business; for industrials and other large emitters it is a material issue and requires high level governance; for a software company it may not.” This comment is consistent with the statement made by Carbon Disclosure Project (2007) that “the level of (emissions) data was highly correlated with the type and level of exposure to carbon and other climate change risks” (p. 64).

A similar view came from another participant from a government body who noted that:

The answer to many of these questions is critically dependent on the size of the organisation and the GHG intensity. For smaller companies with a low GHG intensity there is not a need for significant investment in the climate change space. For a large very GHG intensity the situation is very different.

A similar view was voiced in the following comment of a respondent from accounting professional group:

We are too early in the Climate Change debate to assess many of these issues – what is important is that companies do these things whether the disclosure is important will be determined by the industry in which they operate and whether they are liable or impacted under the CPRS (Carbon Pollution Reduction Scheme) i.e. is it relevant for David Jones – no , One Steel – yes.

The comments of the respondents suggest that climate change-related risks vary considerably across sectors. According to the respondents, our CCCG index would be material for the large companies with a high GHG intensity, whereas for smaller less emissions-intensive companies it is less relevant. Therefore, for energy or emission intensive sectors it would be expected to find a significant amount of disclosure. This finding is consistent with prior literature where Freedman and Jaggi (2005) found firm size to be positively associated with the extent of pollution disclosure.

Leadership

Another important issue raised by the respondents was that “climate leadership within businesses should be strongly encouraged” (Institutional investor). The issue of ‘leadership’ is predicted to exert major influence on the future of business organisations. As highlighted by one of the respondents:

Leadership is urgently needed, leadership that is strategic in nature, reflects broader economic, social and environmental goals than those of the next quarter and those specifically related to the business. This will not come from governments and must come from forward thinking and socially responsible governance within the private sector.

This demands a new breed of governance leadership that throws aside the narrow, short-term, dogmatic and ideologically-driven performance for a more reflective and forward thinking approach. There are good signs that the newer generation of corporate leaders are more in this mould than their predecessors. (Climate change consultant)

4.3 Our final version of the CCCG disclosure index:

Reviewing the suggestions and comments made by the experts, we have found six additional issues that should be incorporated in a comprehensive CCCG disclosure index. *Table 6* represents the revised and final version of the CCCG disclosure index, including the additional issues (presented in bold) raised by the respondents.

Table 6: Revised Index of Climate Change-related Governance Issues:

General Categories	Specific Issues
BOARD OVERSIGHT	1) An organisation has a board committee with explicit oversight responsibility for environmental affairs.
	2) An organisation has a specific board committee for climate change and greenhouse gas (GHG) affairs.
	3) The Board conducts periodic reviews of climate change performance.
	4) <i>The board should understand and disclose the potential financial implications of any climate change policy affecting the organisation.</i>
SENIOR MANAGEMENT ENGAGEMENT AND RESPONSIBILITY	5) The Chairman/CEO articulates the organisation's views on the issue of climate change through publicly available documents such as annual reports, sustainability reports, and websites.
	6) An organisation has an executive risk management team, dealing specifically with GHG issues.
	7) Some senior executives have specific responsibility for relationships with government, the media and the community with a specific focus on climate change issues.
	8) An organisation has a performance assessment tool to identify current gaps in greenhouse gas management.
	9) <i>The executive officers' and/or senior managers' compensation is linked to attainment of environmental goals.</i>
	10) The executive officers' and/or senior managers' compensation is linked to attainment of GHG targets.
EMISSIONS ACCOUNTING	11) An organisation conducts an annual inventory of total direct/indirect GHG emissions from operations.
	12) An organisation calculates GHG emissions savings and offsets from its projects
	13) An organisation has set an emissions baseline year by which to estimate future GHG emissions trends.
	14) An organisation sets absolute GHG emission reduction targets for facilities and products.
	15) An organisation has third party verification processes for GHG emissions data.
	16) An organisation has a specific policy to purchase and/or develop renewable energy sources.
	17) An organisation has specific requirements for suppliers to reduce greenhouse gas emissions associated with their operations.
	18) An organisation has a policy of providing product information including emissions reduction information to the customers through product labelling.
	19. <i>An organisation has an accredited labelling standard for providing information about the environmental impacts of the products.</i>
RESEARCH AND DEVELOPMENT	20) An organisation has a specific policy to develop energy efficiency by utilising/acquiring low-emission technologies.
	21) An organisation has a policy of investment to accelerate the research and development of low-emissions technologies and support energy efficient projects.
POTENTIAL LIABILITY REDUCTION	22) An organisation pursues strategies to minimise exposure to potential regulatory risks and/or physical threats to assets relating to climate change.
	23. <i>An organisation pursues strategies to minimise the possibility of litigation being brought against for its impact on climate change.</i>

REPORTING/ BENCHMARKING	24) An organisation has specific frameworks to benchmark its greenhouse gas emissions against other companies and competitors.
	25) An organisation employs its industry benchmarking standards(if any) of reducing GHG emissions.
	26) An organisation has a policy of compliance with Global Reporting Initiatives (GRI) Guidelines or a comparable Triple Bottom Line format (e.g. GHG Protocol) to report its greenhouse gas emissions and trends.
CARBON PRICING AND TRADING	27) An organisation has a policy for trading in regional and/or international emission trading schemes.
	28) An organisation has a policy to assist government and other stakeholders on the design of effective climate change policies such as carbon pricing and/or National Emission Trading Scheme.
EXTERNAL AFFAIRS	29) An organisation has a public policy to support collaborative solutions (e.g. work with the government and other organisations in voluntary emission reduction projects) for climate change.
	30) An organisation has a policy to promote climate friendly behavior within the community by raising awareness through environmental sustainability education.
	31) An organisation should disclose information about its climate change-related political lobbying to ensure transparency.

We can argue that this new expertly validated index of CCCG issues is the most comprehensive index yet developed. Therefore, according to our experts, firms should address these issues and disclose related information to reduce associated risks such as regulatory, physical, and business risks, and to respond to stakeholder requirements. The research findings also offer some contingent factors in the adoption of the new index and organisational behaviors required for its successful implementation. That is, while this index has potential wide spread applications, it largely depends upon firm size, and the nature of their activities. The implementation of the index also requires a strong leadership role from the CEO and Board of Directors of large corporations. As highlighted by one of the respondents:

The response to these questions and success of these disclosure issues does depend on the size of the corporation. Large corporations should have in-house capacity to do all of these things and it is very important that they do. It is unrealistic, however, to expect that small to medium sized corporations will be in the same position. In this regard the CEO and board of directors of the larger corporations can show leadership by demonstrating what good practise is. (Climate change consultant)

5. Conclusion

Cogan (2006) argued that effective corporate responses to climate change must be built on well-functioning environmental management systems and properly focused governance practices. Our current research attempts to provide a best practice index for the disclosure of business organisations CCCG practices.

More specifically we sought to develop a comprehensive list of CCCG disclosure practices. Drawing from existing climate change guidance documents, and content analysis of leading Australian companies' disclosure practises, and extant research, we developed a best practice index culminating in 25 specific issues under eight general categories. The study then conducted an online survey to explore experts' opinions as to the importance and relevance of identified issues. Experts were selected from a range of stakeholder groups and were asked to rate the issues on a Likert scale from 1 to 5 (1 being unimportant and 5 being very important). All 25 issues received mean scores between 3.5 and 4.5 showing that the climate change-related experts considered disclosure of the each issue in our CCCG index important to assess organisations' CCCG practises. This perhaps was not surprising given that the disclosure index was initially developed by referring to a number of documents identifying perceived best practice CCCG practices, with these documents being developed by organisation that had expertise within the area. The results of the survey indicated a high degree of homogeneity among the expert groups in relation to the relative importance of each issue. Finally, the study revised the initial CCCG disclosure index based on the feedback received from experts and proposed a new CCCG disclosure index incorporating the additional issues recommended by the experts (*Table 6*). The inclusion of the additional six issues lead to the index comprising 31 issues under eight general categories.

We believe that the index, and the process of its development, offers researchers a comprehensive framework for developing a best practice disclosure index through content analysis and expert validation.

As this study utilised the perceptions of climate change experts within different stakeholder groups, business organisations now have a basis for understanding stakeholder demand and expectations regarding CCCG disclosures. This new, expertly validated index provides business organisations' a framework by which to operationalise their CCCG practises against best practice. While this study has contributed to the research seeking to develop a best practice disclosure index for the business organisations, as indicated by the respondents it is more likely to be applied to the industries with large firms and high GHG intensity, i.e. the industries those are expected to be mostly affected by the impact of climate change (Deegan, 2010). In addition, such an index offers a way of mitigating, or at least demonstrating that

management have considered the risks and uncertainties associated with climate change. Therefore, our current study would offer important insights for the managers about what should be addressed in an effective CCCG disclosure index.

Finally, the findings of this study are expected to provide an important focus for future policy formulation and direction in climate change-related issues, and serve as guidance for the development of a CCCG disclosure index directed at the corporate managers.

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Appendix 1: Respondents' profile

<i>Experts within Different Groups (N)</i>	<i>Positions</i>	<i>Organisations</i>
<i>Accounting professionals (8)</i>	1. Senior Policy Adviser (provides CPA Australia's policy statement about emissions trading, involved in development of new financial reporting standards for emissions trading)	CPA Australia
	2. Head of corporate social responsibility and sustainability	Anonymous
	3. Partner-climate change and sustainability services, national climate change leader	Ernst and Young
	4. Partner-climate change and sustainability service	Ernst and Young
	5. Policy adviser on corporate regulation (including reporting and Assurance frameworks for climate change issues)	CPA Australia
	6. Anonymous	Institute of Chartered Accountants in Australia
	7. Policy adviser	Anonymous
	8. Director, environment and sustainability services	Anonymous
<i>Environmental NGOs (9)</i>	9. Director/Founder, climate change activist group	LIVE (LIVE supports and works with leading environmental groups and other community based climate change action groups to reduce greenhouse gas emissions are reduced)
	10. Integrated Sustainability Services Manager (working with local government)	ICLEI Oceania, Environmental and sustainability NGO
	11. Director of Strategic ideas, Legal advisor- (leads ACF's advocacy on corporate environmental responsibility issues)	Australian Conservation Foundation
	12. Director (has 15 years experience in industry, government and the environment movement developing environmental policies and working in communications, works with State Governments, industry and other organisations on advancing action on climate change)	The Climate Group
	13. Climate and Energy Campaigner (developes and communicates plans, policies and other materials that illustrate how Australia can move from a fossil-fuel to a renewable energy-based society, co-authored several reports whilst at Greenpeace about climate change)	Greenpeace Australia Pacific
	14. Director (working at the community level to address the issues of global warming)	Cool Melbourne
	15. Manager, States and Region program	The Climate Group
	16. Co-ordinator, Climate and Energy Campaign	Greenpeace
	17. Anonymous	Anonymous
<i>Environmental consultancies</i>	18. Associate (sustainability assurance and advice/consultancy)	Banarra
	19. Director	THRIVE Sustainability Services
	20. Director (climate change consultancy) (was	Graeme Pearman

(3)	presented a UN Environment Program Global 500 Award in 1989)	Consulting Pty Ltd.
Government bodies (2)	21. Superintendent, National Climate Centre,	Bureau of Meteorology
	22. Anonymous	Anonymous
Institutional investors (5)	23. Managing Director	Risk Metrics Group, Innovest Strategic Value Advisors
	24. Director (also worked in partnership with Zurich-based Sustainable Asset Management (SAM), established and managed SAM's operations in Australia)	Generation Investment Management
	25. Research Analyst	AMP Capital Investors
	26. Head of Corporate Responsibility and Sustainability	Westpac
	27. CEO, (governance research and engagement service provider)	Regnan
Researchers (9)	28. Emeritus Professor	Griffith University (also President of Australian Conservation Foundation)
	29. Director	ARIES (Research Institute in Education for Sustainability)
	30. Academic (expertise in environmental and sustainability issues)	RMIT University
	31. Professor, Innovation Leader Sustainability	Anonymous
	32. Coordinator, Australian Climate Change Science Program,	CSIRO Marine & Atmospheric Research
	33. Principal Research Scientist, (also Chair of the Joint Scientific Committee of the Geneva-based World Climate Research Programme)	CSIRO Marine & Atmospheric Research
	34. Research Program Leader	Anonymous
	35. Theme Leader - Adaptive Primary Industries, Enterprises and Communities Climate Adaptation Flagship	CSIRO Marine & Atmospheric Research
	36. Anonymous	Anonymous
Others (for ex: Law firm, consumer, media) (3)	37. Senior Associate, Climate Change, Renewable Energy Law, Environmental Advisory	Baker & McKenzie
	38. Senior Policy Advisor Sustainability	CHOICE (consumer association)
	39. Group Manager, Environment and Climate Change (held the position of Manager of News Limited's Environment and Climate Change Department since the company first formally began to address environment in 1990)	News Limited
Total 39		