

Evaluation of Sustainability Reporting in the Canadian Electricity Sector

by

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A thesis

presented to the University of Waterloo

in fulfillment of the

thesis requirement for the degree of

Master of Environment Studies

in

Sustainability Management

Waterloo, Ontario, Canada, 2016

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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ABSTRACT

Sustainability reports are essential platforms through which organizations communicate their corporate social responsibility (CSR) commitments to stakeholders and demonstrate accountability. Organizations often commit significant resources annually to the production of sustainability reports; however, several debates arise as to the utility and quality of information in these reports.

In this light, this study presents an evaluation of sustainability reporting in the Canadian Electricity Sector using the Industry's sustainability leaders (member companies of the Canadian Electricity Association) as a case study.

The research adopted a mixed method approach, which consisted of two studies. The first study utilized content analysis to evaluate sustainability reports and further determine the extent to which 15 identified sustainability issues relevant to the electricity industry were addressed in the reports. The second study utilized the themes derived from the first study to construct an online survey to gain understanding of how companies perceive their report and further determine how the 15 sustainability issues ranked in order of relevance to the company's operation. The objective of this comparison was to determine if the most relevant issues to the companies (as identified by the survey) were indeed the most reported issues (as shown in the sustainability/annual reports). Results obtained revealed that the sustainability communication of the Canadian electricity association had significantly greater focus on the social aspect of sustainability than the environment and economic aspects. Furthermore, the result identified a disconnect between the most relevant issues to the companies and the most reported issues.

ACKNOWLEDGEMENT

I would like to take this opportunity to thank God without whose help I would not have achieved this.

Thank you to my Supervisor, Dr. Blair Feltmate, for your support and guidance- for providing me constructive feedbacks and for pushing me to achieve greater heights.

Thank you to my committee member, Dr. Olaf Weber for your immense support, feedback and encouragement all through the thesis process. Thank you Dr. Jason Thistlethwaite, I appreciate your feedback and support.

My appreciation goes to Katherine MacLean; you were always there to help in every way you could, you are my guardian and mentor and I really appreciate all the support and assistance you provided me. Thank you Katherine.

I would like to dedicate this thesis to my family: my husband Tony and my awesome children Ife, Chinua, Kody and Zara. Without them, I would have never made it to the end. Thank you for your immense support, encouragement and understanding. Thank you dad and mom for your prayers, support and communication.

My sincere appreciation to my friend Boye for your encouragement, and thank you to my classmates: Dayo, Ola and Jessica, Karan and Eduardo for your support.

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CHAPTER 1: BACKGROUND

1.1 Introduction

The use of sustainability reports (SD reports) to disseminate information on organizations' commitment to sustainable development has gained traction in the corporate world. Despite the voluntary nature of sustainability reporting, it has been observed that companies invest significant resources in producing these reports due to its perceived benefits. These benefits are diverse and depend on organisational perceptions of the gains associated with producing a sustainability report. While some organisations engage in sustainability reporting to meet regulatory requirements and reduce the potential cost of future regulations, others believe sustainability reports helps them increase cost savings (Morhardt, Baird, & Freeman, 2002) . In addition, sustainability reports serve as a platform to engage and communicate with their key stakeholders as well as manage risk more efficiently among many other reasons (Daub, 2007).

Irrespective of the motive, sustainability reporting requires the commitment of significant resources and this necessitates a periodic evaluation not only to identify what needs to be improved but also to ensure that resources invested in these reports derive optimal benefits for the organization (Hohnen & Potts, 2007) . In addition, the voluntary nature of sustainability reporting creates a divergence within the practice; this implies that the quality and quantity of information disclosed vary widely resulting to difficulties in benchmarking, disclosure and other challenges such that the intended purpose of generating the report could be averted.

This gap necessitates an objective assessment of sustainability reporting and communication to stakeholders. It also creates the need to evaluate and track the relationship between the perceived approach to sustainability, reporting and the current practice and performance as it relates to specific industries. The need for an evaluation was asserted by (Hohnen & Potts, 2007: 73) when they noted that, *“the art of business has analogies to sailing. It is about setting a course, steering to make best use of the prevailing winds, and constantly checking to see if the sails need to be adjusted. In similar fashion, an evaluation allows a firm to see whether it is on course, and what it needs to do to be more effective”*.

Drawing from this analogy, this thesis evaluates the sustainability reporting practice within the Canadian electricity industry with particular focus on the industry association - Canadian Electricity Association (CEA).

1.2 Why the Electricity Sector?

Electricity plays a pivotal role in Canada’s economy; Canada is said to be the world’s second largest producer of hydroelectricity (IEA, 2010) and the sixth largest generator of electricity by nuclear power. According to the Conference Board of Canada, investment in electricity infrastructure between 2011 and 2030 is estimated to be \$347.5 billion. Furthermore, the direct, indirect, and induced impacts of these investments is estimated to add up to \$10.9 billion per year to real GDP with the potential of supporting an average of over 156,000 jobs annually. Electricity can be said to be the backbone of Canada’s energy system and the powerhouse of economy. Its demand has grown at an annual average rate of 1.2 percent since 1990; in addition, population growth and increased dependence on

electrical appliances are expected to be significant drivers of increased electricity demand in the near future (Natural Resource Canada, 2016).

Electricity no doubts, plays an important role in the country's economy, however, the financial benefit comes with its attendant adverse impact on the environment and society. Electricity provision is divided into three sectors: generation, transmission and distribution and all three stages have significant impact on the environment and society, ranging from its contribution to global warming to the release of harmful air emissions to alteration of ecosystems and wildlife to radioactive waste from nuclear plants which have potential of serious health implications.

1.3 The Challenge

Having highlighted the strategic importance of electricity sector to the Canadian economy and its impacts on the environment and society, it is safe to say that sustainability, without doubt, is a critical issue for the industry more so as stakeholders' demand for responsible corporate behaviour and accountability is on the rise. The electricity industry, however, is not oblivious to these challenges and has been taking significant steps in addressing this issue through the services of the Industry group - Canadian Electricity Association. Canadian Electricity Association (CEA) is the electricity Industry's national business forum and members comprise of power marketers, distribution and generation companies, electric utility companies, independent power producers and suppliers/ manufacturers of electricity services, materials and technology.

With the view to address the peculiar sustainability issues faced by the Industry not to mention external pressures from stakeholders, the Sustainable Electricity Program (SEP) was developed and implemented by the electric utility members of the Canadian electricity association. The SEP was set up with the objective to reduce the negative impacts of the sector, promote improvement of member companies in economic, environmental and social performance and promote a positive drive towards sustainable development within the sector (CEA, 2016). In this regard, the sustainable electricity program requires that all CEA utility company members not only commit to sustainability in line with the mandate of the program but also to develop strategies for continuous improvement on sustainability issues while keeping stakeholders abreast of sustainability performance through various mediums such as sustainability reports. Similar to other sectors, sustainability reporting and its effective communication thereof, plays a critical role in driving positive corporate sustainability of the electricity sector, however, since the launch of the sustainable electricity program in February 2009, no studies or detailed analysis has been conducted to determine the quality of the sustainability reports in the Canadian electricity association and its alignment with the core mandate of the sustainable electricity program. So the question comes down to “How effective is sustainability reporting within this industry group? What is the value-add of these reports? And how well does the report meet the expectations of its intended audience (stakeholders)? To this end, this thesis seeks to analyze the sustainability reports of the Canadian electricity association member companies and evaluate its strengths and weakness as well as its alignment with the stakeholder’s expectations.

1.4 Significance of Study

An assessment of the current state of sustainability reporting in the Electricity sector is important for several reasons. First, it will help identify the growing trends in reporting and will serve as a value-add to the sustainable electricity program. Secondly, an analysis such as the proposed study would facilitate best practices within the industry with respect to the attainment of global sustainable development. Thirdly, it would contribute to the production of highly credible and effective sustainability reports. The study contributes to the general body of knowledge through the presentation of key findings that highlights the strengths, weaknesses and proffer measures for improvement of sustainability reports produced in the electricity sector.

1.5 Objectives and Research Questions

Having established the need for a periodic appraisal of sustainability reports, with particular reference to Canadian electricity sector, the objectives of the Study are thus to:

- Identify strengths/weaknesses of current sustainability reports relative to its alignment with the core principles of the sustainable electricity program
- Benchmark the performance of CEA members amongst their peers to determine the state and extent of SD reporting within the Industry.
- Determine the extent to which SD reports addresses sustainability issues relevant to the Industry.

In view of these objectives, this thesis seeks to provide answers to two research questions:

1. What are the strengths/weaknesses of sustainability reports produced by CEA member companies?
2. To what extent do sustainability reports of CEA member companies address sustainability issues relevant to the electricity industry?

1.6 Structure of Thesis

An outline of the thesis follows first with a review of relevant academic literature (chapter 2) relating to sustainability reporting. This served as a foundation for the research as relevant criteria used for the evaluation of sustainability reports were identified through the literature review. Having identified the criteria, a detailed evaluation was conducted on each member company to determine the state of sustainability reporting. Chapter 3 provides detailed description of the data gathering, evaluation, and analysis process. After that, the findings chapter follows, where the reporting performance of the companies are presented and based on the findings, a discussion chapter follows where the key findings of the research and possible explanations were discussed in depth. In addition, an overview of the state of sustainability reporting within the electricity sector was also presented. The thesis ends with conclusions and directions for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter undertakes an academic review of literature based on the objectives of this research and focuses on the wider perspective by looking into the background, motivation and challenges of sustainability reporting. It also discusses the need for sustainability reporting and gives a brief overview of sustainability reporting in the electricity sector and concludes by discussing the theoretical framework as relevant to the focus of this research, while noting the literature gaps that this thesis aims to address.

2.2 Background of Sustainability Reporting

Several scholars have defined sustainability reporting in different ways (Daub, 2007), however, the underlying principle is that most definition generally addresses the three pillars of sustainability (economy, environment, and society) also commonly referred to as triple bottom line (Elkington, 1998). Hence, sustainability reporting is concerned with the process of institutions producing reports on their triple-bottom line activities using diverse criteria and indicators.

Alluding to this, the Global Reporting Initiative (GRI) describes sustainability report, as *“a report published by a company or organization about the economic, environmental and social impacts caused by its everyday activities”* (GRI, 2016). According to the GRI, sustainability reports allow organizations *“present their organizational values and governance model, and demonstrate the link between its strategy and its commitment to a sustainable global economy”, while acting as a “key*

platform for communicating sustainability performance and impacts – whether positive or negative” (GRI, 2016).

The term sustainability reporting is often used synonymously with other terms such as SD reporting, corporate social responsibility (CSR) reporting, non-financial reporting, triple bottom line reporting, corporate environmental reporting, citizenship reporting, and environmental, societal and governance (ESG) reporting (GRI, 2016; Roca & Searcy, 2012; Sulkowski & Waddock, 2012)

Sustainability reporting has also become the basis for the provision of information to diverse stakeholders on non-financial matters relating to a company’s interaction with its physical and social environment (Pérez, 2015) and this information is often communicated through corporate annual reports, website or separate CSR reports (Hackston & Milne, 1996) .

As noted by Davidson (2011:353) sustainability reporting has evolved to a point where most reporting systems “show the interrelationships between economic, social and environmental factors”. Through this inter connection, sustainability reporting has been able to “help organizations measure, understand and communicate their economic, environmental, social and governance performance, and then set goals, and manage change more effectively” (GRI, 2016). As noted by Perez (2015:15) the ability to report organizational sustainability initiatives and processes helps organizations *“increase the trust and satisfaction of stakeholders and, hence, the corporate reputation”*.

As it currently stands, sustainability reporting is largely voluntary in nature (Hohnen, 2012; Farneti, & Guthrie, 2009), despite this fact, many of the world's largest public companies report on their sustainability policies and contributions.

There has been a remarkable increase in institutions voluntarily reporting on the environmental, social and economic impacts of business since the first environmental report was published in 1989 (Kolk, 2004). Several studies have been published in this regard; of particular interest is the study conducted by KPMG in 2013 which noted that "almost all the world's largest 250 companies report on Corporate Responsibility" (KPMG, 2013:10), it added that reporting is becoming so popular that "at least 62% of companies in every sector produce sustainability reports" (KPMG, 2013: 27).

2.3 Factors Behind Increased Sustainability Reporting

Given the voluntary nature of sustainability reporting, increased adoption by organizations over the years raises the question "what value does the production of sustainability reports add to an organization?" and "What motivates organizations to produce sustainability reports?" One factor that has encouraged the production of sustainability report is organizational reputation. This observation was stressed by Perez (2015: 15) while noting that sustainability reporting "not only highlights the perceptual nature of corporate reputation but also the relevance of information to stakeholders and transparency that are central to the study of the relationship between CSR reporting and corporate reputation". The need for information by stakeholders and companies' desire to reap the benefits of engaging in sustainable practices are also key elements that encourage sustainability reporting.

Research on the motivation for sustainability reporting has also shown interesting discoveries. For example, (Dawkins, 2005) and (Ricceri, 2008) observed that companies seek to demonstrate responsibility and build a positive image among stakeholders, which helps stakeholders understand the institutional values (Fombrun & Shanley, 1990; Lafferty, Goldsmith, & Newell, 2002) . Other motivations for sustainability reporting is the need to respond to public pressure (Adams, 2002) opportunity to enhance corporate legitimacy, the chance to create a niche, differentiating companies from competitors (Bebbington, Higgins, & Frame, 2009; Bebbington, Unerman, & O'Dwyer, 2014) and the platform to aid corporate credibility (Grewal & Darlow, 2007) .

However, (Pérez, 2015) noted that the key motivation is stakeholder engagement and communication. He stressed that without a proper communication channel to stakeholders, an organization's sustainable development efforts will be void regardless of the efforts put into it. This was further supported by (Du, Bhattacharya, & Sen, 2010) as they noted that the impact of CSR on stakeholder perceptions would be null or even negative if not communicated to the right channels. These conclusions bridge the link between sustainability, its motivation, effects and impact. It also raises the need for effective communications to address and communicate environmental and social initiatives. This approach represents a deviation from the past, as firms were hitherto more concerned with communicating their financial performance so as to show their profitability and returns. However, in recent times, producing sustainability reports is now equally important to maintain corporate reputation (Bayoud, Kavanagh, & Slaughter, 2012;

Pérez, 2015) . The ability to communicate effectively through the CSR Reporting mechanism is thus perceived to have added benefits to institutional performance which includes enhanced reputation and increased financial performance, with the ability to attract foreign investors as well as greater customer satisfaction and employee commitment (Bayoud et al., 2012; Pérez, 2015) .

2.4 Sustainability Reporting Guidelines, Principles and Standards

This section describes the existing reporting guidelines and also the CEA principles, which are applicable to this research. It should be noted that several guidelines exist for sustainability reporting. Though the GRI is the most widely used sustainability report framework (Hohnen, 2012), there are other frameworks that focus on issues specific (e.g. Carbon Disclosure Project (CDP) – climate change), products-specific (e.g. Forest Stewardship Council (FSC)), company and sector specifics (e.g. CEA). Another popular reporting standard is the International Organization for Standardization (ISO) 26000 Standard ‘Guidance on Social Responsibility’, which notes that organizations “should, at appropriate intervals, report about its performance on social responsibility to the stakeholders affected” (GRI & ISO, 2014).

This research will however be using the GRI as the benchmark of its research as it is the “preferred international framework for reporting on the ‘triple bottom line’ – of sustainable development, economic, social and environmental performance” (Hohneh, 2012:5). Also, unlike most other frameworks which are focused on specific-sectors, products, industry and issues, the GRI creates a detailed reporting framework that cuts across all aspects of sustainability, through its detailed

framework which enables organizations to report on all three sustainable development pillars (Hohnen, 2012).

Also, since this research is focused on sector specific sustainability reporting practice, we shall also be employing the CEA sustainability reporting principles alongside the GRI framework. The implication of this is that the methodology of the report will be based on the approach as stipulated by these two reporting guidelines. Below is a brief explanation of the two approaches.

2.4.1 GRI Reporting Framework

As noted by GRI (2016) the GRI's Sustainability Reporting Standards are used in over 90 countries. It is the world's most widely used standard on sustainability reporting and disclosure, which enables businesses, governments, civil society and citizens to make better decisions based on the disclosures on the organizational sustainable development initiatives and process. The reporting framework also helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues. Its reporting guideline is focused on issues such as stakeholder engagement and interest, materiality and sector specific guidelines and approaches. The framework also utilizes other approaches such as Multi-stakeholder input, governmental references and activities, independence and shared development cost to achieve its reporting objectives.

2.4.2 CEA's Sustainable Electricity Program (SEP) Principles

The Canadian Electricity Association's SEP principles are a set of sustainability principles developed by the CEA for its members. The guideline is made up of 10 sustainability principles that were established to guide its members' in their sustainable development and reporting approach. These principles are based on key economic, environmental and social concerns such as Environmental Stewardship, Climate Change Mitigation and Adaptation, Employee, Contractor, and Public Health and Safety, Human Resources and Workplace, Stakeholder Engagement and Transparency, Aboriginal Engagement, Economic Value and Community Investments, Electricity Demand, Efficiency and Conservation, Infrastructure Renewal and Modernization and Business Model Pressures (CEA, 2015). Participation in Sustainable Electricity Program is a condition of CEA membership and as such, all members of the association are signatories to the principles and thereby committed to implementing them in their operations and sustainability approach.

2.5 SD Reporting and Need for Effective Communication

As noted above, companies are increasingly recognizing the reputational risks and opportunities associated with corporate responsibility reporting to aid this. Hence, many large corporations have made significant investment in reporting systems to ensure their corporate behaviour is responsible in the eyes of their stakeholders. This necessity is borne out of the need to effectively and strategically communicate their activities in order to derive maximal benefits inherent in engaging in good environmental and social activities.

The importance of effective communication through sustainability reporting was stressed by (Illia, Zyglidopoulos, Romenti, Rodríguez-Cánovas, & del Valle Brena, Almudena González, 2013:2) when they noted “even companies that seriously engage in CSR could be perceived cynically by stakeholders. After all, most stakeholders cannot directly witness a corporation’s CSR policies or initiatives and to a great extent must rely on the corporation’s own reporting”. Keller (1998) reiterated this in his argument that a company’s corporate reputation is not only based on its actions and involvements in sustainable practices, but also on the effective communication of those practices. A 2012 study conducted by Brandlogic and CRD Analytics, revealed that sustainability performance not only depends on good leadership/sustainable practices but also on effective communication of such initiatives. The report states that real performance and stakeholder’s perception are critical factors for sustainability strategies. The importance of communication to highly attentive audiences was emphasized in this report as such audiences make critical decisions based on sustainability perception. A company that does well in reality but fails to convey that information to stakeholders may lose out on a golden opportunity to influence decisions.

Tehemar (2012) also noted that one of the key aspects of good CSR practices involves effective and transparent communication channels with internal and external stakeholders. This process is key to identifying issues of concerns that the company should address and after these have been addressed, to inform about the ensuing performance. He added that there is an increased demand for establishing

an appropriate communication strategy that helps identify proper communication tools and confirms that the right information is collected and disseminated.

2.6 Challenges of Sustainability Reporting/ Communication

Sustainability reporting faces some unique challenges, which largely contribute to why some companies do not adopt sustainability reports. As noted by (Stubbs, Higgins, & Milne, 2013) , some of the most common issues identified include lack of stakeholder's request, cost implications and lack of understanding relevant reporting guidelines. Other challenges are within the boundaries of key SD metrics to be used, conflicting interest with annual report, external/third party assurance and the understanding of the need to communicate an organization's SD commitments to stakeholders effectively. Even within companies who already adopt sustainability reporting, difficulties are often encountered with identifying and analyzing sustainability issues as it requires that management link information management, corporate accounting and sustainability reporting. This as noted by Herzig and Schaltegger (2006:308) is centered on the ability of "management to establish an approach to identify what contextual priorities should be chosen in each reporting period and how to define and communicate its understanding of corporate sustainability. The capacity to operationalize strategy and communications within the confines of sustainability report can help address problems with sustainability measurement and communication. To address this, Herzig and Schaltegger (2006:308) suggested, "sustainability reporting must be backed up with a systematic accounting and information management system which provides a comprehensive basis for all sustainability issues." This often requires

interdisciplinary teamwork and lateral organization processes, that would create less ambiguity to aid the challenge associated with corporate sustainability reporting (Herzig & Schaltegger, 2006) .

2.7 Theoretical Framework

Several theoretical perspectives have been used in past literatures to rationalize and gain more insight to the motivation behind sustainability reporting. Of the theories reviewed, legitimacy and stakeholder theory were found to be most appropriate in explaining the concept, findings and observations applicable to this research. These theories are reviewed below:

2.7.1 Legitimacy Theory

As noted by Suchman (1995: 574), the concept of “legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions. Drawing from this, legitimacy theory can be explained as the organizational behaviour that relates to “implementing and developing voluntary social and environmental disclosure of information in order to fulfill (organizational) social contract” (Burlea, & Popa, 2013:1579).

Generally, organizations react to the interest of the society (Burlea & Popa, 2013; Lindblom, 1994; Luft Mobus, 2005; Owen, 2008; Tilling & Tilt, 2010) . As Burlea and Popa (2013) noted organizations often report their activities in accordance with the expectations of society. The reason for this is not far-fetched as society tends to

sanction organizations that do not conform to expected social and moral standards which if not well managed can lead to the demise of the organization.

Though criticized by many scholars, legitimacy theory is sometimes seen only as an explanation for organizational motivations toward satisfying the perception of the society without any real effort to determine how a disclosure is conducted (Burlea & Popa, 2013; Owen, 2008) . It is further argued that this “may or may not promote transparency and accountability towards non-capital provider stakeholder groups” (Owen 2008: 248). The argument is that legitimacy theory is a “theoretical construct used for making viable predictions and thus, organizations must voluntarily disclose social and environmental information in order to consider their legitimacy as a resource” (Burlea, & Popa, 2013: 1579).

Legitimacy theory emphasizes the fact that organizations want to be perceived as operating within the bounds and standards of their respective societies, to create a sort of “legitimacy”. As these standards are not fixed, the theory expects organizations to be responsive to the ethical (or moral) standards of their operating environment (Deegan, 2006) . The theory relies upon the notion of ‘social contract’ between an organization and the society in which it operates. This contract represents societal expectations about how organizations should conduct their operations. The inability of an organization to meet this contract may result in the community revolting and thus making it unable to continue its operations (Deegan, 2002) .

In line with this research, Legitimacy theory thus helps explain the role of sustainability report in the disclosure of social, economic, and environmental

information. This is important considering the increased interest in the environmental and social impact of key industries' and the need to report on their activities. This has left organizations with the need "justify" their "existence through legitimate economic and social actions that do not jeopardize the existence of the society in which it operates, nor the natural environment" (Burlea, & Popa, 2013:1579).

2.7.2 Stakeholder Theory

As scholarly work suggests, the predominant reason for producing sustainability reports is not only to keep stakeholders informed but also to show accountability. In other words, stakeholders play a pivotal role and to this end, the stakeholder's theory is often employed to explain why organizations report sustainability initiatives. Considering the objectives of this research, the significance of the electricity sector's stakeholders to its growth and advancement, it only suffices that this research will employ the stakeholder theory to further gain insight on the concepts and current practice of sustainability reporting/ communication in the Canadian electricity industry. Freeman (1984) first introduced the concept of stakeholders and their implication for corporation's success and he defined stakeholders as "*any group or individual who can affect or is affected by the achievement of the organization's objectives*" (Freeman, 1984:46) .

In broad terms, stakeholder's theory explains ways through which organizations address the interests of the varying stakeholders within and outside its fold. The concept largely relies on "*the principle of who or what really counts*" (Freeman,

1994) *“That is, who (or what) are the stakeholders of the firm? And to whom (or what) do managers pay attention?”* (Mitchell, Agle and Wood, 1997: 853).

Stakeholder’s theory puts the interest and needs of stakeholders at the beginning of any corporate action (Parmar et al., 2010) . As noted by Donaldson and Preston (1995: 67)

“Stakeholder management requires, as its key attribute, simultaneous attention to the legitimate interests of all appropriate stakeholders, both in the establishment of organizational structures and general policies and in case-by-case decision making”.

The theory as espoused by (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010) emphasizes that organizations have a responsibility to meet expectations of both internal and external stakeholders (Searcy & Buslovich, 2014) ; this is borne out of their influence to control essential resources needed by the organization to stay in business.

This theory posits that a major role of management is to assess the importance of meeting stakeholder demands to achieve the strategic objectives of the organization (Roberts, 1992) . Stakeholder importance derives from their power to control critical resources required by the organization to remain viable (Freeman, 1983; Freeman, 1984; Ullmann, 1985) . Consequently, an organization will strategically manage relationships with important stakeholders to ensure continued survival (Herbohn, Walker, & Loo, 2014) .

The relevance of this theory in asserting the importance of effective communication is highly applicable to this research as stakeholder’s relationship is viewed as critical in managing an organization and should inform key decisions (Bal, Bryde,

Fearon, & Ochieng, 2013) . Also, since the 1980s, the study of CSR has been inscribed in the general stakeholder theory, stating that companies allocate their resources and make decisions in order to satisfy stakeholders (e.g. shareholders, customers, employees) (Benoit-Moreau & Parguel, 2011). This notion is important as stakeholder theory helps understand what motivates companies to report (Searcy & Buslovich, 2014) and thus is relevant for the exposition of this research.

2.7.3 Stakeholders Influence on Sustainability Reporting

The European Commission defined CSR as “the voluntary integration of social and environmental concerns in the enterprises’ daily business operations and in the interaction with their stakeholders” (Benoit-Moreau and Parguel, 2011:102). This shows the level of influence stakeholder have on sustainability process in any given organization. As noted earlier, obtaining stakeholder’s trust is critical as they “represent an important factor in the context of CSR disclosure and reporting” (Thijssens, Bollen, & Hassink, 2015: 873-874). Perez (2015), while justifying this allusion, concluded that one of the most important factors for CSR reporting is the provision of key information to stakeholders to enhance corporate reputation. This in turn helps enhance the “perceptions of how the firm behave towards its stakeholders and the degree of informative transparency with which the firm develops relations with them” (De la Sabaté & de Puente, Esther de Quevedo, 2003:280) .

The clarification above is necessary to stress the importance of stakeholders to sustainability reporting and the overall connection of this to the reputation of any organization. In line with this, major reporting frameworks such as the GRI G4 base

their reporting mechanism on stakeholder needs and requirements, while principles such as the AccountAbility's AA1000 Series which was developed to help "companies address issues of stakeholder engagement, identify social and environmental indicators, and prepare a reliable CSR report...while building a CSR reporting system" have adopted stakeholders' engagement standard (Tschopp & Huefner, 2015:567). Also, the ISO 26000 guidance is premised on "underlying principles of recognizing social responsibility and engaging stakeholders" (GRI& ISO 2014:6). In addition to this, researchers have highlighted the one key element in CSR research should be how CSR is reported by companies and perceived by stakeholders (Coombs & Holladay, 2011; Pérez, 2015) . The argument is that this helps sustainability communication, creates an effective perception and enhances sustainability reporting and external corporate communication thereby playing a critical role in corporate sustainability integration within specific industry (Herzig & Schaltegger, 2006) .

As noted by Tenuta (2010) sustainability reports are the most operative instrument to relate an organization with its stakeholders. So in practical terms, the production of sustainability report is on the verges of stakeholders concerns, and in this case the utilization of the platform as an operative instrument to convey the environmental and social realities of the industry based on established frameworks and standards. To this end, this research is also concerned with how stakeholders' concerns are addressed through sustainability reports.

2.8 Literature Gaps and Contribution

The research on sustainability is continuously evolving and many vital questions still remain unresolved however, one area in particular that needs attention is how effectively and efficiently sustainability initiatives are communicated to stakeholders especially in key sectors of the economy who have a vast array of stakeholders. This is particularly relevant, as most research tends to focus on the business case of sustainability reporting. In agreement with this, Hahn & Kühnen (2013) identified sustainability reporting quality and stakeholder perception as an area that requires further research. Having highlighted the advancement and progression and benefits of sustainability reporting, the need for periodic evaluation of reports to ensure it communicates the intended message and at the same time meet the needs of the targeted stakeholders cannot be over emphasized. This thesis thus seeks to contribute to the general body of knowledge by addressing this gap.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter presents a detailed description of the method utilized for this study. It commences with a broad introduction of the study design and proceeds to discuss the data collection phase of the study. For clarity, description of the method was categorized into two sub-studies. Sub-study one consist of the data generation process through the analysis of reports and website content while sub-study two covered data generated through online survey instrument.

3.2 Research Design

The study took the form of a mixed method approach, which is a research methodology that integrates both qualitative (open-ended) and quantitative (closed-ended) data collection in one study. The assumption of this approach is that the combination of quantitative and qualitative approaches provides a more comprehensive understanding of a research problem than either approach as each has both limitations and strengths (Creswell, 2013).

The review and analysis of sustainability reporting is a diverse area and many different designs have been utilized in related studies, however, the focus of this research was on the adoption of multiple data collection tools to understand content and evaluate sustainability reports produced in Canadian electricity sector and to this end, the convergent parallel mixed method approach was deemed appropriate for this study. This approach provided a comparison of the different perspectives drawn from quantitative and qualitative data thereby minimizing the drawbacks of

each individual method if they were to be used in isolation. In addition, convergent parallel mixed method approach provided a dynamic perspective to the study as qualitative data generated was analyzed individually and juxtaposed with quantitative data to provide robust findings that either conform or negates each other. The key assumption of this design is that both qualitative and quantitative data provide different types of information (views of participants qualitatively and scores on instruments quantitatively) and together they yield results that should be the same.

3.3 Data Collection

Both qualitative and quantitative data was collected from 3 main sources;

- Sustainability/Annual reports
- Company websites
- Survey Instrument

While survey provided the qualitative description, sustainability and annual reports as well as websites content provided quantitative description of the study. To ensure consistency and accurate comparison for the sustainability issues, criteria for classifying reports and website content remained the same. The sample population for this research was corporate utility members of Canadian electricity association, which consist a total of 32 member companies across Canada.

To reiterate the goal of this research, the two questions this research set out to answer are discussed within the different sub-topics below. Furthermore, the data collection process was categorized into two sub-studies. The detailed description of the data collection process is discussed extensively in sub-study I and II below.

3.4 Sub-Study One: SD/Annual Reports and Company's Website

This part of the study focused on providing answers to the first research question:

“What are the strengths/weaknesses of sustainability reports produced by the CEA member companies?” This was operationalized through the analysis of sustainability/ annual reports and websites of the member companies. The diversity in SD communication strategies and medium of member companies necessitated the inclusion of corporate website content in this research as it was observed that 37.5% of the 32 CEA member companies provided substantial sustainability related content on their website than in a documented report format.

The use of web for communicating sustainable initiatives have been documented in past literature as (Moreno & Capriotti, 2009) noted that Internet is a vital medium through which corporate responsible behaviour is communicated to stakeholders. This was also noted by (Brønn, 2004: 107) when he stated *“today the internet is the primary medium for firms operating in the international arena to communicate their practices”*.

Pursuant to this, all relevant sustainability initiatives and communications thereof on company's websites was assessed and graded on the same criteria as sustainability and annual reports in order to ensure consistency and uniformity (details of grading criteria is described in the subsequent section).

The research covered the most recent published sustainability and annual reports of CEA member companies and the reports were mostly accessed through the companies' websites, however; other sources used for locating sustainability

reports include database such as Global Reporting Initiative; UN Global Compact; Global Sustain and Corporate Register.

3.4. 1 Derivation of Sustainability Reporting Criteria

The evaluation of sustainability reporting performance in this study was established by the development of a benchmarking tool, which incorporated the three aspects of sustainability (economic, social and environmental). This was achieved through the use of relevant academic literature, CEA principles and Global Reporting Initiative (GRI) reporting guideline. For the purpose of this research 5 relevant criteria to the electricity industry were utilized under each of the 3 sustainability aspects, cumulating at a total of 15 criteria for the three sustainability areas.

Of note is how this research arrived at these criteria. In deriving these criteria, the study specifically applied the CEA principles and GRI G4 General Standard Disclosures for the electricity sector, especially the sector specific disclosure requirements for the electric utilities (2013). The goal was to determine the 5 most prominent issues under specific disclosure document and to develop them into the criteria used for the purpose of this research. Hence this paper developed the following criteria climate change, biodiversity conservation, water management (availability and quality), air emission and priority spills for the environment aspect. It utilized profitability, supply chain management, research and development, infrastructure renewal/grid modernization and electricity demand and efficiency for the economic aspect and for the social aspect it used stakeholder engagement, aboriginal relation, community service, employee engagement and employee/public health & safety. While the study strived to incorporate the most relevant criteria to

electricity utilities, it should, however, be noted that given the constraint of the study, not all relevant criteria were included; in other words, certain relevant criteria may have been omitted from this study. Detailed explanation of each sustainability criteria and the reporting standard through which it was derived is described below.

3.4.2 Environment Aspect Description

The 5 criteria used to evaluate reporting performance under the environment aspect of sustainability reporting include climate change adaptation, biodiversity conservation, water management, air emissions and priority spills. Description of each criterion and where it was derived are outlined in table 1 below.

Table 1: Description of environment criteria

Environment Criteria	Description	Reporting Standard/Principles
Climate change	Reducing greenhouse gas emissions, including CO ₂ , methane, and SF ₆	GRI/CEA
Biodiversity conservation	Preserving and restoring natural habitats and the species that depend on them	GRI/CEA
Water management	Reducing the impact of electricity generation on water quality.	GRI/CEA
Air emission	Reducing the emission of harmful non-greenhouse gas such as mercury, particulate matter, NO _x , SO _x	GRI/CEA
Priority spills	Managing spills from storage tanks in power stations, which contain polychlorinated biphenyls (PCBs) that may enter the ground or water body.	CEA

3.4.3 Economic Aspect Description

The 5 criteria used to evaluate reporting performance under the economic aspect of sustainability reporting include profitability, supply chain management, research & development, infrastructure renewal/grid modernization, and electricity demand/efficiency. Description of each criterion and where it was derived are outlined in table 2 below

Table 2: Description of economic criteria

Economic Criteria	Description	Reporting Standard/Principles
Profitability	Revenue/income generated by company	GRI/CEA
Supply chain management	Compliance of suppliers/ contractor and procurement procedures to company's ethical standards	GRI
Research and development	Funding and initiatives towards research projects and innovation	GRI/CEA
Infrastructure renewal/grid modernization	Investments in infrastructure upgrade and modern technology	CEA
Electricity demand and efficiency	Uninterrupted electricity supply, affordability of electricity for all	GRI/CEA

3.4.4 Social Aspect Description

The 5 criteria used to evaluate reporting performance under the social aspect of sustainability reporting include stakeholder engagement, aboriginal relation,

community service, employee engagement and employee/public health & safety.

Description of each criterion is outlined in table 3 below.

Table 3: Description of social criteria

Social Criteria	Description	Reporting Standard/Principles
Stakeholder engagement	Collaboration and engagement with stakeholders in the decision-making process	GRI/CEA
Aboriginal relations	Engagement with aboriginals in decision- making processes.	CEA
Community service	Contributions by electric utilities to their communities through procurement decisions, philanthropy, and volunteerism	GRI/CEA
Employee engagement	Maintaining a workforce with the required size, skill profile and productivity.	GRI/CEA
Employee/public health & safety	Preventing accidents and minimizing the impact of electricity generation, transmission, and distribution on long-term public health. Safety of employees and contractors of utilities	GRI/CEA

3.4.5 Identification of Sustainability Criteria

Having identified the 15 criteria, the researcher proceeded to determine if the criteria were present in each company's SD/annual report or website by reading through the reports and conducting a manual word search for keywords.

To ensure validity and accuracy, a series of similar synonyms or related phrases were searched for each criterion. This was necessary to ensure that no criteria were disregarded in the study. A list of similar words and phrases used in the word search to arrive at the findings based on their contextual meaning is included below.

Table 4: Sample of related phrases searched under environment criteria.

Environment Criteria	Similar word/Phrase
Climate change adaptation	Extreme weather, climate, GHG,
Biodiversity conservation	Land, habitat, forest, remediation
Water management	Water usage, recycling, conservation
Air emission	Greenhouse gases, Hg, NO _x , SO ₂ , CO ₂ gases
Priority spills	Oil spill, Polychlorinated biphenyls (PCB's)

Table 5: Sample of related phrases searched under social criteria.

Social Criteria	Similar word/Phrase
Stakeholder's engagement	Collaboration, engagement, meetings
Aboriginal relations	First Nations, Natives, aboriginals, locals
Community service	Charity, donations, volunteer
Employee engagement	Support program, training, skill development
Employee/public health & safety	Accident prevention, health, safety, wellness

Table 6: Sample of related phrases searched under economic criteria.

Economic Criteria	Similar word/Phrase
Profitability	Financial, earnings, profit, revenue
Supply chain management	Vendors, third party, contractors, procure
Research and development	Research projects, academic initiatives
Infrastructure renewal	Modernization, innovation, upgrade, technology
Electricity demand and efficiency	Conservation, service demand/interruption

3.4.6 Allocation of scores to sustainability criteria

Following the identification of the criteria through search, scores were allocated to each criterion based on a 0-3 categorical scale depending on the quality and quantity of information present in the report. A scan through academic literature affirmed that several researchers have used similar rating scale for the assessment of sustainability performance indicator (Clarkson, Li, Richardson, & Vasvari, 2008; Lozano, 2013; Widiarto Sutantoputra, 2009) . Daub (2007) in his assessment of sustainability reports of Swiss companies used a 0-3 point scale; Sutantoputra (2009) similarly utilized a 3-point scale for measurement of social indicators in sustainability reports. The 0-3 score used in this study was adapted by Daub (2007), Clarkson et al (2008) and Lozano (2013) and is explained below.

Table 7: Description of 0-3 score scale

Score	Description
0	No meaningful information is provided on the specific criterion. Total lack of information on the quality, whereby no information can be found.
1	Sketchy information is provided. There is some information provided, but it is too general or has little detail or depth.
2	Report provides good information on the criterion. However, some relevant areas are not addressed. Data covers about half of the issues, or there may be good detail but only in some aspects.
3	Report includes full information of the criterion and is indicative of good performance. Complete and detailed information is provided.

(Source: Daub, 2007)

Below is an example of what each whole number value would include in a criterion

Criteria: Stakeholder engagement

0 = No mention of stakeholders and/or engagement process

1 = Some general mention of stakeholders without clear descriptions or specifics on who the stakeholders are and how the company affects or is affected by them.

2 = Discussion of stakeholders, however, one or two key factors are absent example engagement process and integration of identified stakeholder's concerns

3= Full information of stakeholders including discussion on engagement process and evidence to show that stakeholder concerns are integrated.

3.4.7 Data Analysis

Following the allocation of scores to 15 criteria, the sum of all assigned values across the 32 companies was calculated and thereafter was divided by the maximum probable points (the highest obtainable point if all 32 companies received the maximum score of 3) which in this case equals 96, to arrive at a standard value that reflects the average reporting performance under each criteria.

The procedure was repeated for all 15 criteria across the three sustainability aspects covered in the study. For example, the average values obtained for climate change adaptation, biodiversity conservation, water management, air emissions and priority spills was compiled to arrive at the Environmental reporting performance.

Table 8: Scores for Environmental reporting performance

	Environment				
Company	Climate change	Biodiversity conservation	Water	Air Emissions	Priority spills
A	3	3	3	3	1
B	0	0	0	0	0
C	0	3	0	3	0
D	2	3	3	3	0
E	0	0	0	0	0
F	0	0	3	0	0
G	0	3	0	2	0
H	0	1	1	0	0
I	1	2	1	3	3
J	0	0	0	0	0
K	2	3	3	3	0
L	0	3	0	3	3
M	2	0	0	1	0
N	0	0	0	0	0

O	0	0	0	2	0
P	3	2	0	3	2
Q	2	2	3	2	0
R	3	3	0	1	1
S	3	2	3	3	3
T	1	0	2	1	0
U	3	3	3	3	3
V	2	3	3	3	3
W	0	3	0	0	3
X	0	3	0	0	0
Y	3	3	0	2	0
Z	1	0	1	2	0
AA	3	3	3	3	1
AB	3	3	3	3	3
AC	3	3	3	3	3
AD	0	0	0	0	0
AE	1	3	3	3	3
AF	3	1	3	3	3
Total	44	58	44	58	35
Max Probable	96	96	96	96	96
Average	46	60	46	60	36

This procedure was repeated for criteria identified under economic and social aspect to arrive at the economic reporting performance and social reporting performance respectively. Sustainability reporting performance was derived from the cumulative average of economic, social and environmental reporting performance.

3.5 Sub-Study Two: Survey Instrument

This part of the study focused on providing answer to the second research question: *“To what extent do sustainability reports of CEA member companies address sustainability issues relevant to the electricity industry?”* The assumption behind this question is that SD/Annual reports are essentially reliable sources of a company’s sustainability initiative and to this end; the reports should convey sustainability issues most relevant to the company’s operation. To operationalize this, the researcher developed a survey instrument, which generated results that reflect the perception of sustainability practitioners in the companies with respect to sustainability reporting. A comparison of the results obtained from sub-study I and II, therefore, provided insight to the second research question. Detailed description of the survey instrument is discussed in the next paragraph.

The use of survey instrument in this research provided quantitative description of trends, attitudes or opinions of the CEA member companies by examining the companies with the intent of generalizing or drawing inferences. Survey instruments generally include cross-sectional or longitudinal studies using various structures such as questionnaires through electronic mail, telephone, internet, one on one interviews, or group administration for data collection (Fowler & Cosenza, 2009) however, internet survey was deemed most appropriate for this research. The use of internet survey for data collection has been discussed extensively in past literature (Nesbary, 1999; Sue & Ritter, 2012) and has been proven to be cost-effective (Wright, 2005) ; produce more accurate data, make coding easier (Boyer, Olson, Calantone, & Jackson, 2002) and yield quicker response rate thereby

eliminating response delays which often slows down the research process (Shannon & Bradshaw, 2002) .

In designing the survey, the researcher used an online survey software (Survey Monkey) which was deemed appropriate for the study as the software enabled the creation of custom survey templates, provided the options of email invitation to participants and generated results that was transcribed to descriptive statistics and made available for download into other database for further analysis.

3.5.1 Survey Participant Recruitment

The sample was significantly oriented to capture the opinion and perception of those who deeply understand the sustainability reporting framework of their company. Two main criteria were used to select survey respondents within each company. This was to ensure that the respondent could provide useful answers to the research question. The respondents were expected to

- Hold a senior position in the company
- Be either a manager or director of sustainability or corporate social responsibility and is primarily responsible for sustainability reporting in their company.

3.5.2 Survey Questions

The survey was designed to contain a total of 23 questions of which 3 were open-ended and 20 were closed-ended. 15 questions were multiple-choice options and 5 were designed on a 5-point likert scale (based on a rating scale of strongly agree/most relevant to strongly disagree/least relevant). While the close-ended

questions provided statistical evidence, the open-ended questions strengthened the interpretation of results by adding a qualitative perspective to them. The key idea with this design lies in the collection of both forms of data using the same or parallel variables, constructs, or concepts. Comment boxes were posted for majority of the questions to give respondents ample opportunity to express their concerns freely and skip logic was employed in the survey construction to ensure all questions remained relevant to each specific respondent (see appendix 2 for survey questions).

3.5.3 Survey Implementation

The survey was sent out to 10 volunteer participants for pilot testing, this was to ensure content validity and improve question structure, format and answer scales. Comment and observations from the pilot test were incorporated into the final survey; furthermore, the survey received full ethics clearance from the University before commencement.

With a view to ensure high response rate, the researcher utilized a four-phase administration process to disseminate the survey. Invitations were first mailed out on 19th February 2016 and the second mail, which was the actual survey, was distributed 2 days after the invitation notice. The third follow-up email was sent to non-respondents 3 days after the suggested timeline for the survey completion and a final reminder email was sent out 2 weeks after the third mail.

3.5.4 Survey Response and Data Analysis

Response rate was lower than anticipated; Of the 32 participants, only 18 completed the survey, resulting in 56% response rate.

One of the terms for ethics approval was on the condition that questions are made voluntary; the implication of this was that respondent skipped some questions consequently; the survey results generated different number of response for different questions. Although the data presented in the results section showed the number of respondent for each question, it is important to note that this variation in respondent rate for each question may somewhat affect the proportionality of the findings, as questions with higher respondents would represent the sample population better than the questions with fewer respondents.

Results obtained were analyzed using descriptive statistics and participant's response was mostly displayed using bar graphs.

3.6 Limitations of Study

As noted in the introductory chapter, this study involved an evaluation of current sustainability reports of the CEA corporate utility member companies, which comprised of all three-industry groups (generation, transmission and distribution).

It is must be stressed that the objective of this thesis was by no means to measure companies' actual sustainability performance but evaluate the representation of their performance through sustainability/annual reports/ website. While the research strived to be as comprehensive as possible, analysis was however limited

to published/publicly available sustainability report as well as sustainability-related issues on company's website.

One limitation identified in the course of the study is that data utilized relies on self-reported sustainability performance hence the validity and accuracy of the data cannot be verified. Another limitation is the voluntary nature of sustainability reporting; this is evident in the fact that not all CEA member companies produce sustainability reports.

Variation in reporting cycle and frequency also posed a challenge during data analysis of sustainability report as the reality of this dissimilarity is that it created an uneven platform; in other words, older reports were analyzed with the same standards as recently published reports. Similarly, this scenario was also applicable to company's website with respect to information update and accuracy. Data obtained from company's website was difficult to assign a date to hence the accuracy and the validity of the information could not be verified more so as some websites did not specify when information was last updated.

Lastly, variations in company's area of operation for example, electricity-generating companies were expected to have different environmental impact and challenges compared to transmission and distribution companies. Such disparity created challenges when comparing individual reports within the sector, however the impact of this variation on the research results is expected to be minimal as majority of the companies either utilized more than one energy source or had more than one area of operation (generation, transmission and distribution).

CHAPTER 4: RESULTS

4.1 Introduction

This chapter starts with a descriptive presentation of the results obtained from sub-study I and subsequently presents the results from sub-study II.

4.2 Results of Sub-Study I

As noted in the method section, this phase of the study involved the evaluation of SD/ annual reports as well as website content which cumulated to the allocation of scores to the 15 criteria identified across the sample population (32 companies). Results obtained from this procedure are discussed below.

4.2.1 CEA Members Overall Performance

The total score obtained for each company across the environment, social and economic aspects (15 criteria) revealed their overall reporting performance. Figure 1 below shows the overall performance distribution of CEA member companies. It is worthy to note that only one of the 32 companies assessed in this research had a perfect score of 45 out of 45 (100%). Cumulatively, at least 17 of the companies performed above average (based on the statistical analysis in table 9 below), three of the companies scored zero, which implies that they did not have any form of SD related content: this is interesting to note, considering that they are signatories to the CEA's Sustainable Electricity Program (SEP). The graphical representation of the score distribution is shown below and to ensure anonymity, the companies are characterized with alphabets. A summary of the descriptive statistics is also presented.

Figure 1: Cumulative average score of CEA members' reporting performance

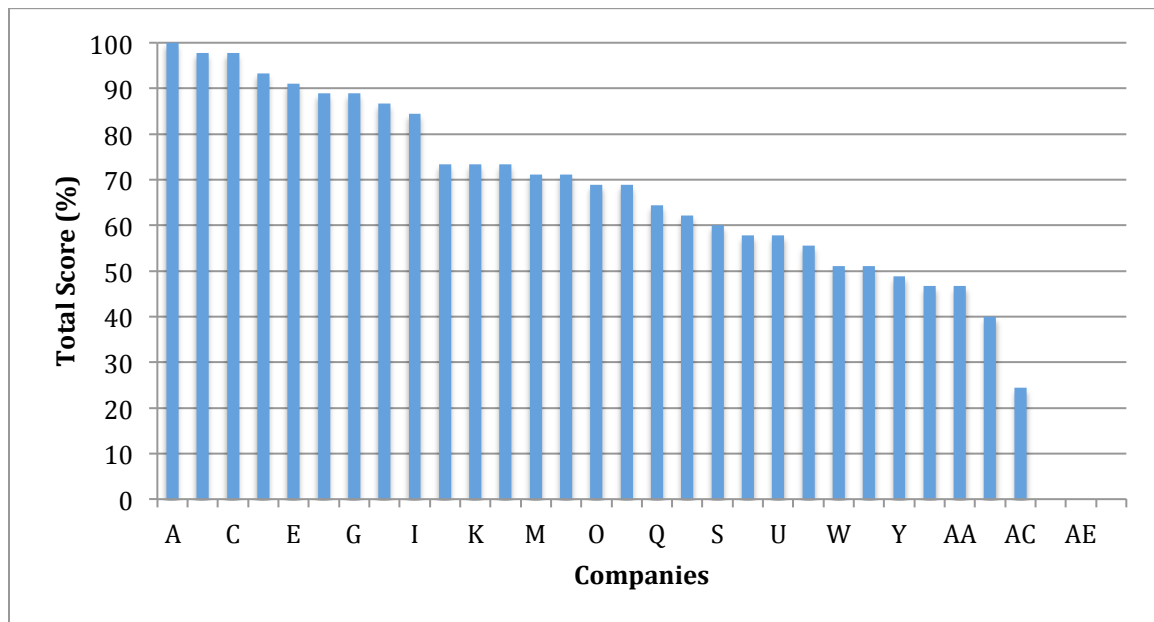


Table 9: Descriptive statistics of CEA members score distribution

Standard Deviation (σ)	12.37045778
Variance (σ^2)	153.0282258
Total Numbers, N	32
Mean (Average in %):	62

4.2.2 Overview of Sustainability Reporting Performance

In evaluating the reporting performance of the companies, the average score for each criterion was first determined and subsequently the total average for each aspect (environment, economic and social) was calculated. Figures obtained from these calculations depict the reporting performance and is shown in Figure 2. Reporting performance for the social aspect had the highest score with a mean value of 75% followed by economic which had 62% while environment was the lowest with 50%. To validate this data, ANOVA test was performed which yielded the

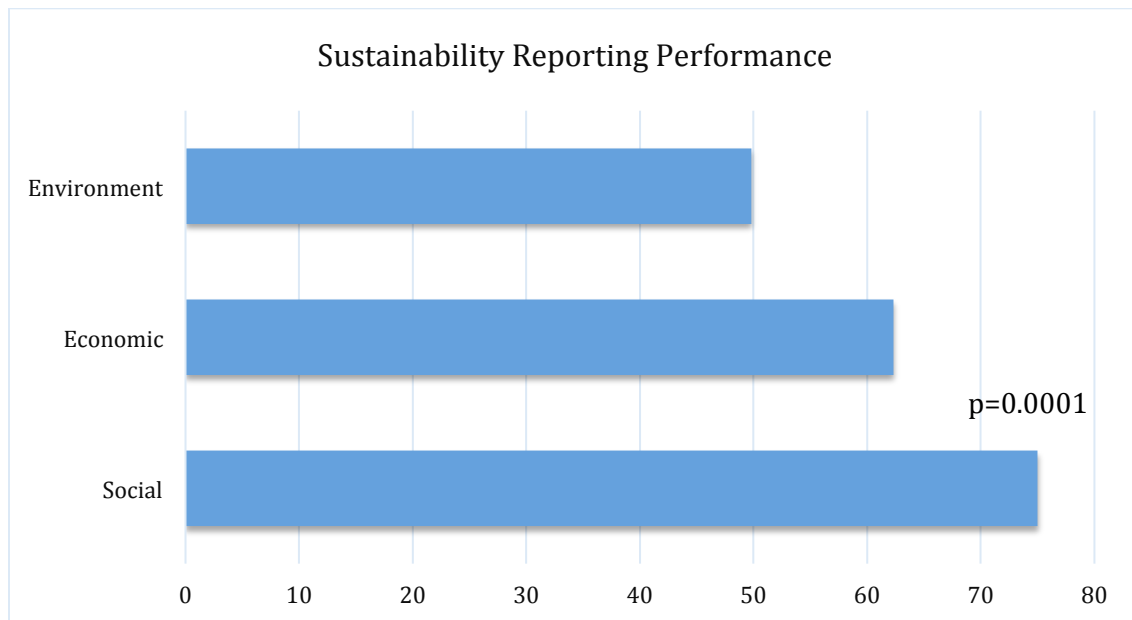
result: $F(2,477) = 13.64$, $p = .0001$. With a p -value < 0.05 , we reject the null hypothesis that there's no difference between the means and conclude that a significant statistical difference exists between the mean values of the three aspects.

Table 10: ANOVA Test of environment, social and economic aspects

Source of Variation	Sum of Squares	d.f.	Mean Squares	F	P value
between	45.75	2	22.88	13.64	<.0001
error	800.2	477	1.678		
total	846.0	479			

The statistical results, therefore, show that the social aspect contains more comprehensive information, in other words, the social aspect of sustainability was more represented in members' sustainability reports.

Figure 2: CEA Members average score (%) under the three sustainability aspects

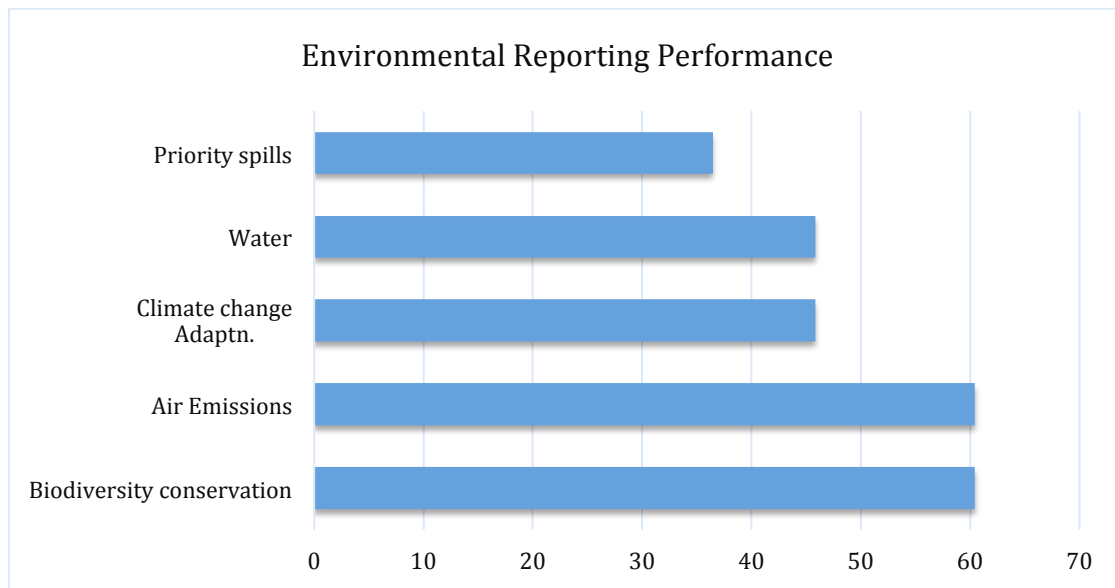


Having broadly described the general sustainability performance across board, the researcher goes further to show detailed reporting performance in the environmental, economic and social sustainability aspects.

4.2.3 Environmental Reporting Performance

As mentioned previously, reporting performance on environment was the lowest of the three sustainability aspects with a mean value of 50%. Figure 3 below shows details of the individual factors analyzed under the environment aspect. The results indicate that consideration for air emission and biodiversity conservation had the greatest attention with an average of 60%. This was followed by climate change and water with 46% each while priority spills was the lowest with only 36% average.

Figure 3: CEA members average score (%) under environment aspect.



- Key observations

Priority Spills recorded the least reporting performance when compared to other environmental aspects. 18 companies, which constitute 56% of the sample

population, received a weight score of 0 (indicating that they made no mention of priority spill in their report, thus constituting the highest number of non-reported indicator in this research). The maximum weight of three was only recorded for 10 companies (31% of population) while the remaining 4 companies received a weight of either 2 or 1.

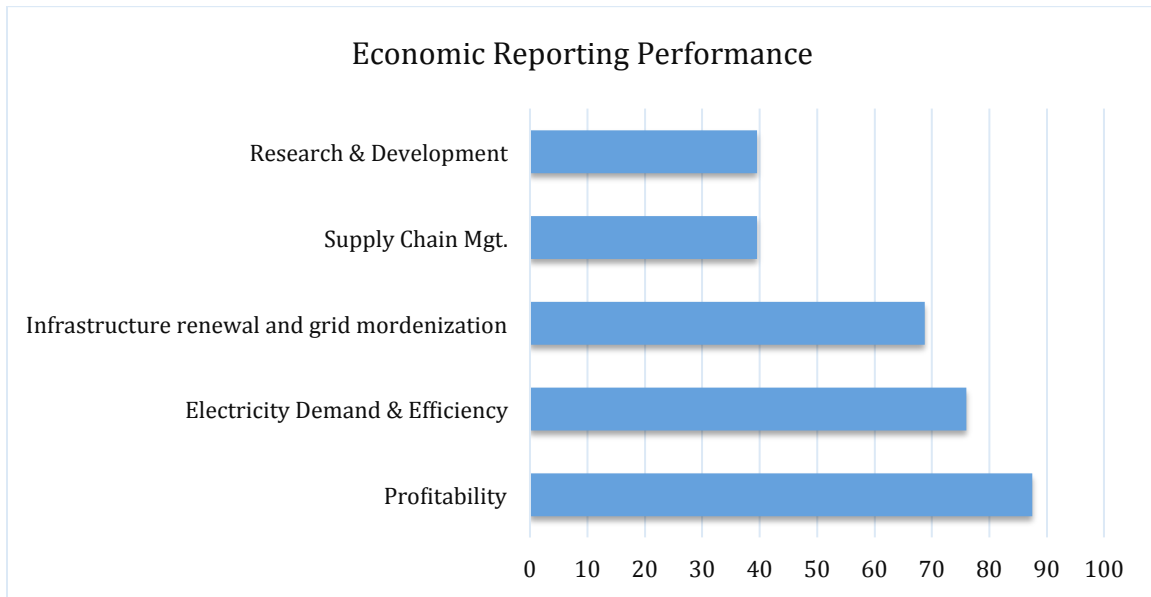
Reporting performance for climate change was also low considering that 13 companies (representing 41% of the sample population) received a weight score of 0, which implies that they made no reference to climate change in their reports. In addition, to those that reported on climate change, only 10 companies (representing 31% of the sample population) received the maximum weight of 3 while the remaining 9 received a weight of either 2 or 1.

The combination of these two criteria contributed largely to the low overall reporting performance of the environmental aspect of this research.

4.2.4 Economic Reporting Performance

Results for economic reporting performance as shown in Figure 4, reveals that profitability had the highest average score of 88% while supply chain management and research/development were bottom with a score of 40% each.

Figure 4: CEA Members average score (%) under economic aspect.



- Key observations

Profitability came up as one of the most reported criteria with 28 companies receiving the highest weight score of 3. On the other hand, research & development had the least average with 16 companies recording a weight score of 0. Of the remaining companies, only 8 (25% of sample population) were awarded the highest weight score of 3 while the rest recorded a score of either 2 or 1.

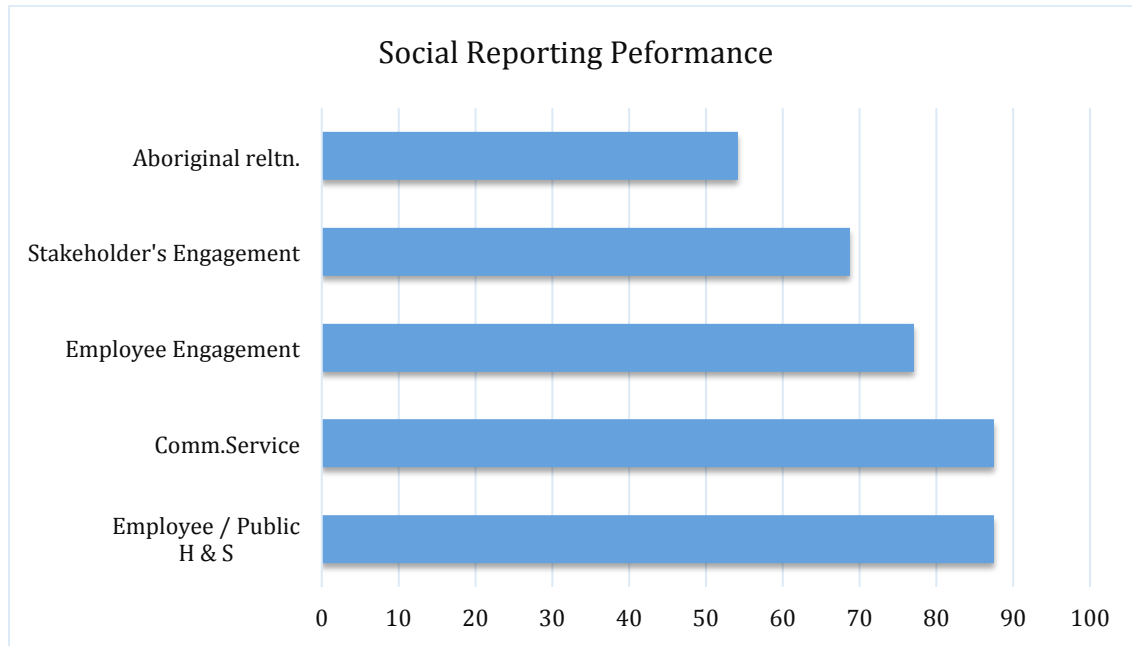
For supply chain management, 44% of the population received a weight score of zero, 25% received the maximum weight score of 3 while 31% scored either 2 or 1.

4.2.5 Social Reporting Performance

Social aspect recorded the highest reporting performance in comparison to the environmental and economic aspects. Figure 5 below shows the average for each criterion reviewed under the social aspect. Community investment and health & safety had the highest average score of 88%, which was closely followed by

employee engagement 77% while aboriginal relation was the lowest at 54% average.

Figure 5: CEA Members average score (%) under social aspect.



- Key observations

Aboriginal relation had the lowest average in the social aspect. 12 companies recorded a weight score of 0 while 15 companies recorded a maximum score of 3. The remaining 5 companies either had a score of 2 or 1. This score despite being the above the 50% mark, constitute the lowest median score in the social aspect of all the reports.

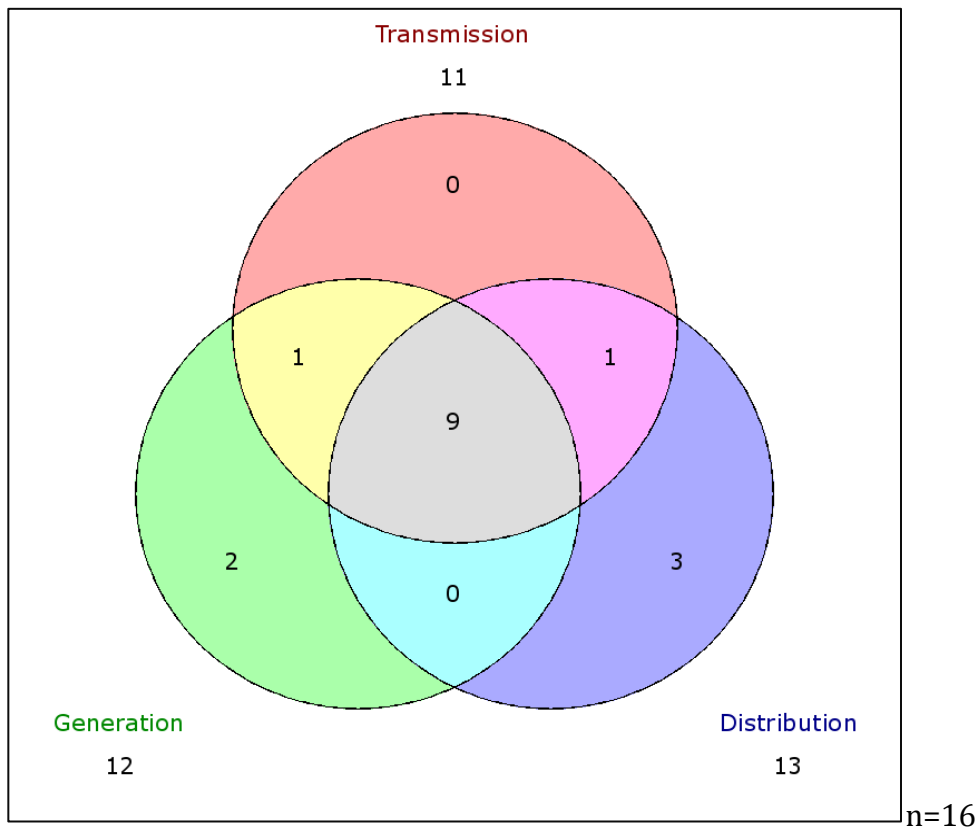
4.3 Results of Sub-Study II

This section shows results obtained from the online survey conducted in this research. It represents the perception of CEA members on reporting practices. The

survey questions analyzed in this section are related to issues that revolve around sustainability reporting particularly with regards to stakeholders' engagement, resources allocated to production of SD reports, SD issues relevant to company's operation and other relevant issues of interest.

To gain insight into company's key area of operation, respondents were asked to identify their area of operation (figure 6). The importance of this question was to understand if there were observable patterns in the response to survey questions; in other words, were any answers peculiar to any specific group within the sector? The resulting overlap in company's operation as shown in figure 6 is attributed to the fact that most companies had more than one area of operation.

Figure 6: Survey Participant's areas of operation

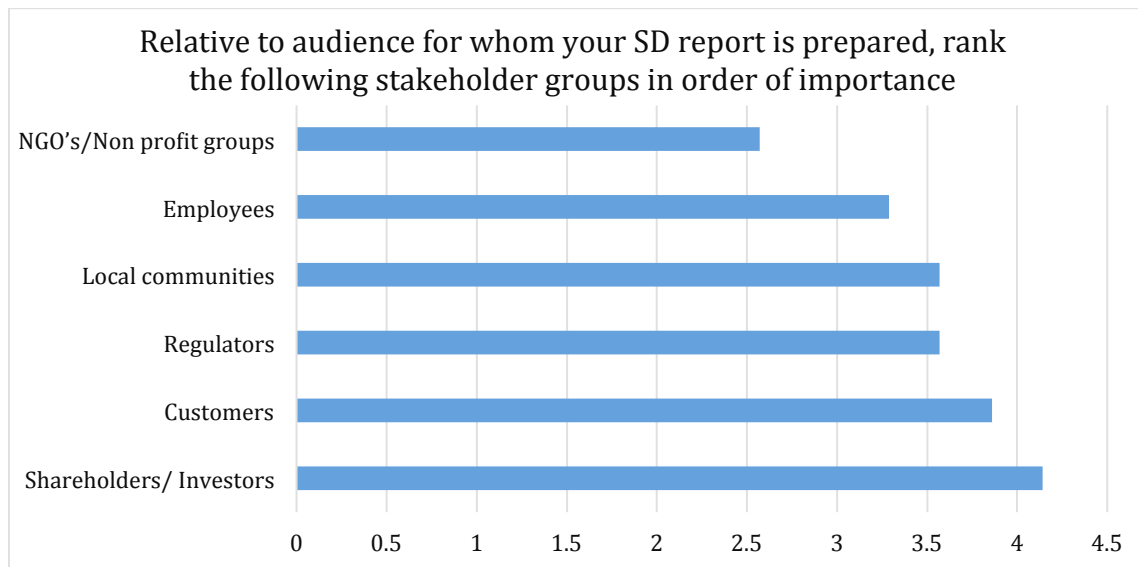


In further enquiry to energy source for electricity generating companies, 92% generated electricity through hydroelectric, natural gas accounted for 58%, coal and wind accounted for 50% each, fossil fuel 42%, biomass 25% and nuclear only 17%. Having highlighted the background questions, response to other survey questions was grouped into themes and discussed in section below.

4.3.1 Stakeholder Engagement

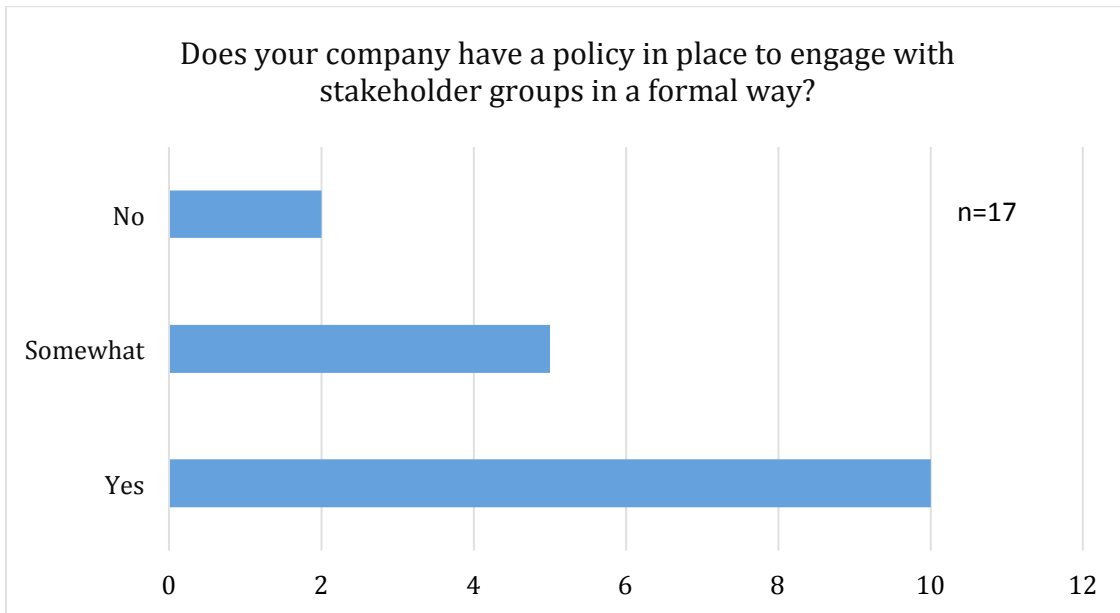
One of the objectives of this research was to evaluate how CEA members communicate key aspects of their sustainability initiatives to different stakeholders. As discussed earlier, companies need to identify their stakeholders, prioritize the needs of these stakeholders, and ensure that SD reports are tailored to capture their interests and expectations. In this regard, respondents were asked to rank different stakeholder groups in order of importance. The groups considered were: shareholders/ investors, customers, regulators, local communities, employees, and non-governmental organizations (NGOs). The result (figure 7) shows that shareholders/investors group are given highest consideration in the development of sustainability reports while non-governmental organizations had the least influence in terms of stakeholder consideration in the development of sustainability reports in the industry.

Figure 7: Ranking of Stakeholder groups in increasing order of importance



Subsequently, when respondents were asked if they had a policy in place to engage with stakeholder groups in a formal way, (figure 8) shows that 10 out of the 17 respondents said yes, 5 said somewhat, while 2 of the companies surveyed do not have any form of stakeholder's policies in place. Of the respondents that said yes, 5 (50%) of them identified with the use of multiple platforms to communicate with their stakeholders. Other respondents use different means such as community liaison committees, social media and emails, town hall meetings and presentations, while one respondent said they have a formal stakeholder & aboriginal affairs department that engage as per regulatory requirements wherein the company's corporate responsibility program maintains a stakeholder engagement program to ensure they disclose what matters to key stakeholder groups. This result clearly shows that majority of the respondents (88%) have defined structures and policy for engaging their key stakeholders.

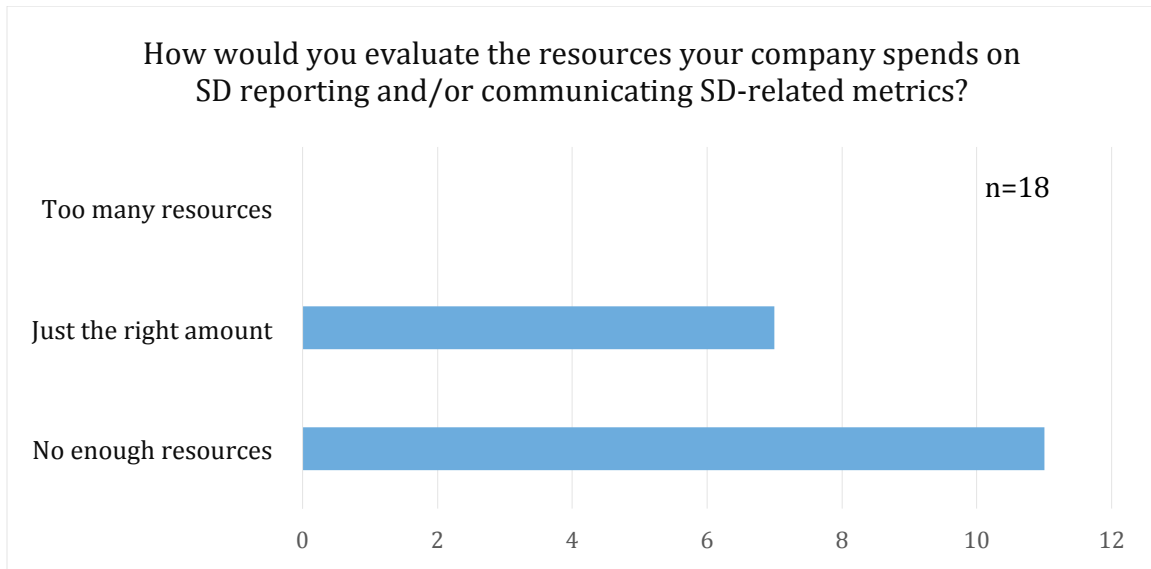
Figure 8: Stakeholder group engagement policy



4.3.2 Resources

Relative to the resources companies allocate to SD reporting/ communication, one vital question that raises concern is whether companies invest enough resources in sustainability reporting. This is centered on the fact that communicating sustainability initiatives requires dedicated amount of resources in terms of financial and human capital. This may range from the costs associated with hiring personnel to cost of data collection/ gathering, external third party assurance as well as other costs associated with publishing corporate sustainability report. Response to the question: How would you evaluate the resources your company spends on SD reporting and/or communicating SD-related metrics (Figure 9) showed that a greater portion of respondents (11 out of 18 which is 61% of respondents) believe their institutions do not invest enough resources in sustainability reporting and communicating SD related metrics.

Figure 9: Resource allocation to SD reporting/ communication.



4.3.3 Climate Change

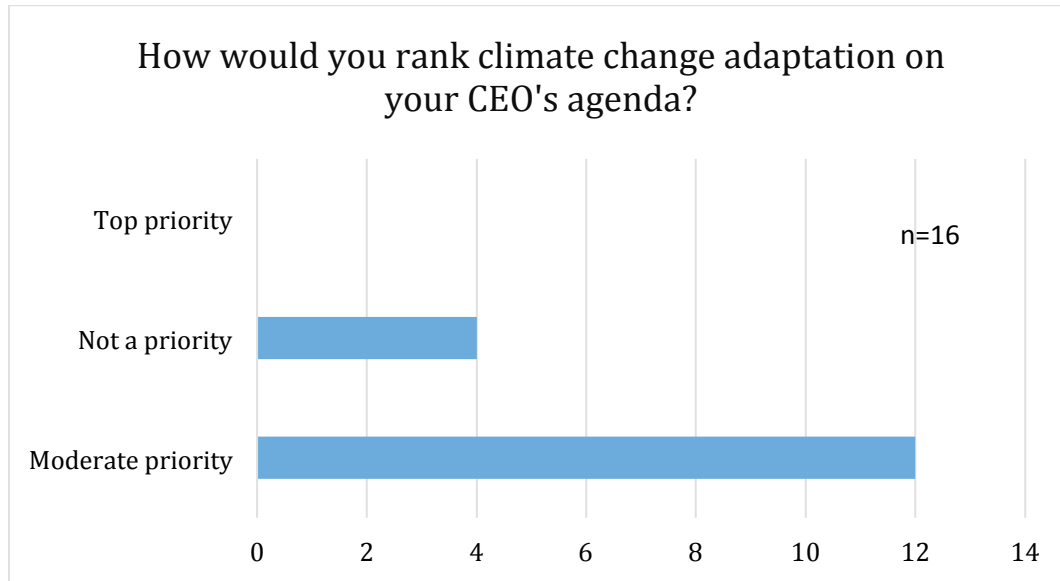
Of particular relevance to the electricity sector is the issue of climate change due to the projected impacts and vulnerability of the sector to extreme weather events.

The breakdown of Canada's greenhouse gas (GHG) emission by sector shows that electricity is one of the major contributors of GHG (Environment Canada, 2016). Although there has been a steady decline in the GHG emissions of the electricity sector due to the shift from coal energy source to nuclear and natural gas, more needs to be done to further prepare this vulnerable sector for the risk of the impending global temperature rise. Significant weather events such as the 2013 Alberta flood and the 2013 Toronto ice storm had devastating impact on the electricity sector and further stresses the need for preparedness.

In this view, survey participants were asked the question: How would you rate climate change adaptation on your CEO's agenda? As represented in figure 10 below, majority of the respondent (75%) rated climate change as moderate priority

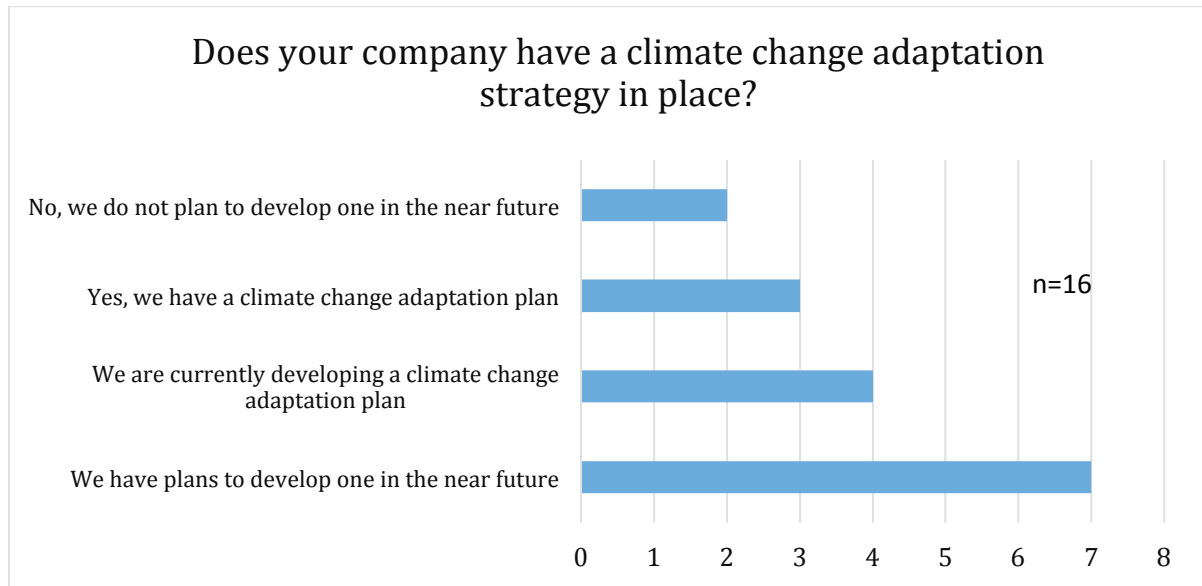
and none of the respondents considered climate change top priority for their company.

Figure 10: Climate change adaptation issues



To further elucidate this point and gain understanding on how prepared companies are for climate change related risks, respondents were asked if their company had a climate change adaptation strategy in place. Only 3 of the 16 respondents said yes, 4 stated they are currently developing a climate change adaptation plan while 7 out of the remaining respondents said that they have plans to develop one in the near future. The remaining 2 respondents stated that they do not have any climate change strategy and there are no plans to develop any in the near future. This response clearly shows that only 43% of the respondents have some form of structure in place for climate change adaptation. (Figure 11)

Figure 11: Climate change adaptation strategy



4.3.4 Environmental, Economic and Social Aspects

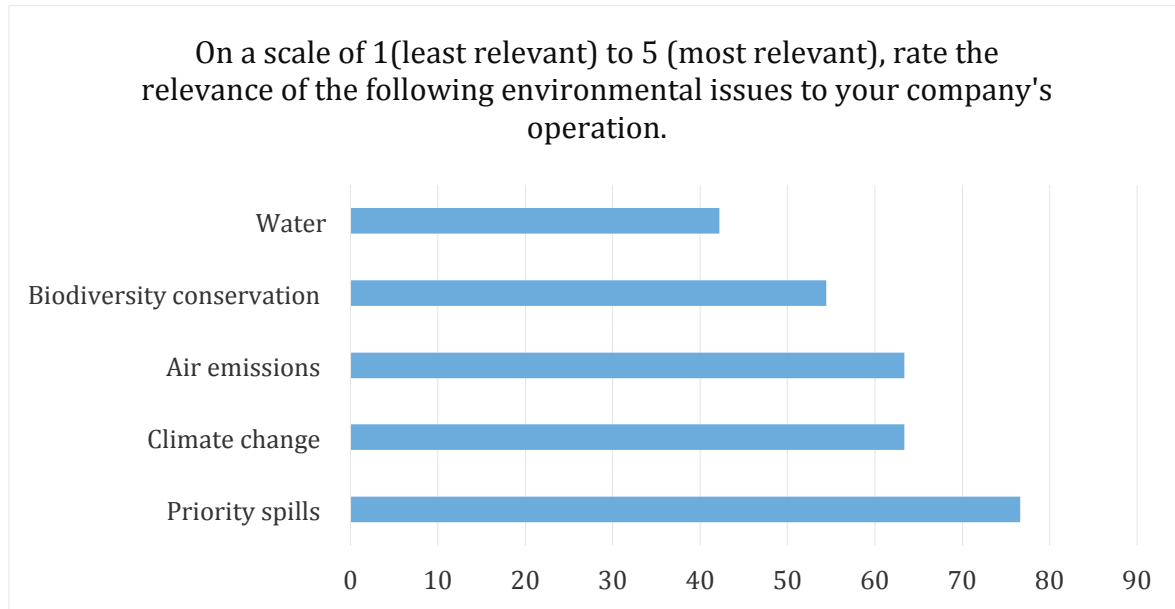
Similar to the evaluation of sustainability/annual reports conducted earlier in this research, the survey also examined the three broad aspects of sustainability and how CEA companies prioritize these issues. To evaluate this, survey question outlined the same 15 identified criteria used in sub-study I (5 under each aspect) and asked respondents to rank them in order of relevance using a scale of 1 to 5. Responses generated from these questions are discussed below:

4.3.5 Environmental Issues by Relevance

Data generated from the question asking respondents to rank 5 environmental issues in order of relevance revealed that priority spill with an average rating of 77% was identified as the most relevant environmental issue to the CEA member company's operation. Water, on the other hand, was ranked as the least relevant

environmental issue with an average rating of 42%. Figure 12 shows details of the ranking in increasing order of relevance.

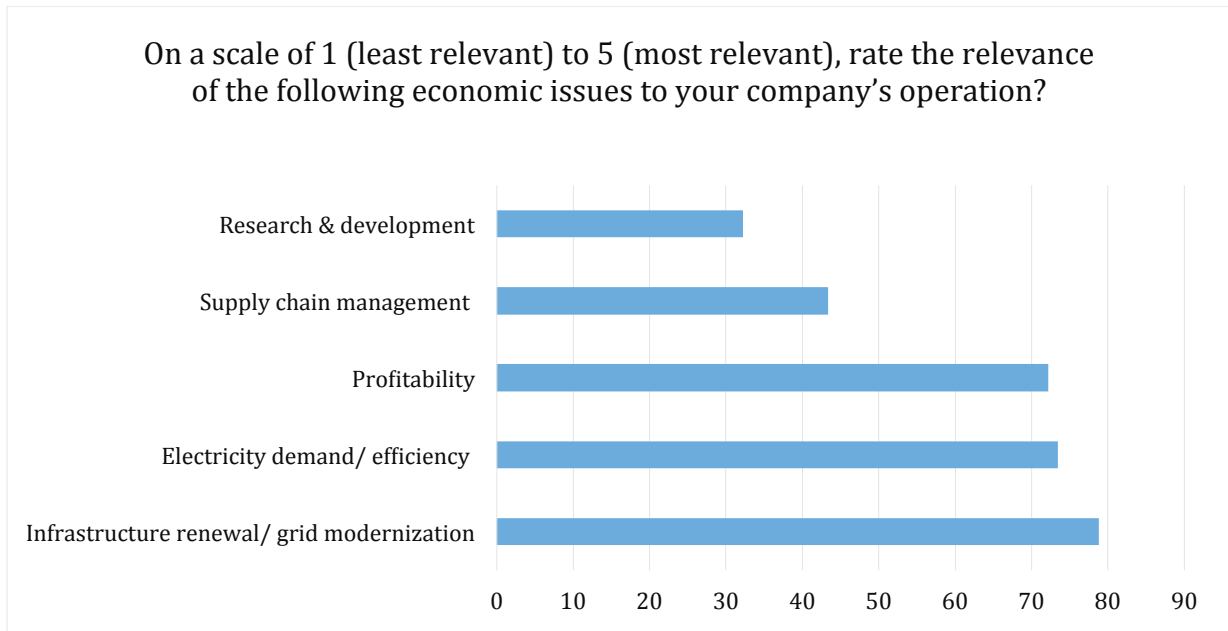
Figure 12: Ranking of environmental issues by increasing order of relevance



4.3.6 Economic Issues by Relevance

For the 5 economic issues identified, respondents ranked infrastructure renewal/grid modernization as the most relevant issue for their company, with 79% average score while research & development came in as the least relevant with an average of 32%. Detail of ranking is highlighted in figure 13 in increasing order of relevance.

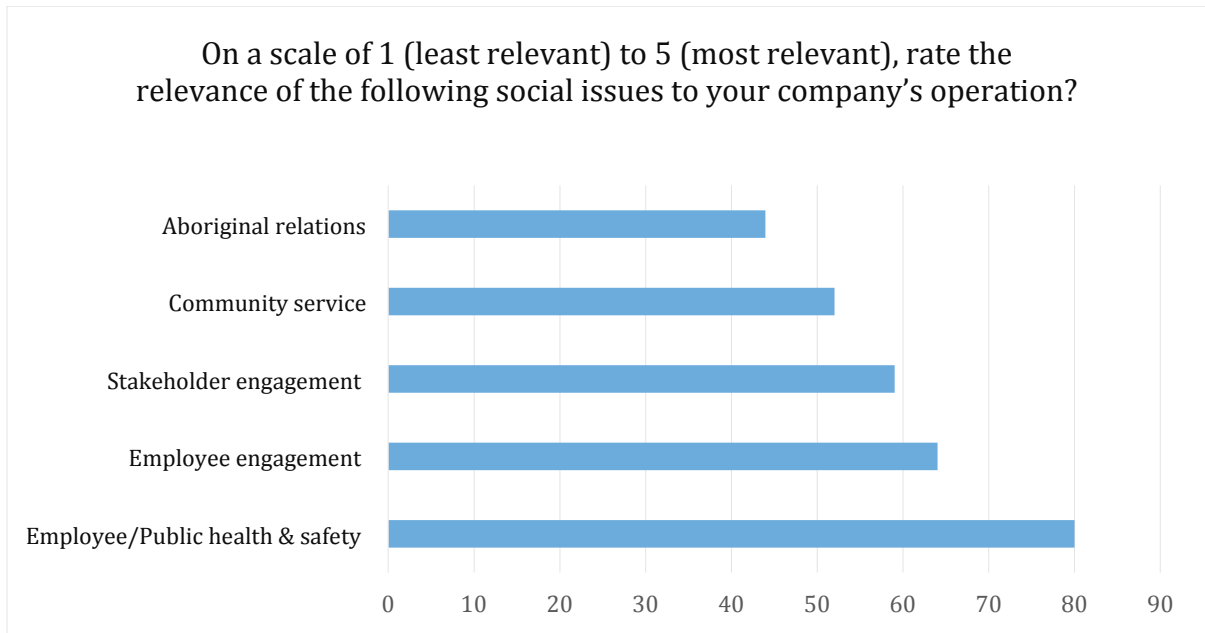
Figure 13: Ranking of economic issues by increasing order of relevance.



4.3.7 Social Issues by Relevance

In ranking the relevance of the 5 social issues, respondents rated employee/ public health & safety as the most relevant with an average of 80% while aboriginal relations came in as the least relevant with an average of 44%. Detail of ranking in increasing order of relevance is shown in figure 14.

Figure 14: Ranking of social issues by increasing order of relevance



Having broadly identified the sustainability issues covered CEA members' reports and subsequently identified the most relevant issues to the companies' operations from the survey, the next chapter undertakes a comparative analysis of both results to determine the degree of alignment. It should however be noted that this analysis is based on the response and perception of the survey participants and may not be necessarily be a representation of the company or industry's perception. Furthermore, not every criteria utilized in this study may be applicable to all the companies based on their energy source and whether their operations included generation, transmission or distribution.

CHAPTER 5: COMPARATIVE ANALYSIS OF SUB-STUDY I AND II

5.1 Introduction

This chapter undertakes a comparative analysis of the results from both sub-studies (evaluation of sustainability reports of and the survey). Recall that the sustainability report generated data, which revealed how comprehensively each of the 15 criteria was reported while some questions in the survey generated data showing how these same criteria ranked in order of relevance to the company's operation.

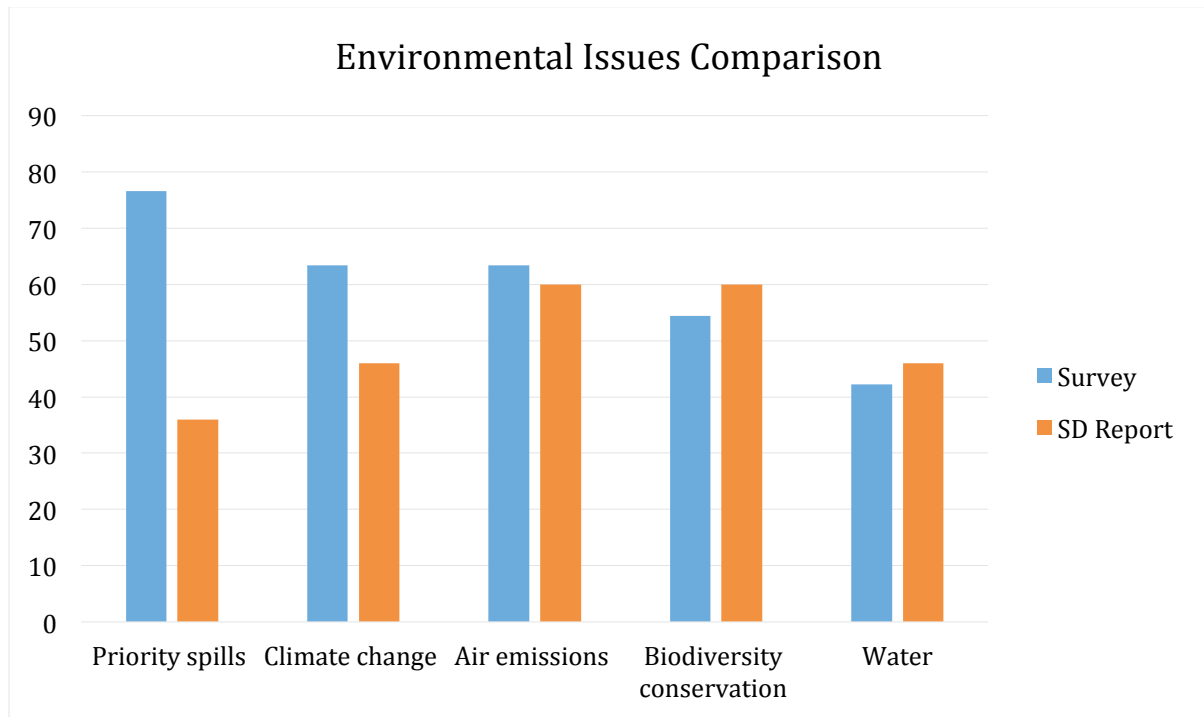
The objective of this comparison was, therefore, to evaluate the two dataset and determine if the most relevant issues to the companies (as identified by the survey) were indeed the most reported issues (as shown in SD/annual reports). In other words, are the companies reporting the sustainability issues most relevant to their operations or not? The relevant results are juxtaposed using descriptive statistics and represented in bar graphs. Furthermore, the differences between the two results were validated using t-test.

5.2 Evaluation of Environment Aspect

One compelling contrast observed in the environmental aspect of this study was on the importance of priority spill to the companies' operation. While majority of the respondents identified priority spill as the most relevant environmental issue, the reality was different in their SD/Annual reports. In other words, the respondent assessment sharply contrasts what is being reported in this regard as priority spill ranked the lowest in terms of environment factors being reported.

The observation shows a disconnect between what the CEA member companies identify as important and what is actually communicated through their reports to their stakeholders. Detail of this comparison can be seen in figure 15 below.

Figure 15: Comparison of actual environmental disclosure (SD report) and relevance of environmental issues (survey)

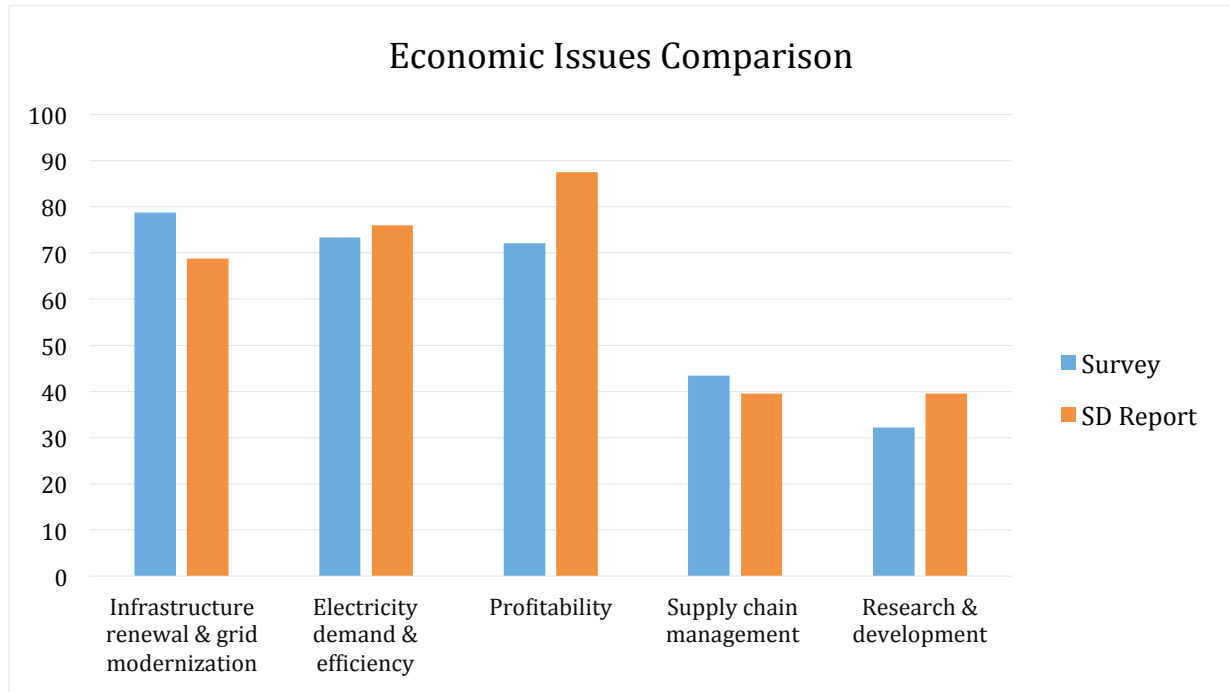


5.3 Evaluation of Economic Aspect

A key observation from the economic aspect is the fact that profitability was observed as the most reported issue however, the survey revealed that infrastructure renewal was the most relevant issue to the company's operations. The economic aspect did not show great variation as compared to those observed in the environment aspect. The result (figure 17) shows that the survey and reports analysis agreed on the fact that supply chain management and research &

development are the least prioritized issues being considered in their sustainability report.

Figure 16: Comparison of actual economic disclosure (SD report) and relevance of economic issues (survey)

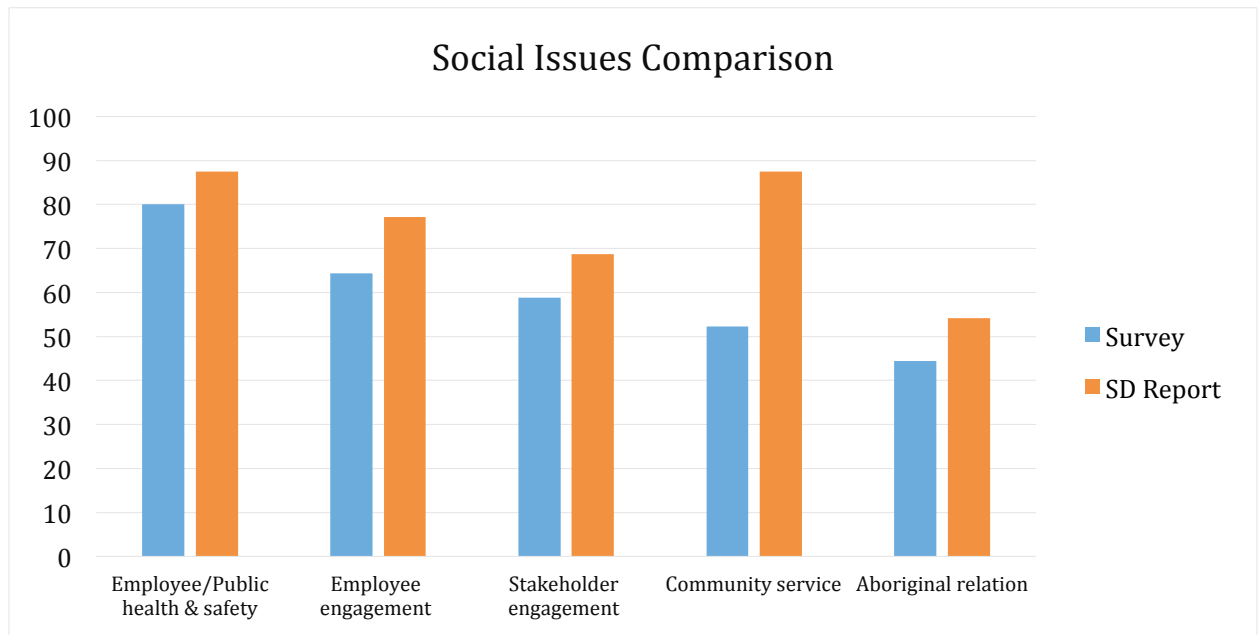


5.4 Evaluation of Social Aspect

Based on evidence as presented in figure 16 below, survey respondents ranked in the following order: employee/public health & safety, employee engagement, and stakeholder’s engagement as the most important social factors for their company. However, this hierarchy contradicts slightly with what the industry member’s reports, as employee/public health & safety and community services gets the most attention in the sustainability report, followed by employee engagement while stakeholder’s engagement came a distant fourth. There was, however, agreement in the consideration of aboriginal relations as the least most important issue, which

possibly explains the reason for its low reporting indices in all the reports considered.

Figure 17: Comparison of actual social disclosure (SD report) and relevance of social issues (survey)



5.5 Statistical Analysis

To validate the comparative analysis, t-test of independence was performed on each dataset. Results for 12 out of 15 criteria showed significance at $p < .05$, we therefore reject the null hypothesis that there is no difference between the mean and conclude that a significant statistical difference exists between the mean values of the 12 aspects. However, t-test for community service, research & development, and aboriginal relations showed no significance at $p < .05$, we therefore fail to reject the null hypothesis and conclude that there is no statistical difference between their mean values (results of t-test are shown in Tables 10, 11 and 12 below).

Table 11: T-Test of environment aspect

Environment	t value	p-value	
Biodiversity	2.38449	0.010551	significant at $p < .05$
Climate	4.65262	0.000013	significant at $p < .05$
Water	1.87444	0.033481	significant at $p < .05$
Air emission	3.16267	0.001355	significant at $p < .05$
Priority spill	6.89805	0.00001	significant at $p < .05$

Table 12: T-Test of economic aspect

Economic	t value	p-value	
Electricity demand	-4.33534	.000037	significant at $p < .05$
Infrastructure renewal	5.18597	0.00001	significant at $p < .05$
Research & Dev	1.21558	.115046	<i>not</i> significant at $p < .05$
Supply chain	2.688	0.004925	significant at $p < .05$
Profit	3.05065	.001856	significant at $p < .05$

Table 13: T-Test of social aspect

Social	t value	p-value	
Aboriginal	1.45932	.075495	<i>not</i> significant at $p < .05$
Comm. service	-0.0409	0.483774	<i>not</i> significant at $p < .05$
Health & Safety	4.12299	0.000074	significant at $p < .05$
Employee engagement	2.67432	0.005103	significant at $p < .05$
Stakeholder engagement	2.57594	.006565	significant at $p < .05$

CHAPTER 6: DISCUSSION AND CONCLUSION

6.1 Introduction

Having highlighted the main issues and observations in the two studies in section four, this final section discusses the findings as deduced from the analysis of existing sustainability reports of CEA members and responses from the survey conducted. It also explains the findings as observed from the comparative analysis in the last section. These findings are discussed in details below.

6.2 Overview of CEA Members Sustainability Reporting Performance

A review of the reporting performance of all CEA members based on the metrics of this research shows that while some companies had substantial sustainability information on all three aspects of sustainability, other companies barely reported on some aspects of sustainability. This performance is considered low, bearing in mind that reporting on environment, social and economic performance is one of the key mandates of the Canadian electricity association's Sustainable Electricity Program (SEP), which all the evaluated companies are signatories. This low performance can be partly attributed to the fact that not all CEA members had sustainability reports. Although this is not the focus of this research, findings from this research, however, showed that the CEA member companies that produce sustainability reports had more comprehensive sustainability related information for the most part and hence performed better in this analysis than their counterpart. Reasons for this could be that processes and guidelines for sustainability reporting affords them the opportunity to identify key aspects to report on and furthermore,

aids the accurate and complete reporting of those key aspects. On the contrary, companies who do not produce sustainability report are not privy to such opportunities and as such are limited in their capacity to communicate with stakeholders on their initiatives. Although some companies' annual reports had sustainability components, they rarely contained sufficient information on sustainability performance. Furthermore, some companies claimed to have integrated reports, however, these reports lacked comprehensive sustainability-related information. From these observations, we summarize that although companies used several mediums (such as websites, publications, annual reports) to communicate their SD initiatives, sustainability reports provided most comprehensive information.

6.3 Greater Focus on Social Issues

From the analysis in this research, it was observed that CEA member companies' communications were more focused on the social aspect of sustainability. This reality was reinforced by the results from this research, as presented in the last section. It was observed that most companies preferred to communicate their activities in the community and other social areas rather than portraying their environmental and economic initiatives and performances at the same level.

The reason for this could be explained by literature, which suggests that organizations generally react to the interest of the society (Burlea & Popa, 2013; Lindblom, 1994; Luft Mobus, 2005; Owen, 2008). Hence we can say that the findings of this research are in line with Burlea and Popa's views of legitimacy theory, which notes that organizations often report their activities in accordance with the

expectations of society. They reiterated this argument by noting that society often sanction organizations that do not conform to expected social and moral standards which if not well managed can lead to the demise of the organization (Burlea and Popa, 2013). As noted in this study, the electricity sector has a vast stakeholder group across its three areas of transmission, generation and distribution, hence the need to project a friendly outlook to their stakeholders. There is, however, the need to consider and define who these important stakeholders are. Through the findings of this study's survey and the report analysis conducted, we can safely say that organizations are concerned with the interest of a wide range of stakeholders among which their operating communities, investors/stakeholders, media, regulators and customers have the highest consideration.

The inclusion of the highlighted group's interest plays a significant role in the development of organizational communications part of which the SD report is key. Hence considering the influence of these groups in their individual capacity and the need to continually "impress", we can safely assume that reporting on social impacts is often perceived to promote a positive perception of the company by helping them appear as being sensitive to the plight and needs of the diverse groups as represented by their stakeholders. Hence, companies tailor their reports to suit these intended audiences/groups. However, Owen (2008) argued that such approach to legitimacy theory "may or may not promote transparency and accountability towards non-capital provider stakeholder groups" (Owen 2008: 248). This raises more questions as to who the target audience for sustainability reporting is and to what extent do the reports meet their expectation?

6.4 Stakeholders' Influence in Reporting Process

As observed in this research, survey respondents noted that the most important stakeholder groups to CEA member companies are their investors and shareholders. So could we then assume that investors and shareholders are more interested in social initiatives more than economic and environmental performance of the business? No doubt, some stakeholders have more influence than the others and this could be the reason for the disconnect and disparity between the survey and the report evaluation as diverse interest and management influence comes to bear on the final content of sustainability reports. Hence, we can argue that some stakeholders have more influence than others.

This observation raises another concerns in relation to the disconnect between the survey result and the report analysis. For example, in the survey responses, investors were considered most important stakeholders, though our analysis shows that substantial areas of the reports focused on the social aspect. Despite this observation, however, it can be argued from the same analysis of the economic aspect of the sustainability reports that due consideration was individually given to the interest of other key stakeholders as the reports shows a high degree of reporting and information on the profitability of the CEA members. In fact, against the survey findings which placed infrastructural development and renewal as being the most important aspect, the reports show clearly that investors interest were well considered in the reports, as profitability was most reported criteria under sustainability economic categorization.

This raises the argument for legitimizing specific stakeholder groups and the influence they bear on the presentation and production of not only sustainability reports but also organizations as a whole. Though there are no empirical evidence to show this and this study's survey and report analysis did not explicitly reveal this, it is however identified as an area that requires further research to determine if stakeholders with more resources are able to influence a firm's sustainability reporting or are key in determining the disclosure interest and content of organizations while producing their SD reports.

The need for this becomes more interesting, considering the significant impact of the electricity sector on the environment, as the omissions of key aspects that should be reported may send off wrong signals to key stakeholders who may be primarily interested in other issues, such as environmental and economic performances. This becomes even more imperative when one considers the little focus given to pertinent issues such as climate change as analyzed in SD reports of the companies. Hence, there is the need for the companies to fully determine key stakeholders' expectation and create a more balanced approach to ensure that their sustainability report aligns with those expectations.

6.5 Survey Perception and Report Evaluation Results

One key finding of this research is the dissimilarities between issues that companies consider important and issues, which their sustainability communication actually focuses. There was an obvious lack of coherence between what the industry perceived as relevant and what was is being reported. It was discovered that findings in the sustainability reports and the survey responses did not correlate for

the most part. For example, under the economic aspect of sustainability, most organizations reported profitability as the most important issue, whereas, the survey classified infrastructure renewal/grid modernization and electricity demand/efficiency as more relevant. Another good example is the case of priority spills which though not reported on extensively by half of the sustainability communications analyzed, but was identified as the most relevant environmental issue by survey respondents. These observations raise questions on the focus of sustainability reports and the disconnect between intent and actions.

One possible explanation for this disconnect is the challenges associated with sustainability reporting process which was highlighted by Herzig and Schaltegger (2006) as they noted that companies encounter difficulties with identifying, prioritizing and analyzing sustainability issues in the reporting process, as it requires a high degree of information management and human capacity. Furthermore, the process of sustainability reporting involves various stakeholders with competing interests as well as senior management team whose buy in is fundamental to the reporting process and ultimately has the final say as to what should be included in the report based on their prioritization of stakeholders as we clearly outlined that some stakeholders have more influence than the others.

6.6 Environmental Concerns

Due to the environmental impacts of the electricity sector and its vulnerability to extreme weather events and other environmental concerns, it was expected that sustainability communications within this sector would address key concerns in this regard and provide comprehensive information on steps taken to address these

issues. This was however, not the case as observed from this research; environmental issues especially issues of climate change seem to be on the back burner of the CEA members reporting and sustainability agenda.

In fact, it was generally agreed in the survey that no CEO had climate change issue as top priority or interest on their agenda, despite the propensity of the industry to negatively impact the environment and furthermore, contribute significantly to climate change. There was also little evidence that the industry is taking any meaningful step towards addressing global warming/climate change action through majority of the report assessed and survey response. To put this in perspective, only 17% of respondent companies said they have a climate change strategy in place. Considering the huge losses recorded by the electricity sector in past extreme weather events such as the 2013 Alberta flood and 2013 Toronto ice storm to mention a few, it is surprising that priority is not given to the mitigation/adaptation of such an important issue to the sector and little is said about it in the sustainability communications.

6.7 Theoretical Application to Research

The findings as discussed above bring to perspective, the application and relevance of legitimacy theory to this research. As noted by Burlea and Popa (2013), the entire life cycle of an organization is based the organization's image. This is more relative when we consider the fact that legitimacy, as a status or condition cannot be confused with any institution because the legitimacy exists only by power of the organization's credibility and virtue (Burlea & Popa, 2013; Lindblom, 1994) . Hence

organizations seek this legitimacy and credibility by reporting on the perceived interests of their stakeholders.

Therefore, despite the quest for legitimacy and its influence on the SD reporting, organizations operate in an environment created by the stakeholders, who exert their internal and external pressures. This is why this research correlates with Burlea, & Popa's argument that "legitimacy theory, even if it is used for voluntary disclosure of social and environmental norms and values, does not have to be considered by the corporation as a panacea that solves their social and environmental problems in order to demonstrate to the stakeholders that the activity they develop is ethical and respects certain norms and values". Burlea, & Popa (2013: 1580)

This argument above also highlights the relationship between legitimacy and stakeholder theory, which were utilized to explain this research. The fact is that stakeholders exercise enormous influence on organizations. As noted by Hybels (1995: 243) "stakeholders influence organizational legitimacy by the control they exercise on the organization's activities". The idea is that "stakeholders do not confer legitimacy on an organization, but their activities are able to provide legitimacy" (Burlea & Popa, 2013:1583). The implication is that stakeholders' perceptions of the activities of any organization often align with their needs which exert the pressure on organization to meet this, which help create the necessary perception that will aid the going concern of their business. Hence, the role of stakeholders in obtaining and maintaining legitimacy is reflected in the support of organizational socially responsible practices (Mitchell, Agle, & Wood, 1997;

Suchman, 1995). Thus, legitimacy offers to an organization the right to perform its activities in consensus with stakeholders' interests (Suchman, 1995) .

The observation above helps explain why focus on certain aspects takes prominent in the report as against the survey as organizations often report on the perceived interests of their prominent stakeholders in order to maintain legitimacy, despite a different notion in terms of perceived necessities of the organization. Hence, in summary, one salient point to note is that legitimacy operates at many levels, but for an organization, it is very important to act in consonance with industry standards while also considering stakeholders' interest.

6.8 Conclusion

This research was conducted primarily to evaluate sustainability reporting and communication within the Canadian electricity sector. Through a mixed method design, the research aimed to identify key areas of strengths and weaknesses in the sustainability reports of CEA members and further determine if the reports covered issues relevant to the industry.

The main findings of this research are summarized below:

1. Sustainability communication of CEA members showed significantly greater focus on social aspect of sustainability than other aspects.
2. There is substantial variation in sustainability issues addressed in CEA members' sustainability reports and issues identified as most relevant to the companies.
3. Although CEA member companies used several mediums (such as websites, publications, annual reports) to communicate their SD initiatives,

sustainability reports provided the most comprehensive sustainability related information.

4. Sustainability reports of CEA members does not adequately reflect their commitment and interest in key issues such as climate change.
5. There is the need to incorporate strategies that integrate material issues relevant to both the organizations and their key stakeholders in the sustainability reporting process.

This research generated findings with potential applicability to other resource-based industry such as forestry, petroleum and mining who face similar sustainability challenges with respect to the three aspects of sustainability as observed in the electricity sector. This calls for the need of a holistic assessment of the sustainability reporting practices within other resource-based industry to ensure that all sustainability aspects are adequately represented in their sustainability reporting process.

Our research findings highlights the need for CEA members to create a more balanced approach to sustainability reporting with respect to the three aspects of sustainability while ensuring that material issues relevant to industry are incorporated in the sustainability reporting process. It also emphasizes the need to enhanced stakeholders engagement and inclusion to ensure that other relevant stakeholders beyond those with greater resources are captured in the reporting process.

This thesis contributes to the debate of what companies actually report versus what should be reported and also raises concerns with respect to the issues of

transparency and stakeholder needs. It also resonates with current global trend of companies' failure to fully disclose information on sustainability indicators as shown in the studies conducted by Corporate Knights Capital (2014), which revealed, "97% of companies fail to provide data on the full set of "first-generation" sustainability indicators". According to the report, only 39% of the world's largest companies currently disclose their GHGs (Corporate Knights, 2014:5).

Question about transparency, stakeholders' expectation and how companies integrate such concerns in their sustainability communications remains unanswered and this queries the application of sustainability reporting standard as projected by the GRI G4 guideline which emphasizes the need to focus sustainability reports on material issues relevant to both organizations and their key stakeholders (GRI, 2016). In other words, it is essential that organizations strike a balance between stakeholder's expectation, transparency, materiality of sustainability issues and the objectives of reporting as observed from this research. In summary, focus on materiality and the engagement/integration of stakeholders' expectations through a two-way communication is essential for creating an effective sustainability reporting process.

6.9 Direction for Future Research

Based on the observations of this research it suffices to discuss direction for further research in relation to sustainability reporting.

First, this study was limited to the electricity industry group – Canadian Electricity Association members and may not be a total representation of the entire Canadian energy sector. To this end, similar studies may be extended to the entire energy

sectors across Canada and furthermore to other resource-based sector such as mining, petroleum and forestry. Also, comparative studies of CEA and Non CEA companies could be conducted to benchmark sustainability performance of CEA members versus non-CEA members.

Lastly, the focus of this study was to evaluate how issues relevant to the electricity industry were represented in sustainability reports and determine if the key issues were well reported. This study did not, however, attempt to measure actual sustainability performance but rather, focused on how performance was reported. Though inclusive sustainability reporting may suggest better sustainability performance, this is not usually the case. In this regard, studies need to be conducted to evaluate sustainability reporting against sustainability performance; in other words, do companies who have more comprehensive sustainability report actually perform better in terms of sustainable initiatives or is sustainability reporting just a means to an end?

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APPENDIX 1: DECLARATION OF NON-DISCLOSURE

DECLARATION OF NON-DISCLOSURE

I understand that in my capacity as a research student of the School of Environment Enterprise & Development, University of Waterloo under the supervision of Dr. Blair Feltmate, I am privy to confidential information. This information includes but is not limited to survey and reports for the project titled "*Effectiveness of Sustainability Reporting the Canadian Electricity Sector*". I agree to keep all matters to which I am privy related to this studies confidential and will not reveal it to anyone outside the research team. Furthermore, all of the data generated from this study will be summarized and no individual could be identified from these summarized results

I agree that during my association with the Canadian electricity association corporate (CEA) utility members, I shall not disclose to any other person, firm or corporation, any confidential information relating to this project

I would also like to assure you that this study has been reviewed and received ethics clearance through the Office of Research Ethics at the University of Waterloo. If you have any comments or concerns resulting from your participation in this study, please feel free to contact Maureen Nummelin, Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or by email at maureen.nummelin@uwaterloo.ca

By signing and returning a copy of this document to Channa Perera, CEA Director, Sustainable Development, I confirm my understanding and acceptance of the above clause and will comply with these clauses.

Signed:

Elodie

Name (printed):

JANE CHUKWUELUE

Witness:

Hosja Adesoye Oyejunde

Date:

02/02/2016

APPENDIX 2: SURVEY QUESTIONS

Welcome to our survey

Project title: Sustainability Reporting in the Canadian Electricity Sector
Prepared for: Canadian Electricity Association Corporate Utility Members
Prepared by: Jane Chukwuelue
Date: February 2, 2016

Thank you for participating in our survey. Your feedback is important.

Please be assured that any information that you provide will be confidential. This survey will take approximately 10 minutes to complete. The questions focus on the content and style of published sustainability reports in the Canadian Electricity Sector to determine their strengths and weaknesses. The results of this study will help improve sustainability reporting standard within the industry and contribute to general body of knowledge.

Please answer all the questions provided. Should you have any question about this study, please contact Jane Chukwuelue (jchukwue@uwaterloo.ca) or Dr Blair Feltmate (bfeltmat@uwaterloo.ca).

(Use buttons at the bottom of each page to navigate throughout the survey)

1. Which of the following categories best describe your company's operations? (Check all that apply)

- Generation
- Transmission
- Distribution

2. If generation, select the main energy source that apply to your operations (Check all that apply)

- Nuclear
- Coal
- Natural gas
- Biomass
- Hydroelectric
- Solar
- Wind
- Fossil



* 3. On a scale from 1 (least relevant) to 5 (most relevant), please rate the relevance of the following environmental issue to your company's operation? (By relevance, we mean how significant an issue is for your company. The more significant an issue is to your company, the higher you would rate it).

	5	4	3	2	1
Biodiversity conservation (includes habitat protection, species conservation, land reclamation etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate Change adaptation/ mitigation (GHG reduction, carbon capture, cap and trade, tree planting etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water (water management including use, conservation, recycling etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air emissions (air quality and emission of gases such as sulphur dioxide, nitrogen oxide and mercury emissions)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Priority spills (management of spills over 500 litres which contains more than one gram of polychlorinated biphenyls (PCBs), and any volume of petroleum-based or PCB-contaminated substance that enters a water body)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 4. On a scale from 1 (least relevant) to 5 (most relevant), please rate the relevance of the following economic issue to your company's operation? (By relevance, we mean how significant an issue is for your company. The more significant an issue is to your company, the higher you would rate it).

	5	3	4	2	1
Electricity demand and efficiency (energy conservation programs, meeting electricity demand and ensuring uninterrupted power supply)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Infrastructure renewal and grid modernization (Investment in infrastructure upgrade and modern technology)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research and development (funding/ initiatives towards research projects and innovation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supply chain management (compliance of suppliers/contractors and procurement procedures to ethical standards)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Profitability (capital expenditure, investments, revenue etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 5. On a scale from 1 (least relevant) to 5 (most relevant), please rate the relevance of the following social issue to your company's operation? (By relevance, we mean how significant an issue is for your company. The more significant an issue is to your company, the higher you would rate it).

	5	4	3	2	1
Aboriginal relations (engagement and collaborations with First Nations)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community service (contributions to communities through philanthropy, volunteerism, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employee/ public health & safety (accident/ injury prevention, health and wellness promotion etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employee engagement (workforce development, training, job satisfaction, employee support programs etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stakeholder engagement (collaboration and engagement with stakeholders)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



6. Does your company have a policy in place to engage with stakeholder groups in a formal way? (This may include town hall meetings, social media, presentations, facility tours, emails, webinars etc).

- Yes
- Somewhat
- No

(please specify which medium is utilized)

7. How would you rank climate change adaptation on your CEO's agenda?

- Top priority
- Moderate priority
- Not a priority

8. Does your company have a climate change adaptation strategy in place?

- Yes, we have a climate change adaptation plan
- We are currently developing a climate change adaptation plan
- We have plans to develop one in the near future
- No, we do not plan to develop one in the near future

Comment



* 9. Indicate your level of agreement or disagreement with the following statements regarding SD reporting/metrics.

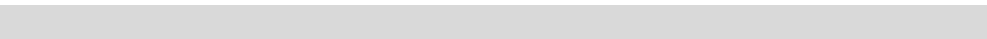
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Key SD metrics should be included in company's annual report.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In enhancing company's brand perception, SD report is more influential than annual report.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
External/third party assurance greatly improves credibility of SD reports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My company is doing an effective job in communicating its SD commitments to stakeholders.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 10. Which of the following sections of SD reports do you find most interesting? (Select the top 3)

- | | |
|--|--|
| <input type="checkbox"/> Company Profile | <input type="checkbox"/> Corporate Governance |
| <input type="checkbox"/> President/ CEO Statement/ message | <input type="checkbox"/> Key Achievements (ie awards and recognitions) |
| <input type="checkbox"/> External Assurance report/ Statement (also known as verification statement) | <input type="checkbox"/> Stakeholder Engagement |
| <input type="checkbox"/> Economic performance | <input type="checkbox"/> Material Aspects |
| <input type="checkbox"/> Environmental performance | <input type="checkbox"/> Future goals |
| <input type="checkbox"/> Social Performance | |

11. How would you evaluate the resources your company spends on SD reporting and/or communicating SD-related metrics?

- We invest too many resources on SD reporting and communication
- We invest just the right amount of resources on SD reporting and communication
- We don't invest enough resources on SD reporting and communication



* 12. Does your company develop a sustainability (SD) or corporate social responsibility (CSR) report or any form of report periodically to reflect its environmental, social and economic commitments?

- Yes
- No

13. Relative to question 12, what type of report does your company currently use to reflect its sustainable initiatives?

- Annual report
- Integrated report
- Special publications
- Sustainability (SD)/corporate social responsibility (CSR) report etc
- Other (please specify how your company reflects its sustainable initiatives)



14. Which of these statements best describes your company's situation with respect to SD/CSR reporting

- We have never produced an SD/CSR report
- We released SD/CSR reports in the past but no longer produce one
- Other (please specify)

* 15. Please select the option below that best explains why your company does not produce an SD/CSR report

- Lack of support from senior management team
- Budget/financial constrain.
- Lack of employee support
- Lack of stakeholder interest/ pressure.
- SD information is maintained internally but our company chooses not to publish it
- Concerns about how SD information may be used by competitors
- Lack of verifiable/ accurate data
- Other (please specify)



16. Please select the option that best describes the reason your company produces an SD/CSR report. By reason, we mean the incentive for producing an SD/CSR report

- It helps differentiate our company from competitors
- It helps to attract and retain staff/customers/investors
- It helps our company comply with regulatory standards
- It presents opportunities to increase revenues (by offering new products or services or by entering new markets).
- It presents opportunities to manage risk.
- It strengthens our corporate reputation.
- It supports our core values.
- Other (please specify)

* 17. Relative to audience for whom your SD report is prepared, rank the following stakeholder groups from 1 (least important) to 6 (most important). The more important a stakeholder group is to your company, the higher you would rate it).

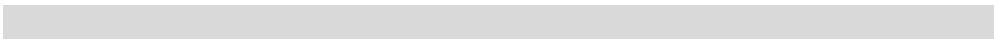
	6	5	4	3	2	1
Shareholders/ Investors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local communities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NGO's/Non profit groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Which group within your company takes the lead in preparing the Sustainable Development (SD)/Corporate Social Responsibility (CSR) report?

- Sustainability/CSR team
- External consultants
- Marketing team
- Legal team
- Communications team
- Public relations team
- Environment/Risk team
- Corporate council
- Others (please specify)

19. Does your company utilize external-third party assurance to validate its sustainability report?

- Yes
- Somewhat
- No



20. What is your company's biggest concern about developing SD/CSR reports?

- Data collection (research and compilation of accurate company data from all departments)
- Supply chain management (ensuring contractors/suppliers compliance to company's SD commitments).
- Compliance with international/industry SD standards (meeting GRI, ISO, CEA reporting standards).
- Internal stakeholder support (senior management buy-in, employee commitment to the project etc).
- Budgetary/financial constrain (cost of implication of third party assurance, external/consultant support, report publishing etc).
- Target audience (development of report to meet diverse stakeholders expectations).
- Regulatory requirements (capacity to meet/exceed industry regulatory requirements).
- Other (please specify)

21. What do you consider the top three sustainability challenges facing your company? List in order of importance

- 1.
- 2.
- 3.

22. How can SD/CSR report be improved your company?

23. Contact Information

Name of Organization	<input type="text"/>
Title	<input type="text"/>
Email Address	<input type="text"/>