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Clean, Green and Responsible?

Soundings from Down Under

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Foreword by Lips-Wiersma

I have been waiting for a book like this for a long time! This book is important because to progress the sustainability agenda, what is working but also what is not working needs to be critically assessed at a local level. Collectively, the chapters in this book show that (a) the business sector Down Under plays a significant role in causing unsustainability and (b) that over the past decade political and business mind-sets have not seen enough of a shift to be confident that a sustainable Down Under is within reach.

While almost all sustainability problems have a global reach, the extent to which sustainability is achieved is largely dependent on local action. Action is defined by a wide variety of issues that make up the local context: the types of industries determining a country's GDP, the historic forces shaping countries and communities, the political will, and the disparity between the haves and have-nots within and across local communities. Many of these issues are addressed in this book and as such will play an important role in shaping the Down Under sustainability research agenda.

The book shows that business responses to unsustainability cannot be understood in isolation. The underlying systems on both sides of the Tasman are very similar: a historic lack of a systematic approach connecting government, business, and community; current lack of cross-party collaboration in holding businesses to account; and an ongoing strong GDP reliance on large, yet currently unsustainable, industries such as mining and dairying which are closely interwoven with employment opportunities in local communities. In both these beautiful countries too, the effects of the ongoing contamination are becoming increasingly and clearly visible.

Like any good sustainability book it does a good job in balancing despair with some hope and shows that some business and communities are starting to take effective action. In addition, the book has two helpful chapters on effective teaching in business schools that are starting to take active responsibility for the sustainability mind-set of future business leaders.

The book will be a very useful resource for researchers and teachers alike.

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Marjolein Lips-Wiersma

Foreword by Bentley

Sustainability as a global challenge exemplifies the "wicked problem." With environmental and social pressures ever more challenging and globally significant, contributions such as *Clean, Green and Responsible* are most timely and welcome. It is crucial that, as with all such wicked problems and grand challenges, a joined-up, systems approach is brought to bear on the problems of sustainability and environmental pressures. This means acknowledging complexity and that changes in one area will have implications for others within our global village. It is also the case that meaningful progress in this field will require us to take learnings from across many contexts and from a range of disciplinary sources. Recognizing this, the editors have invited contributions that draw on different theoretical and disciplinary lenses and address a broad and diverse set of sustainability concerns, synthesizing theory and practice to deliver a work of both academic and practical value.

These global, societal, and environmental problems are best articulated in the United Nation's Sustainable Development Goals (SDGs). The SDGs have been with us since 2015 and are now beginning to have impact at different levels of society—including industry sectors and organizations—are the foci of this edited book. It is pleasing to see that the book's contributions cover issues related to many of these 17 goals, reflecting the broad scope of interest in sustainability and environmental challenges among Australasian and South Pacific researchers in the field. It is also pleasing to note the social sustainability and critical issues such as the necessity of decent work feature.

New Zealand and Australia face significant challenges in the setting and meeting of sustainability goals, typified at one extreme by climate change denial by one former Australian leader and at the other by the tension between the marketing mantras of "clean and green" and the realities of maintaining clean waterways in rural New Zealand. This said, there are clearly lessons to be learned from the sustainability experiences and approaches developed in Australasia, as other regions of the world have been reluctant or politically impotent in terms of taking leadership.

As the Director of Research at Massey Business School, I have noted the high number of projects that come to my attention that connect in some way with sustainability. Often these involve collaboration across disciplinary fields, which,

as I note above, I believe to be a necessary approach for dealing with a challenge of this scale and complexity. It is also pleasing to see the high level of industry engagement in this work, as researchers seek to ensure their contributions are both collaborative and impactful in the real world. This participative approach is typified in the chapters of *Clean, Green and Responsible*, making it a book that will be useful for not only students (undergraduate and postgraduate) and academic researchers but also sustainability practitioners and organization based within the South Pacific and beyond.

I conclude this brief foreword by acknowledging the important role the editors of this volume have played in the sustainability discourse in New Zealand and internationally. As a colleague for many years, I have long observed and appreciated their leadership in this field. It is also wonderful to see their commitment to the many early career researchers and doctoral students who have passed through their supervisory hands, several of whom have contributed to the book.

Tim Bentley

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Gabriel Eweje
Ralph J. Bathurst

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Chapter 1
Introduction: Clean, Green and Responsible? Soundings from Down Under—An Overview

Gabriel Eweje and Ralph J. Bathurst

Introduction

'Sustainable development' is an idea that the business sector has turned its attention to in recent years. Hidden within these two words are ethical and moral values which affect all of humanity; values which have encouraged the change of orientation for organisations, from a pure shareholder view to a wider stakeholder one. This change has been tectonic because it implies that businesses do not exist for their own sake alone but are part of the warp and weft of society as a whole. Sustainable development, therefore, assumes that growth is possible and can occur in ways which enhance human being while ensuring the survival of the planet. In sum businesses operate in both local *and* global contexts; with an eye on economic *and* social measures of success.

Taking this basic assumption, for a business to operate sustainably, it must necessarily turn its attention to issues of inequality and poverty. A business cannot be sustainable, by definition, if it does not, at its core, focus on how it may lead to economic and social uplift, where *all* citizens benefit. In response, businesses have been adopting reporting practices that demonstrate their responsibility in economic, environmental *and* social terms. Much of these changes in reporting have been driven by government policy and law, and in Australia local governments in particular have begun reporting on social sustainability variables (Williams, Wilmshurst, & Clift, 2011). Similarly in New Zealand Coalition Government led by the Labour Party and Prime Minister Jacinda Ardern have determined that for the first time in history the 2019 budget will demonstrate a commitment to social measures (Robertson, 2018). The New Zealand Treasury press release accompanying Robertson's policy document noted that "The Government is committed to

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putting people's wellbeing and the environment at the heart of its policies, including reporting against a wider set of wellbeing indicators in future Budgets" ("Budget 2019: Focus on wellbeing," 2018).

It is not surprising, then, that interest in how organisations in the private and public sectors deal with sustainability and responsibility issues has emerged as a major public concern due to high profile corporate scandals implicating social and environmental issues, as well as public utterances by some politicians across the world who are mandated to lead the discussion on sustainability. Further, sustainability and responsibility paradigms have become embedded increasingly within protocols in businesses and governments. Thus, breaches of normative standards now make the news, whether that be a car manufacturer (Volkswagen), a sporting code (FIFA), or a technology company (Samsung) to mention but the few. While perpetrators of these contraventions are penalised substantially, along with the subsequent reputational loss to the firm, it remains a mystery as to why organisations perpetuate a sustainability ideology while at the same time violating those very messages behind the scenes.

Sustainability Rhetoric in the South Pacific

Assessing the effectiveness of sustainability and responsibility models on a worldwide scale is difficult. Thus, in this edited book, we focus on the South Pacific, adopting the view that the ways in which issues have been dealt with in this more closely defined geographical area will flag similar issues across the globe. Underpinning this agenda is the notion that we are all citizens of the global village and that in our networked world, what happens in one place will have implications in other areas.

Recent changes in the political landscape in Europe, Brazil, and the USA where the President doubted the effects of climate change have implications beyond those national boundaries. For instance, Brexit in the UK has resulted in South Pacific countries (Australia and New Zealand in particular) having to renegotiate long-standing trade arrangements with the UK and other European countries; the election of Donald Trump has changed the nature of the TPPA (Trans Pacific Partnership Agreement), forcing Pacific Rim countries to reconsider agreements which exclude the USA. In addition, the new elected Brazilian President, Jair Bolsonaro has promised to pull Brazil out of Paris Agreement, and halt regulations that protect indigenous lands as well as opening the Amazon rainforest for economic exploitation. These immediate responses to political changes in the northern hemisphere and Brazil will have a transforming effect on the educational, political, economic, environmental and social landscape in the South Pacific. One development is the reorientation of government policies around business and financial goals, sometimes in denial of scientific evidence which shows those goals to negatively impact on environmental sustainability.

New Zealand and Australia are considered as countries whose sustainability and responsibility discourse are pursued by governments and business where incentives and initiatives help confront and resolve sustainability challenges. But what, for instance, of the marketing mantras of New Zealand "100% clean and green", and of Australia "clean and green", especially when many waterways are unsafe for swimming? How has government policy impacted on this problem beyond merely changing the reporting thresholds which deem a waterway to be 'clean'?

Former New Zealand Prime Minister, Helen Clark suggested in 2006 that New Zealand should aim to be the first country which is truly sustainable. In contrast, the former Australia Prime Minster Tony Abbot in 2010 asserted that the "climate change argument is absolute crap, however the politics are tough for us because 80% of people believe climate change is a real and present danger" (Rintoul, 2009). Additionally, there is confusion regarding occasional government and business sectors publicly committing to social, environmental and economic change. This begs the question: in the absence of global leadership, how can Australia and New Zealand lead the world in sustainability and responsibility values?

It is noteworthy to mention that in both Australia and New Zealand are ranked 20th and 22th on progress towards the Sustainable Development Goals (Thwaites, 2016).

In October 2017, 60 CEOs from the New Zealand business sector formed the Climate Leaders Coalition. It's single page manifesto dubbed the *2017 Climate Change Statement* highlights and affirms perhaps the single most important factor contributing to global warming: greenhouse gases released into the atmosphere through human actions whether they be industrial or personal activities ("Climate leaders coalition," 2018). The manifesto is aspirational and practical in that it both argues for a prosperous future by reducing carbon emissions, and supports New Zealand's commitment to the December 2015 Paris Agreement.

Perhaps most surprising is the statement: "We support introduction of a climate commission and carbon budgets enshrined in law". Here they propose a partnership with the Government to work together to reduce greenhouse gasses and advocate for legislation to mandate that companies create carbon emission policies and practices. This is a rare gesture given the often-uncomfortable relationships between governments and the corporate sector.

The Climate Leaders Coalition is calling for other leaders to join with the purpose of dedicating considerable resources, expertise and funding towards projects which centre around solutions-driven thinking. They hope that this collective purpose will drive innovation and improve business prospects across the globe. It is hoped, therefore, that the Coalition will see businesses not only attending to their financial bottom lines but also to their social responsibilities.

While Australia and New Zealand are not leading the world in terms of discussion and initiatives around the UN Sustainable Development Goals (SDGs); the above illustration on the climate leaders' coalition indicates that NZ is beginning to show some commitments to climate change. Also, the Modern Slavery Act (2018) in

Australia is a commitment to eliminate the exploitative practices of modern day slavery in supply chain risk and responsibility. The act "establishes a Modern Slavery Reporting Requirement to require certain large businesses and other entities in Australia to make annual public reports (Modern Slavery Statements) on their actions to address modern slavery risks in their operations and supply chains".

Although we wonder why it has taken until now for the business sector to acknowledge that the future of the planet is at stake and that the corporate sector has a significant role to play in ensuring that life on Earth is sustainable for succeeding generations, we do applaud these initiatives.

Bob Doppelt (2003) in his *Leading Change Towards Sustainability* text would concur that leaders need to work together to solve the pressing problem of climate change. However, he would disagree with the focus on innovative practices. He observed that most organizations focus on the 'what' rather than the 'how' and this ultimately limits their ability to make any substantive changes. He argues for deep cultural change as the precondition for any significant moves towards ensuring sustainable development. Furthermore, he claims that leaders themselves are unable to grasp the need for significant structural change because of their unwillingness to move beyond chain-of-command hierarchic organisational structures.

Doppelt does not pull any punches and writes:

> Our current economic system is fundamentally linear in nature. It focuses on producing products and services and delivering them to the customer in the fastest and cheapest way possible. Not much else matters. Humans extract resources from the Earth's surface, turn them into goods, and then discharge the massive amounts of often highly toxic waste the system generates back into nature as either air, water and soil pollution or as solid, industrial and hazardous waste. After two hundred years of experience with the straight-line 'take-make-waste' production system, it has become firmly embedded as the dominant economic paradigm in the psyches of most Westerners. (p. 16)

To undertake deep cultural change, Doppelt urges transformational change at both governance and leadership levels of organizations. In doing so he pleads for dispersed decision-making throughout enterprises rather than continuing the traditions of top-down command and control processes. What is required is fundamental change in the world-views of leaders and governing boards (Brown, 2012) and for them to adopt an optimistic future orientation that seeks solutions at organisational level which will impact significantly on the rest of society.

In Australia, there are evidences of a significant ground swell from ordinary citizens to address climate issues. The Australian Youth Climate Coalition (2018) (AYCC) is "Australia's largest youth-run organisation" and reportedly has some 150,000 members. Similarly, the Climate Action Network Australia proposes that significant climate change will occur through "a diverse network with distributed leadership that links people and organizations" (CANA, 2018).

These Australian initiatives come closer to Doppelt's advocacy for deep cultural change, because they challenge and transform ingrained belief systems.

About This Book

With growing public interest and concern about sustainability and responsibility around the world, this book offers conceptually and empirically how businesses and organisations Down Under committed to sustainable business practices. With historical and current issues discussed, this edited book is a 'must have' for business practitioners, policy makers, supranational organizations' experts, academics, students, and those interested in CSR and sustainability. This text will particularly appeal to undergraduate and graduate students, and scholars interested in new perspectives in the sustainability debate. It will also appeal to sustainability directors and practitioners, especially those concerned with the environmental and social impacts of their business and organizations.

Overview of the Contents

This edited volume focuses on issues of sustainability and responsibility in the Australasian context. Kaz Kobayashi, Shobod Nath, Michelle Sitong Chen, and Josephine Malenga in Chap. 2 examine how New Zealand businesses are progressing toward 'Decent work and inclusive growth' which is one of the goals set in 2030 Sustainable Development Agenda. They look at changing demographics, markets, rules and norms that are affecting businesses, using the construction and service sectors as illustrative examples. Further, they examine how, under such an evolving context, the New Zealand businesses are progressing, and presents an analysis of overall progress for inclusive and sustainable economic growth based on recent statistics, reports, and academic literature. Their analysis suggests that while there are areas of progress, there are also troubling areas with limited or no evidence of progress.

Ashleigh Gay in Chap. 3 examines the conventional models of sustainability in corporate Australia such as Corporate Social Responsibility (CSR). She argues that these models are not driving the level of change required to achieve a sustainable future. The chapter includes a discussion on the sustainable development challenge, and the potential role for businesses to shape a sustainable future and the strengths and weaknesses of the current approach adopted by businesses. This chapter then explores three emerging trends that draw on best practices from the UK and European markets, suitable for an Australian context, that are addressing some of the common shortfalls of corporate sustainability: including redefining the purpose of business, putting sustainability at the core of the business models and realising the UN Sustainable Development Goals.

In Chap. 4 Peter McGhee and Patricia Grant discuss 'Educating for sustainability-as-flourishing' where they share experiences and insights from an undergraduate sustainability course for business students designed to encourage behavioural, cultural, and institutional change. They argue that education must develop higher-order

dispositions, a kind of sustainable 'habits of the mind' towards environmental, social, and economic justice. To them, this is important since what business students do is informed and shaped by their view of reality, and this is informed by their ways of knowing and a sense of purpose.

Lynne Eagle, Breda McCarthy, Rachel Hay, Amy Osmond and David Low in Chap. 5 explore the role that universities are expected to play in addressing sustainability-related issues, noting a lack of agreement on definitions for key terms and on the most effective way to include relevant content within the curriculum. They suggest that these debates need to be seen within the context of calls to ensure that graduates are 'work ready'. The chapter discusses a multi-phase study by an Australian regional university that has made significant investment in integrating sustainability into all subjects within undergraduate business degrees. They conclude that with a discussion of strategies for ongoing fine-tuning of business curricula and for ongoing engagement with current and prospective employers regarding sustainability-related issues within the wider context of equipping graduates with the skills and abilities valued by prospective employers in a rapidly changing workplace.

In Chap. 6 Majid Khan and James Lockhart discuss the changing role of business in society within a New Zealand context. The chapter highlights the premise that academics in management and organisation share the assumption that the task of government is to provide their respective society's public goods, while the business of the business community is to do business—with shareholder primacy being central to free enterprise. They argue that this trend is changing and many companies have started to embed reporting initiatives, and social and environmental responsibilities that go beyond the minimum legal requirements of corporate governance and what is viewed as corporate social responsibility (CSR). They postulate that in order to better understand CSR in a nation state, it is important to learn of the underlying peculiarities of the institutional environment in that country.

Breda McCarthy, Lynne Eagle, Hayden Lesbirel, Amy Osmond and David Low in Chap. 7 examine consumers' attitudes towards climate change and energy resources along with their electricity consumption practices in the home. The discussion is situated within the wider context of sustainability. The chapter shows that survey participants attach importance to minimizing electricity usage in the home and the adoption of roof-top solar systems is related to age, education, political affiliation and home ownership. They further suggest that there is a divergence in attitudes towards the use of fossil fuels as a source of electricity generation, however patterns of electricity consumption in the home are quite similar across the sample. Recommendations, therefore, focus on behavioural modifications to reduce electricity use during peak demand and encourage the installation of electricity-saving devices in the home.

Yue Wang in Chap. 8 investigates the impact of climate-related actions on sustainability in Australia and New Zealand, and discusses practical solutions to global climate change challenges at corporation level, by applying an integration of economic analysis and interview surveys. She concludes that implementing climate-related policy provides a motivation of sustainability development in Australia and

New Zealand, for instance, more afforestation and renewable energy use occur under the existing climate change initiatives. Although the policy leads to a reduction in GDP and wage due to emerging emissions cost, it will expand the volume of exported goods, increase energy efficiency and business sectors' social responsibility.

In Chap. 9 Valerie Dalton and Ray Cooksey explore Sydney Theatre Company (STC), Australia's best-known theatre company, achieving a stronger global presence under the co-artistic direction of Cate Blanchett and Andrew Upton in the period 2008–2012. This case study explores the organisational change that STC went through during the Greening the Wharf (GTW) project and assesses its impact on the long term sustainability of STC's processes and practices, arguing that they have become a sustaining organisation. The chapter demonstrates what is possible in terms of creating sustainable public infrastructure in a heritage listed building and is an exemplar of a very successful organisational change for ecological sustainability, underpinned by a strong commitment to human sustainability.

Jarryd Daymond and Philippe Coullomb in Chap. 10 take a critical look at a co-constructed autoethnographic exploration of tensions in a cross-sector collaboration. Thus, they ask the question: What can be learned from existing climate improvement initiatives so that we can start achieving more from our efforts to improve the climate? Their autoethnographic narrative of the cross-sector collaboration reveals several tensions which accompany largescale climate initiatives. They argue that cross-sector collaborations are marked by power machinations and competing tensions of unity versus diversity, trust versus control, autonomy versus dependence, stability versus flexibility, inclusivity versus efficiency. They conclude that transitioning to a low carbon economy is a slow process but driving systemic climate action requires momentum and building a groundswell of support, which the dualistic strategy of big and small "wheels" of the collaboration seemed to support.

Aymen Sajjad in Chap. 11 examines the notion of green supply chain management in the New Zealand business context. The chapter illustrates that firms have acknowledged the significance of greening the supply chain activities and are seeking ways to integrate green practices across their supply chain networks. Yet, despite this emergent trend, unfortunately, a majority of firms lack a systematic approach by which green practices are effectively embedded in their supply chains. To address this issue, the chapter introduces the best practices framework for greening the supply chain. The framework identifies and explicates the key green supply chain management strategies that can be employed in a firm to improve its economic, environmental and operational performance as well as business value amongst its stakeholders.

In Chap. 12 Kumudini Heenetigala and Anona Armstrong focus on sustainable reporting in Australian mining companies. The purpose of their chapter is to determine why mining companies adopted sustainability reporting, what mining companies report as 'sustainability', what actions mining companies take, and whether they engage with their stakeholders. They argue that the adoption of sustainability measurement gives some support to the premise that companies have a social contract with their stakeholders, underlying social contract, stakeholder and

legitimacy theories. They suggest that companies are increasingly engaged in implementing strategies to reduce environmental risks. Their chapter confirms that 90% of the companies in the study are engaged in community activities that supported the economic and social growth of their communities; despite some significant environmental disasters that occurred when communities were damaged by the failure of corporations to take responsibility for the environment.

Breda McCarthy and Lynne Eagle in Chap. 13 using a case study of Queensland, Australia, examine documents at both State and Federal level to ascertain whether key stakeholders, such as mining, business, utilities and the energy sector, are concerned with, and effectively planning for, a renewable energy transition. They highlight the assumptions, narratives and tensions that underlie an energy transition. As a theoretical basis for their study, the lens of 'social acceptance', including socio-political, community and market acceptance, is employed. Their study evaluates social acceptance of renewable energy on a continuum ranging from 'not accepted', 'moving towards acceptance', and 'high acceptance' where responses are progressive and innovative. The chapter indicates that there is a certain level of social acceptance for an energy transition. Key stakeholders—mining, utilities, energy and the business sector—support an integrated climate and energy policy to help Australia meets its commitments under the Paris agreement.

In sum, this book brings together cases from both sides of the Tasman and is a resource for businesses as they seek to embed sustainability practices within their enterprises. The time for the fulfilment of the SDGs is fast approaching. These goals are not aspirational puffery but measurable outcomes which will ensure a prosperous future for all citizens of planet earth.

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Ralph J. Bathurst Lectures in management and leadership at Massey University, Auckland New Zealand. Ralph's PhD from Victoria University Wellington is in organisational aesthetics, which is an ethnographic study of a symphony orchestra. Given the inseparable links between art, aesthetics and community formation, his background as a music educator and orchestral musician informs his interests in sustainability and CSR. Ralph is the academic coordinator of Massey's Master of Advanced Leadership Practice (MALP) and publishes in journals such *Leadership*, *Journal of Management Inquiry* and *Organizational Aesthetics*.

Chapter 2
Decent Work and Economic Growth: Is NZ Business Progressing Well?

Kaz Kobayashi, Shobod Nath, Michelle Sitong Chen, and Josephine Malenga

Introduction

In 2015, Sustainable Development Goals (SDGs) towards 2030 were adopted by the United Nations General Assembly (UNGA). Goal 8 of this agenda addresses the issues of 'Economic Growth' and 'Decent Work' under the banner of 'Sustainable Development.' The goal is aspirational; it aims to uphold sustainable development through "sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (UNGA, 2015, p. 14). This goal is, for the International Labour Organization (ILO), a key to sustainable development as it is a critical driver of multiple other goals in SDGs (ILO, 2017).

Goal 8 tests our understanding of economic and social dimensions of sustainable development. 'Economic growth' is a well-established concept based on economics perspectives that are centuries old, while 'decent work' is relatively new with only two decades of conceptual development mainly in the labour movement. With these two diverging roots coming together, this juncture is drawing growing attention and interest. For instance, in the presentation of the OECD Economic Survey of New Zealand 2017, the OECD chief economist Catherine L. Mann and New Zealand's then Minister of Finance Steven Joyce stated that NZ's robust economic growth and high levels of well-being are enviable among OECD countries, but the challenge is to make the growth greener and more sustainable (OECD, 2017b). In particular, they suggest enacting reforms to improve productivity, and to include the future generations in their measures of prosperity.

The nature of growth has drawn attention from the business investment community. JBwere, a leading NZ stock broker, claimed that the economy is in productivity recession for 5 years failing to create wealth (JBWere, 2017). According to the head

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of strategy, while this trend has been a common feature across OECD economies, the issue is more acute in NZ as its economy has relied on more people working extended hours but without achieving productivity gains. For this reason, the broker firm predicted a long period of low returns and recommended clients to reduce their exposure to the NZ equity market. Further attention came from within the labour movement. In its report *Under Pressure: Insecure Work in New Zealand* (2013), the New Zealand Council of Trade Unions (NZCTU) painted an alarming picture for increasing population in insecure work. The then President of the NZCTU Helen Kelly claimed that, despite a trend of economic growth, increasingly New Zealanders have been under pressure from the insecurity of employment, such as not having definite hours of work, or the protection of pay and conditions. The report estimated 30% to potentially more than 50% of the workforce is in such a vulnerable position.

Despite increasing concerns, the overall investigation on decent work in New Zealand context has been limited, except for country review based on a few indicators (Ghai, 2003; Kroll, 2015) or specific work-related issues such as work-intensification (Marky & Boxall, 2008) and work-life balance in New Zealand (Wilkinson, 2008). In light of this gap, based on available statistics, this chapter broadly explores the progress of New Zealand businesses towards Goal 8 of SDGs, namely decent work and economic growth. Hence, our question: '*Is NZ business progressing well towards Goal 8 of the SDGs*?' To address this question, we first review the concepts included in the goal. We then lay out a model framework to identify the elements that affect the achievement of Goal 8. We then draw on the available statistics to assess progress towards achieving the Goal and discuss the dynamic of elements of the model and accompanying statistics. We conclude with a summary of our findings.

SDG 8: Decent Work and Economic Growth

The concept of decent work emerged in the global policy arena in the last two decades. The concept was formally incorporated into Millennium Development Goals (MDGs) framework in 2000 as well as the ILO Declaration on Social Justice for a Fair Globalization in 2008 (MacNaughton & Frey, 2015; UN, 2008). Prior to the adoption of both SDGs and MDGs, ILO proposed the concept in their 1999 Decent Work Agenda. The concept was originally described as "opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security and human dignity" (Somavia, 1999, p. 3). In particular, the Agenda distinguished four pillars of decent work: rights at work, fostering employment, social protection, and social dialogue (Ghai, 2003).

These pillars represent economic and social wellbeing of workers. The first component of 'rights at work' comprises fundamental rights of workers, including freedom of association, non-discrimination in work, and the absence of forced labour and child labour in abusive conditions (Somavia, 1999). The second pillar of

'fostering employment' means promoting full employment with adequate opportunities and remuneration, for all the kinds of work that contribute to society, including self-employment, informal paid work, and non-paid family work (Frey, 2017; Somavia, 1999). The third pillar, 'social protection', embodies the effective social security in cases that prevent a person from working and gaining a stable income, such as aging, sickness, disability, and unemployment (Frey, 2017). It also embraces safe and healthy working conditions. The fourth pillar, 'social dialogue', involves consultation and negotiation among workers and their employers at all levels, from the enterprise to society at large (Frey, 2017; Somavia, 1999).

The joint application of decent work and economic growth requires further linkages between economic and social wellbeing. Economic growth is a well-defined concept referring to an increased financial prosperity of the organization or (Klasen, 2010). However, the difficulty with pursuing economic growth alone is that "it is neither automatically inclusive nor sustainable" (Kroll, 2015, p. 68). In other words, economic growth, social wellbeing, and sustainable development are not in a linear, cause-effect relationship. For instance, financial growth may generate work opportunities, but it does not guarantee equal access to work opportunities. In this sense, one critique for SDG 8 is that it does not clarify the relationship between these elements. More specifically, Frey (2017) criticizes SDG 8 for mixing economic growth, human rights, and decent work without specifying the means and ends of how development might occur. This criticism is consistent with the claim that the economic growth is not an end in itself; but a means to accomplish human rights and human development (Drèze & Sen, 2002). The challenge is, therefore, to understand and sustain the relationship between economic and social wellbeing. This puzzle continues to trouble policymakers, scholars, and businesses worldwide.

One concept that helps our understanding of this puzzle is the notion of 'inclusive growth', which may be described as "non-discriminatory growth that grants equal nondiscriminatory access to growth, plus disadvantage-reducing growth (i.e., reducing disparities of disadvantaged groups)"(Klasen, 2010, p. 3). In the similar vein, Ali and Zhuang, (2007, p. 12) suggested that inclusive growth concentrates on both generating "equal opportunities and ensuring equal access to them." These descriptions underscore two necessary aspects: economic growth and social inclusion.

Nonetheless, the concept of the decent work, although aspirational, has remained premature. According to Burchell, Sehnbruch, Piasna, and Agloni (2014), decent work is vague and confusing because of "the lack of availability of internationally comparable data, the control over the research agenda by partisan social actors, and a prematurely mandated definition of Decent Work" (p. 459). Consequently, the consensus is still lacking regarding appropriate measurement (Sehnbruch, Burchell, Agloni, & Piasna, 2015). For example, the ILO identified 29 indicators of measuring the decent work in its 2001 report of the International Labour Conference, while another ILO report in 2008 proposed a set of 31 indicators to measure the decent work (ILO, 2008; Sehnbruch et al., 2015).

These fragmented indicators of decent work are complex to operationalise. This is because the more indicators that are included to accommodate diverse institutional interests, the more tangled the operation becomes (Sehnbruch et al., 2015). For

instance, based on in-depth exploration from a critical discourse analysis of ten policy texts, Di Ruggieroa, Cohenb, Colea, and Formanac (2015) shows that diverse health, economic, and social claims are included from the policy agendas of the ILO, World Health Organization, and World Bank. Some of the emergent issues include the complex association between decent work and health equity notions; financial and pro-market interests versus the social aspects of work (Di Ruggieroa et al., 2015). Also, Teichman (2016) pointed out that some key measurements are missing, such as precarious, low-paid employment for women, youth, or other members of the society. Thus, decent work remains "a contested notion" which is difficult to operationalize, due to diverse institutional perspectives and interests (Di Ruggieroa et al., 2015, p. 120).

Despite this difficulty, several scholars have defended the potential of the decent work concept. Ghai (2003) argued that the purposes of decent work are universally valid; however, it requires the careful contextual adjustment of the institutions, instruments, and procedures to accomplish these objectives. In the similar vein, (Di Ruggieroa et al., 2015) argued that there are contrasting dialogues on decent work in different economies, because each power relation shapes how the concept is understood. In this regard, the inclusion of the "physiological dimension" is considered useful, implying sense and meaning to decent work in a particular context (Ribeiro, Silva, & Figueiredo, 2016, p. 4).

In summary, the UN's SDG 8, although noble, presents significant challenges. The concept itself is vague and confusing; its indicators remain fragmented with a lack of consensus; and the premature inclusion of economic growth in SDG 8 may obscure other social and human development goals. Despite these challenges, the ILO regards SDG 8 as a key to sustainable development because it is not just one goal, but an essential driver of other SDGs (ILO, 2017). In particular, the SDG 8 contains 12 specific targets and 17 indicators, in which some address decent work while the others address economic growth (Frey, 2017; UNGA, 2015).

Thus, 'Decent Work and Economic Growth' has emerged as one of the crucial sustainable development goals for contemporary businesses. Just as for all the other OECD countries committed to SDGs, it presents a challenge for New Zealand, given its claim to be a "clean, green, and responsible" country committed to sustainable development. New Zealand business recognizes this challenge more than ever: SDG 8 is regarded as one of the top SDGs priorities, according to the Annual Review of the State of CSR in Australia and New Zealand 2017 (ACCSR, 2017).

Model Framework

In this section, we lay out a model to frame our understandings of progress towards Goal 8. We draw on institutional theory, which views organizations within their broader context. This contextual perspective helps examine not just where businesses are at currently, but also where they are heading in the future. The model is summarized in Fig. 2.1. It shows that NZ businesses are affected by multiple

Fig. 2.1 Model framework. Adapted from Parker (2002) and Matten and Moon (2008)

contexts: the national institutional system (Whitley, 1999), the global institutional structure (Brammer, Jackson, & Matten, 2012; Vogel, 2010), and macro forces (Dacin, Goodstein, & Scot, 2002; Powell & Colyvas, 2008). Furthermore, it locates economic growth and decent work at the interface between business and society (Brammer et al., 2012); that is, it is neither a goal that companies alone can achieve internally nor that governments can regulate externally. Rather, success sits on the approaches by both companies, state, and other relevant actors, that are constituting this dynamic institutional context (Parker, 2002). The following sections elucidate each context identified in this model.

The first context affecting Goal 8 is the national institutional system (Whitley, 1999), which includes political, financial, education and labour, cultural systems, and markets in the nation (Matten & Moon, 2008; Whitley, 1999). One of the most influential actors in this system is the government, which assumes public responsibility in exercising coercive forces through laws and regulations, by engaging with other actors (such as trade unions and businesses) to promote national strategies and policies. A fundamental coercive force is represented by laws and regulations governing the working conditions in NZ, such as the Employment Relations Act 2000 and its subsequent amendments. Concerning national strategy for economic growth, the NZ government has instituted the Business Growth Agenda (BGA) which aims to build a more productive and competitive economy, supported by "inclusive and sustainable growth with the benefits shared by all New Zealand's people and regions" (Ministry of Business Innovation and Employment, 2017a, p. 8). It supports New Zealand businesses to grow, create jobs, and improve living standards (New Zealand Productivity Commission, 2016).

While acknowledging progress, the recent review indicates areas for further improvement in the future. According to the review by Ministry of Business Innovation and Employment (2017a), although NZ has enjoyed positive growth in

average income since the 2008 global financial crisis, persistently weak labour productivity is holding the economy back. Thus, the focus now needs to be on lifting productivity, as a decline in labour force participation is expected due to the ageing population. Accordingly, the report advocates measures such as lifting the skills of migrants, promoting competition in the services sector, and improving housing infrastructure for people to live where their skills are most valued. It is important to note that underlining these areas is demographic changes, as they affect the nature of labour force on which the growth rests. Thus, NZ employment law, the national growth strategy, and underlying demographic changes were identified as potential elements constituting the national institutional system concerning economic growth and decent work.

The second context affecting Goal 8 is the global institutional structure, which consists of actors and forces operating beyond the national institutional system. This structure includes trans-national organizations such as the ILO, the United Nations (UN), as well as global companies and NGOs (Matten & Moon, 2008; Vogel, 2010). One of the most influential actors in this structure, concerning Goal 8, is the United Nations. While the UN SDGs were unanimously agreed among member nations, the goals are non-binding and non-coercive (UN, 2017). This means that each national government and businesses are expected to commit and promote the goals, but with no punishment mechanism for non-compliance (New Zealand Ministry of Foreign Affairs and Trade, 2017). In other words, Goal 8 is a 'private regulation' without coercive force (Vogel, 2010), and the UN in combination with the ILO exercise non-coercive pressure both for the national government and businesses to attain the goals.

Macro forces compose fundamental drivers that can transform the shape of an institution (Dacin et al., 2002). These forces are often neglected but are vital when considering institutional contexts, for, as Powell and Colyvas (2008) maintain macro forces such as globalization can be "profoundly destabilizing to local orders and individuals", and it is "a mistake for institutional analysts" to neglect changes in the macro forces (p. 278). One such macro force concerning Goal 8 is an increase in non-standard employment (such as part-time employment and temporary work), which is alternatively called insecure work or precarious work, that is insecure and poorly paid than standard employment (Fudge & Owens, 2006). This form of work grew dramatically over the past decades driven by factors such as globalization, increased connectivity by technology, and the shift from manufacturing to the service sector (Fudge & Owens, 2006; NZCTU, 2013). The growth in precarious work is observed globally and in NZ, affecting working conditions profoundly (Groot, Tassell-Matamua, Van Ommen, & Masters-Awatere, 2017). Thus, globalization, technologies, sectors, and erosion of standard employment arrangements, and the growth of precarious work are identified as factors constituting the macro forces affecting 'Economic Growth and Decent Work.'

In sum, this model framework locates NZ business in three institutional contexts. First, in the national-level context, the government initiates growth strategies and labour regulations, which are underlined by demographic trends and policies. Second, at the global level, the UN and ILO exercise non-coercive pressure for the

national government and NZ businesses. Third, at the macro level, erosion of the standard employment and growing precarious work exerts a pressure to NZ business and workers. This model framework indicates that the trends observed in NZ businesses, such as weak labour productivity, more extended working hours, and increasing income gap, are consequences of approaches taken (or not taken) by actors in these contexts.

Fragmented Progress in NZ

In this section, we draw on the available statistics to review the progress of New Zealand business towards achieving Goal 8. We first examine economic growth, and then decent work according to its four pillars. More specifically, this paper investigates a broad range of indicators of economic growth and decent work pillars such as health and safety, employment rights and opportunities, minimum wages, long working hours, labour participation, high-involvement and productivity and draws fragmented but reasonably holistic picture based on available secondary data. In this review, the construction sector, one of the largest sectors in NZ with rapidly growing demand, was used as an example to illustrate the progress and challenges. The review shows that, despite the relatively strong economic growth and protection of workers' rights, the picture of progress in decent work and inclusive growth remains fragmented in New Zealand. It also indicates the need to pay more attention to certain sectors, such as construction sector, which are vulnerable to change forces either at macro, international and national level.

Economic Growth

New Zealand's economic growth prospects seem positive, especially given that over the last 30 years, NZ economy has shifted from being one of the most regulated in OECD to one of the least regulated, and most free-market-based economies (Immigration New Zealand, 2017). In the last 15 years, the economy has grown by 3–3.5% each year, except for periods of slow-down due to the global financial crisis in 2008. The prospect for the next few years is positive with roughly 2.5–3% annual growth expected (ANZ Business Outlook, 2017; OECD, 2017b). The mainstay of this growing economy is supported by traditional primary industries, including agriculture, horticulture, forestry, mining, and fishing contributing about half of NZ's total exports (The Treasury of New Zealand, 2016). Another growing industry is construction, the 5th largest sector in the economy, which is in a period of unprecedented demands for housing and infrastructure in Auckland, the largest population centre and Christchurch because of the need to rebuild that city after several devastating earthquakes in 2010 and 2011 (Ministry of Business Innovation and Employment, 2014; Work Safe New Zealand, 2015). The growth prospect for NZ

economy is further supported by a positive outlook for sizable manufacturing and service sectors, including emerging high-tech, tourism, and film sectors (Ministry of Business Innovation and Employment, 2014). As a whole, this paints a picture of on-going economic growth in NZ.

Decent Work

Prospects for decent work seem positive on the surface; and yet, closer scrutiny shows a fragmented picture of progress and some areas with limited or no evidence of progress.

Pillar 1: Rights at Work

Regarding rights at work, prospects seem positive for full-time employees. The cornerstone for this pillar is the government's policies and regulations to protect worker's basic rights (Employment New Zealand, 2016a). One of the developments in the past few years is identified in the area of *health and safety*. For instance, the health and safety reforms in 2016 advocated for the right of the employees to refuse work if they deem that the work would expose them to a serious risk; employers are prohibited from discriminating against employees due to their involvement in work health and safety actions. The reform also extended parental leave up to 18 weeks, which allowed more workers to remain in employment while fulfilling family-care obligations. These improvements were intended to ensure more flexibility, certainty, fairness, and power to enforce minimum rights in employment (Employment New Zealand, 2016b).

Despite these coercive forces to protect employees' rights, the picture of progress is unclear under scrutiny. For instance, some industries continue to have high health and safety concerns. According to Ministry of Business Innovation and Employment (2014), industries such as forestry, fishing, and construction are classified as high-risk due to *higher fatality rates* than other sectors. In the construction industry, for instance, there were 68 fatal accidents between 2008 and 2014, caused by vehicle accidents and falls from great heights. Also, exposures to dust, asbestos, and other airborne substances such as silica caused an estimated 185 deaths and 731 hospitalisations in 2010. As national growth strategy pointed out, demographic changes, including immigration, is behind the growing demands for construction work. From the model framework perspective, this growing demands could put pressure on the workforce of construction industry. Thus, particular attention must be paid to these high-risk industries as their workforce is vulnerable to increasing market pressure, triggered by national policy. Furthermore, the New Zealand Council of Trade Unions (2013) claims that NZ employment protection remains relatively limited. For instance, according to OECD, NZ has the fourth lowest levels of

protective regulation in the OECD relating to temporary contracts, including the lowest level of regulation on temporary agency work.

Pillar 2: Fostering Employment

The prospect also seems positive concerning *employment* and *labour participation*. As of September 2017, the unemployment rate recorded 4.6%, the lowest since the end of 2008 (Statistics New Zealand, 2017). Also, the labour participation rate, which is a total number of people in the labour force (employed or unemployed) divided by the entire working-age population, slowly grew over the past decade, reaching the highest 71.1% in 2017 (Statistics New Zealand, 2017). This rise in the labour participation rate reflects the rise in the participation rate of older workers and the population of 25–34-year-olds. This high labour force participation, coupled with high levels of net migration, is considered to sustain continued strength in labour supply to meet growing economic demands (Ministry of Business Innovation and Employment, 2017b).

Despite this positive outlook of labour participation, progress is less clear in terms of *labour productivity*, which measures how efficiently inputs are used to produce outputs. Driven by economic growth, labour productivity has grown at the average of 2% from 1987 to 2015 (Statistics New Zealand, 2015a). However, NZ labour productivity ranks among the lower third of OECD countries, slowly expanding a gap with leading economies for the past 40 years (New Zealand Productivity Commission, 2016; OECD, 2017a). In comparison to its closest counterpart, Australia, NZ labour productivity is lower by 30% (Mason, 2013), even with the similar pattern of employment growth.

This lagging labour productivity links with another concern: *long working hours*. A study showed that New Zealanders work about 15% longer than the OECD average to produce about 20% less output per person (New Zealand Productivity Commission, 2016), while about a quarter of workforce works longer than 45 hours a week (Statistics New Zealand, 2013). Labour productivity and long working hours is a concern for the growing construction industry, which employs 7.6% of the workforce (Ministry of Business Innovation and Employment, 2014). For instance, labour productivity in the industry has been declining for the last two decades, with $34 per hour worked in 2010, significantly below the all-sector average of $48 per hour worked (Ministry of Business Innovation and Employment, 2013, 2014). This lower productivity is linked with more extended working hours in comparison to other industries, which results in problems such as lack of rest, social life and time with children (Morrison & Thurnell, 2012; Wilkinson, 2008). These issues may lead to an inability to attract and retain talented employees, which in turn lowers productivity of the workforce (Townsend, Lingard, Bradley, & Brown, 2011).

While the more extended hours are increasing concern for full-time employees, part-time employees face challenges associated *insecure work*. New Zealand Council of Trade Unions (2013) defines insecure work as "any job that denies workers the stability they need for a good life and reduces their ability to control their own work

situation, with damaging consequences for them, their families and their communities" (p. 2). These precarious workers were in various forms of temporary employment; or in permanent employment with a mid-to-high chance of job loss the next year; or unemployed, making up 28.6% of the employees and self-employed in the labour force in 2012 (NZCTU, 2013). Since this number excludes the most at-risk self-employed such as dependent contractors, it is estimated that at least 30%—and potentially 50% or more—of New Zealand's workers are in insecure work (NZCTU, 2013).

This pillar of fostering employment is particularly critical in achieving other goals, such as *poverty* (Goal 1), *gender equality* (Goal 5), and *inequality* (Goal 10). Inequality is a growing problem in most of OECD countries, including NZ, as shown in the ever-increasing gap between the richest and poorest 10% (Kroll, 2015). Also, while absolute poverty concerns developing countries, relative poverty remains to be a concern in OECD countries with an average poverty ratio of 11.5%. The poverty ratio is the ratio of the number of people whose income falls below the poverty line, defined as half the median household income of the total population. NZ recorded a poverty ratio (9.8%), ranking 15th out of 32 countries.

In addition, Kroll (2015) reports an alarming trend of *youth inequalities* in education: NZ ranks 32nd among 34 OECD countries on the PISA index of economic, social and cultural status, which reflects how inequalities in socioeconomic background impact on student educational success. The low score suggests that there are more gaps in educational achievement among people of different socioeconomic background in comparison to other countries. As students become the future workforce, this gap in education may eventually lead to gaps in employment. Furthermore, concerning *gender inequality*, there remains a gap between male and female average salaries: a typical female earned about 12% less for an hour's work than a typical male in 2015 (Statistics New Zealand, 2015b). This gender pay gap in New Zealand is considered as one of the narrowest among the OECD countries (Kroll, 2015); yet it continues to be an area that needs further progress from the decent work perspective.

It is pertinent to note that the nature of the gender gap varies among categories and industries. For instance, in the construction sector, the mean hourly earnings for women were higher than for men in 2015, suggesting that women hold higher-value roles and career opportunities than men in the industry. Thus, in order to make further progress in fostering employment, these potential gaps in employment requires further scrutiny.

Pillar 3: Social Protection

As for social protection, the prospect also seems positive on the surface. One aspect of this pillar is *minimum wage* (Ghai, 2003). In NZ, all the employees are protected by minimum entitlements, including the minimum wage of $15.75 per hour, applied to an employee aged 16 years or over (Employment New Zealand, 2017). However, the recent news and reports reveal the evidence of growing 'working poor' or

workers in insecure work (Edmunds, 2017; Kenny, 2016; NZCTU, 2013). These workers are often on casual work contracts, struggling to make ends meet in their daily lives. This indicates that social protection through employment is not secure for those workers, even with the protection of the minimum wage.

Another aspect of social protection is the *pension scheme*. According to Human Rights Commission (2010), hardship rates among aged New Zealanders were relatively low in comparison to international standards. This was attributed to the provision of superannuation and the levels of savings and home ownership among the elderly. However, a growing population of workers in insecure work with much lower income and savings may need extra support for social protection. This concern for social security is especially acute for the segments disproportionately represented in temporary work and high-risk industries: women, youths, Māori and Pacific, migrant workers and people with disabilities (NZCTU, 2013).

Pillar 4: Social Dialogue

With regards to social dialogue, the prospect is less clear than the other pillars. Under the employment law, employees can choose whether or not to join a union, which negotiates collective employment agreements (Employment New Zealand, 2017). Yet, total *union membership i*n NZ has declined notably since the global financial crisis (Ryall & Blumenfeld, 2014). According to Statistics New Zealand (2016), about 20% surveyed belonged to a union. In the construction industry, union membership experienced a substantial drop to 11.2% in 2014, despite growing employment (Ryall & Blumenfeld, 2014).

It is pertinent to point out that there is a limited number of indicators for social dialogue except for union membership. This lack of indicators may be problematic when there is a growing body of workers in insecure work, whose interests are not represented by traditional union membership without collective employment agreement. Table 2.1 summarizes the progress of NZ business towards Goal 8 of SDGs. In comparison to other OECD countries, NZ ranks lower than average in measures such as labour productivity growth (OECD, 2017b) and PISA Social Justice Index (Kroll, 2015), lagging behind its counterparts in international markets, such as Australia, UK, and Nordic countries.

Discussion

In this section, based on the model framework and statistics discussed in the previous section, we will describe the dynamic interrelations of the elements. First, as summarized in Table 2.1, there are areas either with positive trends or progress. Concerning economic growth, the outlook is positive, and this perspective coincides with laws and regulations to protect basic rights for full-time workers, including protecting workers from dangerous work and extending parental leave to 18 weeks.

Table 2.1 Progress of NZ business towards Goal 8 of SDGs

	Positive or progress areas	Troubling areas with limited or no evidence of progress
Economic growth		
	Annual economic growth	
Decent work		
Rights at work	Laws and regulations to protect basic rights, particularly health and safety reform in 2016 (Rights of employees to refuse risky work; extended parental leave)	Continuing health and safety incidents in high-risk industries
		Limited employment protection especially for temporary workers
Fostering employment	Employment and labour participation rate	Growing gap of labour productivity in comparison to leading OECD countries
		Longer working hours in comparison to leading OECD countries
		Growing population with insecure work
		Youth inequalities in education, in comparison to leading OECD countries
		Remaining gender pay gap
Social protection	Minimum wage	Limited social protection for those disproportionately represented in insecure work (including women, youth, Maori and Pacific, migrant workers and people with disabilities)
	Pension scheme (hardship rates among aged New Zealanders)	
Social dialogue	Rights for collective employment agreement	Declining union membership for full-time workers
		Limited collective employment agreement for part-time workers

Also, employment and labour participation rates are at a record high since 2008, suggesting increasing opportunities for work. The gender pay gap is one of the narrowest in OECD countries. In this growing economy, social protections are provided in the forms of a minimum wage for 16 years or more, and a pension scheme for the elders, while the social dialogue is ensured with rights for collective employment agreement.

There are also troubling areas showing limited or no evidence of progress. While economic growth continues and work opportunities, not all seem to access the opportunities. For the workers in the high-risk industries, such as forestry, fishing, and construction, health and safety continue to be a severe concern. Also, a growing population in insecure, precarious work are struggling to make ends meet, with close to the minimum wage and limited collective employment agreement and social security. They are disproportionately represented by specific social segments, including women, youth, Māori and Pacific, migrant workers, and people with disabilities. Furthermore, in comparison to leading OECD countries, there are more youth inequalities in education, where socioeconomic background impacts students' educational success. Even more, not just in specific social segments, but

overall, there is a growing gap of labour productivity relying on more extended hours in comparison to leading OECD countries.

This fragmented picture of progress indicates that economic growth is neither automatically inclusive nor sustainable in the long term. In other words, economic growth does not guarantee workforce wellbeing. Yet, the gaps in the above picture also help us inquire into the hidden relationship between the economic and social wellbeing of workers. We now turn to the model framework and identify the relationship that needs further investigation.

The first unknown relationship is that between economic growth and growth of insecure, precarious work. The above picture shows that these phenomena are coinciding with each other. In other words, economic growth does not automatically lead to an increase in full-time employment with a concomitant level of social protection. In order to pursue 'inclusive and sustainable growth with the benefits shared by all New Zealand's people and regions' as stated by BGA, we need to align economic growth with rights, secure employment, social protection and dialogue of those insecure workers. To do so, we need to understand the nature and impact of macro forces such as globalization, technology, sectoral changes, and erosion of standard employment on the working environment in NZ.

The second unknown relationship is that of lagging productivity, more extended hours, and the institutional setting within NZ, such as political, financial, education and labour, cultural systems. To respond to changes in macro forces better, the national institutional system also needs to change. The productivity gap with leading OECD countries is increasing, despite the Employment Relations Act 2000 and its subsequent amendments, as well as the national growth strategy. This growing gap suggests that the NZ economy is not adapting to macro forces compared to other leading OECD countries. For instance, the educational system may not be effectively responding to globalization, technological and sectoral changes.

The above unknown relationships also suggest the limitation of Goal 8. How can Goal 8 take the erosion of standard employment into consideration? How do we improve the national institutional systems, such as education and labour, to better address Goal 8? How does Goal 8 capture the emerging social wellbeing issues, such as the increasing productivity gap and more extended working hours? If we were to defend the possibility of pursuing economic growth and decent work towards sustainable development, these dynamics need to be explored theoretically, as well as practically through dialogue with all stakeholders in each local and industry context.

Conclusion

This chapter explored the research question: '*Is NZ business progressing well towards Goal 8 of the SDGs?*'. Our analysis of available statistics shows that while there are areas of progress, there are also troubling areas with limited or no evidence of progress. This fragmented picture of progress substantiates the claim

that economic growth is neither automatically inclusive nor sustainable (Kroll, 2015). This fragmented picture also pointed towards unknown relationships regarding the dynamics of economic growth and decent work. These relationships included elements such as macro factors, insecure work, extended working hours and associated physical and mental health issues, as well as a productivity gap. Our lack of understanding of these elements underlies vagueness and confusion regarding the Goal 8, which is critical in achieving multiple goals. To ensure further progress, key actors at the macro, global, and national levels identified in this chapter need to develop further understanding of the dynamics involved in achieving the lofty Sustainability Development Goals. In the national level, NZ business, the government, unions, and academics need to work together to make this growth more sustainable.

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Chapter 3
Reframing the Relationship Between Profit and Sustainability in Corporate Australia: A Look at the Current Approach and Emerging Solutions

Ashleigh Gay

Introduction

Conventional models of sustainability in corporate Australia are not driving the level of change required to achieve a sustainable future. They ignore, or are at tension with, the key measure of business success which is to generate a profit. However, by using profit as a tool to create a sustainable future, we can reframe the relationship between business and sustainable development from one that is based on a trade-off to one that is mutually beneficial for business, society and the natural environment.

Securing a sustainable future requires a transformation in the way we understand how to create long-term business success and the critical role that the private sector plays in helping shape that future. This chapter outlines the shortcomings of corporate sustainability in Australia and highlights emerging approaches designed to bring sustainability and profit closer together.

This chapter includes a look at the sustainable development challenge, the potential role for business to shape a sustainable future and the strengths and weaknesses of the current approach adopted by business. This work then explores three emerging trends that draw on best practice from the UK and European markets, suitable for an Australian context, that are addressing some of the common shortfalls of corporate sustainability. These are redefining the purpose of business, putting sustainability at the core of the business models and realising the UN Sustainable Development Goals. These themes have been developed by reviewing academic literature and interviews with sustainability professionals to help business leaders understand the principles for business that is profitable *and* socially and environmentally sustainable.

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Methodology

The research methodology for this work can be broken down into two phases. The first phase was a project completed in 2015 as part of a master's degree in Sustainable Built Environment at the University of New South Wales in Australia. This project included a literature review and semi-structured interviews with six professionals from Australia's built environment sector. The aim of the project was to understand the effectiveness of the sustainability agenda within corporate Australia and to identify emerging solutions to further embed sustainability within mainstream business. The interviewees chosen were from a mix of professional backgrounds including private, not-for-profit and academia and shared domestic and international sustainability experience. All of the interviewees and their respective organisations were and still are regarded as subject-matter experts in their respective fields and provided specific views on the Australian context. Across the six interviews, over 40 pages of data was collected and analysed; with overwhelming evidence to support the hypothesis that the current approach to corporate sustainability is not enough to achieve a sustainable future, despite the collective and extensive resources of business. The second phase of this research is based on best practice insight from the UK and Europe gleaned through first-hand work with large, multinational organisations across strategy and communications, including reporting.

For the purposes of this work, 'sustainability' and achieving a 'sustainable future' are defined here as achieving the UN Sustainable Development Goals (SDGs) by 2030 which builds on the traditional definition of sustainable development, "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 16). The SDGs offer a balanced and holistic approach to understanding sustainable development with a focus on consumption patterns, reducing negative impacts across a broad range of sustainability issues and restorative or 'positive' impacts. Additionally, 'business', the 'private sector', 'organisation' and 'firm' are used interchangeably. The focus of this chapter is primarily on large, multinational organisations that are publicly listed. The underlying assumption in this work is that large businesses have the biggest impact both positive and negative and are well-equipped to tackle sustainable development challenges through their vast networks, resources and scale. However, the principles and some of the best practice examples are inspired by start-ups and private businesses, so the ideas presented in this work could be adapted accordingly.

Part I: A Look at the Global Context

The Sustainable Development Challenge

Sustainable development is the most pressing issue of our time. Global population continues to grow, the natural resources we have come to rely on are under threat and

the world's poorest continue to be the most vulnerable. With a predicted three billion people added to the planet by 2050, we must urgently find a way to develop without the social and environmental costs we've come to accept.

In 2015, leaders from around the world ratified the UN Sustainable Development Goals (SDGs). These 17 goals provide a framework for sustainable development focusing on eliminating poverty, protecting and restoring the planet and fostering peace and prosperity through partnership (United Nations, 2017a, para. 1). The SDGs provide targets to help inform policy and business strategy to shape a new kind of development—one that considers social, economic and environmental impacts without compromising our quality of life by 2030. But, there's a way to go and as one of the interviewees engaged as part of this research highlighted, "2030 is not that far away."

In his annual address on New Year's Eve 2017, United Nations Secretary-General Antonio Guterres issued a red alert for the world (United Nations, 2017b, para. 2). In this unprecedented move, the UN Chief highlighted that the world had 'gone in reverse'. He highlighted perils including deepening conflicts, concerns over nuclear weapons, the impacts of climate change worsening at an alarming rate alongside growing inequalities and horrific human rights violations and called for collaboration to defend shared values across humanity (United Nations, 2017b, para. 2).

Take climate change for example. In 2017, the United Nations Environment Programme found that current global commitments represent only a third of what is needed to tackle climate change (United Nations Environment Programme, 2017). This is despite commitments made in the Paris Agreement to keep global temperature rise below two degrees Celsius and to strengthen countries' abilities to deal with the impacts of climate change (United Nations, 2015). Moreover, the World Economic Forum's Global Risk Report (2018) has consistently found sustainability issues such as climate change, rank amongst the top five global risks. Between 2011 and 2018, the report has identified natural disasters, extreme weather events and failure of climate change adaptation and mitigation alongside chronic disease, terrorism, asset price collapse and weapons of mass destruction as the world's biggest risks (World Economic Forum, 2018). These risks are not new, but their likelihood and impact are increasing posing threats to countries, business and people.

Looking more specifically at the Australian context, interviewees unanimously agreed that sustainable development is an unprecedented challenge. The interconnected nature of megatrends and the lack of clear direction beyond the mining sector to drive growth were sighted as complicating factors. Interviewees also highlighted challenges perceived to be unique to Australia that may further exasperate addressing issues such as climate change. These include Australia's relatively low but highly urbanised population, our 'coal addiction' and vast expanse of space. Interviewees all agreed that drastic action is required.

Undoubtedly, progress is being made both globally and in Australia to address sustainable development, but the scale and pace of change is not enough.

The Role of Business

Sustainable development requires a range of solutions involving policy, education and the market. Although none can work effectively at scale in isolation, political inaction on issues such as climate change in Australia, means that the role of business intervention has never been more critical. All interviewees suggested that Australia's ability to drive the sustainable development agenda forward has been limited by poor political leadership and that business has been at the forefront of driving change. In an ideal world, interviewees agreed that government has a "role in creating the conditions in the market such that companies can succeed based on doing good." In reality, however, a manager at a leading sustainable business made the point that, "when it comes to sustainable development … you can't rely on governments or education alone because these institutions aren't' adaptive enough, they aren't flexible enough … businesses have the ability to change, and change quickly and in Australia businesses are leading the way."

The collective power of business to intervene in sustainable development is driven by a combination of resources, capital and a common measure of success. Baker (2014) summarises work by Eccles and Serafeim who found that, "… globalisation has concentrated economic power within a large group of companies who are now able to change the world at a scale, historically reserved for nations" (Baker, 2014, p. 262).

> Just 1,000 businesses were responsible for half of the total market value of the world's more than 60,000 publicly traded companies—virtually controlling the global economy. By 2010, these companies made US$32 trillion in revenue, employed 67 million people directly and had a market capitalisation of $28 trillion—or about half of total world market cap, … these companies and their supply chains have enormous impact for both good and ill on society. They create goods and services for customers, wealth for their shareholders and jobs for millions of people. They also consume vast amounts of natural resources, pollute the local and global environments at little or no cost and in some cases limit employee's well-being if wages and working conditions are inadequate. These latter, undesirable practices make our business-as-usual society unsustainable … ultimately, creating a sustainable society … requires responsible behaviour by every individual and it is easier for every individual to change if the institutions that structure our lives and society pave the way. (Baker, 2014, p. 262)

The resources and capital of business extend beyond employment and revenue, however. The technology, infrastructure, know-how, agility, innovation and relationships that are critical to the success of a business—are equally valuable in business's ability to shape a sustainable future. It is how business collectively measures success that really unlocks the power of business to tackle sustainable development.

Globally, there are approximately 125 million businesses and each of these has a common measure of success; profit (Kushnir, Mirmulstein, & Ramalho, 2010). Although success is increasingly measured on a broader range of factors, profit performs a fundamental role that is deeply entrenched within the fabric of society. It is a reward mechanism for risk-taking, an indicator of efficiency and is enshrined in everything from business school to law that sets out the fiduciary requirements to

ensure directors act in the interests of shareholders by maximising profit (Kumar, 2015). Organisations are structured around increasing profit year-on-year, executives are rewarded based on profit performance and shareholders are incentivised as a result.

Across each of these 125 million businesses, success is comparable across industries, sectors, markets and geographies. So, rather than fighting against a deeply entrenched component of our current paradigm, we must find a way to use profit—and the collective power of business all over the world—to drive better environmental and social outcomes. One interviewee summarised this point by saying, "...you can't change capitalism—it will keep going until it destroys itself. So, we must work with the paradigm we have, and speak the language of banks, customers, shareholders and business."

Part II: Evaluating the Current Landscape

Approaches to Corporate Sustainability

Corporate Social Responsibility (CSR) emerged in the 1950s with books such as Social Responsibilities of the Businessman (Bowen, Bowen, & Gond, 2013) which was the first comprehensive discussion of business ethics and social responsibility. As technology and globalisation enabled global supply chains over the coming decades, companies accepted they had relationships beyond the shareholder and started to consider what this meant for their organisations. 'Corporate sustainability' emerged as an evolution of CSR to align social and environmental issues with the strategic interests of business. Organisations started reporting on their environmental and social performance and consumers were becoming increasingly aware of supply chain issues—highlighted through a few high-profile cases involving human rights violations, environmental disasters such as Exxon Valdez and a tighter regulatory environment.

As corporate sustainability evolved so too did the understanding of its limitations, and concepts such as 'Shared Value' emerged. The concept of shared value was introduced by Porter and Kramer (2006). This was then built upon in a follow-up article, "Creating Shared Value" in HBR in 2011. The impact of the article in 2011 on academia and business was significant and the concept gained traction quickly because it highlighted the role of profit and value in corporate sustainability.

Whilst critical of the status of capitalism today, Porter and Kramer (2011) acknowledge it is a vessel that has powered wealth, productivity and opportunity. However, they suggest that public and private sectors have lost sight of their potential and instead short-sightedness has driven business and society to be traded-off against each other. This has resulted in diminished trust in business as the private sector is viewed to be contributing to environmental, social and economic challenges, rather than playing a role in the solution (Porter & Kramer, 2011).

In defining Shared Value, they argue that perhaps it is easier to start with what it is not. Porter and Kramer (2011) suggest that Shared Value is not about societal or environmental progress at the cost of business outcomes—or business profit to the detriment of society and the environment. Therefore, instead of a company adopting an approach like CSR where related issues are dealt with in the periphery of the organisation, not the core, Shared Value is about turning social problems into business opportunities and shifting the role of a business from maximising profit to the creation of shared value (Porter & Kramer, 2011). Specifically, they define Shared Value as, "policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates" (Crane, Palazzo, Spence, & Matten, 2014, p. 131). Porter and Kramer (2011) highlight the model is about creating a larger pool of total economic and societal value (not an effort to redistribute wealth). Unfortunately, this idea is yet to be mainstream business practice despite many organisations referencing the principles of 'shared value' in their annual sustainability reports.

When focusing on an Australian context, interviewees referred to a mix of experience with CSR, corporate sustainability and shared value and suggested there's no 'silver bullet' for embedding sustainability within businesses to drive sustainable development. Below we examine some of the strengths and weaknesses of how sustainability is playing out in contemporary business dynamics, drawing on input from interviewees, literature and best practice.

Strengths

The Current Approach Is Better than Nothing and Has Matured over Time

First, we must acknowledge the progress in corporate sustainability over the last 10 years. Although far from perfect, interviewees and research sight a proliferation of tools, frameworks, guidelines and standards that have emerged to help organisations understand their most material sustainability issues and how to develop supporting strategies to manage them and communicate performance. One interviewee who advises public and private organisations on sustainability issues said there is a clear trend toward companies doing things differently, "...a lot of businesses are rethinking their products and services and thinking differently about how they capture [and create] value."

Helps to Reduce Negative Externalities in some Way

Through the identification of material issues, we have been able to put systems and processes in place to help minimise the negative externalities created through the production of goods and services such as the reduction of water consumption and generation of waste and emissions. This is commonly referred to as 'doing less bad'.

A sustainability manager for an ASX-listed company said, "...I know doing less doesn't sound great but you have to start somewhere. If a business isn't doing anything [about sustainability] getting them to do less bad, is good. But, they have to move quickly because we are running out of time."

Provides Business with a Licence to Operate

Understanding material sustainability issues and managing them has become the norm. Interviewees suggest that stakeholders expect that organisations are complying with international and local regulation, taking best efforts to minimise their impact and engaging with stakeholders accordingly. When an organisation fails to meet this expectation, their licence to operate is threatened which is increasingly played out in social media and in the press.

Weaknesses

Unclear Definition

Academic literature on sustainability has no clear consensus on its definition. As a result, theoretical development, practical implementation and impact measurement are extremely difficult (McWilliams, Siegel, & Wright, 2006). A more detailed discussion on the definition of sustainability is presented later in this chapter.

Sustainability Has a Brand Issue

Research by sustainability communications agency Radley Yeldar (2018) found that 19 of 20 of the world's most powerful brands are using some form of sustainability cliché in their communications. Some organisations are doing a great job communicating sustainability but the majority default to 'stock sustainability' to represent sustainability in a visual way (Radley Yeldar, 2018).

> Stock sustainability is green and earthy and homespun and full of holding hands, hessian and windmills. It's 'eco-friendly' and 'organic' or dry, dated and corporate...it's harming the cause of sustainability itself...stock sustainability it isn't just off-brand for a lot of organisations it's also not engaging for most audiences...this means that people are less likely to buy into sustainable products, services and lifestyles. People don't want tired and clichéd—they want charming, funny, beautiful or new. (Radley Yeldar 2018)

Siloed Away from the Core Business

The management of sustainability issues within an organisation, is generally isolated from the core business. This approach gives rise to perspectives that corporate

resources are better spent on value-added internal activities to increase return to shareholders (McWilliams et al., 2006).

Organisations are increasingly expected to proactively understand the broad needs of their stakeholders, respond accordingly and report on the results on an annual basis in a sustainability report or similar. The underlying assumption here is that there is an indirect positive relationship between responding to stakeholders' needs and the commercial interests of a business. And so, these issues are generally not managed as part of core business. In fact, they are quite often managed by specialist sustainability teams or in many cases a single individual while efforts to maximise profit continue to be the modus operandi.

Focused on Managing the Negative Impacts Rather than Broader Value Creation

Sustainability has been dominated by doing 'less'. Emitting less carbon, using less water and generating less waste. While this is an important and necessary contribution towards a sustainable future, approaches for understanding how sustainability can be used to explore positive value creation for society and the environment are less developed. Net Balance (2013) found in an assessment of ASX listed sustainability reports, that most organisations address environmental issues that are typically associated with doing 'less bad' with very few, if any reporting on social aspects where organisations deliver direct and indirect value (or 'doing good'). In a more recent study, accounting firm KPMG found that only 50% of ASX 200 companies are including narrative on their non-financial performance in annual reports, with even less connecting non-financial performance to strategic objectives.

Big Issues Get Watered Down

In a study conducted by Wright and Nyberg (2017) into how Australian organisations approached climate change, they analysed five large, 'leading' companies over a ten-year period. They found that in order to protect profits, business will translate complex, interconnected, global challenges such as climate change to less important business issues within three key phases.

In the first phase, they identified that businesses state that sustainability issues are an opportunity, often coming from bold CEO-level commitments. In the second phase they noticed that organisations then seek to implement projects that localise the issue (i.e. on-site eco-efficiency programs) which triggered an increase in greenwashing concerns from media. In the final phase, issues such as climate change are side-lined as business leaders struggled with more immediate challenges such as the global financial crisis in 2008 and the very public debate on carbon pricing. The authors found a common pattern that was highlighted by a CEO who suggested, ". . .when times are challenging, the extra stuff such as sustainability, is deprioritised in favour for getting back to basics, the core stuff" (Wright & Nyberg, 2017).

In summarising their findings, Wright and Nyberg (2017) suggest that the market must be regulated by policy, as business is not set up to manage sustainability issues alongside profit maximisation and returning value to shareholders.

Part III: Emerging Best Practice Solutions

Redefining the Purpose of Business

Over the last few years, there has been a marked change in the discussion about the purpose of business. In 1970, Milton Friedman wrote in a *New York Times* article that the sole purpose of a firm is to make money for its shareholders (Denning, 2013). While this mind-set helped globalise supply chains and shifted socio-economic power from nation states to corporations, it has come at a high environmental and social cost.

As a result, stakeholders have come to expect a lot more from business. Prospective employees are seeking careers with meaning, customers are expecting a level of responsibility from where they buy their goods and services and investors are pushing companies to be transparent about the financial impact of sustainability risks and opportunities. This shift is being driven by a broad and complex set of factors but the challenge to businesses is clear—to define why they exist, beyond returning profit to shareholders.

Leading organisations that have acted quickly and decisively to stay ahead are seeing the benefits. A study in 2015 found that 'purposeful' brands outperform the stock market by a margin of 113%. In the UK alone, it has been estimated that more purposeful business could add 130 billion pounds to the economy, while over 70% of consumers will recommend a company with purpose to others (The House, 2017). The potential benefit of reshaping why business exists is fundamental to unlocking scale and resources of businesses worldwide to shape a sustainable future.

So what is meant by purpose, today? Purpose in a business context, is about being clear why you exist beyond making money (Sinek, 2018). According to a survey conducted by EY, purpose is, "an aspirational reason for being which inspires and provides...benefit to local and global society" (Keller, 2017, p. 1). The survey found that companies generally fall into three categories including prioritisers (those that have a well-understood purpose), developers (those that are in the process of articulating a purpose) and laggards.

In their annual *Fit for Purpose Index*, Radley Yeldar rank the top 100 most purposeful brands. This includes looking at a company's purpose and how they bring this to life across their communications, business strategy and culture (Radley Yeldar, 2016). In 2016, they looked at 180 of the world's biggest organisations and found Unilever ('Making sustainable living commonplace'), Lloyds banking Group ('Helping Britain Prosper'), Philips ('Make the world healthier and more sustainable through innovations'), and Novo Nordisk ('Driving change to defeat diabetes and other serious chronic conditions') are leading the way when it comes to putting

purpose into action (Radley Yeldar, 2016). Each of these organisations has a strategic approach to addressing a societal or environmental challenge and has re-engineered their business to in pursuit of their purpose.

Here we look at some of the fundamentals for being purpose-led, drawing on discussions with interviewees, literature and best practice.

Purpose Is About the Benefit of Society, the Environment and the Shareholder

As highlighted by interviewees, an organisation must deliver value to shareholders but it is no longer acceptable for this to be its raison d' être. One interviewee pointed out, "in Australia we haven't come far from thinking that business exists to deliver a profit for shareholders. It's still the number one item on our CEO's agenda." In fact, purposeful organisations are more profitable. Almost 60% of companies which 'prioritise' their purpose experienced more than 10% revenue growth over the last three years, far outrunning those that didn't (Keller, 2017).

According to Radley Yeldar (2018), a best practice business purpose specifically considers global or local environmental or social needs. When done authentically, the result is stronger relationships with stakeholders, better performance and engaged workforce.

Purpose Doesn't Replace Sustainability

Leading organisation use purpose as an overarching guiding light for organisational goals and behaviours. An interviewee who specialises in purpose said, ". . .purpose should inform every decision, and every consequence." However, purpose is not to be confused with a strategy, values or a mission. Moreover, it doesn't replace an organisation's sustainability efforts. All of these things should be informed by the purpose and ensure an organisations' daily efforts ladder up to a bigger goal.

Purpose Can Be a Powerful Tool to Engage Stakeholders

Purpose can be used as a powerful tool to engage internal and external stakeholders. According to interviewees, the traditional role of business to deliver shareholder value is uninspiring. When discussing the benefits of a purpose-led organisation, one interviewee said, "getting the share price higher certainly doesn't motivate me as an employee." Purpose is intrinsically emotional from which leaders can engage people, align an organisation around a common goal and ensure people feel motivated in their work. One interviewee highlighted the role that culture plays in purpose-led organisations. She remarked, "people go by behaviour, not what's said. . .if you had a culture where [environmental or social issues] were the number one priority but no

consideration was given to [end-use] recycling, then clearly it's not that important...but, done right, purpose and organisational values can drive change in the schism between culture and unwritten ground rules."

Sustainability at the Core of the Business Model

If purpose helps redefine why businesses exist beyond making money to environmental or social betterment, the next question is around the role of profit. Interviewees agreed that profit is one of the most powerful levers we have to enable sustainable development. If an organisation defines its purpose to be environmentally or socially beneficial—it is irrelevant unless the goods and services that company produces, and the way it produces them, are also sustainable. Here we take a look at what a business model means and how they are evolving to enable a more sustainable future.

The term 'business model' emerged as a buzzword in the internet boom of the 1990s and describes the way in which a business makes its money (Ovans, 2015). The term became popular with the advent of personal computers with spreadsheets that allowed managers to 'model' different scenarios regarding components of the business to increase profitability (Magretta, 2002).

Although the term 'business model' is relatively modern, the premise is not. Historically, entrepreneurs and business managers identified a market opening and built a business designed to increase profit based on exploiting an opportunity while navigating a complex range of external factors (Ovans, 2015). Drucker (1994) found that an effective business model understands the underlying economic logic of delivering value to customers at an appropriate cost. Of course, the same remains true today, but key decision makers now have much greater awareness of social and environmental issues. Furthermore, the interconnected nature of supply chains and technology such as social media, means that the impact of failing to manage these risks is much greater. Therefore, a Procurement Manager who may have once been tasked with negotiating the best deal on the supply of key materials, must now consider, sometimes in equal measure, if a supplier maintains responsible labour conditions, actively minimises carbon emissions or may seek guarantees that the products in question are free from toxic chemicals.

We know this is not just a fad—these issues are now a key part of business dynamics, especially for publicly-listed organisations. The requirement for businesses to consider a much wider range of issues in their decision-making processes is here to stay. Dutch companies are required by law under the Companies Act to report on their long-term value creation. That is, issues such as social and employee-related matters, environment and respect for human rights (Monitoring Committee, 2016). It also recognises culture as a key governance mechanism (Deloitte, 2016). In the UK, companies are required to produce a Gender Pay Gap Report with some companies declaring a gender pay gap of up to 60% (The Guardian, 2018). UK companies are also required to produce a Modern Slavery Statement in an effort to identify and

reduce human rights abuses throughout our now globalised supply chains. But it's not just the regulatory market that's shifting. The EU Non-Financial Directive mandates that 'public interest companies of more than 500 employees', must include disclosure on non-financial topics including environmental protection, social responsibility and treatment of employees, respect for human rights, anti-corruption and bribery and diversity on company boards in their annual reporting. In 2017, the Taskforce on Climate-related Financial Disclosures (TCFD) was launched to encourage companies to be more transparent about the financial risks and opportunities posed to their business by climate change. It found that climate change poses a risk to assets of up to an estimated $43 trillion globally and to transition to a low-carbon economy we need to invest $1 trillion a year for the foreseeable future (TCFD, 2017). On a practical level, the TCFD encourages organisations not only to consider how to get product to a customer, but the impact that rising sea levels have on the ability to ship overseas, for example. These shifts towards greater recognition of the non-financial aspects that a business relies on to make a profit are critical to shifting to a sustainable future—and here to stay.

So what exactly is a business model? In its most simple form a business model describes how a business makes money. A business model is the, ". . .chosen system of inputs, business activities, outputs and outcomes that aims to create value over the short, medium and long-term (Integrated Reporting, 2013):

> *Inputs* include financial, manufactured, intellectual, human, social and/or natural capital that is essential for a business to produce its goods and or services, the *outputs*. *Outcomes* are about recognising the internal and external consequences both positive and negative on the capitals as a result of the organisation's business activities and outputs. (Integrated Reporting, 2013)

Having defined the key components of a business model we must look at the principles for ensuring we are enabling a sustainable future. It is no secret that to be more sustainable we must do things differently. But, limited guidance exists on what a business needs to look like to be truly sustainable *and* profitable. Here we outline two key principles for business models to enable a sustainable future for product manufacturers, although more research is required on the business model implications for the service industry.

Sell Products and Services that Are Sustainable

To sell sustainable products and services we must start with the problem we are trying to solve. In the context of sustainable development, it is no longer valid for that problem to serve a 'want' at high social or environmental cost. This problem must be about addressing some of society's biggest challenges—hunger, climate change, inequality, lack of affordable housing. One interviewee who advises the private sector on adopting more sustainable solutions said, ". . .you have to create the market. . .we need to enable consumers to make the best choice."

On creating sustainable solutions for the market, a leading figure in the sustainable built environment sector said, "it's about combining good design, good quality and good behaviour...and it won't work unless we have all three elements." Interviewees highlighted a range of other important factors for ensuring products are sustainable including:

- Long service life;
- Recyclability;
- Superior technical performance;
- Low human and ecological toxicity;
- Specific and measurable environmental and social benefits;
- Affordable and attractive, in line with the principles of human behaviour and psychology.

Make Products in a Sustainable Way

Having defined the specific sustainability challenge or need, we can leverage existing tools, systems, guides and standards for minimising the social and environmental impact of the manufacturing process. Interviewees highlighted that this might include management systems such as the Natural Capital Protocol or ISO 140001 which rely on embedding sustainability issues within strategic business planning and translate sustainability issues into a tangible value.

A common theme amongst interviewees was that the belief that large organisations are too complex and set in their ways, so change cannot be tolerated. The scale of the challenge that we face as a society means that we cannot afford for the giants of industry not to be evolving to leaner, greener ways of doing business. Interface is a prime example of an organisation that radically changed its model to enable a sustainable future and chartered a new competitive paradigm in the process based on a circular business model. On the success of Interface an interviewee talked about how sustainable development was embedded in the business to the point where new markets and products have been created and it's part of the DNA of the company resulting in, "...being more competitive, driving innovation and reducing waste in the process."

Realising the UN Sustainable Development Goals

In 2015, the United Nations launched its Sustainable Development Goals (SDGs) to help shape global development until 2030 (United Nations, 2017a). As part of the UN's Agenda 2030, the SDGs are a holistic plan of actions across 17 goals for the betterment of people, the planet and prosperity. The 17 goals cut across issues such as economic growth, cities, consumption, peace and climate change and are supported by 169 targets (United Nations, 2015).

The SDGs were developed through consultation with public and private bodies. The involvement of the private sector was a notable improvement upon the preceding Millennium Development Goals (MDG), which expired in 2015. The MDGs were often criticised for their lack of corporate engagement—meaning that in the end business largely dismissed them. However, since then, the role of the private sector has been widely recognised as fundamental to unlocking sustainable development. Therefore, the SDGs were developed with this in mind and designed for immediate and decisive action by government, the private sector and society.

Although a voluntary framework, uptake of the SDGs by the private sector over the last two years has been swift. In 2017, the World Business Council for Sustainable Development (WBCSD) found in their annual assessment of over 150 companies' sustainability reports, integrated or combined reports that 79% acknowledge the SDGs in some way; but, there's a long way to go before the SDGs are mainstream business practice, with only 6% of companies aligning strategies to the SDGs at goal and target level, as well as measuring of contribution towards key SDGs (WBCSD, 2017).

Recognise that the SDGs Are a Commercial Opportunity

The SDGs are one of the biggest commercial opportunities of our time. It has been estimated that the SDGs require US$5–7 trillion in annual investment to 2030 (Salter Baxter, 2015). To unlock this potential, there are many tools available to help organisations understand which SDGs are relevant to them and what to do next—as the SDGs alone do not do this.

One of these tools is the SDG Global Opportunity Explorer. The Global Opportunity Explorer is a platform for businesses to find new market opportunities and to search the database of solutions that are already contributing towards the SDGs. These markets often relate to multiple SDGs and include things like upcycling carbon, cost effective infrastructure adaptation and conflict free natural resources, for example. The Global Opportunity Explorer provides key data such as market size and recent investment, including a US$2.6 trillion market for traceability software to identify and eliminate conflict minerals in supply chains (Sustainia, DNV GL, & United Nations Global Compact, 2017). By presenting the market opportunities for sustainable development, tools such as the Global Opportunity Explorer will help organisations see the SDGs as not another sustainability framework, but the key signpost for a sustainable future.

The Global Opportunity Framework also profiles the work companies are already doing to address the SDGs—framed as 'solutions'. These solutions range from carbon positive prefabricated housing to package-free groceries but are all framed around aligning commercial opportunities with global developmental challenges (Sustainia, DNV GL, & United Nations Global Compact, 2017).

Use the SDGs as a Common Definition of Sustainability

The lack of a clear definition around sustainability means that measuring efforts towards sustainable development globally is an impossible task. It is no surprise, then, that defining sustainable development itself is a contentious topic but one that the SDGs help cut through.

The most common definition of sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 16). This definition is as heavily criticised for being 'meaningless' as it is cited as being a profound contribution to the field (Johnston, Everard, Santillo, & Robèrt, 2007). Furthermore, Johnston et al. (2007) suggest that there are over 300 [official] definitions of sustainability and sustainable development that have emerged since the Brundtland Report, interviewees suggested that the only clear agreement regarding what the term means, is that there is no agreement.

Although the Brundtland Report provides a context, which implies equal standing for environmental protection, social equity and economic health, the ambiguity of the definition itself has provided a loophole for the thermodynamically impossible concept of "sustainable growth" to emerge. Daly and Townsend offer a comprehensive refutation:

> In its physical dimensions the economy is an open subsystem of the earth ecosystem, which is finite, nongrowing, and materially closed. As the economic subsystem grows it incorporates an ever greater proportion of the total ecosystem into itself and must reach a limit at 100 percent, if not before. Therefore its growth is not sustainable... When something grows it gets bigger. When something develops it gets different... Sustainable development is a cultural adaptation made by society as it becomes aware of the emerging necessity of nongrowth. (Daly & Townsend, 1993, p. 267)

Wherever you sit in the debate, there is agreement that sustainability or sustainable development is about giving equal consideration to environmental, social and economic issues and impacts both positive and negative.

The SDGs help address this dilemma with a tangible, measurable framework that explores the breadth and depth of sustainable development issues in an accessible and universally applicable way. They are designed to be used by business and understood by the average person—to help governments shape the future of their policies and is reengineering the sustainability industry of consultants and advisors to a common goal.

It could be said that the SDGs go beyond traditional definitions of sustainability to offer a balanced and holistic approach to understanding sustainable development. They include a focus on consumption patterns, reducing negative impacts across a broad range of sustainability issues and also a focus on restorative or 'positive' impacts. Although not perfect, the SDGs are the common platform we need to address sustainability in a tangible way.

Avoid the Business-as-Usual Trap Through Specific Measurement

The SDGs were designed to drive drastic and measurable change. Although many organisations have recognised the importance of the SDGs, meaningful progress towards achieving the SDGs is lacking. At present, it is common practice for organisations to use sustainability reporting as a way of showing how their strategy or approach aligns to the SDGs (WBCSD, 2017). Too often this includes discussion of the approach (often developed before 2015 when the SDGs were launched) alongside a selection of SDG logos. However, this alignment is generally at goal-level only with little or no rigour around the process of determining how the two are related or the supporting targets. The risk that this presents is that the SDGs are used as a badge for labelling business-as-usual resulting in the illusion that companies are contributing to the SDGs but missing the point of the SDGs entirely.

A business's contribution to the SDGs must be measurable. This is not to say that a strategy developed before 2015 cannot contribute to the SDGs—but including the SDG logo against a strategy for climate is simply not enough. Stakeholders will increasingly expect that companies are bridging the gap between their current approach and that mapped out in the SDGs and filling the gaps, reporting on the specifics around investment of capital to fund specific SDGs and that business KPIs ladder up to the SDGs.

Conclusion

Based on a series of interviews from sustainability professionals, business and thought-leaders from across Australia's built environment, best practice insights from the UK and Europe and an academic literature review, it can be concluded that conventional models of sustainability in corporate Australia are not driving the level of change required to achieve a sustainable future. They ignore, or are at tension with, the key principle of business which is to generate a profit. Therefore, a new relationship between profit and sustainability is required. Business should be regarded for doing the right thing, in the right way, and, our environment and society can benefit in the process.

There are three emerging solutions that build on the strengths of the current approach business, including defining a purpose based on social or environmental need, re-engineering a business model to service this purpose and measuring impact (both positive and negative) through the Sustainable Development Goals. These emerging trends suggest that a more business-centric form of sustainable development is underway and we must work quickly to ensure the potential of business is leveraged to its fullest potential to shape a sustainable future.

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Chapter 4
Educating for Sustainability-as-Flourishing

Peter McGhee and Patricia Grant

Introduction

At the recent *International Academy for Business in Society* conference focusing on sustainability, it was noted that as yet the leadership needed for sustainable change did not exist (Bendell & Little, 2015). Perhaps because of this lacuna, business schools are increasingly embracing sustainability (Adams, Heijltjes, Jack, Marjoribanks, & Powell, 2011; Painter-Moreland, Sabet, Molthan-Hill, Goworek, & de Leeuw, 2015; Stubbs & Cocklin, 2008); although, this can be another tactic for maximising profits (Amaeshi, 2013) or a form of greenwashing (Banerjee, 2011). This chapter will discuss experiences and insights from an undergraduate sustainability course for business students designed to encourage "transformational change in the foundational [behavioural, cultural, institutional] structures of our society" (Ehrenfeld & Hoffman, 2013, p. 5).

What Is Sustainability?

According to Heinberg (2010) notions of 'sustainability' have existed in the traditions of many indigenous peoples. An example of this is the New Zealand Māori word, *Kaitiakitanga,* which means guardianship, care and wise management of natural resources. From a European perspective, Heinberg asserts that the first documented use of the word 'sustainability' occurred in 1713 when a German scientist, Hans Carl von Carlo, used it in a book called *Slyvicultura Oeconomica*.

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Notwithstanding such historical references, the concept of sustainability as we know it emerged in the 1960s with the birth of environmental movements concerned with increasingly visible signs of poor resource management and insufficient control of waste (Kopnina & Blewitt, 2015). However, a widespread definition of sustainability did not appear until 1987, when the United Nations authorised the Brundtland Report (WCED, 1987), which described it as "meeting the needs of the present without compromising the ability of future generations to meet their own needs". As noted by Heinberg (2010), this has become the most common interpretation of sustainability or sustainable development. Understanding this principle means not leaving things as we found them but rather preserving "the forces that make continuous evolution of ecosystems, socio-economic systems and humans possible and vital" (McKenna & Biloslavo, 2011, p. 695).

The popularity of the Brundtland definition has not stopped others from trying to classify sustainability. A search of Amazon yielded 21,808 titles containing the word. A further search on Google Scholar found 3,390,000 hits. So much white noise encourages what Engelman (2013) labels sustainababble. Interestingly, Gomis, Parra, Hoffman, and McNulty (2011) state much of this writing inclines towards minimising unsustainability. The literature, they argue, "tends to be descriptive of problems regarding the negative human impact on the environment, or prescriptive in the sense of describing methods to reduce the deleterious impact of human actions on the world" (p. 174). Consequently, the ethical aspect of sustainability is often implied or forgotten, and the emphasis becomes about solving empirical problems. Within the business world, a similar focus occurs. Much of what is actioned centres on lessening negative outcomes, while promoting sustainability for economic reasons (McGhee & Grant, 2017).

The scope of sustainability goes well beyond simply minimising our footprint, or even of "some scientific notion of biologically maintaining our environment. It incorporates notions of human dignity and well-being" (McKenna & Biloslavo, 2011, p. 695). For example, 12 of the 17 United Nations' Sustainability Development Goals (SDGs) arguably focus on the capacity of ecosystems to support quality of life. This emphasis clearly links the notion of sustainability with the idea of flourishing. Sustainability, if done correctly, "enables people to realise their potential and lead lives of dignity and fulfilment, while conserving the earth's vitality and diversity" (p. 695).

Sustainability as Flourishing

This brings us to a different perspective of sustainability, that of sustainability-as-flourishing which has been expressed as "the possibility that humans and other life will flourish on earth forever" (J. Ehrenfeld, 2000, p. 232). This is more than just surviving; "it is the realization of whatever we humans declare makes life

meaningful—justice, freedom & dignity" (p. 233). Building on this understanding, Gomis et al. (2011) connect this idea with morality:

> Sustainability refers to a moral way of acting, and ideally habitual, in which the person or group intends to avoid deleterious effects on the environment, social, and economic domains, and which is consistent with a harmonious relationship with those domains that is conducive to a flourishing life. (p. 176)

This aspirational approach goes beyond the status quo to an ideal state evidenced by self-actualised individuals and a thriving natural, social and economic system (Schaefer, Corner, & Kearins, 2015). It counters much of the existing literature that sees sustainability as business-as-usual with minor changes (Carroll & Shabana, 2010; Epstein & Roy, 2003; Schaltegger & Lüdeke-Freund, 2013).

There is some equivalence between sustainability-as-flourishing, and the idea of 'social sustainability'. Both are dynamic ideas connected to human well-being. And at different times, both have garnered less attention than economic and/or environmental sustainability (Dillard, Dujon, & King, 2009; Gomis et al., 2011). Despite these similarities, there are important differences. Vallance, Perkins, and Dixon's (2011) review of the literature found three broad approaches to social sustainability.

The first of these, *development* (or needs), advocates meeting future needs through both economic development and environmental management. Unfortunately, much of the work in this area does little for those in the majority of the world (Burningham & Thrush, 2003; Gunder, 2006; Marcuse, 1998). The second approach, *bridge* (or environmental good), "actively and explicitly explores ways of promoting 'eco-friendly' behaviour or stronger environmental ethic" (Vallance et al., 2011, p. 344). However, "this is frequently non-transformative, in that methods are conventional, fairly limited in scope, and aspire only to small, incremental changes" (p. 344). Finally, *maintenance* (or wants), is concerned with preserving cultural values, and the environs indefinitely. It is about what people would like to see maintained or improved, such as more green spaces, sustainable housing, and improved public transport.

There are issues with these perspectives. First, they reflect a narrow understanding of human needs and a business as usual approach (Griessler and Littig, 2005; Marshall et al., 2010). Second, such thinking does not demand necessary transformation in the way we interact with the world around us (Vallance et al., 2011). Minimising threats is distinct from creating flourishing or a world we want, likewise minimising unsustainability is distinct from creating sustainability (Grant, 2012). Unfortunately, nearly all action in this space is about lessening unsustainability. As Grant notes, sustainability is "conceived within a paradigm of scarcity, and built on the assumption that wellness is bound to capital" (p. 128). Decoupling this assumption is the goal of sustainability-as-flourishing, and in that sense, it goes beyond social sustainability, which still connects with the current paradigm. As long as sustainability, whatever the form, aims at extrinsic goods (i.e. goods that are a means to an end), as opposed intrinsic goods (goods that are ends in themselves) (Ryan,

Huta, & Deci, 2008), subsistence and survival may be possible, but human well-being and planetary flourishing are unlikely (Grant, 2012).

The world appears to be heading towards a watershed moment. Evidence suggests several planetary boundaries have already been surpassed; there is an urgent need to move the world into a safe operating space (Rockström et al., 2009; van der Leeuw, Wiek, Harlow, & Buizer, 2012). For this to happen, a significant paradigm shift is required in both the way that we do business, and the methods by which we educate business students. Interestingly, Starik, Rands, Marcus, and Clark (2010), made a similar claim in their introduction to a special issue on sustainability education in the *Academy of Management Learning & Education Journal*:

> Neither the 'business-as-usual' nor the incrementalist reform approaches that most individuals, organizations, and societies have employed to address critical global sustainability issues are apparently enough to move us far enough to prevent near-term disaster. (p. 377)

A certain economic worldview fosters this 'business-as-usual' approach (Giacalone & Thompson, 2006; Hamilton, 2003; Stead & Stead, 1994), and promotes certain norms, values, beliefs, and goals (Ferraro, Pfeffer, & Sutton, 2005) that encourage human beings to maximise the self at the expense of the wider society and the planet (J. Ehrenfeld, 2000; Gladwin, Kennelly, & Krause, 1995; Rosanas, 2008). Such thinking ensures notions like community, co-operation and connectedness are relegated to the peripheral, and that when organisations, and the managers within them, tackle sustainability it naturally degenerates at best into minimising negative impacts, or at worst, business-as-usual. Sustainability-as-flourishing means viewing "human beings as moral agents capable of, and indeed obligated to, take responsibility for others; agents who recognise they are part of a wider system and therefore responsible for that system and its members" (McGhee & Grant, 2016, p. 77).

Recently, John Ehrenfeld (2012) argued for the alteration of two beliefs that underpin our current reasoning: (1) being human is more about caring than it is about needing, and (2) large systems need to be approached from a complexity perspective. Building on these two ideas, Schaefer et al. (2015) identifies three broad requirements for moving to a sustainability-as-flourishing worldview. The first of these, *Beliefs and Values*, involves altering values to focus on and enable the best rather than the worst in human nature. As Schaefer et al. note, we need to replace *Homo Economicus* with a view of human beings as moral, social and caring agents rewarded by prosocial behaviours. Such a transformation increases social justice and equity, meaning all have the opportunity to flourish. The second requirement, *Diagnosis*, entails humanity realizing its embeddedness within a web of interconnected ecological systems. Thinking in terms of complex systems counters our modern worldview which tends to be reductionist, mechanistic, and linear (McGhee & Grant, 2017). Such 'systems thinking' identifies the roots of our current unsustainability, as opposed to the symptoms, and is an important step in knowing where to apply leverage to focus on becoming more sustainable (Schaefer et al., 2015). This ultimately necessitates serious "critical reflection by individuals

on their habitual mental and emotional patterns" in a way that minimises harmful reasoning, and that can "facilitate value creation for society and nature" (p. 399). The third requirement for flourishing, *Responsibility*, means shifting from a focus on unbridled growth (Hamilton, 2003) to an understanding that profit is a way to generate social and environmental benefits (Driver & Porter, 2012). To accomplish this, Schaefer et al. (2015) argue for the recognition of, and operation within, planetary boundaries since indefinite flourishing is not possible in a system that exceeds its natural and social limits. Interestingly, Schaefer et al. conclude this requirement by advocating for more "participative and collaborative approaches to business, research and education in order to manifest sustainability-as-flourishing" (p. 400).

Using the word flourishing means that this is not an output, but rather an all-encompassing process. Flourishing requires everyone, both individuals and groups alike, to make far-reaching changes both ethically and materially to achieve a safe, moral and meaningful space for all life on earth. This, of course, requires an extensive shift in our value and belief systems; a re-thinking of our priorities. Any education for sustainability should influence the hearts and minds of individuals such that their values align more with this new ideal. This is especially true for future business leaders who will have to drive this transformation. To move towards sustainability-as-flourishing requires leaders who imbue this aspiration both in their private and work lives.

Teaching Sustainability-as-Flourishing

Several authors have argued that business school curricula, embedded as it is within a neoclassical worldview, needs substantial change. Giacalone (2004), for instance, claims the twenty-first century needs a different business education; one that transcends reductionism to the bottom line and provides a viable future for all. According to Giacalone, this requires embedding higher order goals such as common good and flourishing into our education system. In similar vein, McKenna and Biloslavo (2011) ask whether the

> Modern university education has a responsibility for the formation of socially responsible graduates or is its role to achieve the best value-for-money in accordance to the standard view of business school operating in a market of rational self-interested utility-maximisers? (p. 696)

The challenge for educators is getting students to understand this need, to shift their paradigm without losing the emphasis on practical relevance. Nevertheless, sustainability courses focusing on technique, as opposed to flourishing, may fail to achieve lasting outcomes.

As the introductory paper in a major on sustainability, and as part of a Bachelor of Business Degree, it was important the design of this course instigated the change of mindset and behaviour required to cultivate business students that can progress

society in the direction of sustainability-as-flourishing. At the same time, the course needed to be a broad based introduction to sustainability for a wide variety of students. The focus was not on the technical aspects of sustainability (e.g. waste audits or greening the supply chain), but rather on transforming beliefs and values, and developing a change orientation. To achieve this, the course reflected Roger's (1994) approach to sustainability education. She argues that any such education must cultivate student-relevant knowledge and skills as well as appropriate beliefs, values and attitudes towards sustainability. Moreover, such education must challenge students about how they live in relationship to the welfare of society and the planet. She labels these as the *cognitive*, *affective* and *existential* dimensions of sustainability education. Ultimately, doing this should foster responsibility, decision-making, and action to bring about real change in the world. Roger refers to these as the *empowerment* and *action* dimensions of sustainability education. Moreover, Schaefer et al.'s (2015) categories (*beliefs/values*, *diagnosis*, and *responsibility)* have also been incorporated, as the emphasis of the course shifts further in the direction of sustainability-as-flourishing. Not surprisingly, there are a number of common ideas between both frameworks.

The course divides into four broad modules: individual, organisation, society, and leadership each with 3 weeks of classwork. Each class centres around a learning activity, and at the end of three weeks, a reflective action exercise. At the conclusion of the last module (leadership), students complete and present on a service learning project. Table 4.1 below indicates the outline. Unfortunately, space does not allow for a full examination of the course. Therefore, this chapter focuses on how module 1 and 3 educate for sustainability-as-flourishing. In each section, we discuss one in-class exercise, as well as the end of module reflective action exercise. In addition to this, the chapter reviews the overarching assessment for the course, the service learning project.

Module 1: Individual

Following Schaefer (Schaefer et al., 2015), we start with *beliefs and values* because they influence perception and thus diagnosis. The first module focuses on the individual, the necessity of a flourishing life, and the beliefs, values and attitudes that promote or inhibit this potentiality. In particular, we address understandings of rational self-interest, materialism and consumerism, as students explore the underlying roots of their worldviews, which often then exposes the prevailing economic model at play in so much of our lives (McKenna & Rooney, 2008).

The first in-class exercise, '*What is a Good Life?'* coheres around two quotes sourced from Plato's *Apology*: "the unexamined life is not worth living", and his *Republic* "we are discussing no small matter but how to live". A good life, according to the ancient Greeks, was one lived in accordance with moral values (i.e., the virtues), which was a life of *eudaimonia* (i.e. flourishing) (Mele, 2005). A series of questions asks students to examine their lives, to clarify what they think a good

Table 4.1 Course outline[a]

Week	Module	Class exercises	Reflective action exercises	Service learning project[b]
	Individual		*45% of Final Mark*	*35% of Final Mark*
1	What is Sustainability-as-Flourishing?	What is the Good life? (Solomon, 2006)		
2	Clarifying Beliefs and Values	Developing a Personal Values Index (McDonald, 1998)		Introduction
3	Consumption and Consumerism	Consumeography (Kasser, 2013)	Carrying Out Selfless Acts (McDonald, 1998)	
	Organisation			
4	The Economics of Sustainability-as-Flourishing	The Ideology of the Free Market (McDonald, 1998)		
5	Business, Society and Environment	The McDonalisation of Society		Project Plan
6	Strategies for Sustainability-as-Flourishing	Got a Minute? (Sugar, 1998)	Fair Trade vs. Free Trade (McDonald, 1998)	
	Society			
7	Systems Thinking	The Four Why's (Senge, 1990)		
8	Inequality	The Energy Game		
9	Climate Change	Contentment, Climate Change and the Car (McDonald, 1998)	Rationalisations and Climate Change	
	Leadership			
10	Sustainability-as-Flourishing Leadership	Plato's Cave		
11	Leading with Character	The Character Test		
12	Leading with Spirit	The Highest Goal (Laszlo et al., 2012)		Poster Presentation

[a]Several of these exercises have been adapted from various authors (see above). Others were from the public domain or developed by the lecturers

[b]There is also an in-class test worth 20% of the final mark. We instigated this to ensure students kept up with the course reading

life might look like, to address the sort of person they should be if they wanted to be truly fulfilled and happy, and how such living connects to sustainability-as-flourishing. The exercise finishes with students writing their own obituary (Solomon, 2006). This enables recognition of the distance between student reality and their ideals of flourishing as determined in the first part of the exercise:

You have had a hard week. You are overworked, exhausted and you push yourself still further. All of a sudden, you have a heart attack and die. Write your own epitaph (<500 words):

- What did your life amount to?
- What was memorable?
- What was useful?
- What do you value in retrospect?
- What would you have done differently?
- Who were you?

At the completion of this first 3-week block, students receive a 15% reflective action assessment. These tasks concretise ideas discussed in class, challenge student beliefs and values, and ultimately try to alter perception, and hence behavior. Part of the rationale for this comes from Schaefer et al.'s (2015) argument that for sustainability-as-flourishing to happen, worldviews must shift from that of *Homo Economicus* towards "caring for others and for nature" such that "social justice and equity are enacted" (p. 398). However, for such change to transpire, education must go beyond the artificial. For as both Rogers (1994) and Ehrenfeld (2008) note, transformational learning occurs when we reflect on our everyday experiences in the real world, and when were are empowered to act on them.

For this initial task, students perform two selfless acts (McDonald, 1998). Anything is permissible, as long as it is beyond their normal comfort zone, and it is for strangers. Varieties of actions typically occur, ranging from the simple (e.g. giving a seat up on the bus or helping the elderly across the road) to the more complex (e.g., volunteering at a homeless shelter or planting trees for the day). Since reflection on real-life experiences is an essential aspect of shifting beliefs and values, two methods based on the work of Mintz (1996) are incorporated into this process. The first was 'reflection in action', which requires students to build knowledge before acting. In this instance, class discussion revolves around what selflessness is (e.g. can people even be selfless?), what a selfless action might look like, how to be selfless, and so on. Once the acts were completed, students applied Mintz's 'reflection-on-action', which meant describing what happened, as well as recounting their emotional state during and after the act. It also meant addressing several questions about their experience:

1. How did people react? Why do you think they did this?
2. How did your acts influence the relationship between you and the other person?
3. How does class discussion relate to your experience?
4. What has selfishness/selflessness have to do with sustainability-as-flourishing?

To finish this first assessment, students find learning partners (Rimanoczy, 2016) to read and ask questions about each other's selfless acts. This happens for two reasons: (1) considering other's experiences in relation to their own involvements enhances reflection, and (2) there is an element of role modelling as students learn from each other. As Rossouw (2002) notes, such practices cultivate "a moral community where members of the class learn from one another and where discoveries regarding reciprocity can be made" (p. 428).

Module 3: Society

For Schaefer et al. (2015) complex systems thinking is imperative. The literature supports this claim. For example, Wiek, Withycombe, and Redman (2011) call for individuals and groups to enhance systems thinking competence which involves:

> collectively analysing complex systems across different domains (society, environment, and economy) and across different scales (local to global), thereby considering cascading effects, inertia, feedback loops and other systemic features related to sustainability issues and sustainability problem-solving networks (p. 207)

Others (see e.g., Metcalf & Benn, 2013; Uhl-Bien, Marion, & McKelvey, 2007) contend such complexity cannot be addressed using traditional management approaches; instead it requires an adaptive leadership style that emerges from the informal changing dynamics throughout an organisation. Such leadership, states Schaefer et al. (2015), takes a long-term approach to decision-making, has a holistic experiential understanding, and is pragmatic.

At the same time, Schaefer et al. (2015) also note the need for attending to the root causes of complex problems rather than symptoms. As discussed earlier, identifying the beliefs and values that underpin unsustainability is the first step to addressing them. This means significant critical refection "by individuals on their habitual mental and emotional patterns" (p. 399). Such *diagnosis* leads to realisation of the need for change as well as deeper intuition and insight, which Schaefer et al. assert, expands human consciousness towards others and nature. Consequently, the third module in this course focuses on systemic examples of unsustainability in the world. The module begins with an introduction to systems thinking and the first in-class exercise reinforces that learning using the *Four Whys* exercise (Senge, 1990):

Students choose a complex problem from society relating to unsustainability. It can something wide (e.g. inequality, climate change, biodiversity loss) or narrow (e.g. domestic violence, river pollution, prison populations, fishing stocks etc):

– Ask the question, "Why is such-and-such taking place?" Try to find with 3–4 answers

(continued)

- Put these answers on butcher paper with plenty of room around them
- Repeat the same process for every statement on the page asking "why" about each one. Post each answer near its parent
- Do this three more times for each answer just posted (the idea is to drill down into the problem to find the source not just the symptoms)
- As you dig into the problem, look for convergence between systematic sources (common answers are usually at levels 3 and 4)
- Avoid blaming individuals—focus on the system

This exercise achieves at least three outcomes. First, it helps student's understand the relationship between a structure of a system and its behaviour (i.e., symptoms). Second, it demonstrates how elements in the system relate. It highlights a system's non-linearity, uncertainty and capacity for surprise. Third, it generates a realisation that you cannot solve systemic problems by dealing with symptoms. At the completion of the exercise, students are encouraged to offer solutions to these problems in light of this new understanding.

At the end of this 3-week module, students receive the third reflective action exercise. This task echoes Schaefer et al. (2015) diagnosis category. As before, this is worth 15% of their mark and requires them to put into practice what they have learnt in class. As before students practice 'reflection-in-action' (Mintz, 1996), as they think about the reasons they use for not being sustainable, and comment on the legitimacy and validity of these rationalisations in their lives. Once this is completed, several statements about climate change are proposed and discussed. Many of these connect back to material covered in the previous classes around self-interest, consumerism, markets, and systems thinking. As part of this discussion, students also reflect on how their own validations influence their decision-making around issues such as climate change.

After this 'reflection in action', students are required to engage with 2–3 others in a dialogue regarding climate change. Discussing with others is key to cultivating responsiveness and agreement both of which are necessary requirements for influencing perception and action about climate change (Krznaric, 2008). In this exchange, students inquire about such things as:

1. How much do you know about climate change? Is this an important issue for you?
2. How do you think climate change affects you?
3. What do you think causes climate change? What role does business/government play?
4. What is your responsibility in dealing with climate change? What can you do to fight this issue?

'Reflection-on-action' (Mintz, 1996) involves writing up their dialogue as general narrative. This provides relevant particulars from the discussion, especially noting whether any rationalising occurred. For students, the test is to see such reasoning as

symptoms of deeper structural problems, and to challenge individuals where possible. The learnings from dealing with such differences can be transformative, and students are encouraged to write these up as well. Finally, students enact two simple items from a prescribed list of 10 actions that fight climate change. These include things like tree planting, using a clothesline, avoiding excessive packaging, and joining an action group for climate change. Once completed they go through another process of reflection regarding their action, how felt doing it, whether such conduct targets symptoms or structure, and how it might inform future action. Both the dialogue and actions enable students to practice real-life learning (Rogers, 1994). Again, a review process facilitated additional learning from the narratives of others.

The above describes two of the four modules that students undertake as part of this introductory course in sustainability. The other two modules follow a similar process, with in-class exercises initiating the topic, and a reflective action task and peer review required at the end of the three weeks.[1] Teaching this way is collective, participatory, and experiential. In such an atmosphere, the lecturer facilitates rather than deposits knowledge. Students learn in their own way, and from their own experiences. This seems likely to produce more interesting and fruitful outcomes (Anderson, Reder, & Simon, 1996; Baden & Parkes, 2013; Savage, Tapics, Evarts, Wilson, & Tirone, 2015), including, perhaps most importantly, heightened conscientization around these issues (Freire, 1996).

Service Learning Project

The last requirement, identified by Schaefer et al. (2015), to move us towards sustainability-as-flourishing, is that of responsibility. As implied earlier, this necessitates viewing profit as an end. It also means understanding planetary boundaries and learning to respect these. Moreover, as Schaefer et al. notes, such responsibility involves collaborative and participative approaches. According to Laszlo et al. (2012), a valuable approach for cultivating sustainability-as-flourishing in business students is via systems immersion. This involves designing and facilitating tasks that connect individuals with the broader system in which they live. These enable us to:

> experience, connect to, gain deep understanding of, and appreciate relevant sustainability topics; meet and have dialogue with stakeholders on the front lines of key issues; and be in an environment and context that fosters reflection. (p. 46)

Service learning generates the real world opportunities for students to apply ideas usually in the non-profit or community sector. Research indicates such programmes enhance feelings towards self and learning while improving public engagement, educational outcomes, critical thinking, cultural awareness and leadership skills (Celio, Durlak, & Dymnicki, 2011; Mitchell, 2008; Warren, 2012). Unlike

[1]The last reflective component is part of the service-learning project.

volunteerism, service learning projects are "embedded in a theoretical foundation, with clear learning objectives, activities and reflective components" and "students must engage in their wider community with the aim of extending their learning beyond that which is possible through a purely classroom-based learning context" (Kenworthy & Peterson, 2005, p. 272). Essentially, there are two approaches to service learning: the traditional and the critical (Mitchell, 2008). The second of these differs from the first in that the emphasis is on challenging values, structures and institutional operations while creating community partnerships that aim at real change.

In week 2 of the course, students commence a service learning project worth 35% of their final mark. This is a useful exercise to bring together ideas from the course, while at the same time immersing students in an area of sustainability that is pertinent to their lives. Not surprisingly, given the focus of this course, this project takes a more critical approach to service learning. In groups of 4–5, students approach a community organisation from a list of 150 potentials. These range in size, and incorporate both environmental (e.g., Sea-Cleaners, Sustainable Coastlines, Keep New Zealand Beautiful)[2] and social entities (e.g., Communicare, Lifewise, Bellyful).[3] Once contact is established, students meet with their organisation and together, they complete a learning plan (worth 10%). This includes a brief overview of the organisation, as well as what they will action, and how they (and the organisation) will evaluate their service. Such partnership ensures the community organisation is "actively involved in creating and defining the service-learning experience; they are not just passive beneficiaries" (Ward & Wolf-Wendel, 2000, p. 767). Once the lecturer (and the organisation), approves this plan in week 5, students have until week 11 to complete 10 hours of service. This limit is due to time commitments, and the application of other real-life learning exercises throughout the course (see Table 4.1). After finishing, students conduct an interview with the founder/manager of the organisation, and then present their experiences, learnings, and findings to the class in the form of a poster worth 25%.

To ensure this is not just forced volunteerism, students are encouraged to be change agents, and to use their learning to address and respond to their own communities (Mitchell, 2008)—it is "service for an ideal", not "service to an individual" (Wade, 2000, p. 51). This means choosing organisations that promote sustainability-as-flourishing (either directly or indirectly), and challenging students to explore and recognize the sources of unsustainability these entities are addressing, and the action required to change the underlying structures that perpetuate these. Consequently, as part of their final presentation, students critically analyse their work in the community. This entails a sociohistorical analysis answering such questions as "how did the organisation come to exist?", "what is it about our society that requires such entities to operate?", "how does our market system enhance or limit their operation?" as well as queries specific to their organisation (e.g., "why does New Zealand, a rich country, have such a problem with homelessness?").

[2]Websites: www.seacleaners.com/, www.sustainablecoastlines.org/, and www.knzb.org.nz/

[3]Websites: www.communicare.org.nz/, www.lifewise.org.nz/, and www.bellyful.org.nz/

The project requires students to use course work—the class readings, exercises, discussions, and the action reflections (see Table 4.1 above)—to think about their service in relationship to our current unsustainability. Doing so encourages consideration of the individual and structural concerns that necessitate their service. The course readings reflect this change orientation by bringing attention to such issues as social and environmental justice and concepts of power and bias. In addition to this, the interview with the founder and/or manager garners further knowledge about how these organisations address the societal conditions that create the issues (e.g. homelessness) they are attempting to resolve. Moreover, in these interviews, students hear success stories that reinforce beliefs that sustainability-as-flourishing is possible as well as insights into the type of leadership required to ensure these outcomes. Interestingly, many of the organisations selected appear to use distributed and emergent leadership styles fitting to the adaptive requirements of sustainability (McGhee & Grant, 2017); they seem less traditional (i.e., hierarchical, technocratic, paternalistic) and more inclined to see profit as a means to an end (Schaefer et al., 2015). Students report these findings back to the class via their presentations—again, this builds the moral learning community.

This assessment's underlying pedagogy is experiential (Kolenko, Porter, Wheatly, & Colby, 1996), a crucial aspect of educating for sustainability-as-flourishing. As Ehrenfeld (2008) notes, we learn best when we critically reflect on our own lives, in our own context. Consequently, students are encouraged to pick a community organisation and/or issue that inspires them. This service is also transformative (Bamber & Hankin, 2011). It alters student perspectives through critical class discussion, action learning and reflection such that students become aware of how and why their beliefs and values might limit how they view, comprehend, and experience the world. Being confronted with the issues and trials community organisations face (e.g. child poverty and hunger, destruction of marine life from excessive waste, and increasing homelessness in society) can shift the meaning perspectives that underpin student worldviews thereby creating dissonance and a desire to address this imbalance through new behaviours (Mezirow, 2000). In other words, service learning challenges business students with the 'unfamiliar' to help them question the 'familiar'. Finally, service-learning is pragmatic (Giles & Eyler, 1994). It is not just about personal change; it is also about making a useful difference in the world. Without this aspect, any education hoping to cultivate sustainability-as-flourishing will simply become an irrelevant and egocentric exercise. Consequently, this exercise meets all of Ehrenfeld's (2008) requirements for nurturing a sustainability-as-flourishing mindset (i.e., experiential, transformative and pragmatic).

Conclusion

As discussed above, sustainability-as-flourishing calls us to make significant changes in the way we live to achieve a benign, fair and meaningful space for all human beings. To encourage this, education must develop higher order dispositions, a kind of sustainable 'habits of the mind' towards environmental, social, and

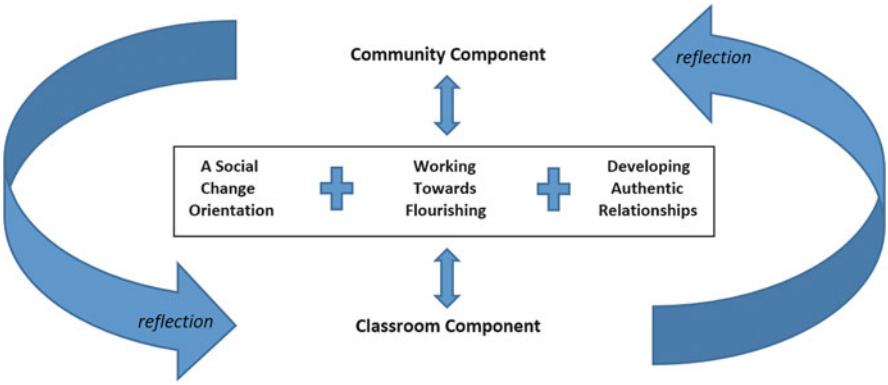

Fig. 4.1 Educating for sustainability-as-flourishing (adapted from Mitchell, 2008, p. 53)

economic justice (Podger, Mustakova-Possardt, & Reid, 2010). This chapter describes an introductory course for undergraduate business students, majoring in sustainability, which develops such a mindset. This is important since "what business students do is informed and shaped by their view of reality, and this is informed by their way of knowing and sense of purpose" (McKenna & Biloslavo, 2011, p. 698). Overall, the goal of this course is to minimise 'banking education' (Freire, 1996), facilitate students to become conscious of, and able to criticise, their own worldview and the current status quo, while being motivated towards responsible change (i.e. to enact sustainability-as-flourishing in their own lives). Figure 4.1 captures the process of how classroom and community components work together to achieve this outcome.

From class discussions built around learning exercises on key sustainability ideas (e.g. consumerism) and skills (e.g. systems thinking), to authentic reflective action, and ultimately immersion in a service project with their wider community, this course provides students with the means and tools to action both personal transformation and societal change. To give a concrete example of how such transformation might occur, we can examine potential outcomes. To successfully complete course assessments, students must interact with others and cultivate relations with them. To do this, students make an effort to understand others' perspectives. Without this moral sensitivity, it becomes hard to minimise the vain egocentricity that feeds our present unsustainability (Hamilton, 2003).

Such interaction also develops moral character, the crucial 'habits of mind'. These exercises shift meaning perspectives towards a new ideal that aims at flourishing as the norm. The dissonance created by this motivates students to align conduct with their new outlook (Mezirow, 2000). This in turn, may foster several character traits (i.e. virtues) conducive to sustainability-as-flourishing. These exercises inspire students to aim at noble goals not for personal interest but for the common good. By serving others, students come to recognize their dignity, understand their own egocentrism, and take responsibility for the needs of others. Doing

this requires the courage to sacrifice their own needs for these noble goals, as well as persistence in the face of opposition to such ends. Ultimately, students comprehend others as ends-in-themselves as they cultivate a sense of obligation that transcends self-interest.

We are under no illusion that a one-semester course will alter students in radical ways. Indeed, many students already have in-built moral dispositions (Kupperman, 1999). We hope this course enhances what exists already in student's hearts and minds by connecting them with sustainability-as-flourishing. For those that do not have strong moral sensitivities, we hope this course reboots their internal software so at the very least they understand the seriousness of what confronts humanity.

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Chapter 5
Stakeholder Perceptions of the Importance and Effects of Sustainability Education

Lynne Eagle, Breda McCarthy, Rachel Hay, Amy Osmond, and David Low

Introduction

The need for increased focus on sustainability and sustainable development-related issues across society is increasingly recognised (Lans, Blok, & Wesselink, 2014), with assertions that the majority of the world's CEOs regard sustainability and sustainable development as essential for long-term business success (Lans et al., 2014). We note, however that there has yet to be common agreed definitions of these and related terms (Stough, Ceulemans, Lambrechts, & Cappuyns, 2018), with criticism of them focusing on their lack of precision (see, for example, Seghezzo, 2009) while others suggest, in relation to sustainable development, that "its inherent vagueness and interpretive flexibility contribute to its broad appeal" (Boström, 2012, p. 3). This debate also presents some significant challenges in terms of what to include in sustainability-related curriculum content.

The most common definitions of sustainability are:

> A way of doing business that creates profit while avoiding harm to people and the planet (Centre for Sustainable Enterprise cited in Connelly, 2010, p. 86).

> Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development (1987) cited in Chabowski, Mena, & Gonzalez-Padron, 2011, p. 55).

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> Consumption that can continue indefinitely without the degradation of natural, physical, human and intellectual capital (Costanza, 1991, cited in Crittenden, Crittenden, Ferrell, Ferrell, & Pinney, 2011, p. 72).

> Sustainability . . . translates into a 'triple bottom line' responsibility, with the implication that assessment of business results should be based not only on economic performance but should take into account the environment and social impact as well (Sheth, Sethia, & Srinivas, 2011, p. 21).

The second and third definitions highlight the need to focus not just on the present and short-term future, but also on the longer-term future. The fourth definition highlights the growing pressure for commercial organisations to report on wider issues than just financial performance (Gross, 2015). This is linked to a growing trend for commercial organisations to undertake corporate social responsibility (CSR) programmes linking themselves to either or both of social or environmental sustainability (Dahlsrud, 2009).

While CSR may be a genuine commitment, it may also be 'greenwashing', i.e. an attempt to make an organisation look good in the eyes of its stakeholders (Prasad & Holzinger, 2013) or to divert attention away from the negative impacts of a firm's activity (Eagle, Dahl, & Low, 2015; Kuznetsov, Kuznetsova, & Warren, 2009). Additionally, while CSR is a prominent manifestation of the recognition of wider responsibility, there are disagreements over its concepts and operationalisation, together with significant differences in the way CSR is interpreted across cultures (Kuznetsov et al., 2009; Panimbang, 2013).

There has also been debate regarding whether 'sustainability' and 'sustainable development' are separate concepts or sufficiently closely related in terms of the former being goal-focused and the latter being the processes used to achieve the overall goal to enable the two terms to be used synonymously (Sidiropoulos, 2014) as shown by the quotes below:

> Some scholars argue that there is a difference between 'sustainable development' and 'sustainability', for example: that sustainability refers to the environmental dimension of sustainable development, or that sustainability refers to a process whereas sustainable development refers to the product (end state). To us the two concepts entail the same dimensions and the same policy implications. Thus, we use them interchangeably (Holden, Linnerud, & Banister, 2014, p. 131).

> Some authors consider sustainability to refer to objectives to be achieved, with sustainable development referring to the processes to achieve them. Others interpret sustainable development as focusing on ameliorating economic growth by taking into account the environment, while sustainability focuses on the ability of humanity to live within the environmental limits of the planet (Mancebo, 2013, p. 30).

> Sustainability is often thought of as a long-term goal (i.e., a more sustainable world), while sustainable development refers to the many processes and pathways toward that goal (e.g., education and training, sustainable agriculture, sustainable production and consumption, good government without corruption, research, and technology transfer) (McKeown, 2013, p. 17).

Neither term can be discussed in isolation from the other. Our stance is that the two terms are sufficiently related in terms of sustainable/sustainable development

educational applications, and that the relationship between them is both dynamic and context-specific, which warrants them being discussed in tandem, if not treated as synonymous. We note that sustainability as a concept continues to be seen as being both abstract and complex, leading to a lack of engagement with policy development and operationalizing sustainability practices (Aleixo, Leal, & Azeiteiro, 2018), thus presenting challenges in terms of how best to engage students with the issues. There is a large and robust body of literature that confirms that mere information provision has no effect on attitudes let alone subsequent behaviours (see, for example, Anderson, 2015).

Role of Universities

What is not disputed is that universities are expected to play a key role in addressing sustainability-related problems (Aleixo et al., 2018; Gale, Davison, Wood, Williams, & Towle, 2015), producing graduates who not only are 'work ready', being able to work with minimal supervision, but who can become change agents with regard to sustainability-related issues within their employing organisation (Heiskanen, Thidell, & Rodhe, 2016; Hesselbarth & Schaltegger, 2014). Universities, through engagement with industry, also have the potential to influence both perceptions and processes within industry organisations (Cicmil, Gough, & Hills, 2017). There is also recognition of the need to develop resilience and adaptability skills for a rapidly changing workplace (Seibert, Kraimer, & Heslin, 2016) and the ability to address complex, change resistant challenges for which no single solution exists: these challenges are increasingly being termed 'wicked problems' (Head & Alford, 2015). How universities can be most effective at addressing these issues is under explored.

International tertiary quality assurance organisations such as EQUIS and AACSB now include sustainability as an explicit criterion for accreditation, for example:

> The school must demonstrate a commitment to address, engage, and respond to current and emerging corporate social responsibility issues (e.g., diversity, sustainable development, environmental sustainability, and globalization of economic activity across cultures) through its policies, procedures, curricula, research, and/or outreach activities (AACSB International, 2017, p. 7).

We note that there has been a long history of debate regarding the relevance of business curricula to the business world and concerns regarding a perceived academic-practitioner divide, particularly in disciplines such as marketing (Brennan, 2004) and management (Stewart, Gold, Gray, Iles, & Watson, 2011). However universities may be unfairly blamed as there is evidence from a Spanish study that identifies both organisational and strategic capabilities as barriers to organisations themselves achieving sustainability (Murillo-Luna, Garcés-Ayerbe, & Rivera-Torres, 2011). There is a lack of proactive discussion regarding the role of universities in improving these capabilities.

As part of the wider dissatisfaction, there is evidence of ongoing employer dissatisfaction in many countries with the performance of graduates entering the workforce (Jackson & Chapman, 2012; McMurray, Dutton, McQuaid, & Richard, 2016). There is also evidence of some frustration among recent graduates that some skills expected by employers, especially time management, communication and analytical skills, had not been taught (Orinos, 2012).

Much of the debate regarding the potential effectiveness of including sustainability content into curricula has focused on post graduate programmes (see, for example, Hesselbarth & Schaltegger, 2014) or, at undergraduate level, individual subjects or disciplines (see, for example, Lozano, Ceulemans, & Seatter, 2015; Perera & Hewege, 2016) and not on a holistic, integrated approach across an entire curriculum.

We now discuss a case study, based on a multi-phase research programme, from a Business College within an Australian regional university, James Cook University, headquartered in Townsville, Queensland with campuses in Cairns (Far North Queensland) and in Singapore, that made a very deliberate decision to ensure explicit sustainability content throughout the business curriculum within the context of increased engagement with potential employers to improve graduate work-readiness. We note that this university has a record of graduate employment slightly higher than the national average (75% versus 73.1% in full time employment and 89.6% versus 89.3% in full or part time employment) (QILT, 2018).

We examine the perceived importance of a range of sustainability issues from the perspectives of three key stakeholder groups: students at the beginning and end of their undergraduate studies, graduates and employers. We note that it is claimed that regional universities have a very specific role in helping regional organisations to address both global and regional sustainability-related issues and to help build regional capacity to respond to challenges facing regional economies (Karatzoglou, 2013; Sedlacek, 2013). It has been acknowledged that it is important for students to understand the relationship between the various components of sustainability and both individual and overall integrated business functions and operations (Stubbs & Cocklin, 2008).

Student Perceptions Prior to Inclusion of Specific Sustainability Content

We initially surveyed both entry-level and senior students prior to, and after the introduction of substantial sustainability-related content across business degree syllabi (JCU ethics approval number H4491). Attitudes, beliefs and self-reported behaviours were explored, using a list of sustainability issues originally drawn from the literature and validated in earlier studies of students enrolled on an undergraduate business degree (see, for example, Michalos, Creech, McDonald, & Kahlke, 2011).

Students who had not been exposed to specific sustainability content showed low levels of awareness of, or interest in these issues, coupled with scepticism regarding

Table 5.1 Comparison of first year entry level and senior level students familiarity with key terms (prior to introduction of sustainability content)

Term (Mean where 5 = very familiar 1 = not familiar at all) and standard deviation (SD)	First semester year 1 Pre-sustainability changes n = 167		Final semester year 1 Pre-sustainability changes n = 80	
	Mean	SD	Mean	SD
Economic sustainability*	3.47	1.19	3.98	0.93
Environmental sustainability*	3.79	1.08	4.11	0.86
Social sustainability	3.25	1.12	3.41	1.25
Sustainable development*	3.45	1.16	4.01	0.85
Conservation*	3.64	1.21	4.04	1.02
Climate change*	3.98	1.11	4.36	0.77
Climate change adaptation*	4.13	0.97	3.48	1.10
Environmental protection*	3.80	1.19	4.14	0.79
Energy conservation	4.25	1.07	4.11	0.94

Note: *Indicates significant difference between years of study $p < 0.05$

what the practical implications of any behaviour change aimed at addressing sustainability issues would be and whether individual actions would have any effect on what they perceived as global issues. These students also identified both unrealistic optimism regarding society's and governments' abilities to resolve environmental problems and a denial of personal risk, findings consistent with research from other countries (for a review, see Eagle, Low, Case, & Vandommele, 2015).

Self-Reported Knowledge

In terms of self-reported knowledge of the key terms (refer to Table 5.1), final semester students appear to have higher levels of knowledge of all bar one of the terms tested, seven of these were statistically significant. An interesting exception is the significantly lower level of knowledge about climate change adaptation than first year students (Table 5.1). We ran both parametric and non-parametric analyses, drawing on the proposition by Norman (2010) that the robustness of parametric statistics for this type of data is frequently unrecognised—and found no differences in the outcomes of the two types of tests.

Implications

A disconnect between awareness and behaviour is well-documented in the academic literature across a diverse range of both generic environmental behaviours (Morren & Grinstein, 2016) and specific behaviours such as renewable energy (Claudy,

Peterson, & O'Driscoll, 2013) and tourism mobility (Juvan & Dolnicar, 2014). This is particularly concerning when awareness and interest levels are low, indicating that information provision alone is unlikely to be effective in increasing engagement with sustainability issues. Past over-reliance on the information deficit model, i.e. the assumption that people do not act as desired due to a lack of knowledge and that provision of this knowledge will rectify the situation has been criticized for ignoring underlying attitudes and values that influence behaviours (Kraft, Lodge, & Taber, 2015; Simis, Madden, Cacciatore, & Yeo, 2016).

Curriculum Changes

The business curriculum was then modified, drawing on advice from industry groups regarding the knowledge and skills sought from graduates, together with best practice strategies identified in the academic literature to strengthen the sustainability content. The aim was to ensure a consistent approach across subjects and disciplines and also to address identified shortcomings regarding the relevance of the curriculum, including sustainability.

The curriculum revision used a best practice 'active learning' approach to maximize potential engagement of students with real-world issues, using a range of situations that students were likely to face in their working lives to illustrate the types of sustainability challenges and potential actions that could be taken, together with their consequences (MacVaugh & Norton, 2012). This curriculum change also included four components, authentic assessment, work integrated learning, the optional opportunity to study abroad for a semester and optional mentoring by members of the local Chamber of Commerce during student's final semester of study and early months of employment as part of their transition from education to the workplace.

A combination of blended learning (using digital technology to combine lectures and tutorials through online platforms) and fully online study options to complement traditional face-to-face delivery was introduced to meet the needs of students in the communities that the university serves, particularly those who are in employment or who live some distance from campuses. This move was driven by feedback from stakeholders and reported best practice in the academic literature. It reflects a global move to meet the changing needs of new cohorts of students (López-Pérez, Pérez-López, & Rodríguez-Ariza, 2011; Marín et al., 2016; Murphy, 2011).

Authentic Assessment

Authentic assessment draws on real-world problems, often with active input from organisations, with the aim of specifically developing and assessing skills that will be required in actual employment. This approach has been shown to both increase

student satisfaction and employability (James & Casidy, 2016). It is closely linked to work integrated learning, but the latter extends to actual placements of students within an organisation, either on a part time basis while continuing studies, or as a defined break from conventional studies.

Work Integrated Learning/Placements

Placement of students within organisations in order to gain experience within work environments and exposure to real-world challenges, including sustainability-related issues, are recognized as effective in increasing work-relevant skills and thus enhancing employment prospects upon graduation (Jones, Green, & Higson, 2017). It also helps students to envisage their future professional identities and, on completion of their studies, aid in the transition to the workforce (Kinash, Crane, Judd, & Knight, 2016), although these benefits are often not immediately recognised by students who claim placements cause economic pressure and disrupt study patterns (Brooks & Youngson, 2016) in spite of evidence that all forms of experiential learning are valued by potential employers (Crossman & Clarke, 2010).

Study Abroad

Students also were offered the opportunity to spend a semester or more at the Singapore campus if they were Australian based, or at one of the two Australian campuses if they were Singapore based. This form of international study experience is recognized as being beneficial to both employers and potential employees. It recognises the increasing globalization of business activity and the need for graduates to be able to function in culturally diverse environments if employed outside of their home country and in increasingly culturally diverse workplaces and range of business contacts regardless of their country of employment (Begalla, 2013; Crossman & Clarke, 2010; Kivunja, 2015). It also enables students to compare sustainability issues in two very different countries.

Chamber of Commerce Mentoring

To aid students' transition from the university 'learning space' to the commercial 'working space', a programme has been established with the local Chamber of Commerce as an addition to other support programmes available to students. This provides students with the opportunity to:

(a) Network with business professionals [the impact of which is also under recognized by students (Kinash et al., 2016)].
(b) Obtain advice regarding resume presentation and interview skills.
(c) Direct mentoring of students by professionals external to the university.

Such programmes have been shown to benefit mentees from this type of mentoring, increasing their confidence, knowledge about their chosen career options and career path options (Jackson, 2016; Smith-Ruig, 2014).

Student Perceptions After Studying Revised Curriculum Incorporating Specific Sustainability Content

The entry-level study participants from the first round of data collection were then resurveyed in their final semester of undergraduate study to determine whether changes in self-reported attitudes and behaviours had occurred.

Table 5.2 indicates that the outgoing first year students had higher knowledge scores than those for the incoming cohort 3 years previously. This is not unexpected as considerable communication was undertaken with these students from their initial enrolment, orientation programmes and their first lectures regarding the rationale for the curriculum change. When this cohort was resurveyed in their final semester, positive changes in familiarity were statistically significant for all terms.

When the final semester groups pre- and post-introduction of the sustainability content were compared, a complex pattern emerges. While familiarity with the first three terms has increased significantly, familiarity with *social sustainability* is lower, possibly because it is a more complex topic than *economic* and *environmental sustainability*. It is subject to conflicting definitions, leading to the observation that it has been under-theorised or oversimplified (Missimer, Robèrt, & Broman, 2017). Harsher critics suggest that "it is a concept in crisis" (Vallance, Perkins, & Dixon,

Table 5.2 Comparison of student responses in first (year 1) and last semester (year 3) of study: familiarity with key terms (after introduction of sustainability content)

Term (Mean where 5 = very familiar 1 = not familiar at all) and standard deviation (SD)	First semester year 1 Pre-sustainability n = 167		Final semester year 3 Post-sustainability n = 133	
	Mean	SD	Mean	SD
Economic sustainability*	3.47	1.19	4.17	0.77
Environmental sustainability*	3.79	1.08	4.32	0.72
Social sustainability*	3.25	1.12	3.87	0.90
Sustainable development*	3.45	1.16	4.02	0.80
Conservation*	3.64	1.21	4.05	0.86
Climate change	3.98	1.11	4.27	0.84
Climate change adaptation*	4.13	0.97	3.64	0.99
Environmental protection	3.80	1.19	4.11	0.83
Energy conservation*	4.25	1.07	3.95	0.94

Note: *Indicates significant difference between years of study $p < 0.05$

2011, p. 342), comprising "a theoretically unfounded selection of assumptions, goals and indicators" (Spangenberg & Omann, 2006, p. 320) and being influenced by political agendas and the outcomes of policies (Colantonio, 2009; Littig & Griessler, 2005). This may account for social sustainability being reported vaguely if at all (McKenzie, 2004; O'Dwyer & Unerman, 2016). In this, and related research, we have adopted the following widely cited definition: no more recent definitions have been proposed to supersede this definition (McKenzie, 2004, pp. 18–19):

> Social sustainability occurs when the formal and informal processes, systems, structures and relationships actively support the capacity of current and future generations to create healthy and liveable communities. Socially sustainable communities are equitable, diverse, connected and democratic and provide a good quality of life.

An investigation of how this can be explained more effectively within the curriculum will now be undertaken, given the importance of social sustainability for small businesses within the university's traditional catchment area.

Any impacts from the curriculum revision will not have occurred in isolation, with potential reinforcement (social encouragement) or discouragement originate from family or peer groups as well as from information obtained through traditional or digital media (Peattie & Peattie, 2003). This influence is likely to have varied according to the specific term and associated behaviours. Peers and associated perceived norms may be stronger influencers in some areas (Hoorn, Dijk, Meuwese, Rieffe, & Crone, 2016) and families in others (Grønhøj & Thøgersen, 2012).

The lack of change in relation to terms such as *sustainable development*, *conservation* and *environmental protection* may reflect a complex pattern of noise via media coverage of regional issues such as the resource extraction (mining) industry and impacts on the natural environment such as the Great Barrier Reef. For example, a large foreign-owned mining complex was given approval in 2016, with support due to the potential employment opportunities expected. The approval was gained in the face of significant protests as illustrated by the 2016 media headlines shown below, most of which appeared in non-mainstream outlets.

Newlands, M. (2016). "Coral not coal—Australian activists fight to save the Great Barrier Reef". *The Ecologist*, 15 December.
Dempster, Q. (2016). "Adani/Carmichael mega coal mine: the mother of all our fears". *The New Daily*, 9 December.
Reside, A., Mappin, B. & Watson, J. (2016). "Four environmental reasons why fast-tracking the Carmichael coal mine is a bad idea". *The Conversation*, 2 November.
Visser, N. (2016). "Australia wants to save the Great Barrier Reef while building a massive coal mine". *The Huffington Post*, 7 December.
Day, J., Grech, A., & Brodie, J. (2016). "Australia must choose between coal and coral—the Great Barrier Reef depends on it". *The Guardian*, 6 December.
Knaus, C. (2016). "Minister defends coal industry after call to ban new mines to save reef". *The Guardian*, 25 November.

The media has not been neutral on the issue, with recent headlines in mainstream media appearing to marginalise the views of environmental organisations, as illustrated by the following headlines:

> Mundine, W. (2017). "Greens are out to damage Australia", *Daily Telegraph*, 9 June.
> Kelly, J. (2017). "Green activists intent on killing coal accept funding from US foundation". *The Australian*, 30 May.

This latter influence may explain the lower mean for *energy conservation*, given this has neither been a specific focus in the curriculum change nor a focus in the state of Queensland where the debate has been centred on the need to transition from coal-powered electricity generation to renewable sources (Eagle, Osmond, McCarthy, Low, & Lesbirel, 2017) and on government attempts to reduce costs per unit rather than rather than energy conservation per se. This is also reflected in media coverage, for example:

> News Corp (2017). "Malcolm Turnbull tells electricity industry chiefs to cut prices", *Daily Telegraph*, 28 August.
> AAP (2017). "Greens call for energy price regulation". *Sky News*, 8 August.

We would also observe that many of the cohorts studied would not as yet be responsible for the payment of power bills and, although they are less likely than older age groups to use traditional media channels, they still rely on some channels such as TV news for information, although increasingly via mobile media platforms (Westlund & Färdigh, 2015) and thus can be expected to have been exposed to the media coverage noted above.

Similarly, in relation to the lower mean for *climate change* for the final cohort who undertook the sustainability curriculum, the causes and impact of climate change in the region have been vigorously debated for a number of years, with a small but vocal denialist group actively challenging both the evidence base for, and potential impact of, climate change (Carter, 2010; Carter & Ward, 2010) and gaining media coverage for their counter views whenever the topic was covered by the media such as:

> Bolt, A. (2016). Ridd on Reef: Don't Trust alarmists. *Herald Sun*, 8 December.
> Bateman, D. (2016). Great Barrier Reef Death in five years is "laughable" *Cairns Post*, 21 May.

As noted earlier, the media are not themselves necessarily neutral, being influenced by "powerful societal interests that control and finance them" (Herman & Chomsky, 2010, p. xi). The tendency to gives equal coverage to both sides of a debate, regardless of the nature or volume of evidence to support or refute claims is well documented in the academic literature, together with the bias this may create (Boykoff & Boykoff, 2004; Dixon, McKeever, Holton, Clarke, & Eosco, 2015; Gross, 2009; Lewandowsky, Ecker, Seifert, Schwarz, & Cook, 2012). The consequence of 'balanced reporting' has been shown to "make the science seem more controversial and uncertain than it actually is" (Kortenkamp & Basten, 2015, p. 288) and "disproportionate visibility" being given to denialists/contrarians.

While the mean for climate change adaptation increased with the new curriculum, it remains the lowest of the terms tested. This may be a reflection of the climate change debate noted above, and also the lack of clear climate change adaptation policy, in spite of repeated calls for this to be developed (Howes et al., 2015), including disaster risk reduction (Serrao-Neumann, Crick, Harman, Schuch, & Choy, 2015).

The findings in Table 5.2 indicate weaknesses in the current curriculum that need to be addressed for future cohorts. Additionally, an investigation of the relative impact of external media on attitudes and beliefs will be undertaken along with the most effective strategies to correct misinformation.

Alumni and Employer Perceptions

We then reviewed the perceptions of graduates and employers regarding the performance of graduates in relation to both generic and sustainability-related skills and competencies (JCU ethics approval H6863). While the sample sizes are small for both groups, we believe that the responses offer some interesting insights. We note two issues: firstly, that skills and competencies are sometimes used interchangeably in the literature, with debate extending over decades as to whether this is correct or whether they are different concepts. We have adopted the stance that they are related concepts, with competencies being broader in scope, incorporating specific, usually taught, skills but also extending to include broader knowledge and attitudes that enable skills to be used in practice. Thus the ability to extract and interpret business research data would be a skill, and problem solving a competency (Orinos, 2012; Parry, 1996). Secondly, there is no agreement on exactly what these key competencies are (Barth, Godemann, Rieckmann, & Stoltenberg, 2007; Rieckmann, 2012) although there is substantial commonality across studies and also recognition of the need to "mirror professional practice and test more than just rote memorization" (James & Casidy, 2016, p. 1). This includes both technical skills needed in business profession roles and 'soft' skills such as empathy and compassion in communication (Brundiers & Wiek, 2017).

Alumni

We compared the student attitudes, beliefs and self-reported behaviours with those of the same university's alumni, who had graduated prior to the introduction of the sustainability content with the latter group also having reflected back on their studies to identify positives, negatives and perceived gaps in curriculum coverage (Table 5.3).

Employers

Given the often-reported disconnect between academia and employers regarding the skills and competencies of graduates noted earlier, employer perspectives are then discussed, drawing on data from a survey of regional employers. This phase of the

Table 5.3 Alumni: familiarity with key terms (after introduction of sustainability content), valuable learning and perceived curriculum gaps

Term (Mean where 5 = very familiar 1 = not familiar at all) and standard deviation (SD) n = 46			Open ended responses (summarized and categorized)	
			Valuable learning from university study	Perceived gaps in university curriculum
	Mean	SD	4 x aspects of the triple bottom line approach	2 x how to achieve organizational change/ change management
Economic Sustainability	4.46	0.50	2 x benefits of minimizing negative effects on the environment—short and long term	2 x social sustainability including accounting/ reporting
Environmental sustainability	4.57	0.50	2 x small incremental steps can result in cumulative benefits	2 x corporate social responsibility applications
Social sustainability	3.70	1.23		2 x potential impact of failure to implement sustainability
Sustainable development	4.30	0.66	Specific subjects noted as valuable Ecological/environmental Economics Tourism and the Environment Sustainable Marketing	2 x organizational recycling
Conservation	4.46	0.55		2 x eco-initiatives available e.g. IT driven
Climate change	4.59	0.54		2 x benefits of sustainability
Climate change adaptation	3.83	1.04		1 x national resource management
Environmental protection	4.52	0.51		1 x practical application of concepts (and their interrelationship) across industries
Energy conservation	4.59	0.62	However most respondents commented that there was very little sustainability content in the subjects they had taken	1 x sustainable work and life practices

study used the same initial questions as used in the student surveys, then explored the perceived importance of sustainability-related practices within their organisations, their perceptions of the importance of both generic and sustainability-specific skills and competencies identified in the academic literature and the performance of recent graduate employees on these. The list in the right hand column of Table 5.4 provides the additional skills and competencies identified as particularly important in sustainability and sustainable development contexts, compared to the generic competencies in the left-hand column. We have marked with an asterisk (∗) those skills and competencies that are common to both lists, and with a hash (#) to indicate those for which there is a partial overlap. We acknowledge the observation of other researchers that possession of competencies is not, in itself, a guarantee of future business leadership success (see, for example, Grint, 2007).

We note that, while many of the perceived deficiencies in graduate knowledge and skills were addressed in the curriculum review, many of the employees on which employer comments were made, would have undertaken the curriculum prior to its revision and the inclusion of specific sustainability-elated content. Seven respondents noted that, where employees fell short on any of these attributes, internal coaching and mentoring systems were activated.

Table 5.4 Comparison of most commonly listed generic versus sustainability-specific skills and competencies

Generic skills and competencies (Finch, Nadeau, & O'Reilly, 2013; Jackson, 2014; MacDonald & Shriberg, 2016)	Additional sustainability-specific skills and competencies (Heiskanen et al., 2016; Rieckmann, 2012)
Effective oral and written communication	Competency for systemic thinking and handling of complexity
Critical thinking*	Competency for anticipatory thinking
Interpersonal communication	Competency for acting fairly and ecologically
Leadership	Competency for participation
Ability to work in a team/collaborate*	Competency for empathy and change of perspective#
Ability to take initiative	Competency for interdisciplinary work
Ability to think strategically	Competency for communication and use of media
Ability to set priorities	Competency for planning and realizing innovative projects
Ability to follow through on tasks	Competency for evaluation
Ability to adapt to change	Competency for ambiguity and uncertainty and frustration tolerance
Ability to problem solve	Able to analyse interdependencies
Time management	Able to motivate and inspire others
Conflict resolution	Able to anticipate and estimate consequences
Able to be empathetic#	Able to be self-critical
Aware of cultural diversity	

*Also on list of key sustainable development competencies
#Partial overlap between the two lists

In terms of what should be taught re sustainability, the following quotes from employers indicate a commitment to sustainability as an important issue:

> The school should put students in different workplaces. One organization practically respect the eco-friendly environment and train the employees how to address issues related to working sustainability. And the other organization will not care about what the employees emphasize the issues in their workplace.
>
> To reinforce the importance that society, the economy, and the environment are interconnected, thus students need to be aware of all three in their future work endeavours. They are after all the planets future, without emphasising sustainable behaviours and activities, it will be detrimental to the planets survival as we know it.
>
> All businesses should have a Sustainability plan. You must understand what sustainability is. When you understand it you may be daunted by the cost of implementing it. Most businesses will have a different plan so you can map out one that suits you. There is plenty of information on the net that you can use parts of to suit your business. Once you have your plan mapped out you can use it as a marketing tool. The benefits gained will far outweigh the costs involved. Always remember Sustainability is an ongoing commitment and you should have log books to keep track of processes and implementing new plans.

We note that the first quote may be value loaded but also that there is implicit recognition of the complexity of 'wicked problems' and challenges faced by organisations (Tables 5.5 and 5.6).

Table 5.5 Employer familiarity with sustainability terms and importance of sustainability-related practices

Term (Mean where 5 = very familiar and 1 = not familiar at all) (n = 30)		Importance of sustainability-related practices to organization (Mean where 5 = extremely important and 1 = not important at all)	
Economic Sustainability	4.47	Recycling (i.e., paper, cardboard, glass, plastic or aluminium cans)	4.12
Environmental sustainability	4.40	Setting targets for waste reduction	3.23
Social sustainability	3.87	Setting targets for reducing electricity consumption	3.31
Sustainable development	4.40	Installing solar or other renewable energy source	3.50
Conservation	4.60	Promoting daily energy saving activities in offices (turning off computers, lights, air-conditioning, etc.)	3.69
Climate change	4.60	Using low-flow water devices	3.23
Climate change adaptation	4.00	Having family-friendly policies (i.e., flexitime)	3.81
Environmental protection	4.40	Considering diversity in hiring decisions	3.81
Energy conservation	4.40	Using sustainability-related criteria in recruitment and selection	3.08
		Contributing to community projects	3.96
		Training of employees to raise their awareness of sustainability	3.27
		Supporting local suppliers	3.85
		Having eco-friendly merchandise or products	3.31
		Appointing a Manager for Energy or Sustainability	2.50
		Obtaining environmental certification (i.e., ISO 14001)	2.85
		Reporting social and environmental impacts in annual reports	3.27

Table 5.6 Importance of and satisfaction with generic and sustainability-related skills and competencies expected of employees

Generic skills and competency set	Mean importance	Mean satisfaction	Sustainability-specific skills and competencies	Mean importance	Mean satisfaction
Importance: 5 = extremely important, 1 = not important at all Satisfaction: 5 = extremely satisfied, 1 = extremely dissatisfied					
Effective oral and written communication	4.44	3.94	Competency for systemic thinking and handling of complexity	3.92	3.29
Critical thinking	4.32	3.94	Competency for anticipatory thinking	3.96	3.19
Interpersonal communication	4.56	3.94	Competency for acting fairly and ecologically	3.63	3.18
Leadership	4.56	3.88	Competency for participation	4.25	3.59
Ability to work in a team/ collaborate	4.40	4.00	Competency for empathy and change of perspective	4.08	3.47
Ability to take initiative	4.40	3.88	Competency for interdisciplinary work	4.04	3.59
Ability to think strategically	4.52	3.65	Competency for communication and use of media	4.04	3.53
Ability to set priorities	3.92	4.06	Competency for planning and realizing innovative projects	4.08	3.24
Ability to follow through on tasks	4.20	3.94	Competency for evaluation	4.17	3.35
Ability to adapt to change	4.40	3.71	Competency for ambiguity and uncertainty and frustration tolerance	4.04	3.00
Ability to problem solve	4.40	3.71	Ability to analyse interdependencies	3.92	2.59
Time management	4.60	3.88	Ability to motivate and inspire others	4.21	3.29
Conflict resolution	3.92	3.71	Ability to anticipate and estimate consequences	4.38	3.53
Ability to be empathetic	4.20	3.94	Ability to be self-critical	4.37	3.35
Awareness of cultural diversity	4.04	3.88			

Discussion: Future Engagement and Curriculum Fine Tuning Strategies

The data from students shows that existing active learning and teaching strategies have been largely effective and highlights the areas where additional content and focus could be beneficial in understanding all elements of sustainability. The feedback from both alumni and employers provides guidance on additional areas of the curriculum that could benefit from additional focus. Holistic, transdisciplinary curriculum approaches that stimulate critical thinking and problem solving (Doh & Tashman, 2014; Howlett et al., 2016) will be strengthened, together with strategies for maximizing the opportunity for real-world learning as advocated by Grint (2007) to complement individual subject-specific content and the skills and competencies discussed earlier. This approach is noted as aiding "translation from theory to practice" (Grint, 2007, p. 233) and, as has been noted in areas such as ethics, practical wisdom, originally termed 'phronesis' by Aristotle (Carter, Mayes, Eagle, & Dahl, 2017), particularly important in the context of uncertainty and ambiguity seen in many 'wicked problems'.

The quotes cited earlier from employers also indicate that strategies for dealing with the complexities of 'wicked problems' and their implications for management should be given more explicit focus, a factor also noted in recent academic literature (McMillan & Overall, 2016). The need for universities to strengthen their coverage of strategies to address wicked problems has been identified as an issue in other countries (Cantor, DeLauer, Martin, & Rogan, 2015; Dentoni & Bitzer, 2015).

The existing links with business regarding work integrated learning, mentoring and other forms of engagement will continue and will be strengthened, recognizing that there are mutual benefits in such arrangements (Bruneel, d'Este, & Salter, 2010). Industry benefits from collaborations not just in areas of research (Dowling, 2015) but also through insights into implications of government policy actions, assistance with problem solving, enhanced human capital and, importantly, business efficiencies and economic competitiveness (Ankrah & AL-Tabbaa, 2015). These latter authors also suggest a role for universities in aiding economic regeneration—a factor important to a regional university in a state in which coal mining has, to date, been a significant contributor to the economy but which is facing increasing calls to focus more on renewable energy for domestic consumption (McCarthy, Eagle, & Lesbirel, 2017) and increasing resistance to the establishment of new export-oriented coal mines (Meadows, 2017).

Limitations and Generalisability

The student studies specifically focused on business students—a comparison of these from other discipline areas would be useful. As noted earlier, the sample sizes for both alumni and employers are small, preventing more than descriptive

analyses being provided. We also note that sustainability issues are increasingly being discussed in the community, possibly influencing responses from all respondent groups.

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Chapter 6
Embedding Corporate Social Responsibility into Business Practice: Lessons Learned from New Zealand

Majid Khan and James Lockhart

Introduction

The purpose of this Chapter is to contribute to the discussion of corporate social responsibility (CSR) in New Zealand, predominately from a business perspective. The discussion that follows explains the adoption or otherwise of CSR by the business community, and contributes to the interpretation of the changing background against which expectations of business for broader social and environmental outcomes are being met.

The political, economic and social histories of New Zealand have had a significant effect on the interpretation of both CSR and sustainability related issues (Roper, 2004) in the country. Lawrence, Collins, Pavlovich and Arunachalam (2006) argue that the concept of CSR is considered seriously in New Zealand whose 'clean and green' image may be tarnished by corporate activity considered to be harmful to either the environment or society at large. The latter includes communities dependent on business for their employment, such as Eltham and Fonterra; and, Tokoroa and Kinleith, and those communities potentially exposed to adverse effects of business on human health. While New Zealand is a signatory and active supporter of the UN Conference on Environment and Development Agenda 21 for Sustainable Development, sustainability was rarely considered in policy formation and its subsequent enactment before the 1990s. Further, if the adoption of CSR by business is measured solely by way of reporting then New Zealand could be observed to lag behind other countries (Kloeten, 2014). Only a small number of companies appear to embark on CSR and make the effort to formally report on their CSR activities. However, business in New Zealand is now

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facing increasing pressure from government, local communities, and other stakeholders and is being increasingly held responsible for a broad gambit of environmental and social consequences. The New Zealand dairy industry is a case in point. The contribution to the economy of the dairy industry, not unlike mining in Australia is so significant that the impact of the 2007 Global Financial Crisis (GFC) in New Zealand was relatively minor (Gow & Lockhart, 2016) at the time. Yet the same industry today has largely lost its social license to operate, especially from urban dwellers—the cost to the environment being perceived by them as being simply too high. Therefore, the consequences of what are seen as being poor business practices on the environment, what were once taken for granted as being acceptable are open to debate regardless of whether or not that debate is empirically or scientifically informed (e.g., the Labour Party's 2017 proposed tax on irrigation water as a means of curtailing pollution singled out only one sector amongst the nation's multitude of commercial water users).

But business in New Zealand is, arguably, vastly different to that in any other OECD or other first world country. Three significant attributes of business in New Zealand are unique. First, and most importantly, the economy is the only one amongst this group of nations that has been and remains dependent on land-based industries (pastoral farming, forestry and horticulture). There is simply no other economy like it amongst top tier nations, where a nation's standard of living is largely upheld by agriculture. Next, with the exception of three specific industrial sites (Marsden Point oil refinery; Waiuku steel mill; and, Tiwai Point aluminium smelter) there is no other heavy industry in New Zealand. There are no heavy users of steel, there is no heavy manufacturing, and there are no scale oil and gas users. Even the largest producers of farm fertilisers (e.g., Ravensdown's Hornby and Ballance Agri-Nutrients' Kapuni plants—both farmer-owned cooperatives) and large wood pulp and paper manufacturers (e.g., Oji Fibre Solution's Kinleith) are, by global standards small. Lastly, the interdependency between listed companies, state-owned enterprises, the large cooperative sector and closely held medium-sized companies creates a cohort of generalist decision makers (i.e., TMTs, CEOs and directors) with a very broad understanding—not always deep—of the consequence of their actions. New Zealand is a small economy, with a small population, and a small interconnected business community, amongst which operates only one firm of global significance (Fonterra). Characterised by a dominant land-based sector; the near complete absence of heavy industry; small-world networks (Hawarden & Stablein, 2008); a principles-based approach to corporate governance (Khan, Lockhart & Bathurst, 2017); and, a fundamental belief (since 1984) that the free market is a better arbiter of value creation than central government (Lockhart, 2013), New Zealand is unique.

Corporate social responsibility is a broad term which begs questions, such as what is it in New Zealand? What is its role in New Zealand's business and society? How do and how ought New Zealand businesses deal with the environment, society and their employees? And, how and why does New Zealand business disclose information regarding social performance and environmental impact?

The concept of CSR continues to evolve and expand as businesses seek to adhere to society's ever broadening expectations towards CSR and more sustainable business models (Australian Centre for Corporate Social Responsibility, 2014). Recent developments regarding CSR in New Zealand business (as opposed to academia) occurred due to the emergence of the Sustainable Business Council (SBC), part of the Business NZ umbrella (group of organisations); New Zealand's leading business advocate and lobbyist. The development of such an organisation illustrates that CSR is of growing importance in New Zealand. The SBC now provides guidelines, leadership and assistance directly to the business community. The Council has considered CSR as a central issue in business operations and decisions (World Business Council for Business Development, 2015) since its inception. While causality between the emergence of the SBC and the subsequent adoption of CSR (or vice versa) is not being implied there have been positive developments regarding CSR in New Zealand, and the phenomenon now developing under the guise of sustainable development, popularly known as the 'Triple Bottom Line' approach (Eweje & Bentley, 2006).

CSR is not regulated nor is it prescribed in New Zealand. Neither the corporate governance principles of the New Zealand Stock Exchange (NZSX) or the Securities Commission in New Zealand (SCNZ) specifically mention CSR (Dobbs & van Staden, 2016) or anything that approaches CSR. But despite the voluntary nature of CSR in the country the concept continues to grow and gain attention of companies, society, academics, media and government. The aim of this Chapter is to explore CSR practices in New Zealand. Drawing from prior research, the Chapter contributes to the existing debate on CSR in New Zealand. More importantly, the terms CSR and sustainability have become the source of near daily discussion among business and academic communities in New Zealand. Whether or not their motives are aligned is not debated here. Therefore, we seek to add to a more logical and contextually informed analysis of corporate social responsibility by studying sustainability and responsibility practices and how they are diffused in New Zealand by utilising an institutional theory lens. In the discussion that follows the context (New Zealand business) is embedded. Throughout the Chapter, as definitions are presented, reporting is discussed, and corporate behaviours explored the reader is drawn into the nation's business community through rich examples, mini-cases and the use of primary, secondary and tertiary data sources. However, the caveat remains (as discussed above) the New Zealand business community, by virtue of the nation's sources of absolute, comparative and competitive advantage is globally unique.

A Brief History of the Corporate Social Responsibility Domain

The CSR domain comprises a veritable proliferation of approaches (Windsor, 2006); a multitude of theories (Melé, 2008); and, a variety of dimensions (Fischer, 2004). Therefore, defining CSR is not an easy exercise and the theoretical origins of the

concept—as opposed to the practices of practitioners—are difficult to pinpoint. According to some, CSR originates in the 1920s with the concept of 'venture philanthropy' which relates to human values attributable to business owners rather than the policies of business itself. However, two decades earlier Andrew Carnegie a US citizen of Scottish origin, published 'The Gospel of Wealth' in which he argued that the purpose of a businessman was twofold, firstly to maximise wealth and second to contribute that wealth to a noble cause (Carnegie, 1906). He further asserted that philanthropy was the primary way through which to make life worthwhile. In the 1930s, Edward Bernays and Harwood Childs predicted that social responsibility would become very important to the development of businesses. Childs mainly stressed the relationship between the business and its environment whereas Bernays advocated that businesses have public relations advisors to ensure it is well informed of social changes from which to propose appropriate adjustment to organisational policies thereby maintaining congruence between business and societies' expectations. In 1953, Howard Bowen, in his book 'Social Responsibilities of the Businessman' further developed the broadening role of business in society and it is this publication that is identified as the start of the modern era of social responsibility (see Carroll, 2008). At least from a theoretical perspective anyway.

The 1960s then saw a shift in terminology from social responsibility to corporate social responsibility, the concept that "business and society are interwoven rather than distinct entities" (Wood, 1991, p. 695). In 1966, Keith Davis derived the phrase "the iron law of business responsibility" (cited in Sotomayor, 2011, p. 32). Concurrently, scholars, such as Frederick (1960) began advocating a normative ethical foundation of corporate social responsibility (CSR). Now in the contemporary business world, CSR has gained new resonance. With the advent of globalisation, managers in different contexts are increasingly pressured to consider CSR initiatives (Jamali & Sidani, 2008). The consistent theme to emerge from this dialogue is that business is now expected to benefit society; the environment; and, all other stakeholders. And, that by doing so business can achieve harmonious growth, sustainable competitiveness and maintain legitimacy within the society that it seeks to serve: a supposition far broader than shareholder primacy.

While the term CSR has been discussed, debated, argued and researched in various forms since the mid-1900s (Fernando, 2013). It only began receiving more intensive prominence in the late-1990s. A new era of research inquiry emerged, one in which the practice of CSR is now expected to be diffused broadly. However, because the discussion of the concept is still engulfed with varied and fluctuating beliefs no single definition of CSR is yet to emerge (Snider, Hill, & Martin, 2003). This difficulty appears to be attributable to several reasons including the observation that CSR has various dimensions; what passes as socially responsible behaviour has shifted historically; there are perceived differences in commitment, namely symbolic CSR versus substantive CSR (Campbell, 2007); and, some (not all) the literature actually has a distinct anti-business (Marxist) undertone. Therefore, CSR has become a kaleidoscope from which an institutionalised instrument allowing the appreciation and evaluation of business and its role in society is still yet to emerge.

Contrasting New Zealanders attitudes towards whaling over the last 150 years demonstrates these changes—that mirror much (although not all) "western society". The increasingly common visit of whale (e.g., Humpback in Wellington Harbour; Orca in the Waitemata) provokes compelling engagement with the respective ecosystems rather than exploitative consumption of a bygone era.

What Is Corporate Social Responsibility?

CSR is not an easy term to define (Campbell, 2006) and the lack of coherent definition is displayed in New Zealand. The concept is largely comprised of broader business behaviour to which we—academics, society and business itself—are concerned with that may have both measurable and understandable dimensions, such as how the business treats employees, environment, community, customers, government and others. This behaviour can subsequently result in the comparison with standards from either regulation within the jurisdiction or the CSR practices of businesses or a homologation of 'standards' adopted by stakeholders (i.e., World Wildlife Fund, or Fish and Game New Zealand) or simply broad or at times vague perception of 'good'. Businesses may then respond to these standards in two ways either through the rhetoric of CSR or substantive CSR (Risi, 2016) responses. According to Campbell (2007) businesses are considered to be socially responsible if they are doing two things. They must not intentionally or unintentionally harm any of the stakeholders, and if they do harm stakeholders, then, there must be some rectification whenever the harm comes to their attention. Rectification can be voluntary or in response to external pressures. This interpretation then provides a minimalistic approach to social responsibility—in that harm especially to employees is avoided, if it occurs it is typically rectified, as opposed to creating better outcomes for these same stakeholders. While New Zealand has few heavy industries and the country has not been immune to industrial accidents and tragedies. A case in point being the Pike River Mine disaster which is discussed later.

This definition of CSR is different from other conventional ones (Campbell, 2006) because harm to stakeholders by business has been neglected in the past. In fact, he argues that there is not one mention of 'harm' in three comprehensive meta-analyses published on CSR. The considerations of harm are important in the contemporary business environment and in our interpretation of CSR in New Zealand business environment in particular. For example, there are businesses which are involved in social responsibility practices, such as philanthropy and so on but at the same time found to be involved in irresponsible practices, such as polluting the environment or discriminating against employees. Hence it is harm and the business's response to harm that distinguishes the approach adopted for this study, and it is largely through harm and the response to that harm that New Zealand business examples have been selected for discussion here.

In summary CSR is a socially constructed, fluid, collection of contested practices and a largely context specific phenomenon (McCarthy, 2015). To impose a limit as

to what corporate social responsibility is would undermine the broad perspective which enables its understanding and the narratives behind decisions and practices of socially responsible behaviour.

An Intuitional Theory Perspective of CSR

Institutional theory is used for the current study to explain CSR in New Zealand. It has been used previously to study both CSR in general (Bondy, Moon, & Matten, 2012; Brammer, Jackson, & Matten, 2012; Campbell, 2006), and country studies are now growing in terms of quantity and quality (Crane, Henriques, Husted, & Matten, 2016). Each country or jurisdiction represents a unique range of stakeholders which are considered to have specific expectations of business. The contextual and institutional analysis of corporate strategy and particularly CSR is becoming prominent in research (Brammer et al., 2012; Campbell, 2007; Hamann, Smith, Tashman, & Marshall, 2017; Matten & Moon, 2008). It is proposed that the jurisdiction's institutional environment determines the environmental responsiveness of companies, hence it is an important avenue for research (Bansal & Roth, 2000) from which CSR may be studied.

According to DiMaggio and Powell (1983) institutional theory sees organisations as open systems strongly influenced by the external institutional environment, such as that created through regulations, beliefs, norms and values. These in turn, both individually and collectively exert significant control over a business in terms of decision making, goal setting, and the selection and implementation of strategy. In order to improve their access to resources, such as employees, allies, and industrial networks (Jarillo, 1988; Thorelli, 1986), business seeks to gain legitimacy through the adoption of behaviour and practices desired by society (Scott, 2004), interpreted and influenced by the institutions themselves. Institutional theory, therefore, addresses the concept of legitimacy, namely, "a generalised 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" (Suchman, 1995, p. 574). The goals business supports or appears to be serving, and how those goals are achieved then play an important role in its ability to acquire legitimacy (de Grosbois, 2016; Scott, 2004). Within institutional theory there are three identifiable sources of external pressure coercive, normative and mimetic each of which requires a business to behave in a specific way. Emerging from these multiple sources within a jurisdiction is an expected common response, isomorphism, to the extent that businesses are expected to behave in relatively similar ways (Amran & Haniffa, 2011).

Coercive pressures comprise of formal and informal forces exerted by other organisations on which a particular business depends. According to DiMaggio and Powell (1983) normative pressures come from professionalisation and socialisation, while mimetic pressures stem from uncertainties within the external environment.

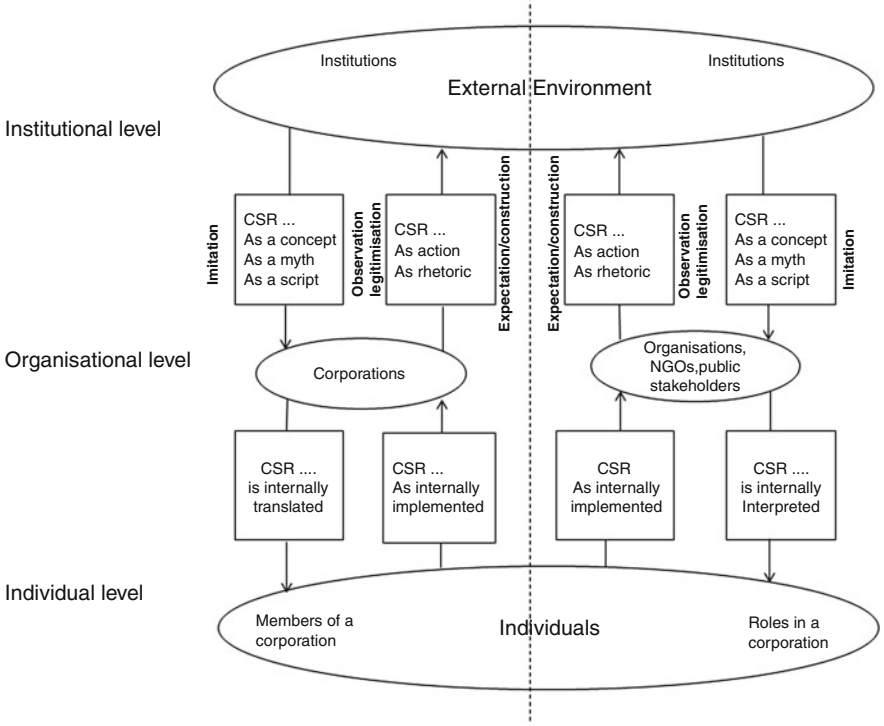

Fig. 6.1 Neo-institutionalisation framework, based on Schultz and Wehmeier (2010) whereby the corporates and broader institutions mirror one another

These pressures are then unavoidable and impact on each business (Meyer & Rowan, 1977). Consequently, these same impacts influence business emerging as identifiable institutions (Amran & Haniffa, 2011) through which business adopts or refrains from CSR practices.

Schultz and Wehmeier (2010) developed a neo-institutionalisation framework of CSR to highlight how businesses incorporate, carry out and negotiate CSR and why businesses institutionalise CSR. The neo-institutionalisation framework is depicted as a multi-level process (see Fig. 6.1). The levels comprise macro-, meso- and micro-levels of the institutional environment. The macro-level institutional environment consists of the three isomorphic pressures identified by (DiMaggio & Powell, 1983). The meso-level environment describes how businesses incorporate CSR into decision making, practices and reporting and lastly, the micro-level environment describes how CSR is translated by individual members of the organisation who in turn influence how CSR is interpreted and practiced at the meso-level (Paynter, Halabi, & Lawton, 2018). The institutionalisation and internalisation of norms, values, behaviours and structures can be observed to come from both formal and informal processes within the organisation (DiMaggio & Powell, 1991).

The institutional pillars proposed by DiMaggio and Powell (1983) are argued to play an important role in an organisations' ability to embark on CSR or otherwise because they largely determine the survival capacity of a business (Barrena Martínez, López Fernández, & Romero Fernández, 2016). The meso-level and micro-level contexts then consist of internal interest groups with links to the business who are able to exercise power over decision making on CSR (see Fig. 6.1).

This variety of pressures at each of the three levels might result in institutional complexity, such as tensions between economic and technical concerns and environmental and social elements as managed by CSR managers. The institutional environment of New Zealand exerts various pressures on business to embark on environmental friendly business practices. According to Milne, Tridiga, and Walton (2008), for the institutionalisation of social behaviour the government exerted normative pressures on what was the existing institutional field. Bebbington, Higgins, and Frame (2009) argued that research centres, to which we add business institutions in New Zealand, for example, the Sustainable Development Counsel among others are stimulating public awareness which helps corporate environmental responsiveness. There are other groups in the country with outspoken conservation movements, such as the Forest and Bird Preservation Society, and Fish and Game. Demonstrably, tension sits in this space, the clean green image being promoted within New Zealand and abroad is yet to significantly reshape consumer habits. But it is especially problematic for two sectors upon which its success appears to be an imperative namely our exports industries and tourism, yet is openly embraced by many large corporates, such as Air New Zealand.

CSR and the New Zealand Context

New Zealand has a small population (approximately 4.5 million) and a relatively low population density—even in urban areas with an economy largely dependent on agricultural exports and tourism (20% and 9% of GDP respectively). There are some 160,000 businesses operating (Tahir, 2017), with 98% of them numerically being regarded as small and medium sized enterprises (Lawrence et al., 2006), while 80% of employment is provided by the country's large firms.

The country has a strong association with the natural environment due to fast flowing short rivers; an abundance of natural and manmade hydro lakes; a long and accessible coastline; mountain regions in both islands; ever present wind (Roaring Forties); and, relatively high rainfall. It now has one of the highest rates of renewable energy amongst the developed world (International Energy Agency, 2015) at 83% from the renewables hydro, geothermal and wind (third highest in the OECD) with the balance being largely generated from gas, coal and oil/diesel.

However, there are emerging uncertainties with regards to whether the 'clean and green' image has been embedded into corporate social responsibility (Frame, Gordon, & Whitehouse, 2003) or whether the country's increasing dependency on dairy and tourism—are actually good sources of sustained wealth creation. In

response to and other causes of environmental degradation in the country the Ministry of Economic Development has been drawn to state the need for an improvement in environmental performance. All manner of business responses in the form of CSR are emerging, but whether or not these are due to government calls, or other sources of motivation is simply not known. For example, Westpac NZ's 'green home loan' in 2007 is one such initiative whose origins are difficult to identify yet were quickly claimed by the government of the time.

The now well documented corporate scandals of high profile businesses, such as WorldCom, Enron and others has fuelled public interest in corporate social responsibility (Lin-Hi & Müller, 2013; Owen, 2005), to which New Zealand is no different. The general public increasingly believe that businesses pay lip service to CSR-related issues and seldom embark on substantive CSR (Risi, 2016), such cynicism has emerged here and large companies and entire industries, especially extractive, but increasingly dairy and tourism are being openly derided for not doing enough regardless of the impacts—or lack thereof—being achieved.

Businesses in New Zealand are realising some of the benefits of CSR but many researchers are still focusing their attention on the process by which CSR can be incorporated into the business—counting things. It has been argued that NZ business is increasingly acting in socially responsible ways through either external forces, such as government regulation, media attention or other external pressures or through normative changes driven from within the organisation (Pajo & McGhee, 2003). Incentives, legislations and codes of compliance can affect corporate decision making depending on the extent to which government nurtures economic development and entrepreneurial society. However, government regulations have pros and cons. Prior to 1984 New Zealand was one of the more centrally planned economies outside of the Soviet bloc (Lockhart, 2013). The influence and regulations of government intruded into almost every aspect of life and business, down to the price of fuel, a loaf of bread and when they could or couldn't be sold. New Zealand's current approach of a free-market, open-economy emerged through the 1984–1993 period. One in which the onus of meeting stakeholder expectations sits firmly with decision makers themselves, and one in which government (until very recently) has *always* been extremely cautious about intervention. The dominant logic of this principles-based approach is confidence that market forces will ensure conformance with expectations over time (Lockhart & Fraser, 2014).

Effective enforcement of regulations can be difficult and it accrues compliance cost for both business and society. In New Zealand the majority of regulatory mechanisms result from a serious and unfortunate (i.e., death or other serious consequences) event. Legislation is, therefore, being mainly reactive in nature (Pajo & McGhee, 2003). For example, the collapse of some 70 finance companies following the GFC owing more than NZ$8.5 billion to investors (Lockhart & Fraser, 2014) provided the catalyst for the Financial Markets Authority; while the deaths of 29 miners at the Pike River coal mine in 2010 was the catalyst for the Health and Safety at Work Act 2015. Whether or not the finance company collapses were inevitable following the GFC remains moot. However, the miner's deaths appear due to the deliberate obstruction or lack of investment in conventional safety

systems, including ventilation within the mine. In both cases new regulatory regimes and agencies emerged where market forces proved inadequate at the time.

According to Welford, Chan, and Man (2007) a key component of CSR best practice is transparency to stakeholders. Increasingly, CSR initiatives of companies are aligned with government priorities more than any single stakeholder (Coles, Fenclova, & Dinan, 2013). In 1984, after a long history of government regulation, New Zealand embarked upon a new policy direction (Milton-Smith, 1997). Consequently, business culture in the country was transformed. While regulatory reform on workplace health and safety and financial market controls were comparatively lax, policy on environmental issues has been intense. Since 1972, The New Zealand Commission for Environment has issued policy on social and environmental issues through the following regulations;

- March 1974—The Environmental Protection and Enhancement Procedures (EP&EP);
- January 1987—Environment Act 1986;
- April 1987—The Conservation Act;
- October 1991—The Resource Management Act; and
- June 1996—Hazardous Substances and New Organisms Act. (Mackenzie 2015, p. 166).

Consequently, New Zealand is ranked as one of the top countries in the world in terms of environmental performance (Pilot 2006 Environmental Performance Index as cited in Mackenzie, 2015). Environmental quality has been the realm of successive New Zealand governments through legislation, with successive governments trying to forge links between environmental issues and the NZ economy (Bebbington et al., 2009).

The Resource Management Act 1991 was a ground-breaking initiative epitomising the sense of national identity by introducing the term 'clean and green' (Frame & Taylor, 2005). More recently, central government has established a climate commission and announced The Zero Carbon Act (Sustainable Business Council, 2017b). This Act is intended to be the cornerstone for the transition to a low emission economy and business is expected to see climate change and clean technologies as an opportunity for investment and innovation. Businesses are setting ambitious targets to cut New Zealand's greenhouse gas emissions, despite being only 0.17% of the global total (NZ Environment Reporting Series, 2018). For instance, Fonterra the world's largest dairy products exporter announced its target to help New Zealand achieve its Paris Climate Agreement commitments (Sustainable Business Council, 2017a), and aims to minimise its emissions to net zero by 2050 for global operations; and, a 30% reduction by 2030.

Companies, notably those in high environmental impact industries are increasingly conscious of the fact that long term business survival needs investment in a greener future (Charter, 2017). These companies are typically sensitive about their debilitating environmental image and are responsive to institutional pressures including environmental regulations. In response to these pressures, companies are taking measures for the environmental excellence movement as an important part of

their value chain. Heavy industry in New Zealand is confined to three sites, however, extraction (coal, iron ore, native and exotic logging and gold mining) is widespread. Businesses across these sectors have responded to CSR, as much due to the complex ownership mix (NZ privately owned—publicly listed and quasi-public; foreign privately owned; NZ government owned; foreign government owned; and, New Zealand owned cooperatives) as to the demands placed on the sector from legitimate and self-appointed stakeholders. The two industries currently being targeted for urgent improvement in their environmental and social impacts are dairy and tourism—the characteristics of both are widespread, dispersed small-business ownership and widespread, dispersed negative impacts on both the environment and society. Quite how each industry manages the cost of nitrification (dairy) and freedom camping (tourism) respectively remains to be seen. With absolute certainty there is a battery of regulation emerging to contain, prevent and minimise the consequences of both, a cost to be born not by corporates but the small- to medium-sized enterprises themselves. The New Zealand institution of 'clean and green' is, therefore, yet to prevail but is certainly influencing outcomes. Paradoxically in the case of tourism, the same tourists seeking to enjoy this environment are increasingly being held responsible for its wilful destruction.

In recent years, the rate of global environmental degradation has compounded. The environmental movement began in the nineteenth century as businesses started mass production with little attention to environmental or social welfare. In the era of industrial revolution nations fought for industrial supremacy and New Zealand provided no exception. The *real* environmental movement was launched in the sixties in response to the influential publication of Rachel Corson's 'silent spring'. However, environmental concerns resurged in 1972 at the now historic UN conference on human environment in Stockholm. The key result of which was businesses starting to go 'green', something to which large New Zealand business has ascribed. The country is a signatory to the Kyoto Protocol, which means it aims to protect the environment by reducing greenhouse gas emissions and other government policies and programmes. A further paradox here is that the single largest source of greenhouse gas emissions in New Zealand is from ruminant livestock (dairy in particular) that has, to date, been exempt from the country's Emission Trading Scheme (ETS). This exemption is a source of much contention between rural and urban New Zealand; conservative and liberal; business and non-business; and, fuel for the chattering classes that carbon sequestering from pastoral farming has been ignored simply adds to the complexity of rhetoric and the dominant institutions. New Zealand now has the sixth largest footprint per capita (NZPA, 2009, January 31), the area of land and sea area required to support the lifestyle of a country's population. One reason for that appears to be New Zealanders consumption of cars, fourth in the world, of which only some can be explained by the rural population and agriculture.

Corporate social responsibility is not yet a dominant management phenomenon in New Zealand (Eweje & Bentley 2006; Keeper, 2011). As observed there has been a significant shift in this regard and businesses are increasingly bringing CSR and

sustainability into the heart of their strategies (Australian Centre for Corporate Social Responsibility, 2016). Despite the introduction of a plethora of environmental regulations, the concept of corporate social responsibility remains deregulated and purely voluntary in New Zealand (Frame et al., 2003). With respect to socially responsibility, New Zealand is one of the least regulated countries in the world considering the 'market driven' philosophy that has prevailed in the country. Given the emphasis on deregulation, one might expect business organisations in New Zealand to be proactive in managing their CSR and embed it into their practices and decision making. The only exception being increasingly strict workplace health and safety regulatory reform. Businesses take voluntary CSR initiatives in order to seek legitimacy from their stakeholders by ensuring that the business' values are in congruence with that of the society (Chauvey, Giordano-Spring, Cho, & Patten, 2015) they seek to serve. Organisations adopt different strategies to enhance their legitimacy. These might include influencing organisational behaviour or manipulating perception of different stakeholders regarding the organisation (Dobbs & van Staden, 2016). According to Newson and Deegan (2002) voluntary CSR can be used as one of these strategies. ACCSR (2017) reports that 359 people representing 45 businesses in New Zealand participated in their survey, the largest ongoing longitudinal study of CSR practices down under. Companies came from a diverse range of sectors, such as banking, transport, manufacturing, accommodation and hospitality, professional services, and oil and gas among others. This now annual review of the state of CSR in New Zealand and Australia found that almost half (48%) of the respondents support regulation for CSR *reporting*, namely disclosure. They also responded (82%) that emerging priorities will relate to the effective management of regulation. Other priority issues reported are managing stakeholders (76%) and managing technology (74%), such as privacy. Finally, the top future goals regarding CSR were identified as gender equality (ironic given NZ's record on women's suffrage), work conditions and economic growth, climate action, good health, and wellbeing and responsible consumption and production. Quite how the tension across this mix is to be resolved is, for the time being left to chance. Incidentally, the top three performers on CSR in New Zealand are considered to be Air New Zealand, Toyota NZ and Westpac. Air New Zealand, the national flag carrier is a listed company, majority owned by government; ToyotaNZ is a wholly-owned subsidiary of Toyota Japan (publicly listed); and, Westpac is a wholly owned subsidiary of Westpac Banking Corporation, an Australian listed finance corporation.

CSR Education in New Zealand

Corporate social responsibility, business ethics and sustainability have received increasing attention from business schools (Doh & Tashman, 2014). The increased focus on CSR through both teaching and research is, in part, due to the numerous corporate scandals, such as Enron, WorldCom, Andersen and others. The fact that

majority of the perpetrators were educated in business schools, does little to dampen the view that the b-schools themselves are somehow culpable (Ghoshal, 2005; Sharma & Hart, 2014; Swanson & Frederick, 2003). At the extreme end of this argument is the view that b-schools are actually "guilty of having provided an environment where the Enrons and the Andersens of the world could take root and flourish" (Mitroff, 2004, p. 185). Mitroff somehow bizarrely further considered schools as active partners and co-conspirators in criminal behaviour of businesses. Assigning causality between these headline scandals and b-schools verges on the hysterical rather than empirical, nonetheless CSR education is now seen as having significant relevance in management and organisational studies (Branco & Delgado, 2016), especially considering that those who graduate are likely to implement and manage CSR in their respective organisations. Arguably, it is social responsibility that should be taught as one of the main objective of b-schools (Gioia, 2003; Mitroff, 2011); one where the consequences of and sources of business performance are explored in full.

Business schools started to add ethics and social responsibility courses to curriculum during the 1960s and 1970s (Sharma & Hart, 2014). With the advent of globalisation responsibility and ethical issues began to transcend national barriers and were observed to be valued across many cultures. In a recent study comparing ethics, corporate social responsibility and sustainability practices between New Zealand and Australia b-schools Rundle-Thiele and Wymer (2010) nine universities in Australia and only one university in New Zealand were found to not have any dedicated course promoting sustainability, fostering sense of social responsibility and business ethics.

Six of the seven b-schools in New Zealand now participate in Principles for Responsible Management Education (PRME, 2018). PRME is a voluntary engagement platform for academics to transform research, teaching and thought leadership in support of universal values of social responsibility, ethics and sustainability. The University of Waikato Management School was the first to join in 2008, Massey University College of Business in 2011, University of Canterbury Business School in 2012, Auckland University of Technology Business School and University of Auckland Business School in 2013 and Victoria Business School in 2014 as depicted in Table 6.1.

The University of Waikato Management School and Massey Business School appear to have the most developed CSR, sustainability and business ethics programmes. Courses focus on issues of environmental management, corporate social responsibility and other areas related to the role of business in society and workplace well-being. Both universities have active research groups of faculty and graduate students exploring the adoption and reporting processes of CSR by NZ business. The University of Canterbury offers courses such as business and society and the environment, business and sustainability, environmental economics, social and environmental reporting and managing corporate responsibility. Besides, offering a number of courses the University also has a research group called sustainability and innovation with the aim to conduct applied and theoretical research on sustainability and innovation.

Table 6.1 Participation of New Zealand Universities in PRME

Name (ascending order)	Communicating Participation	Date Join
Auckland University of Technology Business School	Advanced signatory	18 Oct 2013
Massey University College of Business	Advanced signatory	30 Mar 2011
UC Business School	Advanced signatory	05 Oct 2012
University of Auckland Business School	Advanced signatory	25 Oct 2013
University of Waikato Management School	Basic Signatory	01 Apr 2008
Victoria Business School	Advanced signatory	09 Jun 2014

Source: PRME (2018)

Auckland University of Technology (AUT) provides a major in sustainable enterprise, while the neighbouring University of Auckland also provides courses on CSR, such as responsible business and sustainability. Similarly, there are research interest groups at Victoria University Wellington, namely, philosophy ethics and social theory research interest group and social and environmental accounting research group, among others, working towards sustainable future and clean and green environment. The University of Otago and Lincoln University also deserve mention, while not signatories to PRME they both offer a variety of courses on CSR and sustainability.

Embracing CSR, especially the implicit challenge to shareholder primacy sits comfortably with many b-school academics. Few are reportedly conservative in their outlook (Munitz, 2000; Orser, 1992). Hence, Mitroff's (2011) accusations appear misplaced. All the b-schools in New Zealand have embraced the CSR agenda, and consequent promotion of social responsibility, business and sustainability, environment. Therefore, the tertiary education sector, like the others, is demonstrably contributing, through which its own institutions are expected to emerge over time.

Conclusion

In summary, corporate social responsibility has remained a contested territory for many researchers. In general the ongoing debate is not focused on whether businesses consider embarking on CSR but why would businesses be socially responsible, what are the underlying institutions which force business to consider socially responsible behaviour, and the nature and extent of that wider responsibilities. Additionally, CSR is considered as a taken for granted assumption in many developed countries. However, there are currently no requirements from the Securities Commission and corporate governance principles and guidelines in New Zealand regarding CSR. Businesses in New Zealand recognise that good stakeholder management ensures new opportunities, prudent risk management and access to vital

resources (SBC, 2015) including the social license to operate. However, the CSR agenda of businesses in New Zealand appears to put more emphasis on reducing environmental impacts and less on global sustainability issues.

Although, CSR in New Zealand is not regulated, businesses face pressures regarding environmental and social responsibilities from various stakeholders. In some industries the pressures are more intense (high impact industries), compared to others. Institutional theory suggests that a number of various institutional conditions exert these pressures on businesses to shape CSR. Detailed empirical studies are now required in order to identify underlying institutions that effect a business' choice to conduct CSR or otherwise in New Zealand.

Finally, CSR education in New Zealand is of concern to business schools. Currently, almost all the major business schools in the country are offering courses on CSR, sustainability and ethics. Moreover, many academics and PhD scholars are focusing their research on CSR. The creation of research groups at business schools dedicated to CSR research are further developing the research in this area.

The process of embedding CSR in New Zealand business environment is at a fascinating point. Some 35 years of the most sweeping regulatory reforms in the country's history whereby the market as opposed to the state was recognised as the most efficient mechanism for producing CSR is being embraced. Whether or not the rate with which it is occurring will reach society's expectations remains moot. We are of the view that it is far better for businesses in New Zealand to continue the adoption of CSR through sound informal institutions rather than having the government regulation imposed of which the unintended consequences are likely to be significant.

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Chapter 7
Social Marketing and Residential Electricity Consumption: Every Kilowatt Matters

Breda McCarthy, Lynne Eagle, Amy Osmond, and David Low

Introduction

The electricity generation sector is a major contributor to anthropogenic climate change. Electricity generation in Australia is claimed to account for 38% of greenhouse gas emissions (GHG), due primarily to the use of fossil fuels in electricity generation (Byrnes, Brown, Foster, & Wagner, 2013). Australia's per capita emissions rate is one of the worst in the world (Organisation for Economic Cooperation and Development (OECD), 2015), leading to calls for urgent action to reduce emission levels. Increasing concern is evident in the literature regarding the sustainability of current forms of energy generation: "Scientists, politicians and macromarketers alike have come to realise that most existing energy systems are unsustainable and that progress towards sustainability will require significant changes in the production and consumption of energy" (Claudy, Peterson, & O'Driscoll, 2012, p. 324). Likewise, the International Energy Agency (IEA), sees renewable energy investment, along with electricity conservation in the residential, business and industry sectors, and other measures such as carbon capture and storage (CCS) and nuclear energy, as crucial to climate change mitigation efforts (International Energy Agency, 2016).

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The focus of this book chapter is on electricity consumption in the home and the discussion is situated within the wider literature on sustainability and social marketing. The authors seek to understand whether attitudes and socio-demographic factors influence electricity consumption practices in the home. While there is a substantial literature on electricity conservation (Frederiks, Stenner, & Hobman, 2015a; Šćepanović, Warnier, & Nurminen, 2017; Tsuda, Uwasu, Hara, & Fuchigami, 2017), it is noted that "despite an expanding literature, we find that empirical evidence of the impact of these variables [socio-demographic] has been far from consistent and conclusive to date" (Frederiks et al., 2015a). Furthermore, consumer-oriented studies of electricity conservation or consumption in Australia are surprisingly scare (see, for example, Bond, 2011; Moloney, Horne, & Fien, 2010; Mullaly, 1998). There is growing interest in the factors driving the adoption of roof-top solar and emerging energy technologies (Ren, Grozev, & Higgins, 2016; Sommerfeld, Buys, & Vine, 2017; Tayal & Rauland, 2016). Hence, this study adds to the growing literature on electricity consumption and adoption of roof-top solar in regional Australia.

Theoretical Overview of the Topic

In this book chapter, the authors draw on several streams of literature, electricity consumption, adoption of roof-top solar and social marketing, and highlight the contribution that the social marketing discipline can make to the energy literature. In the second part of this book chapter, findings from a survey are described.

Sustainable Consumption and Electricity Generation

There is a growing literature on sustainable consumption. Sustainability has multiple definitions, and simply put, however, sustainability is "the ability of a system to maintain or renew itself perpetually" (Martin & Schouten, 2014, p. 10). One of the most common definitions, originating from the Brundtland Commission, is as follows: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development (1987) cited in Martin & Schouten, 2014, p. 28). These two definitions are appropriate in the context of energy. Energy systems depend on natural resources, such as coal and petroleum, but these resources are finite and non-renewable. A transition towards renewable energy (which covers a wide range of technologies including solar, wind, hydro, geo-thermal, marine), and away from a fossil-fuel dependent system, is seen as crucial to global climate change mitigation efforts, and furthermore, transitions may be part of a continuing process of sustainable development (Dincer, 2000; Meadowcroft, 2009). The transformation of the energy mix could possibly include nuclear power, a source of 'clean' energy,

albeit a controversial one (CSIRO, 2013). The environmental costs of electricity generation (especially for coal) are externalised, resulting in lower private, but higher social costs, for fossil fuels compared to renewable energy (Byrnes et al., 2013). While fostering low-carbon energy production is an important way to tackle climate change concerns, measures taken in the consumption side of energy systems arguably yield the most efficient results (Stern, 2000).

The topic of domestic electricity practices has generated a vast body of academic work (Abrahamse, Steg, Vlek, & Rothengatter, 2005; Burger et al., 2015; Frederiks, Stenner, & Hobman, 2015b; Grey & Bean, 2015; Lopes, Antunes, & Martins, 2012; Mills & Schleich, 2012; Sweeney, Kresling, Webb, Soutar, & Mazzarol, 2013; van Doren, Giezen, Driessen, & Runhaar, 2016; Vine, Buys, & Morris, 2013). Despite the expanding literature, it is recognised that consumer behaviour in this area is complex and attempts to predict energy consumption patterns are difficult (Lopes et al., 2012; Frederiks et al., 2015a). There is also growing academic interest in the adoption of solar photo voltaic (PV), a form of micro-generation, that enables consumers to generate their own electricity, particularly since it can deliver a significant reduction in CO_2 emissions (Breyer, Koskinen, & Blechinger, 2015). However, if large numbers of consumers leave the national grid, then the subsequent declining network utilisation will lead to increases in retail prices and will challenge existing business models (CSIRO, 2013). The capital cost of solar power is predicted to decline (CSIRO, 2013) and studies show that the levelised cost of solar (LCOV), which is defined as the cost of energy per kWh produced, is now below the cost consumers pay directly to suppliers for electricity in major Australian cities (Australian Energy Council, 2019). Not surprisingly, Australian states such as Queensland and South Australia have substantial penetration rates for solar PV (Australian Energy Council, 2019). There are many factors that explain the rapid adoption of residential solar PV and scholars highlight the following drivers of demand: real electricity price increases; policy drivers such as feed-in tariff policies; influence of neighbours or peer effects; shorter pay-back periods; climate change concern; private home ownership; family size; characteristics of the home such as number of bedrooms and socio-demographic factors (Faiers & Neame, 2006; Foran et al., 2016; Graziano & Gillingham, 2014; Nelson, Simshauser, & Kelley, 2011; Sommerfeld, Buys, Mengersen, & Vine, 2017).

The term ‘electricity conservation’ encompasses a diverse set of behaviours, including lighting, laundry, heating/cooling and use of electronic devices, that vary widely in terms of relative financial cost, effort and knowledge required to implement them (Karlin et al., 2014). Consumer lifestyles and choices in relation to energy use (i.e., personal travel, type of car used, home heating; use of air conditioning) are important contributors to CO_2 emissions (Bin & Dowlatabadi, 2005; Vakiloroaya, Samali, Fakhar, & Pishghadam, 2014). Two groups of behaviour have been differentiated in the literature (Martiskainen, 2007; Stern & Gardner, 1981): curtailment behaviour (which includes habits, being frugal, reducing demand) and efficiency behaviour (which includes buying decisions such as purchasing energy efficient appliances). Habits are seen as a major barrier to behavioural change (Huebner, Cooper, & Jones, 2013).

A multitude of factors affect household electricity consumption. As noted by Owens and Driffil (2008, p. 4412): "In the area of energy consumption, there is a need to take account of the physical, social, cultural and institutional contexts that shape and constrain people's choices". Energy demand is rooted in social norms relating to comfort, cleanliness and convenience, which influence the ability of interventions to impact energy use by changing behaviour (Yust, Guerin, & Coopet, 2002). These authors (p. 188) indicate that "decisions about energy services are highly constrained, and individual behaviour is not readily influenced". Financial constraints, and lack of property ownership, may prevent behaviours, such as the installation of solar panels or even replacement of lightbulbs with energy efficient bulbs, from being undertaken, even if attitudes are positive (Cocklin, Dibden, & Mautner, 2006; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007; Schultz et al., 2015). A further barrier to environmental behaviour change may also be a sense of the problem, such as climate change, being too big for any one person or group of people, who will therefore not be able to 'make a difference' (Semenza et al., 2008). Thus, actions such as installing roof-top solar may be seen as unwarranted.

Electricity consumption has been linked to socio-demographic variables, such as income, dwelling type and size, home ownership, family size, composition and life cycle stage (Frederiks et al., 2015a). Likewise, Costa and Kahn (2013) highlight factors such as the attributes of the home, electrical appliances and their intensity of utilisation; climate; prices of devices and political ideology. Willingness to pay for 'green' power has been correlated with income (for a review, see Stigka, Paravantis, & Mihalakakou, 2014). Demographics, however, only explains a small part of variance in behaviour (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003). Electricity consumption has been linked to climate zones and psychological factors such as concern about energy resources and desire for frugality (Chen, Xu, & Day, 2017). Material culture, cognitive norms (Sweeney et al., 2013), along with contextual forces, such as building standards, are all crucial factors underlying energy-related practices (Black, Stern, & Elworth, 1985; Bond, 2011). Energy-saving measures are expected to lower electricity costs for householders in the long term (Bond, 2011), but they must also correspond to needs like personal comfort, convenience, effort or belonging in order to be realized (Bond, 2011; Samuelson & Biek, 1991; Tan et al., 2016; Zundel & Stieß, 2011). Consumers tend to lack energy literacy (defined as making the optimal choice when considering an investment in more energy-efficient equipment), awareness of electricity expenditures (Brounen, Kok, & Quigley, 2013) and knowledge of how to effectively manage their consumption (Press & Arnould, 2009). People tend to engage in 'low-effort, low-impact' actions instead of focusing on changes that would make a bigger difference to the planet and their pocket (Attari, DeKay, Davidson, & De Bruin, 2010). Market segmentation studies are emerging in the energy literature which offer insight into people's motivations for conserving electricity (Santin, 2011; Sütterlin, Brunner, & Siegrist, 2011). Studies show that electricity-saving behaviour is motivated by financial pressure (Sweeney et al., 2013). For example, the 'thrifty energy saver' segment, which amounted to 14% of the population, consisted of people on the lowest incomes (Sütterlin et al., 2011). Studies have found that there is a strong

association between environmental attitudes and energy-saving behaviours, and that the attitudes of 'green' consumers are not in any way influenced by subsidies or government policies (Gadenne, Sharma, Kerr, & Smith, 2011).

In summary, the literature highlights the important role played by socio-demographic, contextual and situational factors in influencing patterns of household electricity usage. Although electricity conservation might seem like a simple problem, the solution, 'to just turn off the lights', is much more complex than that would appear at first glance.

Social Marketing and Addressing Changes in Consumers' Behaviour

Definitions of social marketing abound in the literature. However, some degree of consensus has emerged and the following definition is one that was endorsed by the Boards of iSMA (International Social Marketing Association based in the USA), ESMA (European Social Marketing Association) and AASM (Australian Association of Social Marketing) in 2013 i.e.: "Social Marketing seeks to develop and integrate marketing concepts with other approaches to influence behaviours that benefit individuals and communities for the greater social good. Social Marketing practice is guided by ethical principles. It seeks to integrate research, best practice, theory, audience and partnership insight, to inform the delivery of competition sensitive and segmented social change programmes that are effective, efficient, equitable and sustainable" (Saunders, Barrington, & Sridharan, 2015, p. 162). For the purposes of this study, this definition of Social Marketing is adopted.

Social marketing has in the past been used widely in the health sector (i.e., alcohol consumption, healthy eating) rather than in the electricity consumption area, however policy makers in many countries, including the UK, USA and Australia, have recommended a wider use of social marketing to address environmental problems (Dahl, 2010; Menegaki, 2012). Corner and Randall (2011) argue that social marketing offers a framework for designing behavioural change programmes that is flexible enough to be applied to a range of issues. While the social marketing approach has been proposed for the electricity sector, it is apparent that authors confuse social advertising with social marketing, advocating mass media activity only, or failing to move beyond vague descriptions of its potential (Chen, Liu, & Chuang, 2015; Frame & Newton, 2007). A series of benchmarks have been developed by the National Social Marketing Centre (NSMC, 2016), drawing on the work of Andreason (2002), showing the depth of social marketing and how its principles can be operationalised in many different contexts. Social marketing explores the determinants of human behaviour that benefits society and it focuses on interventions to promote it. In the context of energy consumption, interventions can be information-based, rewards-based or structural (see Šćepanović et al. (2017) for a review). For example, social marketing could use educational campaigns and incentives to motivate consumers to

reduce electricity usage in order to stimulate a reduction in peak demand. Electricity generators are required to cater for peak demand periods, requiring infrastructure commitments that are required only for short periods of time (Hamer, Swinson, & Ardo, 2014). Currently, residential tariffs do not incorporate higher rates during peak periods compared to most other times, although lower night time tariffs may apply (Higgins et al., 2014).

Attitudes generally predict behaviour but inconsistencies between attitudes and behaviours have been observed (Ajzen & Fishbein, 2005), frequently referred to as the 'knowledge-action' gap and the 'value-action gap' (Frederiks et al., 2015a, 2015b). Several studies have revealed a significant gap between attitudes and actual behaviours in relation to both the adoption of renewable technologies and energy efficiency overall (Claudy et al., 2012; Lavergne & Pelletier, 2015; Rhead, Elliot, & Upham, 2015). Part of the reason for this is an undue reliance on the mere provision of information, based on the assumption that a lack of knowledge (i.e. an 'information deficit') is the reason that desired behaviour changes do not occur and therefore that information provision will change attitudes and then behaviours (Costello et al., 2009; Owens & Driffill, 2008; Semenza et al., 2008). The main weakness of the 'information deficit' model, both in the health and environmental sectors, has been identified as a failure to recognise the complex interaction of values and experience on attitudes and ultimately behaviours (Lorenzoni et al., 2007).

Attitudes are multi-factored and interact with a number of other factors such as norms and perceived ability to undertaken recommended actions (self-efficacy) (Fishbein, 2008). Even if attitudes change, behaviour does not automatically follow due to the interactions of individuals with a range of social, environmental, structural and institutional factors that may act as either enablers of, or barriers to, behaviour change (Ockwell, Whitmarsh, & O'Neill, 2009). There is a growing acknowledgment that social marketing, particularly when underpinned by theory-driven approaches, can lead to more persuasive messages than information-only messages. However, it is not a panacea and the role of legislation and incentives, in conjunction with both education and social marketing, must be recognised (Rothschild, 1999; Sheavly & Register, 2007).

The literature on electricity conservation is linked with a long established body of work on the determinants of pro-environmental behaviour (Faiers, Cook, & Neame, 2007; Jackson, 2005; Steg & Vlek, 2009; Wilson & Dowlatabadi, 2007). Studies suggest that people with higher environmental concern are more likely to support renewable energy technologies, perform energy-saving curtailments and invest in energy efficiency (Urban & Ščasný, 2012; Von Borgstede, Andersson, & Johnsson, 2013). The results of efforts to encourage environmentally protective behaviours may not be as intended. In the energy conservation field, 'rebound effects' have been notes such as users of energy-efficient appliances using them more often and thus failing to reduce overall energy usage (Abrahamse et al., 2005). 'Nudges', i.e. strategies that "alter people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2009, p. 6), have been proposed to promote energy efficiency and consumption reduction but there is evidence that they may backfire (Costa & Kahn, 2013). For

example, normative social influence plays a role in explaining energy consumption (Frederiks et al., 2015a). However when descriptive messages providing average energy consumption data in a neighbourhood have been provided, those using lower than average energy actually increased their consumption (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). The nudge approach has been questioned by a number of academics, with deficiencies highlighted (see, for example, French, 2011; Ölander & Thøgersen, 2014). It has been suggested that acceptability is dependent on "the right kind of nudge for specific circumstances" (Cohen, 2013, p. 10). Further, the acceptability and thus effectiveness of nudge strategies may context-dependent, incorporating both the nature of the nudge and both the perceived trust in the motives of 'nudger' (Lucke, 2013). There are therefore calls for further research into "what works, for whom, in what circumstances and for how long" (Marteau, Ogilvie, Roland, Suhrcke, & Kelly, 2011, p. 264).

In summary, the social marketing discipline is ideally situated to address the complexity of human decisions in relation to energy use and to identifying barriers to sustained behavioural change.

Methodology

The research questions are as follows:

1. What factors are associated with the adoption of roof-top solar systems in the home?
2. Do consumers who support fossil fuels in the energy mix differ from those who do not in terms of their electricity conservation beliefs and energy-saving practices in the home?

Ethics approval for the study (H6601) was secured from the authors' university. Survey development began in May, 2016. The survey was circulated to a number of researchers for feedback and changes were made to clarify questions, shorten the survey and reduce the effort required by respondents. The study was restricted to a regional city, Townsville, since its economy has links with mining and approximately 3% of the population is part of the mining labour force (Queensland Department of State Development, 2015). It must be noted that electricity supply is predominantly coal-fired in this region (Martin & Rice, 2012) and as the 'sunshine state', it has the largest number of residential solar PV installations in the country (Sommerfeld, Buys, Mengersen, & Vine, 2017). A non-probability, convenience sampling method was adopted. Data collection took place from August to October 2016. Respondents were recruited at food markets, festivals and shopping centres in the city and at selected suburbs in order to access a diverse sample. Information was collected on adoption of roof-top solar and battery storage; electricity conservation in the home; constraints to saving electricity in the home; attitudes towards climate change and energy resources; support for the various sources of electricity supply, demographic data, number of

electrical appliances, type of housing (i.e., apartment, detached etc.), home ownership, number of teenagers in the house and household size.

Scales to measure attitudes towards climate change and energy resources were derived from the new environmental paradigm (NEP) scale (Dunlap & Van Liere, 1978) and from other relevant studies such as Eagle et al., (Eagle, Hamann, & Low, 2016). As noted earlier, distinctions have been made between efficiency (purchase-related) and curtailment (habitual) behaviours (Stern & Gardner, 1981). Therefore, scales to measure energy-conservation included both efficiency improvements and curtailment. Some items were developed by the authors to directly link to the research objectives and others were informed by the literature (Attari et al., 2010; Poortinga, Steg, Vlek, & Wiersma, 2003). Several questions were posed using Likert scales. To reduce social desirability biases, which is a tendency to respond in a manner considered to be socially desirable (Randall & Fernandes, 1991), we guaranteed respondent's anonymity at the start of the survey. An incentive was used to encourage completion of surveys. A total of 362 people replied to the survey, but after data cleaning, a total of 325 usable surveys were analysed. The data was analysed using IBM SPSS 20 software. Frequency distributions, cross tabulations and non-parametric tests were performed (Field, 2013).

The summary statistics of the sample are as follows: slightly more females (54.5%) than males participated in the survey. Income levels were diverse and the sample included 13% in the low-income category; 17.2% in the average income bracket and 19% in the high income category, based on data from the Australian Bureau of Statistics (ABS, 2016a). The sample was well educated, with 26.8% reporting a Bachelor's degree as their highest level of educational attainment. This is higher than average. Statistics show that 17% of the Australia's population has a Bachelor degree (ABS, 2016b). Respondents came from all age groups, with most (67%) aged from 20 to 49 years. Half the sample (50.8%) was in full-time employment. The sample was a reasonably diverse one.

Findings

This section of the chapter summarises the findings from the survey. It covers the following: installation of roof-top solar systems and the factors associated with installation; electricity conservation or consumption in the home and comparative analysis of respondents who supported fossil fuels in the energy mix with those who did not.

Installation of Roof-Top Solar Systems in the Home

Survey participants were asked if they currently have, or are planning to install, roof-top solar systems. Table 7.1 outlines the proportion who have solar compared to

Table 7.1 Installation of roof-top solar

Roof-top solar	Yes % (n)	No % (n)
I currently have roof-top (photovoltaic) at home	24.3 (76)	75.7 (237)
I am likely to install roof-top (photovoltaic) in the next 2 years	17.6 (51)	82.4 (239)

Table 7.2 Installation of roof-top solar by age category

Solar	Under 29 years	30–49 years	50 years or over	Chi-square
No (%)	80.7	80.7	61.6	$\chi^2 = 12.195$, $p = 0.002$, Cramer's V = 0.199
Yes (%)	19.3	19.3	38.4	

Table 7.3 Installation of roof-top solar by home ownership

Solar	Owned	Rented or DHA	Other	Chi-square
No (%)	66	89.2	68.4	$\chi^2 = 21.795$, $p = 0.000$, Cramer's V = 0.265
Yes (%)	34	10.8	31.6	

those who do not, with one quarter of respondents stating they have roof-top solar, and one fifth indicating that they were likely to get one in the future.

Demographic and Attitudinal Factors Associated with the Adoption of Roof-Top Solar

To determine the relationship between the adoption of roof-top solar and demographical variables, chi-square analysis was conducted using variables such as gender, age, income, education, household size, home ownership, type of dwelling and political affiliation. There was a statistically significant relationship between age, education, home ownership and political affiliation and the installation of roof-top solar systems. Table 7.2 shows that a greater percentage of older consumers, in contrast to younger consumers, had installed roof-top solar systems.

Table 7.3 shows that a greater percentage of home owners, in contrast to renters or other categories (i.e., housing commission or living with family members) had installed roof-top solar systems.

Table 7.4 shows that a greater percentage of respondents with a trade qualification, certificate or diploma, in contrast to those with degrees or post-graduate qualifications, had installed roof-top solar systems.

Table 7.5 shows that a greater percentage of consumers who supported the Green Party and the Labour Party, in contrast to the Liberal National Party, had installed roof-top solar systems. It must be noted that a large number of respondents ticked 'other' or choose not to answer this question.

Table 7.4 Installation of roof-top solar by educational level

Solar	None/year 10 or 12	Trade, cert or diploma	Degree or post-graduate	Chi-square
No (%)	63	71.8	82.4	$\chi^2 = 9.154$, p = 0.010, Cramer's V = 0.173
Yes (%)	37	28.2	17.6	

Table 7.5 Installation of roof-top solar by political affiliation

		Political Affiliation			Chi-square
Solar	Greens (n = 33)	Labour (n = 62)	LNP (n = 54)	Other/Not stated (n = 171)	
No (%)	81.3	63.9	88.9	73	$\chi^2 = 10.497$, p = 0.015, Cramer's V = 0.187
Yes (%)	18.8	36.1	11.1	27	

The survey sought to evaluate participants' attitudes towards climate change, fossil fuels and other sources of electricity supply. The results are shown in Table 7.6. Attitudes were measured on a 5 point Likert scale, where 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree and 1 = strongly disagree. Overall, respondents agreed that climate change was occurring and that there was a need to develop renewable energy. They also disagreed with the statement, 'there is no link between electricity used in the home and climate change'. Two statements in relation to fossil fuels (their economic and environmental impacts) also received neutral scores.

Chi-square analyses were then performed between respondents' attitudes and the installation of roof-top solar. For this analysis, the attitudinal response (originally in a five-point Likert scale) was collapsed into a three-point scale ('agree', 'neutral' and 'disagree'). Respondents who had roof-top solar did not differ significantly in their attitudes when compared to those who had not installed these systems. There are three exceptions. Not surprisingly, a high percentage of people (52.6%) who had a roof-top solar system agreed that it was the cheapest form of electricity. Likewise, a high percentage of people (81.3%) who had a roof-top solar system agreed that Queensland was rich in renewable energy resources. Surprisingly, more people (62.6%) who did not have roof top solar disagreed with the statement 'there is no link between electricity used in the home and climate change' than those who had installed this system (48%).

Table 7.6 Attitudes towards climate change and energy resources by installers and non-installers of roof-top solar

Attitudinal item	Total (n = 323)	SD	Roof top solar is not installed (n = 237)			Yes, it is installed (n = 76)			Chi-square
	Mean	S. Dev.	Disgree (%)	Neutral (%)	Agree (%)	Disagree (%)	Neutral (%)	Agree (%)	
(a) There is no link between electricity used in the home and climate change	2.43	1.19	62.6	21.7	15.7	48	25.3	26.7	$\chi^2 = 6.060$, p = 0.048, Cramer's V = 0.140
(b) Human-induced climate change is occurring at some level	4.19	0.951	4.7	12.7	82.6	1.3	14.5	84.2	$\chi^2 = 1.826$, p = 0.401, Cramer's V = 0.076
(c) Investment in renewable energy is a means of stimulating economic growth	3.95	0.916	6.5	18.5	75	10.7	9.3	80	$\chi^2 = 4.467$, p = 0.107, Cramer's V = 0.121
(d) Solar photovoltaic (PV) is the cheapest form of electricity	3.36	0.744	14.3	51.9	33.8	13.2	34.2	52.6	$\chi^2 = 9.130$, p = 0.010, Cramer's V = 0.172
(e) Fossil fuels (i.e. coal, gas, oil) should *not* be avoided because they support the economy	2.74	0.849	40.4	32.3	27.2	52.6	27.6	19.7	$\chi^2 = 3.650$, p = 0.161, Cramer's V = 0.108
(f) The environmental impacts associated with coal-fired power stations are often overstated	2.69	1.225	45.3	29.7	25	48.7	22.4	28.9	$\chi^2 = 1.581$, p = 0.454, Cramer's V = 0.071
(g) We are using up supplies of fossil fuels (i.e. coal, oil, gas) too fast	3.89	1.144	8.5	25.6	65.8	3.9	23.7	72.4	$\chi^2 = 2.089$, p = 0.352, Cramer's V = 0.082
(h) It is our responsibility to develop renewable energy for future generations	4.45	0.968	2.1	4.6	93.2	3.9	1.3	94.7	$\chi^2 = 2.434$, p = 0.296, Cramer's V = 0.088

(continued)

Table 7.6 (continued)

Attitudinal item	Total (n = 323)	SD	Roof top solar is not installed (n = 237)			Yes, it is installed (n = 76)			Chi-square
	Mean	S. Dev.	Disgree (%)	Neutral (%)	Agree (%)	Disagree (%)	Neutral (%)	Agree (%)	
(i) High levels of energy use will impact future generations' standard of living	4.27	0.977	3.4	11.9	84.7	6.7	4	89.3	$\chi^2 = 5.133$, $p = 0.077$, Cramer's $V = 0.128$
(j) Queensland is rich in renewable energy sources (e.g. solar, wind)	4.10	0.950	5.6	16.7	77.8	12	6.7	81.3	$\chi^2 = 7.393$, $p = 0.025$, Cramer's $V = 0.155$
(k) Queensland's renewable energy sources (e.g. solar, wind) should be fully exploited	4.33	0.852	5.5	10.5	84	5.3	4	90.7	$\chi^2 = 3.024$, $p = 0.221$, Cramer's $V = 0.098$

Note: items in bold represent significance, $p < 0.05$

Support for Fossil Fuels and Importance Attached to Electricity Conservation

Chi-square analyses were performed between respondents' support for fossil fuels in the energy mix and perceived importance of electricity conservation. For this analysis, support for fossil fuels (originally in a five-point scale) was collapsed into a three-point scale ('support', 'neutral' and 'oppose'). There was a small segment that supported fossil fuels ($n = 66$, approximately 21% of the sample). A total of 143 indicated that they 'opposed/strongly opposed' to fossil fuels (approximately 44% of the sample). A large number of respondents were undecided about fossil fuels, with 114 ticking the 'neither support nor oppose' category (approximately 35% of the sample). Respondents were presented with a list of 17 different 'energy-friendly' behaviours and asked to rate how important that behaviour was to them. Likert scales were used to assess level of importance, with 1 = not at all important and 5 = very important. The mean values are shown in Table 7.7. Looking at the columns, it can be seen all respondents attached importance to a wide range of practices (importance score = 4 or greater). The neutral group attached importance to 11 behaviours; the pro-fossil fuels group attached importance to 10 behaviours and the anti-fossil fuels group attached importance to 14 behaviours.

Differences between respondents who were pro- and anti-fossil fuels were investigated using the Mann-Whitney test. This test is appropriate when the data is not normally distributed. Statistically significant differences were evident. Those who opposed fossil fuels had stronger importance scores on seven behaviours, comprising of two efficiency behaviours and five curtailment behaviours. The items were as follows: using a solar hot water system (Mann-Whitney tests, $U = 0.4673.5$; $z = -0.131$, $p = 0.895$); setting air conditioners at the right temperature ($U = 5954$; $z = 3.791$; $p < 0.001$); buying energy-rated electrical goods ($U = 5632.5$; $z = 2.596$; $p = 0.009$); using ceiling fans ($U = 5744.5$; $z = 2.820$, $p = 0.005$); waiting until there was a full load to do the laundry ($U = 5435$; $z = 2.008$; $p = 0.045$); being conscious of peak periods ($U = 5371.5$; $z = 2.181$, $p = 0.029$) and limiting use of air conditioners ($U = 5544$; $z = 2.522$, $p = 0.012$).

Differences between the three groups were also investigated (using the Kruskal-Wallis test) and statistically significant different were evident with regard to eight behaviours. The items were as follows: using a solar hot water system ($H = 21.776$; $p = 0.000$); setting air conditioners at the right temperature ($H = 16.919$; $p = 0.000$); buying electrical goods with a high Energy Star rating ($H = 7.719$; $p = 0.021$); saving energy by using ceiling fans instead of air conditioners ($H = 10.164$; $p = 0.006$); installing water efficient shower heads ($H = 6.375$, $p = 0.041$); being conscious of peak periods in terms of electricity usage ($H = 7.283$; $p = 0.026$); limiting use of air conditioners ($H = 10.771$; $p = 0.005$) and doing energy intensive tasks at times when electricity is cheapest ($H = 8.811$, $p = 0.012$).

Table 7.7 Importance attached to electricity conservation

Type of behaviour	Item	Mean (n = 324)	SD	Neutral (n = 114)	Support fossil fuels (n = 66)	Oppose fossil fuels (n = 143)	p Mann Whitney	p Kruskal-Wallis
Curtailment	Switching the light off when it is not needed	4.58	0.586	4.58	4.53	4.59	0.895	0.986
Curtailment	Setting air conditioners at the right temperature (i.e., 25 degrees in summer; 18 degrees in winter)	4.30	0.977	4.22	3.97	4.51	**0.000**	**0.000**
Curtailment	Saving energy by using ceiling fans instead of air conditioners	4.30	0.915	4.17	4.12	4.48	**0.005**	**0.006**
Curtailment	Waiting until there is a full load before doing the laundry	4.20	0.948	4.18	4.02	4.30	**0.045**	0.130
Curtailment	Washing clothes at cold water temperatures	4.17	0.969	4.15	4.00	4.24	0.146	0.288
Curtailment	Drying washing on a clothes line instead of in a clothes dryer	4.48	0.856	4.37	4.50	4.55	0.822	0.087
Curtailment	Being conscious of peak periods in terms of electricity usage	3.88	1.007	3.78	3.71	4.04	**0.029**	**0.026**
Curtailment	Limiting use of air conditioners	4.32	0.936	4.21	4.14	4.48	**0.012**	**0.005**
Curtailment	Doing energy intensive tasks at times when electricity is cheapest	3.71	1.061	3.51	3.66	3.86	0.104	**0.012**
Efficiency	Buying compact fluorescent light bulbs (i.e., light bulbs that may be spiral- or twisty-shaped and fit into ordinary light fixtures)	4.17	0.894	4.12	4.12	4.24	0.583	0.414
Efficiency	Buying LED lights (i.e., energy efficient bulbs with a long lifetime)	4.25	0.885	4.12	4.26	4.27	0.801	0.820
Efficiency	Using a solar hot water system	4.01	1.038	3.86	3.65	4.28	**0.000**	**0.000**
Efficiency	Buying electrical goods with a high Energy Star rating	4.30	0.895	4.20	4.12	4.44	**0.009**	**0.021**
Efficiency	Having ceiling insulation	4.37	0.860	4.33	4.30	4.41	0.569	0.481
Efficiency	Installing water efficient shower heads (i.e., releases water around 6 L/min)	4.03	0.972	3.91	3.88	4.19	0.056	**0.041**

Efficiency	Using an in-home display or smart meter that gives feedback on electricity usage	3.42	1.061	3.28	3.39	3.54	0.279	0.133
Efficiency	Having a standby power controller (i.e., a device which automatically reduces time spent in standby mode and switches off appliances not in use)	3.58	1.121	3.45	3.55	3.70	0.295	0.128

Note: number of responses (n) to questions ranged from 107 to 114 in the neutral group; 63–66 in the pro-fossil fuels group and 140–143 in the anti-fossil fuels group; Items in bold represent significance, $p < 0.05$

Electricity-Saving Practices Performed by Survey Participants and by Those in Favour of, or Opposed to, Fossil Fuels

Respondents were asked to indicate if they had actually made an effort to conserve electricity in the home. Table 7.8 illustrates the results and it reports the percentages of respondents who ticked 'yes' to a dichotomous question.

Looking at the columns, it can be seen that the vast majority of respondents performed a wide range of electricity-saving actions. Over 70% of all respondents performed ten practices that were identical. These practices were also perceived to be important by respondents who were pro- and anti-fossil fuels in the energy mix. Differences between those who were pro- and anti-fossil fuels are shown the table. The numbers in the last column represent a simple subtraction of percentages taken from the 'pro-fossil fuels' column and the 'anti-fossil fuels' column (a−b). The differences are minimal and cross tabulations showed that they were not statistically significant. However, one cross tabulation showed that there was a significant association between ceiling insulation and whether the respondent was in the pro-fossil fuels or anti-fossil fuels group ($\chi(1) = 8.087$, $p = 0.004$). More respondents who were in favour of fossil fuels had installed ceiling insulation. Cross tabulations showed that demographical and other variables (i.e. gender, income, education, home ownership, political affiliation) were not associated with having ceiling insulation.

Out of a list of 17 items, five items got the lowest scores from all three groups. In other words, less than 50% of respondents performed these electricity-saving practices. These practices were as follows: being conscious of peak periods; doing energy-intensive tasks at times when electricity is cheapest; using a solar hot water system; using smart meters and having a stand-by power controller.

Discussion, Policy Implications and Limitations

The purpose of this study was to investigate the attitudes of consumers toward climate change and energy resources and examine the factors that explain adoption of roof-top solar and patterns of electricity usage in the home.

Our analysis reiterates the influence of some of the socio-economic factors on the adoption of solar PV. Demographic factors, such as age and education, along with political affiliation and home ownership, were associated with the installation of roof-top solar. Studies have found that age is positively associated with adoption of solar PV (Martinsson, Lundqvist, & Sundström, 2011; Urban & Ščasný, 2012). Martinsson et al. (2011) concluded that the significance of people aged over 55 years as an explanatory variable in solar PV uptake may reflect concerns by older people about electricity prices. However, related studies show inconsistent support for age, as well as educational differences, in explaining energy consumption (Frederiks et al., 2015a). Many studies suggest a positive correlation between education level and energy-related activities (Mills & Schleich, 2012), since education is commonly associated with better

Table 7.8 Conservation behaviours performed

Type of behaviour	Action	Total sample (n = 324)	Neutral (n = 114)	Support fossil fuels (a) (n = 66)	Oppose fossil fuels (b) (n = 143)	a–b
Curtailment	Switching the light off when it is not needed	93.9	93.2	92.1	95.3	−3.2
Curtailment	Setting air conditioners at the right temperature (i.e., 25 degrees in summer; 18 degrees in winter)	76.1	76.7	71.4	77.8	−6.4
Curtailment	Saving energy by using ceiling fans instead of air conditioners	81.3	76	87.1	82.7	4.4
Curtailment	Waiting until there is a full load before doing the laundry	74.3	74.8	72.6	74.6	−2
Curtailment	Washing clothes at cold water temperatures	77.8	80.6	74.6	77	−2.4
Curtailment	Drying washing on a clothes line instead of in a clothes dryer	85.4	81	88.9	87.2	1.7
Curtailment	Being conscious of peak periods in terms of electricity usage	44.7	40.4	47.6	47.2	0.4
Curtailment	Limiting use of air conditioners	80.7	76.7	81	83.7	−2.7
Curtailment	Doing energy intensive tasks at times when electricity is cheapest	39.6	35.2	41	42.9	−1.9
Efficiency	Buying compact fluorescent light bulbs (i.e., light bulbs that may be spiral- or twisty-shaped and fit into ordinary light fixtures)	75.7	76	73	77.4	−4.4
Efficiency	Buying LED lights (i.e., energy efficient bulbs with a long lifetime)	70.9	73.8	69.8	68.8	1
Efficiency	Using a solar hot water system	24.5	24	22.6	26	−3.4

(continued)

Table 7.8 (continued)

Type of behaviour	Action	Total sample (n = 324)	Neutral (n = 114)	Support fossil fuels (a) (n = 66)	Oppose fossil fuels (b) (n = 143)	a–b
Efficiency	Buying electrical goods with a high Energy Star rating	79.5	78.6	79.4	80	−0.6
Efficiency	**Having ceiling insulation**	67.4	72.3	79	57.9	**21.1***
Efficiency	Installing water efficient shower heads (i.e., releases water around 6 L/min)	51	46.1	54.1	53.2	0.9
Efficiency	Using an in-home display or smart meter that gives feedback on electricity usage	14	19	11.3	11.3	0
Efficiency	Having a standby power controller (i.e., a device which automatically reduces time spent in standby mode and switches off appliances not in use)	24.5	22.9	24.2	26.2	−2
Efficiency	Currently have roof-top solar PV (n = 76; n = 108; n = 64; n = 140)	24.3	16.7	25	30	−5%
	Intend installing roof-top solar in next 2 years (n = 57; n = 104; n = 58; n = 127)	17.6	17.3	20.7	16.5	4.2

Note: number of responses (n) to items ranged from 101 to 105 in the neutral group; 61–63 in the pro-fossil fuels group and 121–125 in the anti-fossil fuels group
*Items in bold represent significance, $p < 0.05$

knowledge of technology or financial capacity (Sommerfeld, Buys, Mengersen, & Vine, 2017). However, Sommerfeld, Buys, Mengersen, and Vine (2017) found that the areas in Queensland with the lowest levels of tertiary educated persons had more than double the installation rate of solar PV. Likewise, this study found that people with a trade qualification and lower levels of education were inclined to have roof-top solar. It may be the case that the highly educated consumers were less likely to install roof-top solar given negative perceptions of the return on investment, which is a common barrier to pro-environmental behaviour (Faiers & Neame, 2006; Steg & Vlek, 2009); or perhaps people with a trade qualification had more confidence in their capacity to

maintain these systems. There is consensus in the literature that installation of solar PV is influenced by household income, given the high capital cost of solar, as well as by private home ownership. Home owners tend to make larger capital investments in electricity devices than those living in rental housing (Frederiks et al., 2015a; Sommerfeld, Buys, Mengersen, & Vine, 2017). There is very little evidence in the literature that political affiliation is linked to the adoption of roof-top solar, although some scholars have concluded that those who vote in favour of 'green policies' and register for liberal/environmentalist political parties are more likely to purchase 'green' products (Kahn, 2007; Kahn & Morris, 2009).

Cross tabulations were performed on attitudes towards climate change, fossil fuels and other energy resources and the installation of roof-top solar. However, there was not a statistically significant relationship between attitudes and the installation of roof-top solar (apart from three exceptions). This study drew on the commonly cited 'attitudes-behaviour' perspective (Martinsson et al., 2011) to explain consumers' electricity saving practices in the home. One would expect people who were opposed to fossil fuels in the energy mix to restrain their consumption of a service, such as electricity, that generates a negative externality. Yet, there was not a significant difference in electricity consumption practices and adoption of roof top solar between respondents who supported fossil fuels and those who did not. In general, opposition to, or support for, fossil fuels, does not necessarily affect electricity usage in the home. This finding is not too surprising given that a multiplicity of factors affect how householders consume and conserve energy (Frederiks et al., 2015a).

The study found that some curtailment behaviours (e.g., being conscious of peak periods; doing tasks at times when electricity is cheapest) and efficiency behaviours (installing roof-top solar, having a solar hot water system; in-home display/smart meter, stand-by power controller) were not common. Hence, resistance to these behaviours (perhaps cost, renting or lack of knowledge) needs to be understood if solutions are to be found. Studies show that consumers are poorly attuned to actions that involve research, effort and out-of-pocket costs (Attari et al., 2010). There is one 'curtailment behaviour' in particular—using electricity outside of peak periods—that could be stressed by utilities. Electricity generators are required to cater for peak demand periods, requiring investment in infrastructure that is required only for short periods of time (Hamer et al., 2014). Incorporating higher residential tariffs during peak periods (Higgins et al., 2014), also known as 'cost-reflective' tariffs, as envisaged in the Energy White Paper (Australian Government, 2015) is logical. Hence social marketing may lead to persuasive messages aimed at changing curtailment behaviours. It is acknowledged, however, that social marketing is not a panacea and that legislation and incentives, in conjunction with social marketing, play a role in modifying behaviour (Rothschild, 1999; Sheavly & Register, 2007). For instance, the concept that houses should be built and renovated, from the perspective of environmental, social and economic sustainability, is well established in the literature (Smyth, 2010). Legislation that mandates the installation of smart meters or solar hot water systems in new homes, or government subsidies to support retro-fitting by landlords, could perhaps address deficiencies in efficiency behaviours. Hence, there is scope for policy makers and utilities to heed the findings of this study and take contextual factors into account.

This study had its limitations. The sample, although diverse, was a convenience sample of mostly urban North Queensland residents. The sample was somewhat skewed towards females, the middle aged, people who were well-educated and on higher incomes, and the findings need to be interpreted with caution. Hence, this research could be extended to other areas for future study, using a larger, nationally representative sample, to obtain results that are more convincing. The survey relied on self-reported behaviour which does not always equate to real behaviour; people's perceptions of electricity-related behaviours are subject to unrealistic optimism and misconceptions (Attari et al., 2010). Furthermore, simply asking people about whether an everyday activity is important and if they carry it out increases the likelihood of a positive response. Furthermore, electricity saving behaviours were measured using a dichotomous scale (i.e., yes, I perform this activity, no I do not) rather than by frequency (i.e., always, often, sometimes, never), which may have led to more positive responses. Hence, while survey data is useful and it captures broad patterns of behaviour, the results here are tentative and survey data alone is not always a sound basis for electricity policy decisions.

This research provides an understanding of the factors the help explain different patterns of household electricity usage in a regional Australian city. Additional research on consumer behaviour and householders' motives for using electricity sustainably is essential if Australia is to make a transition to a low-carbon electricity market. Social marketing approaches have much to offer when it comes to influencing residential consumers' attitudes and behaviours in relation to *energy conservation*.

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Chapter 8
Climate Change Initiatives for Improving Sustainability and Responsibility in New Zealand

Yue Wang

Introduction

At the latest global convention on climate change (COP21) held in Paris at the end of 2015, New Zealand (NZ) along with other participants agreed on a worldwide treaty with the aim of reducing Greenhouse Gas (GHG) emissions and thereby contributing to limiting the rise of global warming. Before the meeting, each participant was requested to propose its "Intended Nationally Determined Contribution (INDC)" to reduce GHG emissions in the period after 2020. The design of an INDC needs to be careful considered. From one hand, it is the primary GHG reductions commitment made by each participant; from another hand, it produces a long-term impact on the participant's economic development and decides whether the development can direct to a sustainable way.

Once a participating country ratified the Paris Agreement, the INDC became NDC. For instance, NZ's NDC is a target of reducing 30% emissions below 2005 levels by 2030.

As a key pillar of NZ's response to climate change issues, the NZ Emissions Trading Scheme (NZ ETS) was introduced in 2008. This scheme covers all GHGs and involves most production sectors within NZ. For instance, forestry, manufacturing, utilities, and so on. However, the most significant domestic emitter of GHG—agriculture was not included. As a result, the total market demand for mitigation is less than the situation if agriculture sectors enter into the emissions trading scheme. Based on the economics law of demand, assuming supply is fixed, less demand would drag down the market price of the goods. In fact, the carbon permit price was very low around 2013. At the end of 2012, the NZ government announced that it would not ratify the

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second Kyoto Protocol period, whereas it still took responsibility to reduce its GHG emissions under the UNFCCC. Also, the NZ government announced its intentions to delink from the international carbon market so that the participants were not eligible to trade international carbon units but only NZ units since November 2015. The international carbon market plays a vital role in reducing the global GHG emissions, allows participants to trade the international emission allowances with each other. Delinking with the international market will limit the transaction of NZ carbon permit, which in turn pushes up the permits' price.

The main supplier of carbon permits come from forestry sector. Within the ETS, the forestry sector has financial liability for harvested trees and decayed woods, i.e. it has to pay when harvested trees release the carbon dioxide to atmosphere. Energy, industrial processes, waste, refined fuels, and synthetic gases sectors have to pay for their emissions, but agriculture is exempted from the scheme. Agriculture, one of the primary industries in NZ, contributing a large number of products to the world market. For instance, NZ exports 75% of sheep meat and 33% of dairy products whereas it only account for 6% and 3% of the world production for sheep meat and dairy, respectively MPI (2018). Given the significant role agriculture plays in NZ economy, the impact of the ETS if agriculture is involved on carbon prices and economy should be carefully analysed. NZ is one of many countries that has implemented a national climate change initiative at early time of paying attentions to climate change. The EU had its ETS since 2005, put a lot of effort on improving energy efficiency in order to reduce the emissions from combustion of fuels such as coal used to generate electricity. China implemented its national ETS from the end of 2017, prior to the national scheme, the Chinese government set 7 carbon trading pilots locating in different provinces for participants to buy and sell the carbon permits. It will take time to integrate these pilots into the national system.

Global GHG emissions can be expected to reduce when the largest emitter—China actively reduces its own emissions by green innovation in technology and switch to renewable resources for energy production.

Like the ETS, a carbon tax is an alternative option to reduce GHG emissions. Both a carbon tax and ETS are components of a range of available regulatory approaches, including emission pricing and quantity control. Other strategies include technology improvements and performance standards for low emissions. Although a carbon tax was proposed, to date it has not been officially introduced in NZ. If a fixed tax is imposed on production inputs such as capital and land use, it may lead to investment in efficiency improvements and equipment upgrades. However, the disadvantage of implementing a carbon tax is the possible uncertain emission control. At a higher carbon tax, emitters respond by shifting away from relatively expensive input to those less expensive ones. As a result, sectoral outputs decrease which lead to a decrease in emissions.

In this chapter, I first introduce the emissions profiles of a range of NZ's industrial sectors. Then, I take a brief look at the primary emission sources and alternative sustainable energy use for electricity use. Finally, I outline the benefits of reducing current and projected future carbon emissions and discuss actions to address the climate change issues in NZ.

New Zealand's Situation

NZ Carbon Dioxide Equivalent (CO_2-e) Emissions

The primary carbon dioxide emission from agriculture is methane from the enteric fermentation category and nitrous oxide released from soils (Ministry for the Environment, 2015a). Due to improved productivity, feed, and stock management, agriculture emission intensity declined from 1990 to 2013. Emissions from the energy sector are mainly from road transport and electricity generation. From the year 2008–2011, the level of CO_2 emissions was lower than the period 1990–2007, due partly to the increasing use of renewable resources in electricity generation (Energy Efficiency and Conservation Authority (2016) reported that in 2015 NZ sourced 40% of its total energy from renewable resources). The primary emission sources from the "industrial processes and product use" sector include industry, household refrigeration, and air-conditioning systems. Chemical, mineral, and metal products combustions contribute to the emissions from the industrial sector. The waste sector has lowered emissions between in 2013 by 1% compared with the year 1990 due to improved landfill management (Ministry for the Environment, 2015b). Figure 8.1 shows NZ's GHG emissions in a million tonnes (Mt) of CO_2-e by sectors in 2013.

The forestry sector is significant in mitigating the GHG emissions. Growing trees have the function of absorbing the CO_2 emissions, whereas harvesting trees release these emissions to the environment. The harvesting rate of trees is largely affected by factors such as log price and tree age. When the deforestation profit is lower compared to other land use, forest owners will plant more trees. Besides, emissions would fall when land in agriculture use converted to forestry production land. In contrast, a large amount of emissions comes from grassland use such as animal grazing.

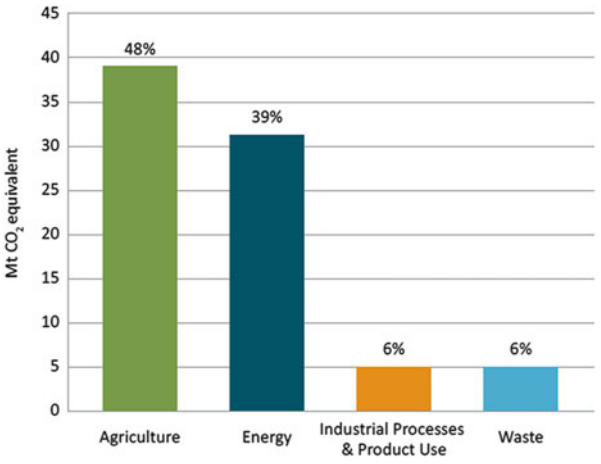

Fig. 8.1 NZ's emissions by sector. Source: MFE (2015b)

In 2013, net removals of CO_2-e emissions from the "land use, land-use change and forestry (LULUCF)" sector were −26.8 Mt. CO_2-e. This figure is different from 33.7 Mt., which is mentioned above because 33.7 Mt. measures the net removal (i.e. difference between carbon sink and emission) from the land converted to forestland only. Figure 8.2 shows the change in total emissions and net removals from 1990 to 2013.

GHG emissions from NZ agriculture over the period 1990–2012 increased by 14.9% and it remains a very high proportion compared with the rest of developed countries. This is associated with increasing number of NZ agriculture exports. Figure 8.3 compares the CO_2 emission between NZ and other countries. Big

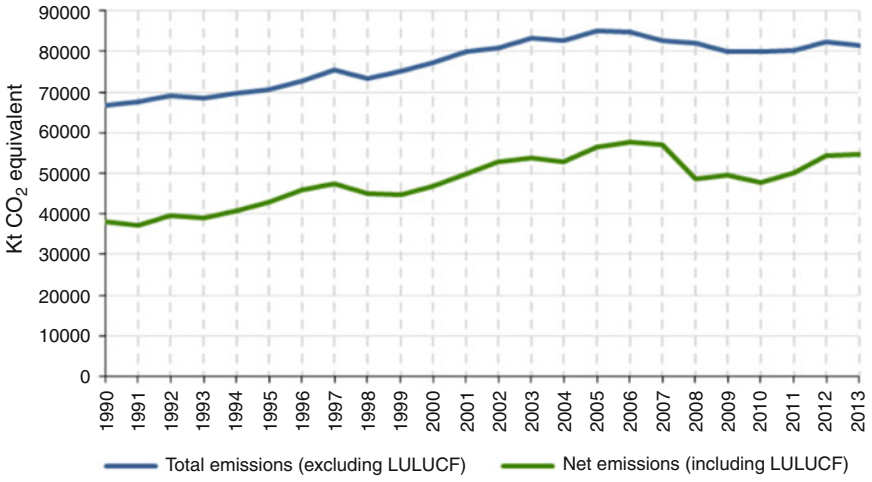

Fig. 8.2 NZ's total emissions and net removals. Source: MFE (2015a)

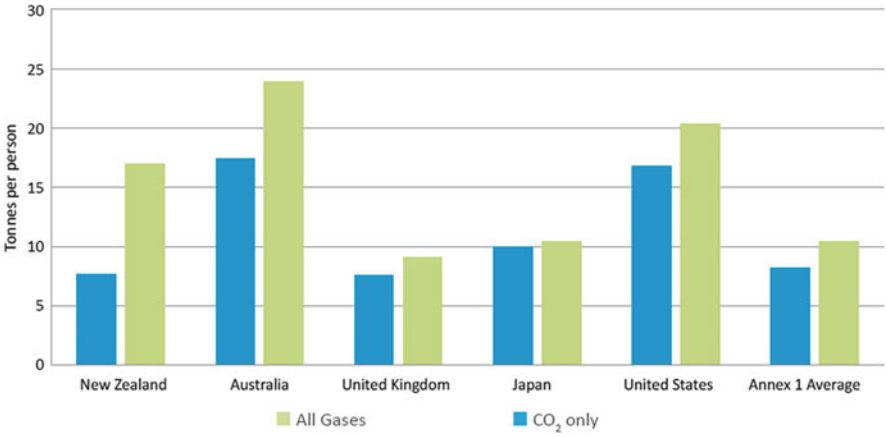

Fig. 8.3 Global emission by CO_2 per capita comparisons in 2012. Source: MFE (2015b)

economy, the United States, also contribute to a large proportion of both all gases and CO_2 emissions. The "Annex 1" countries shown in Fig. 3 include the developed countries that are members of the OECD (Organisation for Economic Co-operation and Development) and the economies in transition, as well as the Russian Federation, the Baltic States, and several Central and Eastern European States (UNFCCC, 2014).

Primary Emission Sources

Five types of emission sources contribute the most to the increase in total emissions: road transportation, public electricity and heat production, agricultural soils, consumption of halocarbons and sulphur hexafluoride (SF_6) (e.g. in electricity consumption), and enteric fermentation (Ministry for the Environment, 2015a).

NZ is one of the OECD countries which has the highest rate of car ownership and old vehicle fleets, heavily depends on emission-intensive truck transportation (OECD, 2017). Almost 50% of total CO_2 emissions were from road transportation, public electricity and heat production sectors in 2013. However, the amount of vehicle emissions of CO_2 decreased between 2001 and 2013 which in turn improved NZ's air quality. The biggest pollutant threatens the most of countries is particulate matter (PM), with diameter less than 10 μm (PM_{10}) or 2.5 μm ($PM_{2.5}$) penetrates deeply into human respiratory system. The pollutants generate severe health issues in both short and long-term effect. Over 1000 premature deaths were associated with PM pollutions in NZ in 2012.

The largest emissions sector, agriculture, contributes 22% of total emissions from agriculture soils in the form of nitrous oxide (N_2O). Specifically, direct N_2O emissions are generated by two parts: grazing manure and extra synthetic nitrogen fertilisers; and indirect N_2O emissions are mainly through volatilisation of fertilisers.

Regarding net GHG emissions, due to the unique emission profile of NZ, the most emission sources occur when land converted to grassland in the LULUCF sector. In addition, NZ has utilised renewable energy such as wind, hydro, and geothermal to replace traditional coal and gas for electricity generation. Increased use of renewable resources can help reduce GHG emissions and promote to a sustainable development for economy.

Renewable Resources

NZ has a rich stock of geothermal resources that provide 17% of domestic electricity production. However, these geothermal resources are not 100% clean because they contains some pollutants such as gas and minerals (Energy Efficiency and Conservation Authority, 2016). However, it is cleaner than other energy-fuelled electricity generation (e.g. coal and gas). Wind farms are also used for electricity generation. It

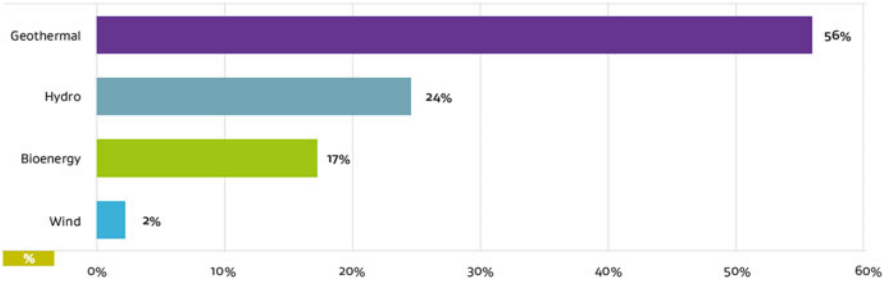

Fig. 8.4 Renewable energy use in 2014. Source: Ministry of business innovation and employment (2017)

is completely clean and very easy to build. Operating wind farm is not expensive. Currently NZ has 19 wind farms providing 690 MW of electricity production. Besides, water from rivers and streams supply potentials of electricity generation. Although NZ does not have a massive storage of water, wind power can substitute hydro-electricity that helps to reduce the GHG emissions.

NZ uses 40% of renewable resources in its total energy supply, ranked by the third highest among the OECD. The NZ government set up a long-term develop a strategy for the energy sector from 2011 to 2021, covering four primary areas: renewable energy development, environmental responsibility, energy efficiency, and secure energy (Energy Efficiency and Conservation Authority, 2017). Renewable energy generates almost 78% of NZ's electricity. Figure 8.4 presents the renewable energy use in NZ in 2014.

The above figure shows the four main types of renewables use in NZ. Hydro electricity is highly depending on dam capacity. Between 2012 and 2013, national GHG emissions decrease by 3% due to high hydro flow and reduction in fossil-based electricity generation.

However, water supply for hydro-electric generation varies from time to time, reducing during times of drought, and NZ has limited water storage capacity. Geothermal is more reliable as supply is not influenced by external weather condition. Wind energy infrastructure is quick and easy to build, not generating any emissions. Bioenergy comes from forest products such as wood and crops, providing 7% of total energy supply. Solar energy also contributes to NZ's electricity generation, but with the highest operation cost (Energy Efficiency and Conservation Authority, 2016).

NZ's Sustainable Development

As defined by the NZ Resource Management Act 1991 (RMA), sustainability initiatives are comprised of two factors: one, fully understand the current capacity of natural and physical resources in order to predict the ability to supply the

country's current and future needs; two, conserving potential resources for future generations (United Nations, 1997).

The United Nations outlined 17 sustainable development goals where the NZ government commits to achieving these goals through both domestic actions and international co-operations. Domestically, NZ put efforts on improving living conditions, e.g. supplying affordable housings and protecting the environment. At the global level, NZ needs financial support (i.e. NZ Aid Programme) to invest in education, health, governance, and resilience (New Zealand Foreign Affairs and Trade, 2018). There are a few simple steps to achieve a more sustainable society that can be readily undertaken by members of society. For instance, reduce paper use, recycle rubbish to lower carbon emissions, and manage fresh water use.

NZ and International Climate Change Initiatives

NZ signed the Kyoto Protocol in 1997 and ratified it in 2002 for the first commitment period 2008–2012. From 2008 to 2012, NZ had a target of reducing its emissions to 1990 levels.

At the COP 21 conference, delegates from 196 countries agreed to a deal for tackling global climate change. This is the first time in history that all the world's nations have agreed to reduce GHG emissions. The deal endeavours to limit the global average temperature increase to below 1.5 Celsius degree by the end of this century, and reduce the GHG emissions to the levels at which the natural resources like trees, soil and oceans can absorb carbon naturally, sometime between 2050 and 2100. Renewable energy is encouraged, especially in developing countries. According to the agreement, rich economies are responsible for providing "climate finance" to poorer countries helping them to adapt to the new requirements around climate change. This "climate finance" is treated as a "floor", a base to build upon, and will commence on 2020. Following this, a world review on GHG reductions will be undertaken every 5 years.

NZ committed to reducing GHG emissions to 30% below 2005 levels by 2030. The reduction covers five main emission sectors: energy, industrial processes and product use, agriculture, forestry and other land use, and waste. All GHGs are included in the target.

The two largest economies in the world China and the US committed to reduce their domestic GHG emissions at the COP 21 conference. China pledged to cut its GHG emission per unit of its GDP by 60–65% from 2005 levels, and increase its share of non-fossil fuel use in energy consumption by 20% by 2030. In 2014, China and US had agreed to drive bilateral cooperation on climate change, i.e. "US-China commitment to curb carbon emissions". According to this deal, the US will cut emissions up to 28% by 2025, and China promised to establish a national cap-and-trade system on industrial emissions. Unfortunately, the Trump government announced to quit the Paris agreement in 2017.

If agriculture is included in NZ ETS, the scheme would increase production costs for dairy and sheep-beef, and in the short term, these industries could lose competitiveness in the global market. However, in the long term, NZ will contribute to reducing GHG emissions compared to countries without emissions regulation policy. This is because, in the long term, the polluting sectors in NZ will adjust the sectoral production cost with improved efficiency and technological innovation that will decrease the GHG emissions. Greenhalgh et al. (2007) point out that the climate policy should have competing objectives, such as (1) maximizing environmental effectiveness; (2) minimizing social disruption and adjustment costs; (3) minimizing the fiscal cost to taxpayers, and (4) improving NZ economic efficiency in a carbon-constrained future.

The EU ETS is the core instrument of EU policy to combat climate change. It operates in 28 EU countries plus Ireland, Liechtenstein and Norway: it is being introduced in 4 phases. The first trading period was between 2005 and 2007; the second trading period was between 2008 and 2012; the third period spans 2013–2020, and the last period will run from 2021 to 2028. Around 45% of total EU emissions are regulated by the scheme. Overall emissions have been capped, and firms can buy and sell carbon permits as needed. The system accounts for over three-quarters of international carbon trading and is looking to link with other countries' climate policy. Firms are allocated carbon permits from the government regarding their production, which is called an output-based allocation. Three main GHG emissions are covered: carbon dioxide (CO_2), nitrous oxide (N_2O), and perfluorocarbons (PFCs). The allocation helps to reduce the risk of the emission leakage.

NZ GHG emissions are mainly from agriculture and energy combustion, therefore, evaluating the effects of emissions needs to be carefully considered. The next section explains the definition of externalities and summarizes approaches to solve the problem caused by externalities in terms of economic theory.

Benefits of Implementing Climate Change Policies in NZ

Motivation for Emissions Abatement

It is crucial to face this global issue and solve the problem from three aspects: on the one hand, new technology (e.g. hybrid vehicles) is being developed to substitute for traditional fossil fuels with low-carbon energy sources; on the other hand, policies are aimed at reducing the negative impact of GHG on climate change by penalizing GHG producers; and, the international cooperation is essential.

41% of households in NZ use traditional fuels such as wood and coal for heating in winter. As a result, it would worsen air quality in NZ. The main pollutants from the air pollution are the PMs. These particles are small enough to penetrate deep into human's lung and body. Exposure to these pollutants is associated with health problems, causing an adverse effect on the social economy. For instance, health

issues lead to lost productivity through absence from work. The pollutants affect environment such as freshwater and land, negatively impact on national sustainable development.

To better understand the emissions impacts on socio-economy, we need to conduct a robust analysis by using a comprehensive method. The comprehensive method can capture interactions among each economic component. For instance, a producer's decision on purchasing production factors may have effect on household income due to higher product prices. This is because the production factor such as labour and capital comes from the household. Such interaction can be examined by an economic method—computable general equilibrium (CGE) modelling.

Method

This section briefly outlines the approach of assessing the impact of climate change policy on a country or region's economy from an economics perspective.

To better capture the emissions impact on NZ's economy, a CGE model is a widely used approach for policy analysis nowadays (Wing, 2004). It consists of a set of equations describe producer and consumer behaviour, solved for a set of prices that balance supply and demand, and the quantity of goods that are produced and consumed is in equilibrium. The equilibrium is an economic concept, illustrating a situation where supply and demand are balanced and remain unchanged in the absence of external influences. Figure 8.5 depicts the framework of the CGE model for an economy.

As seen in Fig. 8.5, basically, three main elements and two markets interact each other in an economy. Households supply production factors such as labour and capital to firms and receive wage and payments as a return. Firms use these factors for production, and sell the products to the commodity market where households and government purchase goods and services. Both households and firms pay taxes to the government as part of government income.

Unlike econometric approaches that explain the reason for variable change based on a set of data, the CGE model captures the whole interactions among all activities in an economy. By using the model, researchers can design various policy scenarios to simulate practical situations. This makes the method particularly practical when estimating the impact of climate change policy on the economy.

In addition to the quantitative approaches, conducting qualitative studies can also estimate the effect of climate-related policies on the economy. According to the qualitative method, researchers can obtain an in-depth understanding of human behaviour and their responses towards the environmental policies. In addition, researchers can obtain the first-hand data, and investigate how external policy such as the climate change initiative takes effect on the company's sustainable development, and how company's green development impact on a whole economy.

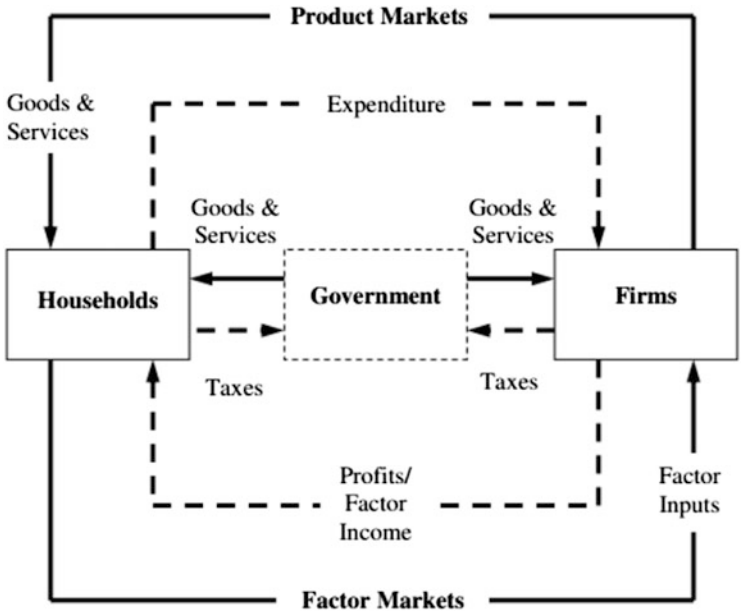

Fig. 8.5 Circular flow of CGE model. Source: Wing (2004)

Results

Implementing the climate change policy will generate negative impacts on some economic indexes. For instance, the gross domestic product (GDP) and income of labour in the short term. According to Wang (2016), the NZ's real GDP will decline by 0.2% if emissions polluters were to be changed at NZ$24 per tonne of CO_2-e by the author's calculation. The declined GDP leads to a fall in domestic production and labour income. In the long term, the negative effect can be eliminated by having an efficient policy, such as establishing mechanisms for carbon permits trading, subsidizing forest owners for afforestation and reforestations.

A clear change occurs in macro-economic variables under a carbon emission cost. For instance, government expenditure on goods and services increases under the carbon tax as tax revenue is part of the government's revenue. However, the government does not earn this revenue in the ETS. Regarding international trade, the ETS with a closed carbon trading market brings advantage to the value of exports. Due to the emerging emission cost, the use of domestic factors or intermediate goods is relatively more expensive compared with imported goods. In response, the value of imported goods increase.

As a small economy, carbon permit trading in NZ is highly affected by the international market. Given that NZ now is delinking from the world carbon market, the price of domestic-only emission permits is rising. This plausible outcome would generate a risk of an emerging black market.

Conclusions

This chapter summarises the current situation of NZ carbon emissions and responses to the climate change issues. In the process of being the low-carbon economy, improving energy efficiency, optimizing the use of renewable energy, and developing in a sustainable way are essential. Forestry plays a significant role in abating GHG emissions. Thus, afforestation is highly encouraged under climate change policies. With high emission cost, more lands are converting into forestry use.

NZ implemented its own carbon emissions trading scheme—NZ ETS, and a series of initiatives and international co-operations to regulate domestic emissions. Having such policies make this important economy in the Southern atmosphere contributing to lower global warming issues. To achieve the national sustainable development goals, NZ needs to take care of managing the use of rubbish, fresh water, energy, and transport.

There are several approaches that can be used to evaluate effects of implementing climate change policies. From an economic perspective, econometric method built on a set of data, estimating variables for the specific research question. But such method cannot capture a whole interaction among each economic sector.

This paper describes an economical method—CGE model, which is widely applied to capture the interactions among economic activities in order to examine an economic impact. However, this model has challenges. For instance, developing such model is time-consuming. Having climate change policy would cause a decline in some economic index such as GDP, income, and international trade; however, it will encourage innovation and sustainable development to reduce GHG emissions in the long term.

NZ has a special geographic location surrounding by the ocean. It is far away from the rest of world. Thus, NZ is not significantly affected by pollutants from other countries in terms of air quality. Developing co-operation with other countries is crucial. Australia supports climate change actions. In 2016, Australia ratified the Paris Agreement and the Doha Amendment to the Kyoto Protocol. NZ is closely connected with Australia, it is important to learn lessons from the neighbour's experience. Furthermore, collaborating with international organisations such as NGOs develops to form strategies to overcome sustainability issues.

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Chapter 9
Becoming a Sustaining Organisation: The Case of Greening the Wharf at Sydney Theatre Company and Its Impacts

Valerie Dalton and Ray Cooksey

Sydney Theatre Company is one of Australia's leading theatre companies with an international reputation. Its profile was raised significantly under the co-artistic direction of Cate Blanchett and Andrew Upton from 2008–2012. Part of the increase in its profile was through an ecological sustainability program called Greening the Wharf (GTW) which ran from 2008 to 2011. The project aimed to showcase how an organisation could respond to the challenges of climate change, even in a heritage listed building. Ultimately, the project sought to make STC the greenest theatre company in the world. The result was a powerful exemplar of green public infrastructure and STC used the project to advocate and educate about how organisations could respond to the challenge of climate change. The project was showcased on its now decommissioned website, www.greeningthewharf.com through a series of case studies around the project planning, and the greening of STC through work on energy use, water use, waste to landfill and theatre production. It presented as a highly successful organisational change worthy of investigation and we were given the opportunity to research the GTW project and its impacts in late 2013. The aim of this research was to investigate how that change process had unfolded over time and how well the change had become embedded in the organisation's culture, processes and practices. The research method chosen was a single in-depth case study involving interviews with 20 staff and analysis of media reports, company reports and other sources of documentation. Valerie Dalton gathered data for the project in 2014. The interviews were conducted with three groups of staff. The first group were directly involved in the implementation in the project. The second and third groups were not. The second group had been with STC before, during and after the project proper. The third group had joined since the project had formally wrapped up. This allowed us to garner a range of perspectives and assess how embedded ecological sustainability had become at STC.

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Sustainability

Before proceeding, we need to provide some background on what we mean by organisational change as it applies to sustainability. The Brundtlandt report defined Sustainable Development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987, p. 24). Sustainability has also been defined as "the long-term maintenance of systems according to environmental, economic and social considerations" (Crane & Matten, 2010, p. 34). In an organisational context, sustainability can be described as a means of running an organisation according to an integration of economic, environmental sustainability and social dimensions, or the Triple Bottom Line (Elkington, 1998). The economic bottom line is understood as "a company's profit figure used as the earnings figure in the earnings-per-share statement, part of standard accounting practice" (Elkington, 1998, p. 74). Environmental or ecological sustainability requires organisations to appreciate their impact on natural capital, both critical (essential to maintaining life) and replaceable (through regrowth or repair) and avoid activities that damage both, ensuring that replaceable capital is used at rates within its replacement capacity. Finally, social sustainability should account for broader social stakeholders beyond the organisation. Corporate sustainability has also been defined as "meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc.), without compromising its ability to meet the needs of future stakeholders as well" (Dyllick & Hockerts, 2002, p. 131). The link between external stakeholders and internal stakeholders has been well captured by Benn, Dunphy, and Griffiths (2014) who added human resource practices that ensured the ongoing development of staff, ensuring a safe working environment and encouraging work-life balance. The two aspects of human sustainability can be succinctly described as "development and fulfillment of the needs or well-being of both employees and community-based stakeholders" (Angus-Leppan, Benn, & Young, 2010, p. 231).

The process of changing organisational practices to incorporate sustainability that attends to the triple bottom line is difficult and complex. Change theorists offer different perspectives on how best to manage organisational change to maximise the success of the process.

Managing Change for Sustainability

Up to three quarters of the approaches to organisational change, including strategic planning, re-engineering, downsizing and Total Quality Management fail because they are too technocentric and neglect the human aspect of change including culture, attitudes and behaviour (Lozano, 2013). When we are dealing with change, we need to address human as well as technical factors because organisational change for sustainability requires behaviour change by organisational members who, in part,

socially construct the organisation and its culture through their relationships (Jabri, 2012). Jabri places the human dimension at the heart of managing change, arguing that change can be managed effectively through the use of narrative and storytelling because we are storytelling creatures who habitually talk in narrative form. Such narrative conversations between those effected by change can provide insights as to why they might accept or resist it. Benn et al. (2014) have developed and evolved a comprehensive phased approach to organisational change for sustainability that specifically includes attention to the human dimension.

The Sustainability Phase Model developed by Dunphy, Benn and Griffiths in their seminal work *Organisational Change for Corporate Sustainability* originally published in 2003, assesses organisations against two forms of sustainability—human and ecological, focusing on the two prongs of the triple bottom line that are most neglected. The model identifies six stages that an organisation might move through as it becomes more sustainable: (1) rejection, (2) non-responsiveness, (3) compliance, (4) efficiency, (5) strategic proactivity and (6) sustaining (Benn et al., 2014). Organisations who are at the lowest level, rejection, have a very instrumental perspective on both the ecological environment and their employees. Non-responders are often more ignorant of the need to be more sustainable on one or both dimensions. Compliance-focused organisations focus on the risks of non-compliance with legal and community standards. Efficiency focused organisations see managing for the environment as a cost reduction to the organisation and human resources management as being about productivity gains. An organisation at the strategic proactivity level has identified sustainability and the development of their staff as a sources of competitive advantage. The sixth level embraces the systemic aspects of sustainability and appreciates the embeddedness of organisational open systems with their environment and the key role that all organisations play in promoting sustainability. Sustaining organisations embrace sustainability because it is the right thing to do and value their staff as human beings first and workers second (Benn et al., 2014). Organisations can be operating at two different levels on the human and ecological dimensions but there is an assumption that building human sustainability will lead to improvements in ecological sustainability (Angus-Leppan et al., 2010).

A process of organisational change for sustainability can be achieved either incrementally or through a process of transformation (Benn et al., 2014). Incremental change is characteristic of most change theories and programs developed through the twentieth century when the world occupied by organisations was less changeable. Transformational change programs were only employed during times of crisis. Incremental change is characterised by collaborative approaches that require changes in the way that people work and may involve changes to certain business unit processes and for generating new capabilities or corporate values. There is no single best approach to the change. The process must be chosen after a careful review of the situation the organisation is in, including what resources are available to facilitate the change.

A transformational change process may become more commonplace as the pressure for organisations to stop "plundering and polluting the planet, destroying

the human capital assets of the organisation or fracturing community relationships" (Benn et al., 2014, p. 262). It requires a deep change in the way the organisation conceives of itself and its role in society and will require careful leadership. Characteristics required for those involved in leading change include: "personal resilience and persistence; realistic self-esteem, self-direction and initiative; tolerance of ambiguity; flexibility and adaptability; clear focus; enthusiasm and motivation; the ability to inspire others; political awareness; empathy; a sense of humour; a helicopter view"; and "a commitment to continuous learning" (Benn et al., 2014, pp. 298–299). The process articulated by Benn et al. involves ten steps.

1. Know where you are starting from before you can set a vision.
2. Develop a vision for what the organisation can become.
3. Identify the gaps between the present reality and the vision.
4. Assess the level of organisational readiness for change. Benn et al. argue that transformative change depends on emotional contagion across an organisation's members because only that can really start to address deeply entrenched behaviours.
5. Set the scene for the change. This involves ensuring that there is broad awareness of the need for change, the identification of change leaders and gathering the requisite resources to run the change program.
6. Secure basic compliance. This is the base level of legal compliance and meeting the expectations of stakeholders and provides the springboard to higher levels of change.
7. Move beyond being merely compliant. This is stepping the organisation up the levels of the sustainability phase model, moving through the efficiency phase towards strategic proactivity and ultimately, the sustaining organisation.
8. Establish the performance criteria for 'compliance-plus'. This phase involves deciding how to judge if the program has been successful.
9. Launch the change program and then manage the change.
10. Maintain the commitment. Once the transformation has been achieved additional changes will be incremental but the organisation does not stand still.

In following the Sustainability Phase Model we need to attend to both the human and ecological elements at play and how they interact with each other, whether they work together synergistically or whether they force organisations into trade-offs between the human and ecological elements (Angus-Leppan et al., 2010).

Research Approach

This research was exploratory in nature. A single in-depth case study was conducted in 2014–2015 to assess if the GTW project had been a successful organisational change for ecological sustainability initiative (Yin, 2014). The benefit of engaging in a single case study is the opportunity to gain depth of understanding of a particular context, a rich narrative. The understanding also comes with an assumption that the

findings may not be transportable to other groups or organisations but may be transportable within the organisation or case study group (Cooksey & McDonald, 2011). Yin distinguishes between holistic and embedded case studies. A holistic case study examines the entire organisation but it may involve more than one unit of analysis. If this happens and attention must be given to subunits such as a particular department or project, the result would be an embedded case study design (Yin, 2014). Our aim was to go in depth and try to gain an understanding of the nuances of the project in its context. The design is variant of Yin's concept of an embedded case study because it only examines a specific project within the organisation. It engaged in a holistic study of the organisation itself as it related to the GTW project and its long-term impacts on organisational practices and processes. Yin's method favours collecting data in natural settings so we could study the project and its impacts in the setting in which it took place. The data were gathered by Valerie Dalton over three site visits in 2014 with a couple of follow-up interviews conducted in 2015.

Data gathered comprised interviews with three groups of staff, company annual reports, media clippings over the relevant period, a small number of internal company documents, the www.sydneytheatrecompany.com.au website, the www.greeningthewharf.com showcase website, State and Federal Government websites, plus a research diary. A small number of photographs were also taken.

The primary data source was a series of semi-structured interviews conducted with three groups of staff. The first were those who were directly involved in the implementation of the project. The second two groups were staff who were not directly involved with the implementation. The second group were long term staff who experienced life before, during and after the project. The third group had joined STC after GTW had formally been completed. The latter two groups were purposively sampled through the Human Resources area by selecting five names from the staff list for each group based on their years of service. Those who had been with the STC for more than 5 years at the time the research was conducted, had lived through the GTW project and could comment on the level of ecological sustainability before and after the project. The second group had been with the organisation for less than five years and could comment on how well ecological sustainability had become embedded in organisational life. During site visits a small number of staff were identified as having interesting insights to share about the project and were approached directly. In all, 20 interviews were conducted.

The interview guides varied slightly for each group because they each had slightly different temporal perspectives on sustainability at STC and the implementation group could comment in more depth on the change process as it unfolded over time. All participants were asked questions about their understanding of the term sustainability, what they understood about GTW, what it was like to work for STC; what ecologically sustainable behaviours they had engaged in prior to GTW or joining STC and what ecologically sustainable behaviours they engaged in since GTW or joining STC. The latter questions sought to tease out how embedded ecologically sustainable behaviours had become in organisational life since the project formally ended in 2011. Interviews ranged from twenty minutes to an over an hour depending on the interviewees level involvement with the project.

Interviews were recorded and transcribed verbatim before being uploaded to MAXQDA 11.1.2 along with all of the other data sources. This permitted triangulation of findings across multiple data sources within the same software. The following articulates the GTW story as it emerged through the data analysis process.

Project Background

STC is housed in The Wharf, a refurbished warehouse on a finger wharf on Walsh Bay at Milsons Point in Sydney which was originally built in the early twentieth Century to load cargo ships. In November 2006, actor Cate Blanchett and her playwright husband, Andrew Upton, were announced as the incumbent Co-Artistic Directors of STC, commencing formally in 2008. When asked what their artistic vision for the company was, they said it was to 'green theatre'. While this was a vision that seemed tangential to the core business of STC it had the full support of the Board of STC and the General Manager, Rob Brookman. The nebulous ambition grew into what became known as Greening the Wharf (GTW). The idea was to showcase how even a heritage-listed building could be made ecologically sustainable and to use the project to engage with the community in dialogue around the issue of climate change. The project was led by Brookman from 2007 until mid-2010 when he left the company. The new General Manager, now Executive Director, Patrick McIntyre hired Paul O'Byrne to take over the project. The formal part of the project wrapped up in mid-2011. By 2014, the project had been officially completed for a couple of years and there was an opportunity to assess just how well its goals and processes had become part of the company culture and practices. See Table 9.1 for a chronological activity summary of the GTW journey. Through the period 2007–2011, the project evolved as milestones were achieved and key personnel changed. The journey unfolded over two key eras.

Transformational Era: 2007–2010

As discussed, some organisations take an incremental approach to sustainability while others take a transformational approach (Benn et al., 2014). STC took the latter path. Table 9.2 shows the steps in the transformational path and how STC took them.

The process started in 2007, a year before Blanchett and Upton formally took up their roles but were shadowing the outgoing Artistic Director, Robyn Nevin. Brookman sought and obtained funding from the NSW State Government for BigSwitch Projects, a company that assisted organisations to improve the environmental performance of their buildings, to audit the Wharf building and work practices and establish a base line of current energy and water use and waste management. As part of that process STC managed to reduce energy consumption by 10% once some key inefficiencies were identified. In 2008, Blanchett and Upton

Table 9.1 Chronological activity summary of the GTW project

Year	Key activities
2006	• Negotiation of appointment of Blanchett and Upton as Co-Artistic Director's at STC. • Announcement of appointment to commence in 2008. Artistic vision—'we intend to green theatre' (Sydney Morning Herald November, 2006)
2007	• Discussions about greening start with NSW Government and preliminary funding for project planning secured. • Scoping and planning commences—BigSwitch Projects audit the Wharf building • UNSW speak to STC about being a potential showcase site for a PV solar array to be donated by the Shi Family Foundation.
2008	• Blanchett and Upton commence Artistic Director roles and announce greening as key to their tenure at the first Company meeting they chair. • Tim Flannery addresses full company on challenges of climate change. Almost 100% attendance. • Planning continues—announce plans for PV Array, water harvesting and reticulation system, efficiency program, waste reduction program, ethical purchasing, public education. Project to be rolled out in 2009/2010 subject to funding. • BigSwitch run planning workshops—about 40% of staff attend.
2009	• Full project plan revealed and funded including: – wide-ranging energy and water reduction measures – rainwater harvesting, storage and reticulation – best practice waste handling and recycling – significant organisational culture change – the generation of solar power through Australia's largest building-mounted photovoltaic (PV) array – extensive public education.
2010	• Execution of project commences. • Resignation of Head of Development. • Application for NSW Government Green Globe award (subsequently won). • Resignation of General Manager, Brookman, and hand over to new Executive Director, Patrick McIntyre (first six months). • Infrastructure installation commences with PV Array, followed by rainwater harvesting and retrofitting bathrooms. • Hiring of Sustainability Project Manager, Paul O'Byrne to continue project execution including management of stakeholders and communications management.
2011	• Continued execution of project • GTW given 3 pillars: Infrastructure, Behaviour Change and Advocacy. • www.greeningthewharf.com launched to share knowledge. • Greening embedded into recruitment and induction documentation. • Code Green workshop co-hosted with UK Sustainable Arts organisation, Julie's Bicycle, to share the sustainability journey of STC and other organisations with other Arts organisations. • GTW project formally ends.
2012 and beyond	• Behaviour change is focus of new 'green team' of staff volunteers. • GTW wrapped into a broader sustainability plan 2012–2015, iterating another level of infrastructure, behaviour change and advocacy.

Table 9.2 Transformational path

Step on transformational path	STC action
Understand where you are now.	2007—BigSwitch Projects audit the Wharf building for resource usage.
Develop a vision by questioning the purpose of the organisation and imagining a new future.	2008—Tim Flannery addresses the company about climate change and need for action. Series of workshops run by BigSwitch to establish vision and plan of action. Vision set—"make STC the greenest theatre in the world".
Identify the gap between the new vision and present reality.	2008—workshops helped staff consider all aspects of the company and what could be done to make the building and the company activities 'greener'.
Assess the level of organisational commitment for learning and change.	2008—workshops sought volunteers willing to investigate how to improve company practices and key change champions emerge. They become the first Green Team.
Identify change leaders and assemble resources needed to enact change	The Green Team take on key leadership roles: General Manager—overall project management. Head of Development—fundraising Head of Scenic Art—green set construction Head of Lighting- reducing wattage for productions House Manager—dealing with dept. of Public Works Production Manager—looking at waste stream management.
Secure basic compliance with legal requirements and stakeholder expectations. Move beyond compliance and progress toward a full sustainability program.	STC combined step 6 and 7, securing $5.2 million funding for full sustainability program covering solar PV array, rainwater harvesting,

officially took up their positions and formally announced their intention to green The Wharf at their first Company meeting. They invited Tim Flannery (see Flannery, 2005), the preeminent Australian voice on climate change at the time, to address the company and almost all of the 100 permanent staff attended. His speech detailed the perils of climate change and created a sense of urgency for taking action. STC developed a vision to be the 'greenest' theatre in the world.

To achieve this vision, BigSwitch were called back to run a series of workshops with staff—all were invited and approximately 40% attended. The workshops canvassed all aspects of the company and its activities, identified a range of initiatives and developed a detailed project plan. As part of that process, a small group of enthusiastic staff formed The Green Team. It comprised Rob Brookman, the General Manager, the Heads of Development, Scenic Art, Lighting and the House Services Manager with support from the Director of Finance and the Production Workshops

Manager. Brookman managed the project overall and the Head of Development took on fundraising. The Head of Set Construction investigated ways to build more sustainable sets. The Head of Lighting investigated how to reduce the wattage load for productions. The comprehensive project plan covered sets and lighting plus a number of other initiatives related to waste management, maintenance, administrative practices, communication with the broader community and culture change.

Towards the end of 2007, the University of New South Wales (UNSW), the Shi Family Foundation and STC engaged in preliminary discussions about installing a major photovoltaic (PV) solar array. Dr. Shi Zhengron runs a highly successful solar business, SunTech, in China and was an alumnus of UNSW. He wished to donate a PV array and have it installed on a high-profile site to showcase solar technology. Over a two-year period of negotiations, STC managed to secure selection and the accompanying donation of a $two million PV array. In addition, Federal and State government funding was sought and won for different aspects of the project and philanthropic donations also made up a minor component. In total, $5.2 Million was raised from the aforementioned stakeholders. The program of changes was announced in mid-2009, refined in the internal project planning document in 2010 with the following final objectives captured in their project planning case study (STC, 2011, p. 2):

- significantly reduce on site energy and water use;
- reduce carbon emissions;
- develop a leading sustainable theatre venue;
- stimulate conversations about sustainability;
- demonstrate and communicate practical steps to sustainability to encourage action from other organisations and individuals;
- demonstrate the combination of sustainability and heritage buildings can work;
- showcase best-practice innovation and technology;
- demonstrate active arts leadership on Climate Change.

STC made significant efforts to communicate the work done to the broader community in order to really engage it in a conversation about climate change. This included hosting the Wentworth Group of Concerned Scientists to speak about tackling climate change. Significant press was generated in the period 2008–2010 around the project, particularly the roll out of the more significant infrastructure elements such as the PV array and rainwater harvesting.

The company experienced a significant loss when both the Head of Development and Brookman resigned from STC in early 2010. Brookman stayed on until June to hand over to his replacement, Patrick McIntyre. At this time, the project was fully planned and funded and in the process of rolling out. The PV array was installed in mid-2010, followed by a water harvesting system, then refitting the bathrooms with state of the art water and energy efficient fixtures. A Green Design Guide was created by one of STC's project managers. It provided advice for freelance set designers across a range of production areas. While STC has a permanent staff of about 100, it employs many freelance staff who work production to production. Set designers are

particularly important as they are making decisions about the materials used in set construction. The Green Design Guide helped them to understand STC's approach and included advice about appropriate timbers for sets, wattage limits for lighting, encouraged the use of existing costumes, props and flats (ply used to construct sets). This was usually adhered to by freelance staff, though there were occasional breaches. Re-sale and recycling of materials from STC's sets that could not be reused sat within a comprehensive waste management program in partnership with waste management company, Veolia. STC applied for a Green Globe Award from the NSW Government in 2010 for the work they had done to that point and were granted the top honour, the Premiers award for Sustainability Excellence.

The pivotal factors that contributed to the success of this era of the project included the timing, the socio-political climate, the incumbent artistic directors and Rob Brookman (Dalton & Cooksey, 2017). In 2006, Al Gore's documentary, *An Inconvenient Truth* (Guggenheim, 2006), was raising awareness of climate change and its potential impacts; Tim Flannery was named Australian of the year in 2007 on the back of the huge success of *The Weather Makers;* a new Labor Federal Government was elected in 2007 promising action on climate change and the State Labor government was philosophically aligned with their Federal counterparts; and UNSW seeking a showcase site for a donation of a large photovoltaic (PV) array were key points of serendipity. In addition, Blanchett was known for her strong environmental activism and had a huge media profile. Brookman, a self-described "organised hippy" took on the project with zeal, running it in addition to his normal role for three years. However, the confluence of serendipitous factors should not suggest that the process was easy. For example, it took two years of negotiation between Brookman, the Shi Family Foundation and UNSW before STC secured itself as the location for the large PV Array. Brookman and his small volunteer Green Team were the linchpin in the initial project.

After Brookman left STC, the House Services Manager dealt with the Department of Public Works on the infrastructure which he reported took up about sixty per cent of his time until it was all installed. There was also significant work on the financial aspects of the project with the Director of Finance, in managing the project stakeholders and managing the communication aspects of the project. The change of staff signalled the next era in STC's sustainability journey.

Consolidation Era: 2010–2011

When Patrick McIntyre took over as General Manager he appointed Paul O'Byrne to take over the GTW project. GTW was attracting a great deal of press attention, and STC was known more for that project than its core business. As he commented in an interview, "people were asking, what happened to theatre"? In an effort to fit GTW into the business of theatre, McIntyre's called the new business plan STC ABC where ABC stood for Arts, Business and Community. This approach cast STC first and foremost as an arts company; then emphasised the importance of being

financially viable; and finally, GTW became part of its community dimension. GTW was also given a three-pillar approach—infrastructure, behaviour change (continuing the commitment to culture change) and advocacy (continuing to engage the community in a conversation about what STC were doing with GTW).

The infrastructure components were in the process of being installed during this period. Behaviour change was underway in the Production area. To broaden the scope of behaviour change, O'Byrne created a new version of the Green Team. Just like its predecessor it was comprised of volunteers drawn from across the organisation and they were tasked with coming up with ideas to encourage behaviour change among staff. The new green team was announced at a company meeting and given an enthusiastic reception by the executive. This provided the top down support for their grass roots approach to improving green behaviour at work, allowing staff to self-select and become leaders in that area. The transformational change process of the first era shifted into a process of incremental change where smaller changes at the level of individual behaviours were encouraged (Benn et al., 2014).

In 2011, STC earned a Banksia Award for leading in sustainability—setting the standard for small organisations, as it was "considered the most comprehensive environmental program of any arts company globally" (Banksia Foundation, 2011). The Banksia Foundation was established to inspire excellence in sustainability.

The advocacy component extended the communication and education aspects of the original project specification and included initiatives such as lunchtime talks, education publications and incorporating GTW in tour guide scripts. In October 2011, the British Arts Council and STC hosted a collaborative sustainability workshop called Code Green with other Australian theatre companies and corporates already working towards sustainability to share knowledge and build ideas.

The GTW project proper came to an end in mid-2011 when the final infrastructure elements were in place and the acquittals process to government and other stakeholders was complete. The company continued to report on the ongoing benefits of GTW through a series of metrics captured in Fig. 9.1. They also linked from their main website (*www.sydneytheatre.com.au/sustainability*) to the website for the project (*www.greeningthewharf.com*) until 2017 when the site was decommissioned. The GTW website features a video clip of Blanchett and Upton asserting that the purpose of theatre is to speak to the issues of its day and that there was no more pressing issue than climate change. From the beginning, STC sought to use the project to engage with its audience, fellow arts organisations and the public in a conversation about climate change and explore what we could all do to improve our environment. The www.greeningthewharf.com website used a series of case studies to discuss the key aspects of the project and how they were achieved. These included project planning, energy, water, waste, theatre production (sets, lighting, costumes) and advocacy. While the site offered an excellent narrative about the project and how it achieved its objectives it does not give a sense of how widely the culture change was spread. Had it become part of "business as usual", a phrase used by McIntyre to describe what success would look like.

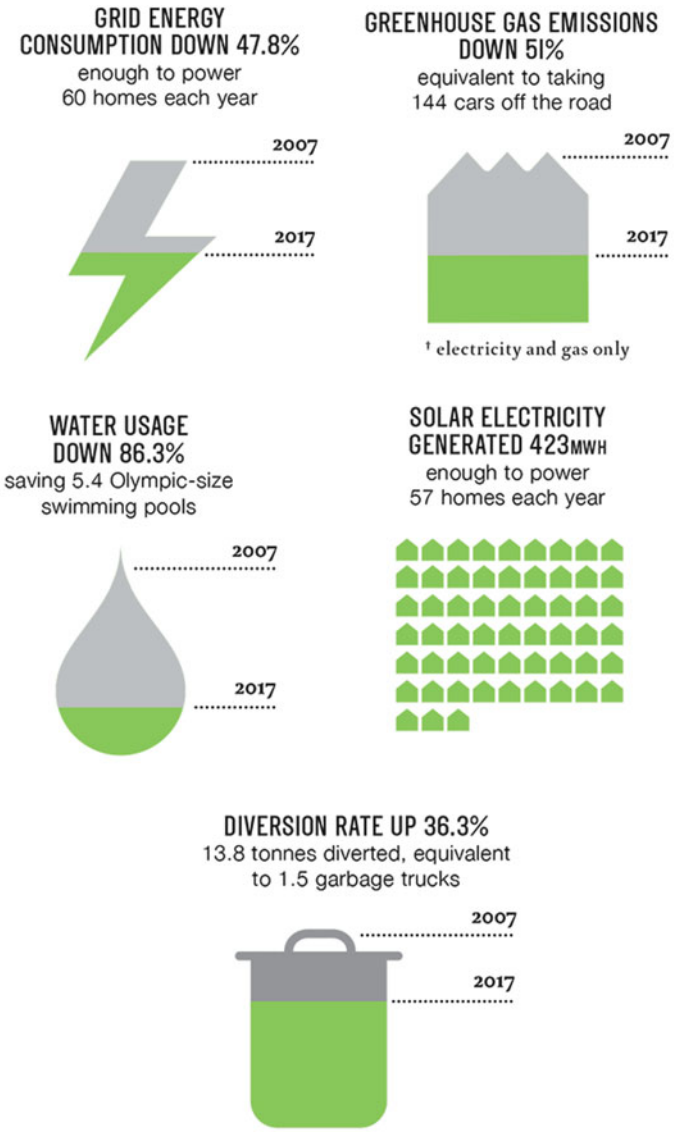

Fig. 9.1 Snapshot of key achievements to 2017

Business as Usual? 2012 and Beyond

The infrastructure changes were supported by the aforementioned changes in organisational practices and policies. Further changes took place with the support of the Production area which took responsibility for working with waste management company Veolia to divert all recyclable timber, metal, paper and cardboard

from landfill, resulting in 24 tonnes of waste being diverted from land fill from 2010 to 2015. A creative approach was taken to reusing and repurposing as much of the scenic art, props and costumes as possible.

A Green Events Guide was produced for organisations hosting events at STC which allowed the events coordination staff at STC to ensure compliance with STC's green ethos. From 2011, all job descriptions mentioned greening responsibilities alongside Work Health and Safety (WH&S) duties and included explicit encouragement to make suggestions for improvements to the Green Team. A greening page was also included in the induction kit for new staff. All printers were set to print double sided, black and white printing and there were signs encouraging staff to reconsider printing. Recycling bins were dotted around the offices and public areas of the STC building.

Once the GTW project formally wrapped up, O'Byrne continued with the company, taking on the role of Director of Community and Corporate Partnerships. He continued to head the new Green Team which reported at the quarterly company meetings on their activities. They awarded Green Gnomes to staff who come up with their own suggestions on ways to continue improving greening behaviours. Some of the Green Team's other incremental initiatives included File Fling Fridays where staff were asked to recycle old files; ride/walk to work days; single sided printed pages set aside for notes; and the Big Switch off. This initiative was mentioned by several interview participants. The Green Team emailed staff to say they would be checking if staff were switching off their computers. A few days later the team arrived at work early and left chocolates on the desks of those who had switched off their computers. This 'carrot' approach seemed to really resonate with staff and was characteristic of STC's positive approach to behaviour change.

O'Byrne developed a Sustainability Roadmap 2012–2015 which continued the three pillars of infrastructure, behaviour change and advocacy iterated to another level. Sustainability plans for STC continued to engage the community through theatrical productions like *The Long Way Home*, a production featuring actors and returned service personnel performing a play about the difficulties those personnel experience after returning from deployment. The advocacy and education aspect of the STC continued to find a range of ways to share their learning with the broader community. This included education programs for schools and hosting sustainability workshops for other arts organisations. In 2014, O'Byrne was working to have regular Indigenous interns working at STC and wanted to establish a program to employ people with disabilities.

Both McIntyre and O'Byrne were pivotal in the evolution of sustainability at STC from the initial GTW project to a broader sustainability agenda that explicitly added a social sustainability dimension. What had been focused on the Wharf building's infrastructure and practices as an initial focus had achieved culture change and become part of business as usual. The transformational process undertaken with Green Team I moved into an ongoing incremental change process under Green Team II and the new leadership team.

GTW Reported Outcomes

Over the life of the project and since, company reports have provided updates on progress and in 2011 began to report on the achievements of the GTW project year on year, across a small number of key metrics. This information is also published on the STC website. Figure 9.1 provides a snapshot of key environmental sustainability performance indicator achievements to 2017.

These metrics provide an excellent way to reinforce the positive environmental impact the greening of the Wharf building has had, but they mask the human behaviour changes that were pivotal to the success of the project and how those changes were fostered. We can extend their conception of sustainability from just an ecological lens to include the human dimension both within and beyond the organisations as described in various models and assessment tools, some which have already been mentioned (Benn et al., 2014; Elkington, 1998; Nattrass & Altomare, 2003). By explicitly looking at the human and ecological aspects of sustainability at STC, we can gain a more comprehensive understanding of how well it is embedded in the organisation. In fact, we would argue that the core meaning of 'sustainability', centres not on what organisations do to become sustainable, but how behaviours and cultures need to change in order for greening activities to become sustainable through time; sustainability is less about what organisations do to become greener, but how they do it.

STC: Level of Sustainability Commitment

To assess STC's human and ecological sustainability, we applied the Sustainability Phase Model (Benn et al., 2014). As discussed, the model assesses the level of commitment and practices relevant to human sustainability and ecological sustainability in organisations across six phases from rejection to sustaining.

While STC have couched their achievements much more strongly along the ecological dimension, the underpinning philosophy of what Benn et al. describe as the sustaining corporation are evident in the STC's intention to 'green theatre'. There was a strategic intent at the outset to use the profile of the company to raise awareness around environmental sustainability, particularly climate change and to leverage the traditional 'forum' role of theatre as a place for engaging with the important issues facing the community. In the context of having such high profile Co-Artistic Directors in Blanchett and Upton, that objective was certainly met. The GTW project attracted extensive media coverage. However, underpinning that strategy were the strong ecological commitments of Blanchett and Upton who were known for their environmental activism and thus, their underpinning objective for greening theatre was to do the right thing. Specifically, the sustaining corporation can be described as providing the following to human and ecological sustainability.

In terms of human sustainability, the organisation takes a multiple stakeholder perspective underpinned by strong ethical stance. It takes a position of influence within its industry and in the broader society in order to pursue just social practices and human welfare in order to assist people to attain their full potential. It also takes seriously the importance of contributing to the development of human knowledge and skills within the organisation and the broader community. The organisation promotes diversity, equal opportunity and work-life balance within the workplace. In terms of ecological sustainability, the organisation behaves in an ecologically responsible way because it is the right thing to do. It actively promotes ecological sustainability within its industry and in society more broadly. The organisation is also willing to promote the development of community values to nurture the development of a more sustainable society and that includes encouraging government to adopt more sustainable policies. On both scales, people and the environment are valued for their own sake. The model is couched in terms of corporate sustainability but we contend that it can apply to other organisation types as well.

Table 9.3 demonstrates the assessment of STC against the checklist for a Sustaining Corporation. While the model was designed to assess the sustainability of corporations, we contend that is can be used for other organisations types as well. The model uses three symbols to indicate the extent of the evidence for the relevant item.

Discussion

Ecological Sustainability: Level 6

In addition to the savings made through infrastructure changes and behaviour, STC's commitment to the environment is demonstrated in its continued refining and embedding of sustainable practices into organisational activities, as discussed through the previous sections. The commitment to waste management extended to the Bar restaurant who were contracted to STC. They used the same waste-management company, had a worm farm and compost bins for food scraps; used only natural light during the day; and sourced food and wine locally where possible. However, we have not addressed the human sustainability aspects as yet.

Human Sustainability: Level 6

STC's corporate values were c*reativity, play, rigour and commitment.* Keywords that flesh out those values included curiosity, flexibility, collaboration and continuous improvement. The organisational structure was flat with an executive team comprising the Artistic Director and Executive Director, then departments with a single manager including Finance and Administration, Marketing and Customer

Table 9.3 STC assessment against sustaining corporation criteria

Key	○	Unknown/no evidence/ irrelevant	◐	Some evidence	●	Strong evidence
Characteristic	Possible activities					Level
Vision/goals	Review basic corporate values; create codified set of company values.					●
	Ensure top-level support for a strong sustainability position.					●
	Re-examine organisation values against changing external expectations by active workshopping with stakeholders.					◐
	Codify corporate values.					●
	Broaden stakeholder analysis to include society as a whole, future generations and the natural world.					◐
Change agents	Ensure that the senior executive team deeply internalizes and acts on sustainability principles.					●
	Build strong collaborative networks between internal and external change agents to create momentum on progressing sustainability					●
Corporate policies/ strategies	Build on the sustainability achievements of previous stages					●
	Use external bodies to conduct social and environmental audits; cultivate transparency and accountability					●
	Communicate achievements to employees, the community and other organizations and share learning with alliance Partners- build reputational capital					●
	Develop new market opportunities; provide customized Services					○
	Contribute to maintaining the biosphere					●
Structures/systems	Develop a networked, flexible corporate structure.					◐
	Form alliances and emphasize collaboration.					●
	Create a strong corporate culture around core sustainability values.					●
Stakeholder relations	Develop a shared vision with non-profit organizations.					◐
	Share employee work hours with non-profit partners					○
	Encourage active engagement in community activities.					●
	Be proactive in pursuing sustainability agenda with governments and other community bodies.					●
Human capabilities (internal)	Build the personal and professional capability of the workforce					●
	Build intellectual capital within the organization and in collaboration with alliance members					●
	Include ethical concerns in staff performance measures					◐

(continued)

Table 9.3 (continued)

Key	○ Unknown/no evidence/ irrelevant	◐ Some evidence	● Strong evidence
	Ensure staff relations are based on potential for contributions, not status; support participative decision-making		◐
	Ensure staff recruitment policies are proactive towards minority groups; foster workforce diversity and equal opportunity		◐
	Ensure highest standards in workplace health and safety		●
	Adopt family-friendly policies		◐
	Develop higher-order employee capabilities (process skills, self-confidence, sharing)		◐
Ecological Capabilities	Contribute to ecological renewal		●
	Be proactive in negotiating with other corporations for the design and production of more sustainable products		◐
	Assist smaller corporations to be more responsible by sharing knowledge and expertise		●
	Use life-cycle assessment to reduce packaging, eliminate waste, increase dematerialization		◐
Tools/techniques	Consolidate and integrate the systems adapted in earlier phases		●
Production/service systems	Redesign products to ensure environmental safety		●
	Redesign supply chains to become material processing loops to eliminate waste and pollution		●
	Dematerialize physical products where possible to emphasize service activities		○

Services, Philanthropy, Community, Corporate Partnerships, House Services and Production Workshop, Set Construction, Scenic Art, Lighting and Costumes. Staff at STC spoke of a company that they were proud to work in, a place that encouraged work-life balance, where contributions from staff were welcomed and supported for exploration. Human Resource recruitment practices enforced the values around GTW and greening was part of the staff induction. WH&S practices and documentation were rigorous.

In a section of the 2015 Annual report headed *A Great Place to Work*, staff education initiatives were documented, staff engagement with the other organisations or the community were applauded and long serving staff were honoured. Staff interviewed for the case study expressed pride in being staff members and demonstrated high levels of morale as captured in the following quotes:

> I don't have trouble voicing opinion where it's appropriate in general anyway. I do think particularly because the executive team here.... kind of invite that kind of conversation. I think they genuinely are deeply collaborative people (Connor, Company Manager, 2014).

> There's an emphasis put on work life balance and not working too many hours (Susie, Ticketing Specialist, 2014, p. 34).

> I think the massive change with me was coming from corporate. It didn't feel like it was a corporate company and I think people are a lot more relaxed as well. So that took a bit of time to adjust to that, you know, because it tends to make you be yourself, more than that corporate image that you have to portray, which I had to portray when I worked for a corporation (Bob, Building Services Manager, Sydney Theatre 2014)

> I would say it's an excellent company to work for certainly and it's a responsible company. . . . If I were to leave then whatever company I would chose I would hope that they would have the same responsibility in and outlook as TC has. It has influenced me in that way (Will, Ticketing Specialist).

This approach to human resources greatly assisted the company to draw on the talents of their employees. Staff were supported to develop their skills and shared their knowledge within and beyond the company. The culture was relaxed, creative and collaborative.

As discussed, STC engaged with the community in a variety of ways, promoting its sustainability journey to school children, other theatre companies and the public. The Community section of the website details the extensive work that STC did in terms of adult drama and literacy, juvenile justice and providing disadvantaged students with access to live theatre. In 2015, STC made another visible contribution to their human sustainability credentials by releasing statements related to its commitment to human rights and against corruption, stating "Sydney Theatre Company (STC) takes seriously its role as a responsible leader and influencer within the arts industry and wider community. . .STC's statement on Human Rights and Social Performance reflect our ability to uphold human rights within our organisation and our sphere of influence" (STC, 2015b). The anti-corruption statement indicates that STC upholds "our obligation to ensuring transparency and accountability of our business decisions and dealings" (STC, 2015a).

Though GTW did not specifically set out to address human sustainability as such, the way in which the company dealt with its staff strongly contributed to a culture that was open to and willing to change to support ecological sustainability through investigating and modifying organisational practices as well as it has. We argue that the phase model provides a key to understanding the success of the GTW project at STC.

At the time the project began we argue that STC would have been rated at the level of ecological sustainability level two, non-responsive, on the Sustainability Phase Model (Benn et al., 2014). The ecological environment was not a factor in the day to day business of the company. It became a focal point for the company when Blanchett and Upton took up their co-artistic directorial positions. Had their human sustainability been at level two, where staff are viewed as a cost and industrial relations is focused on making sure the employee is meeting their key performance indicators, the level of buy-in from staff when asked to engage in 'greening' their work practices is likely to have been minimal. At this level, significant barriers to change are usually evident. Staff may be cynical, unwilling to take on the additional workload and engage in defensive routines, avoiding engagement with the process (Argyris & Schön, 2004). The fact that staff were consulted on the project from the

outset already indicates that they were valued for the broader contributions they could make.

The process of engaging the staff, of empowering them to explore their ideas and the continued commitment to gaining their input on improving greening practices indicates that STC were operating between Human Sustainability level five and six. At these levels, staff are valued for all that they can contribute and the workplace works on attracting and retaining the best staff it can by providing excellent working conditions. The people who work for the company are seen as having value in their own right. There is also the factor that theatre may attract staff whose values may suit a 'greening' agenda as they value working in theatre over being better remunerated in other industries. As Andrew Upton commented, "one thing that can't be underestimated ... is that some people find themselves in jobs, they don't really know why they're there, but very few people find themselves in theatre and not know why they're there" (Upton, 2014).

The way in which the change process was conducted is indicative of Jabri's dialogic model (2012). Taking a top-down approach would not have resulted in the same level of attention across the company. Even with his strong ecological commitments, there is no way that Brookman could have understood the challenges that were obvious to those who were working at the coal face, designing, building and painting sets, making and maintaining costumes, dealing with ticketing stock, marketing materials and maintaining the archives. By bringing the entire company together and inviting their input the collective intelligence of many in the company was harnessed. The leadership shown by Blanchett, Upton and Brookman was one of empowering the staff to look at how to be green in their own particular roles and functional areas. Similarly Brookman took an open approach very early on by having BigSwitch run the workshops that invited input from staff across the organisation. It was at those workshops that Joe, the Head of Set Construction, raised the issue of the lauan ply used for sets which was a critical issue for theatre production.

Lauan ply used for set building is harvested from old growth forests and used widely in theatre and film making because it is cheap and light. Joe had been aware of the issue but assumed that there was no option but to continue using it. As soon as he raised the issue the company switched to birch ply which is twice the weight and twice the price as the lauan. He was supported in applying for a grant to travel to theatre companies around the world to investigate alternatives. His report indicated that the best alternative was the birch ply they had already switched to. The weight made transporting and bumping in (installing) sets at their venues more costly due to the number of staff required and transport prices if freighting them overseas for touring productions. Without a capacity to increase the budget, work practices had to change to accommodate the new material. Those practices included minimising the use of glue and opting to screw sets together so that they could be dismantled and the flats (individual pieces of ply) reused. While this practice was done prior to GTW, the reuse of flats increased substantially post GTW. The Green Design Guide specifically discouraged the use of lauan ply and actively encouraged designers to see what materials were already available in the workshop and in costumes before sourcing new products. Similarly, the Head of Lighting volunteered and did all of the

work to investigate more efficient options which resulted in the setting of a wattage limit for productions.

When Brookman left STC the GTW project could have been completed and wrapped up by O'Byrne and McIntyre and the results outlined in Fig. 9.1 might have been almost as impressive. The energy harvested from the PV array, the water harvesting, the efficiencies gained by refitting lights and bathrooms would have continued. Those infrastructure elements would have become part of the furniture and faded from consciousness. By reconstituting the Green Team, O'Byrne facilitated the continuation of incremental change across the organisation, using volunteers to maintain awareness of greening and creating a culture of continuous improvement around greening practices. Having the Green Team report at the quarterly company meetings provided an opportunity for the whole company to engage with what was happening and for the staff to see that the Executive still valued pro-greening behaviours.

Conclusion

This exploratory case study investigated GTW at STC and its long term impact on the organisation. STC have demonstrated that they have engaged in successful organisational change for sustainability. They are a sustaining corporation through their achievements in human and ecological sustainability. A critical factor in the success of their organisational change efforts is that the ecological achievements were underpinned by an already high commitment to human sustainability that can be seen in their internal culture of collaboration and empowerment of staff, their ongoing commitment to ecological sustainability since the GTW project formally ended, their community outreach, their education, advocacy and contributions to the social good through their collaborations.

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Chapter 10
Learning from a Climate Improvement Initiative: A Co-constructed Autoethnographic Exploration of Tensions in a Cross-Sector Collaboration

Jarryd Daymond and Philippe Coullomb

Introduction

Sustainability and climate improvement initiatives are widespread across the globe, yet we who are concerned about the impact of humanity on the environment often experience a pervading sense that significant progress on climate issues is unattainable. This sense of frustration is not to diminish the sustainability advancements of many projects driven by individuals, collectives and organisations around the world, but rather to highlight the ongoing challenge of making nationally or globally significant improvements to the climate. The Montréal Protocol of 1992 was successful at a global level in improving the state of the ozone layer. However, the initial optimism of the Kyoto Protocol subsequently evolved into disappointment over its implementation and was followed by widespread perceptions of failure at the United Nations Climate Change Conferences (Dessai, 2001; Gross, 2015). As a result, the international climate community is increasingly sceptical of the potential of international cooperative agreements as a mechanism to bring about significant large-scale progress on the climate (Manne, 2013; The world is losing the war against climate change, 2018). If the results of large-scale climate initiatives are to change, then our approach to those initiatives needs to change as well. So, we ask, what can be learned from existing climate improvement initiatives so that we can start achieving more from our efforts to improve the climate?

Rather than risk repeating similar initiatives with a similar and thus far unsatisfactory outcome, we offer up an exploration of one such initiative from an insider's

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perspective and use a co-constructed autoethnography (Duarte & Hodge, 2007; Kempster & Gregory, 2017; Kempster & Stewart, 2010; Yarborough & Lowe, 2007) to explore the lived experience of an ambitious climate-focused project in New Zealand. We agree with Senge, Lichtenstein, Kaeufer, Bradbury, and Carroll (2007) that "[m]eeting the sustainability challenge will require the kind of cross-sector collaboration for which there is still no real precedent" (2007, p. 44). However, cross-sector collaborative arrangements bring with them a unique set of management challenges. Bryson, Crosby, and Stone (2015), in reviewing the literature on cross-sector collaborations, note that several key studies identify endemic tensions in collaborations, such as "power imbalances, competing institutional logics, autonomy versus interdependence, stability versus flexibility, inclusivity versus efficiency, and internal versus external legitimacy" (p. 655). In addition, cross-sector collaborations are beset with paradoxical challenges of creating unity amongst diversity, maintaining efficient operations while being inclusive, reconciling discordant goals, and the need to trust collaborators versus control outcomes (Cornforth, Hayes, & Vangen, 2014; Daymond & Rooney, 2018; Provan & Kenis, 2008; Sandström, Bodin, & Crona, 2015; Saz-Carranza & Ospina, 2011; Stone, Crosby, & Bryson, 2013; Vangen & Huxham, 2012). It is little wonder, then, that collaborations have been deemed paradoxical by nature (Vangen, 2017). Building on this understanding of the complexity of cross-sector collaborations, our exploration reveals the practical challenges that accompany such complexity, specifically in relation to navigating tensions between an appropriately ambitious vision and tangible, timely progress.

We draw on paradox theory to reflexively explore the tensions we experienced in the cross-sector climate initiative. Paradox denotes tensions between "contradictory, yet interrelated, elements that exist simultaneously and persist over time" (Smith & Lewis, 2011, p. 382). Despite their contradictory demands, these elements must be pursued simultaneously to ensure sustainable performance in the long-term (Lewis, 2000; Smith & Lewis, 2011). We join a small but growing number of scholars using a paradox lens to describe, highlight and make sense of the tensions in multi-sectoral (Jay, 2013; Stadtler & Van Wassenhove, 2016; Vangen, 2017) and collaborative contexts (Das & Teng, 2000; Ospina & Saz-Carranza, 2010; Saz-Carranza, 2012; Vangen & Huxham, 2012; Vangen & Winchester, 2014). We use paradox theory to explore our experience of strategic tensions in a climate-focused cross-sector collaboration.

Our co-constructed autoethnography draws on the second author's experience of crafting a cross-sector collaborative setting, bringing together a group of committed leaders from government, business and academia to set the foundations for an ambitious national initiative to accelerate the transition of New Zealand to an emissions' neutral economy. New Zealand has been proposed a global "testing ground" for the "new leadership practices, models and processes that the world desperately needs in order to effectively respond to the natural and man-made challenges that we increasingly face" (Jackson, 2012). In 2006, then New Zealand

Prime Minister Helen Clark suggested that the country become the first which is truly sustainable (Clark, 2006). More than 10 years on from the Prime Minister's exhortation, a group of committed leaders from government, business and academia came together to work on this vision which is narrated in our writing. We begin by outlining our autoethnographic research process before presenting the autoethnographic serial narrative (Czarniawska, 1997) which forms the spine of our writing. The narrative discusses the emergence of a climate-focused cross-sector collaboration and identifies aspects of paradox and tensions involved in developing such a collaboration. The article concludes with a discussion of tensions in the collaboration and reflects on approaches to managing the tensions.

The Autoethnographic Approach

Autoethnographic research is increasingly recognised for the reflexive insight it sheds on the relationship between people, culture, and the processes and practices of organising (Boyle & Parry, 2007). Autoethnographers observe outwardly before using narrative accounts to reflect inwardly on their observations (Parry & Boyle, 2009). By occupying a front-row seat in a research-setting show, autoethnographers can inwardly reflect with a richness of insight that is beyond the reach of non-participant observers. These rich insights may well be influenced by an autoethnographer's proximity and attachment to the observed events, but they provide a useful point from which to interrogate vexing issues such as stalled progress on seemingly pressing climate challenges.

Autoethnographic studies in organisations illuminate relationships between individuals and the actors in their context "in a way that crystallises the key conceptual and theoretical contributions to understanding the relationship between culture and organization" (Boyle & Parry, 2007, p. 185). Boyle and Parry (2007) suggest that autoethnography, with its retrospection and thus diminished emotionality, enables valuable assessment of theoretical contributions from research contexts. Co-constructed autoethnography (Duarte & Hodge, 2007; Yarborough & Lowe, 2007) can enable greater introspection due to reframing and prompting questions. We co-constructed our autoethnography through ongoing dialogue on the progress of the project from its inception to conclusion. Our discussions were often informal and but also included semi-structured interviews and culminated in the second author writing the story of his experience of the cross-sector collaboration. During the writing of the narrative, we continued to discuss the insights that were emerging and found the prompting and reframing a valuable sensemaking process (Boyle & Parry, 2007; Ellis & Bochner, 2000). The "filling" of our autoethnographic sandwich is a recollection of serial episodes from January 2015 to February 2017 when the second author helped initiate a climate initiative.

The Narrative

The Genesis

I have been exploring the field of systemic change since 2012 with the resolute intent to apply my expertise in collaboration design to some of the most complex cross-sector challenges of our times. After more than a decade designing cross-functional and cross-company collaborations, I felt I had enough insights to be confident in my ability to extrapolate that experience to a whole-of-system-level, where many critical social challenges remained unresolved.

I first attempted to catalyse a movement of change in South Australia, to create "a path for long-term prosperity" in a region with a gloomy economic and social outlook. We had to abandon the project for lack of funding, but it granted me many insights on how to bring together, or curate, the right kind of system leaders from across several sectors. I then briefly considered an opportunity in Singapore to set up a coalition with the World Business Council for Sustainable Development on the topic of "Food, fibre and biofuel". This project didn't progress very far for lack of the right leadership to catalyse a movement, but it delivered an equally valuable set of learnings about how systems leader to create and "hold a space" (or not) to drive systems change. One of the most valuable outcomes of this project, however, was an introduction to Bonnie [Note: pseudonyms are used for all individuals mentioned] in New Zealand, an encounter that paved the way for a unique nationwide initiative on climate change.

Dreaming of a Game-Changing Approach

Bonnie suggested meeting in a coffee shop in Wellington CBD. The name of the shop—Pravda—may have been a hint of her appetite to drive change and make a difference. We only had 30 minutes for this first encounter, but we immediately connected and saw potential in talking further. The question keeping her awake at night was beautifully simple and yet, profoundly complex: how can we push through the dozens of reports and white papers on climate change and drive concrete, game-changing actions with a tangible impact on emissions?

Bonnie was the CEO of a business association and had the legitimacy to speak and act on behalf of many NZ businesses. Given her inclination towards environmental issues and sustainable development, she knew she needed to balance her perspective with a more mainstream business profile and decided to invite Shannon—an industry representative for energy and transport—to our first working session.

The first working session confirmed that there was a unique opportunity to undertake a large-scale project around climate change in New Zealand. We all felt the readiness of many business executives as well as the government to take some action, combined with the increasingly alarming climate data and insights shared

by scientists across the globe. The 2015 United Nations Climate Change Conference (COP 21) scheduled to take place in Paris at the end of the year was also creating a useful milestone to work towards. Further, we recognised that despite multiple climate-focused initiatives emerging "here and there", the mono-sector and disjointed nature of those projects were limiting their impact. The challenge before us was to initiate a national movement that would bring together a "coalition of the willing" and to harness the full potential of effective cross-sector collaboration working on a common goal. How we would do it remained mostly unclear, but it was exciting to feel we shared the same diagnosis and intent.

The subsequent working sessions revolved around two primary questions: what level of ambition should we set for our work, and how soon, if at all, should we make it a cross-sector initiate to maximise our chances of delivering some tangible impact? On both of these questions we oscillated between a progressive and relatively conservative view—"let's set out an ambition we feel we can achieve and limit ourselves to the private sector"—to a bolder and more radical approach—"let's transform the NZ economy and aim for a new sustainable societal model". To test our hypothesis, we conversed widely with people in academia and the public, private and not-for-profit sectors; extensively modelled our thinking on whiteboards; and eventually, we crystallised the following design principles that structured our first few months of work and which, with the benefit of hindsight, proved to be useful:

- We aim to create a cross-sector initiative. For the sake of time and in the light of our current context, we will start by assembling a business coalition to create some convergence within the private sector, that we can then leverage to attract other stakeholders from across the system.
- The ultimate level of ambition will be determined by the coalition itself. Yet, to attract the right people and create the right mindset upfront, the initial convening needs to be premised on the highest level of ambition.
- Curation of the right people will be critical to our success, but we are limited in the time and resources we can allocate to it. As a first step, we will rely on our existing networks and current knowledge of people to assemble the best possible group.
- Our first visible step will be to bring together the business leaders we have identified in a carefully designed and facilitated workshop to explore the potential and their appetite for shaping some form of initiative and taking shared ownership of it.

We scheduled the first workshop within two months of our first conversation at Pravda. We were in for a two-year ride, and this was the point when we knew the train had left the station. We had found the confidence to go public with our initiative, so there was no going back.

By then, Bonnie had secured some seed-funding from her organisation to pay for expenses and had appointed a part-time project manager. My business would contribute my time for free until the project could be sufficiently funded to pay for resources, and Jane—a System Designer and one of our freelance associates—

agreed to benevolently come on board to co-design and facilitate the journey with us. All five of us shared the excitement of our audacity to undertake something that could change the face of the country, combined with a true sense of responsibility to the nation and the world. We also remained humble with regards to our chances of success, but we were determined to make it work.

Shaping the Early Collaboration

In early May 2015, 12 senior executives from several industries (including motor vehicle, oil and gas, telecommunications, banking and food) gathered in Auckland for a full-day workshop to reflect on the opportunity for the NZ business community to drive an ambitious agenda on climate change. The group was exclusively composed of business representatives and had been curated based on their known level of authority in their organisation, public position on climate-related issues, and desire to act. The credibility of the group partly came from the prestigious organisations represented in the room, but the participants joined as individuals and only represented themselves at this point.

We designed the workshop around three objectives:

- Explore and crystalise a shared ambition for moving to a low carbon economy—how far and fast we could lead the country through this transition while growing the economy and the citizen's well-being.
- Extract a limited number of principles and practices to take this ambition forward.
- Creating a purposeful connection on the topic and this group.

Using sophisticated collaboration design methodologies and techniques (primarily the MG Taylor methodology which seeks to build alignment and ownership across diverse groups of stakeholders to solve complex problems), we engaged the participants in a process of self-discovery and structured exploration of the current dangers and opportunities relating to climate change. The group rapidly converged on the following convictions:

- There is both an imperative and an opportunity in NZ to develop a holistic and ambitious plan for climate change.
- Government bodies are unable, and possibly unwilling, to autonomously drive an ambitious climate change agenda for the country.
- New Zealand businesses have never spoken with "one voice" on this issue. If they could, they would be in a strong position to not only influence government but to also generate tangible short, medium and long-term impacts.
- As it stands, there is strong potential and appetite for this group to become the catalyst for a New Zealand-wide business-driven initiative. A pre-requisite condition, however, is that the group articulates a clear, shared purpose.

The conversation surfaced some important nuances between the various perspectives. Most significantly, the levels of ambition ranged from "setting more aggressive

greenhouse gas emission reduction targets" all the way to "inventing a new model of society based on a different approach to producing and consuming". As a consequence, the participants positioned their contributions at different levels and with different time horizons.

None of the views expressed were contradictory, or even incompatible. What became clear however was the large amount of effort and dialogue required for the group to articulate a shared intent that was not perceived as "too narrow and short-sighted" by some, nor "too conceptual and intangible" by others. The time required to agree an extremely ambitious intent would probably have been more than the participants were willing to invest. As a result, we developed the conviction that, moving forward, we needed to acknowledge and leverage this diversity by creating two distinct streams of work and designing a mechanism for convergence over time towards the higher end of the ambition spectrum. It took us a few weeks and several design conversations to crystallise this conviction and translate into an actionable "operating model" for the project.

Designing the Machinery of the Collaboration

To drive systemic change on climate change in New Zealand, we needed to embrace the diversity of stakeholders, specific interests, time horizons, and all other drivers that contributed to shaping the system as it is was, and that would contribute to what it could become. To tap into those driving forces and direct them towards an end goal, we needed to design the machinery with a number of different projects, or "engines" as we called them, independent but interconnected and all contributing to the same outcome. Each of them would have its own characteristics, its own purpose, and would produce its own impact on the system. We felt that the connections between them would amplify their total impact on the system; each engine would play an equally valuable but different role in the whole.

We came across a photograph of an old piece of farm machinery composed of multiple wheels of different sizes strapped together by pulley belts, and all were contributing to the final output of the machine. This image, and the metaphor of the multiple wheels of different sizes, rotating at different speeds, and yet assembled into a mechanism producing a coordinated outcome stuck with us and became a sensemaking artefact for our team to explore and explain how we were trying to work. We were each one wheel of that machine we were trying to design, essential and yet inadequate alone.

After the first workshop in Auckland, we could clearly identify the first two "wheels" of our climate "machine". The majority of participants in our working sessions had demonstrated enthusiasm and commitment for a business-driven initiative which would be focused on outcomes and delivering impact in the short-to-medium-term. This wheel was comprised of people who were pragmatic achievers; they were willing to commit time and resources provided that they could clearly articulate the expected outcome. In addition to its short-term contribution to the

objective, this wheel could be an asset to create momentum and gain visibility for our initiative as we sought to tackle the more systemic climate challenge.

In addition to this business-driven, shorter-term group, a subset of our collective had demonstrated a level of ambition and an ability to "create the space" for a paradigm shift. They became another wheel, composed of people who could see the system-level picture and the huge opportunities that currently existed. Purpose and conviction drove them; they didn't need a rational connection to the outcome or the journey in order to project themselves to an unknown future and pursue a new paradigm with others. This ambitious, longer-term group would be essential to ensure the depth and sustainability of our impact, and to provide the foundations and aspiration upon which others could build.

We knew from the start that the group with the long-term systemic orientation would be essential, but at the outset, we hadn't foreseen the potential and possible necessity of a more action-oriented stream such that emerged with the first wheel. We felt excited and relieved at this point to have understood how the different profiles in our collaboration could engage into some distinct yet mutually re-enforcing efforts. The individuals in these groups would operate at a different pace and hold different time horizons. For both groups to progress in parallel, our design would need to synchronise their efforts so that they could converge and mutually reinforce each other at key milestones on their respective journeys.

Setting Directions and Timeframes

For the first wheel/group, going full cycle would consist of defining and delivering tangible value within the current paradigm and in a short timeframe. Such an outcome would be immensely valuable. Going through the experience of achieving results would enable the group—as well as all the other stakeholders involved in this process—to develop a new perspective on the possible subsequent steps and initiatives and their ambitiousness. We felt this perspective was grounded in confidence and tangibility.

For the second wheel/group, going full cycle would consist of articulating a shared vision for a different paradigm and designing, at a high level, how to take the country on that journey. As an example, we discussed the opportunity of setting an aggressive deadline for the country to become carbon neutral, possibly ahead of any other country. This vision would become an end-point to design towards, as well as a frame of reference for the first group, from which further initiatives and approaches could be triggered. The specific journey towards such a vision was unknown, and the greatest value of this group would be to inspire, foster hope and confidence, help shed some light of the path ahead and galvanise their networks to take action. Beyond the initial stage of developing the ambitious long-term shared vision, the first visible milestone for this group would be the kick-off of a large-scale collaborative process that would bring the key forces of society together around the highest level of ambition.

To preserve this level of ambition while attracting large numbers of engaged citizens we needed both ingredients: a clear, ambitious purpose owned by charismatic leaders as well as a set of more accessible opportunities to get involved and start making a difference. In May, we started working on the level of ambition for each group and COP 21 was looming at the end of November. The conference constituted a point of global synchronicity around climate issues, and we saw it as a catalyst. No matter how progressed our journey would be at the time of COP 21, we had a responsibility to leave "the system" in a state of clarity at that juncture so New Zealand could adopt and demonstrate an unambiguous position in the conference. We, therefore, thought it was imperative that the slowest of our wheels had gone full cycle at least once by November to establish legitimacy for the initiative.

Based on our projections, it seemed to make sense to aim for a September timeframe for both groups to converge and for our initiative to take on a new dimension. By then the "short-term group" could have achieved great progress in disrupting and reframing the "here and now" conversation through the initiation of streams of work, while the "long-term group" could have created the conditions for a much broader and more ambitious climate conversation on the long-term future of the country with the intention of creating a paradigm shift.

The month of May was exhilarating. We were pumped up by the success of and feedback from our first workshop, and our ambition and confidence were growing as we were refining our thinking. We felt that everything was possible and that if we took the right, carefully thought out steps, we would finally achieve a historic outcome for the country. We were deeply committed to the outcome—a significant impact on New Zealand's emissions—and felt deep ownership of the process to get there. Despite years spent explaining to our clients that the ownership of outcomes and process had to be distinct, we didn't sense the inherent risk linked to our dual sense of ownership within the collaboration. From that point, our focus shifted to the curation of the people we would need on the journey. Bonnie secured a second round of funding that would hopefully allow us to get to the point where the group would find ways to finance itself. We thought we were in a good place.

Curating the Right People

We had made significant progress through our first phase of work in identifying people with the appetite and potential to contribute to the outcome. However, there remained more work to assemble the optimal combination of leaders for each group and bring them together in a way that would harness the power of their collective ambition and potential to act. As "system integrators", we had a responsibility to help identify them, invite them to join the conversation, and organise their contributions in a way that maximised both the individual and collective value creation.

Few people have the stature of a system leader and the complexity of the questions we were encountering demanded "special people" coming to the question from diverse vantage points. We were looking for true leaders: people who would

get things done with passion and humility; leaders able to hold a long-term vision and connect it to the here and now; people in positions of authority and influence who could mobilise networks; caring people with a genuine intent to achieve something bigger than themselves; people with direct interests in New Zealand. Collectively, they would represent the main stakeholder groups that were part of the problem, and therefore part of the solution: businesses, public and not-for-profit sectors, and academics.

The group was to remain small for the sake of focus and agility, and we thought that ten people would be the right size. Given the seniority of people we were looking for, we expected that time pressures would make it very challenging to bring them together for working sessions, but we still underestimated the extent to which time constraints would undermine the dynamic we were seeking to create. We estimated that we needed to invite at least 20 people to form a final group of about 10, and we would need to meet with each of them at least twice to get them across the line and bring them onboard. All together and between the five of us, we thought that it would require 15–20 days of work over a few months. History proved us painfully wrong.

The other group/smaller wheel required a slightly different profile of people. The focus of the group would be on more immediate, tangible outcomes. We were looking for determination and pragmatism. The nature of their personal motivations—from altruistic to opportunistic—mattered less than their commitment to the outcomes and ability to generate pace "in the right general direction". Collectively, the smaller wheel would need to represent a cross-section of industries, with a focus on heavy emitters (e.g. Transport) and heavy absorbers (e.g. Forestry). The target size of this group was between 12 and 20 people to cover a suitable span of industries and have sufficient reach across the entire economy. The curation process would consist of quickly confirming that the five or six people who had previously expressed interest were still "in", and then identifying and inviting additional contributors. The profiles we were seeking for this group were less rare than the long-term group and as a result probably easier to find and mobilise.

Planning the Work

We decided to progress with two distinct streams of work that would operate in parallel. The short-term group/smaller wheel would focus on outcomes and deliver tangible and recognised value before the Paris COP. While operating in the current paradigm, and although the government targets would have been set by the time this group became operational, the group would shape its own level of ambition, irrespective of what the government would announce, and would likely set the bar higher. The work of this group would be designed and facilitated with the objective of driving a robust and ambitious outcome, and also allowing for realisation of the connection between the contribution of this work and a bigger picture paradigm shift, and vice versa. We would initiate a cycle of workshops to

echo the rhythm of work and amplify the momentum of the project, but we would largely make progress between workshops under the leadership of the team members.

The "long-term" group would focus on paradigm change and as such, engage in a much broader and more in-depth conversation, at a much slower pace. The participants had an appetite to participate in the big picture conversation and could do so. The work of this group would be facilitated with the objective of navigating the complexity of the question and identifying possible inclusive pathways for the nation to engage with and take action on. They would initially deliver a shared vision and ambition for the country, and an articulation of the levers to play with and a high-level approach to get started and be successful. The primary challenge ahead of us would be to turn a set of high calibre individuals into a group with a shared aspiration to engage in something bigger than themselves or their business. At this point in their career, they would naturally be very selective in picking their battles and their companions.

To achieve this, we envisaged a one-day workshop within three months, carefully designed and facilitated to create a deep level of alignment and the highest level of ambition around "why to act", and to explore the conditions we would need to create to succeed individually and as a group. We would then reconvene for three hours every three weeks to unpack the ambition, further structure work into themes (for example, shifting demand, redefining prosperity, and so on.) and to elaborate, at a high level, an approach to us start. Through those conversations, the team would establish a budget for the approach they envisaged, agree how they would fund it, and commit to finding the resources.

By the end of the year, we aimed to develop a framework and approach to transition to a prosperous and sustainable economy over time, establish a long-term vision for NZ prosperity and a shorter-term ambition for low carbon growth, and identify the activities and initiatives to achieve this ambition. The optimistic side of us thought we would even have launched some initiatives by then. On that basis, we projected that we could consider merging the two groups at the beginning of the following year, into a system-wide initiative that would integrate and balance the imperatives of various time horizons (i.e. long, medium and short-term) and associated levels of ambition. These assumptions were in line with our aspirations, and the hypothesis we were putting forward seemed realistic, in particular regarding budget and time commitment. Whether the reality would validate our assumptions or not didn't really matter: the direction was clear, we had a hypothesis to test, and we were ready to pivot with our approach if some of our hypotheses were proven wrong—it turned out that most of them were wrong.

Encountering Tensions

As Winston Churchill said, "Plans are worthless, but planning is everything". We had a plan—the production of which was immensely valuable for us as a team—but

unsurprisingly, things unfolded very differently. While the pathway we had designed seemed clear to us, we repeatedly encountered a stumbling block: terminology. We couldn't agree on the best way to label the two groups we were envisaging. To label our groups, we played with "short-term/long-term" and with "action/vision", which both conveyed some of what we meant, without adequately reflecting what we felt. We ended up with the first option, not because it was right, but because we thought the second one could be considered derogatory.

These tensions around language should have been a red flag to us, particularly because the discomfort with these labels persisted. However, we were not sufficiently alert to what might go wrong. At the time, we didn't realise that the discomfort with these labels might be reflective of an unhealthy distinction between the groups and therefore a point of fragility in our machine. This fragility only became clear more than a year later, when participants in a workshop of the 'short-term' group, claimed they were dependant on the 'vision' that the other group would develop. We had accidentally created a form of hierarchy or at least, a disempowering dependency.

The curation proved to be a slow and time-consuming process. Very few people naturally demonstrate the type of leadership required for such an undertaking. We met many special individuals with incredible qualities who seemed to fit the bill, and yet, rapid exploration of their past and present, deeper conversations and multiple perspectives often led us to believe that they would have a greater impact in different roles or at a later stage in the process. After meeting with more than 30 people, we retained a group a 12 from the private sector (5), Government (2), not-for-profit (2) and academia (2) and one at the intersection of the last three. This group committed to attend three 4-hour workshops to explore the opportunity and eventually determine the nature and level of their potential engagement.

This process was lengthy, probably too long with the benefit of hindsight. The first seven or eight names were confirmed in the first few months, but we had the intuition that we were missing some additional profiles. During the additional six months it took us to complete the 'casting' we probably lost some of the momentum we had created with the workshops of May and October. Once we finally decided that we had assembled a good enough group of individuals, we were then constrained by their agendas scheduling our first encounter. This delayed us by another two months. All in all, 14 months passed between the decision to create a "long-term group" and the day they all got into a room to start exploring the opportunity. Coming from a background of project management, I felt frustrated by the slow progress and our inability to even vaguely meet our deadline. On the other hand, I also recognised that the context wasn't the most enabling—both Jane and I were working benevolently in parallel to our day jobs—and that the multigenerational nature of our undertaking required a different relation to time. Although we were mindful of our slow pace, it didn't worry us.

Starting to Collaborate

We scheduled our first workshop with the "long-term" group in early August 2016. Our goal for the session was to verify the level of alignment at a philosophical and cultural level and to try and crystallise a baseline from which to build. We invested most of our time exploring everyone's deepest aspirations and drivers, progressively building understanding, trust, and respect for each other. We believed that the exploration of the "how"—on which we had done much work—would only be relevant at this point to the extent it would help the participants suspend their disbelief that it could be done.

Consequently, we only planned very little time, towards the end of the session, to reassure the group that "there was a plan". Looking back over the design and delivery of this session, our handling of the "how" wasn't appropriate. The participants didn't seem to need to explore strategic and tactical consideration at this early stage, and our handling of it was too rushed and created more confusion than the clarity and confidence it provided. Thankfully, the session confirmed the potential of the group, but it left many questions unanswered. The feedback we received was weighted between acknowledging the sense of potential and expressing the frustration and uncertainty around how to go about it. The entire group remained committed to the first step of the journey, yet doubtful of whether it would go any further.

Our second session took place in mid-September 2016 at the Carter Observatory in Wellington. Our ambition was to take the group one step further in their ability and willingness to individually and collectively take ownership of this initiative. Our design for the session revolved around two major activities: the formulation of a more precise purpose statement and the exploration and iteration of the two overarching models underpinning our thinking. As systems designers, Jane and I proposed an operating model for a systemic initiative, which we called our "scaffolding model", and a pathway to quickly scale the conversation to the national level, which we referred to as the "scaling engine". We made significant progress in our understanding and ownership of those models. We engaged in interactive conversations, made valuable iterations, and started anchoring some of the concepts and language. Two notions, in particular, stood out and seemed to generate much consensus: storytelling would be one our most critical levers to create a movement, and we would need to organise a large-scale workshop as a tipping point to bring a critical mass of thinkers and doers on board and to achieve the required scale. We estimated the critical mass to be 150 people.

During the session, we also had a long conversation on purpose. It was also valuable but inconclusive. It helped us reveal nuances in the way our participants were holding the intent. As the participants unpacked the language they were using to describe the initiative, they came to realise the diversity of postures they could choose to adopt in relation to the problem. We crystallised some questions, but we didn't provide answers to them. Overall, this session was largely acknowledged as a big step in the right direction. Two or three of the leaders seemed to be approaching a

state of readiness to commit and the others, despite a degree of scepticism, continued to develop a positive bias toward the initiative.

Growing Tensions

We scheduled a third session for mid-November around a shared desire to crystallise a path forward and a few tangible steps to take as a team. This third session was also the last one that Jane and I could commit to delivering without any form of compensation. While everyone else involved was on some payroll in their organisation, we were the only ones engaging exclusively out of belief and conviction that something could and had to be done. As we were approaching the 2-year mark, the imperative to secure funding was become more crucial and ended up becoming a healthy design constraint.

A major event happened within our team as we entered our second year of work which undoubtedly affected our project. Bonnie decided to accept a new exciting role, leaving her CEO position vacant. She actively engaged in recruiting her successor to ensure, among other things, that he or she would not only support but keep driving our initiative. This was an interesting time for us with what would turn out to be a critical fork in the road. Bonnie was a true system thinker and a pragmatic idealist. We learnt how to work with her, and we had developed intimacy and trust. In her new role in the public sector, she would have been a perfect candidate to keep leading our project from another vantage point. In doing so, she would strengthen our sensing and sense-making ability. Unfortunately, the new role represented a challenge in itself, and our initiative wasn't part of the priorities she had signed up for. She felt it would be more appropriate to leave the role of sponsoring the project with her previous organisation and thus transitioning to her successor.

We were familiar with the newly appointed CEO, Leanne, as we had met her as part of the curation process for the 'long-term group'. She was very driven and committed to this initiative which gave us confidence, and Bonnie was confident she would demonstrate the right leadership to embrace the role. She was experienced, willing and energised, and had been involved since the first workshop back in May 2015. She was vocal about her desire to prioritise this initiative over others. She would, however, have to establish her legitimacy for the CEO role within the organisation and create her networks internally. The right thing for us to do at that time seemed to be embracing the change and respecting both Bonnie's and Leanne's desire to transition the sponsorship of the project. We all invested time in the transitioning process and thoroughly explored our deeper aspirations and motivations as well as our ways of working. The conversations were mature and enjoyable, and we felt we were investing in building a solid relational foundation.

Inevitably, however, our patterns of work had to evolve to embrace Leanne's style and expectations. She had multiple priorities to attend to as she began the new role, and our interactions became less frequent, shorter and more targeted than before. Leanne approached the project from the context of having to establish her

leadership in her new organisation, which required some form of rupture from the legacy of her predecessor. This renewed emphasis on the business perspective was at the expense of the cross-sector posture that had defined our approach thus far. Looking back, I don't think I ever managed to establish the level of intimacy with Leanne that was required to navigate the complexity and ambiguity we would encounter. No one can predict what would have happened if the sponsorship of the project had stayed with the person rather than the CEO role, but it is evident that the change in people and dynamic within our core nucleus was a major disruptor.

Between a Rock and a Hard Place

As the project was scaling, the challenges were accumulating, and each of them was testing the quality of our collaboration and dialogue as a design team. Jane and I started feeling some discomfort in February 2016, but it wasn't until April that we could pinpoint what was troubling us. Those months were uncomfortable, but they were intellectually exciting. I didn't know what I was looking for, so I went on an exploratory quest to try to uncover some insights. I found the most guidance in the body of knowledge of the Collective Impact methodology (Kania & Kramer, 2011, 2013) as well as in my conversations with Sandra Daniel, a friend and colleague based in Canada.

These explorations made us realise that we needed to pivot, in particular regarding the governance of the project, and gave us a perspective on how we could do it. Specifically, I felt our project team of five lacked the requisite variety of perspectives and postures required to embrace the cross-sector nature of the project successfully. We were at risk of lowering the potential of our work by tying it too closely to one organisation—a point even more accurate since Leanne started taking more ownership with, what I perceived as, an increased emphasis on the needs and wants of her own organisation.

We didn't manage to clearly articulate this new perspective on governance nor the level of urgency. Jane and I were convinced that we needed new models to catalyse the conversation, and we organised multiple working sessions between our larger gatherings, but we couldn't crack the nut. Being mindful that the quality of our collaboration was becoming an obstacle to our work, Leanne proposed to ask a professional to facilitate a session for us to re-align our intent and ambition at a deeper level. The session was useful and provided us with valuable insights into one another. Unfortunately, it was too short to deeply and sustainably shift the pattern of our relationships. We felt the benefits of the session for a while, but it didn't restore the level of trust required to navigate troubled waters.'

Unfortunately, all of us wanted this project to succeed and were genuinely doing our best to make it work. We all agreed on the diagnostic that Jane and I had formulated about governance and urgency but tackling the issues at this point would have required a level of effort that was challenging to produce until we had established a stronger commitment from our "long-term group". Inversely, it

would be challenging to nurture that commitment without tackling these issues. This was a case of the classic "chicken or egg" dilemma.

We decided to hold-off from acting on our newly formed understanding and continue with the initial plan as per our commitment. The challenge we had identified would be the first one the "long-term group" would have to deal with once formed. We would have our third and last workshop, and we would leave it to them to decide whether or not to continue on the journey and in what way. I was not comfortable with this decision, but I couldn't articulate my discomfort constructively. I could feel I was no longer holding the space of our ambition in a way that was enabling our team, and that I was becoming antagonistic and polarising. I decided, with regret, to go with a plan that I didn't believe in. I rarely go against my intuitions, which serve me well, but unless I was able to facilitate the emergence of an alternative approach, the most useful thing I could do was get out of the way. So, I did.

Finishing with a "Small-Wheel" Orientation

The long-term group had taken much of our energy, and without making it an ultimatum, we had decided we wouldn't proceed any longer with the collaboration unless the big-wheel members decided to take some clear ownership of the project during our next and final workshop. The last session with the group was planned for the end of October 2016, but we received several cancellations in the days before the meeting. Executives are busy and have a lot to deal with. Short term imperatives almost always get in the way of making the time and space required to allow for something new to emerge. The cancellations we received were understandable but symptomatic of the paradigm we were trying to push through. We reached a point where maintaining the session would have been counter-productive, so we rescheduled to early December but encountered the same challenge. With the Christmas break around the corner, we were forced to reschedule to February 2017, more than 5 months after the second workshop.

The session showed that the participants were individually committed to keeping going, but the level of alignment and trust within the group was too fragile for them to formally take shared ownership of something that could become one of their biggest personal and professional challenges. They were ready to launch smaller initiatives—and they did—that would develop the fitness of their collaboration as a group and would consolidate a foundation to build from. Unfortunately, just like for the short-term group, that would require a level of external nurturing and support that no one knew how to finance.

The day was designed to allow for people to individually and collectively contemplate the progress made, the challenge before them, and their level of readiness to continue. The last activity put them in front of the abyss, as a collective, with a simple question: What now? As facilitators, Jane and I removed ourselves from the room (we were, in fact, hiding to listen to the conversation), so that the

group could feel the void and potentially decide to acknowledge and fill the vacant leadership space. The conversation was frank and dominated by the pragmatists and realists. There wasn't enough shared intent nor enough time for those individuals who were ready to encourage their peers on a more ambitious but uncertain path. The group agreed to progress two ideas and people took ownership of them. They also agreed to document the 'next-steps' and to reconvene six weeks later for a phone check-in. For Jane and I, the time had come to let the other collaborators own the journey they had joined us on, and Leanne's organisation took over the project management.

The agreed check-in happened, the actions were completed, and progress was made. Unconsciously, the group had reverted to their known working patterns, and the focus had shifted back from a systemic- to a sector-specific view. This was a disappointment for Jane and me, but deep inside ourselves, we had anticipated it for several months. For Leanne, it was a relief that this initiative had reached a state where it was easier to manage as a project. Some people from the group carried on with the projects they had committed to; others moved on. In the following months, the people involved contributed in their own ways—some very tangibly and others in the background—to advancing the climate agenda in New Zealand. Even though we were disappointed not to achieve our lofty aspirations of what "could have been", the cross-sector collaboration project has provided us with multiple pieces of evidence that our collective effort made a difference.

Discussion

Our autoethnographic narrative of the cross-sector collaboration reveals several tensions which accompany largescale climate initiatives. Cross-sector collaborations are marked by power machinations and competing tensions of unity versus diversity, trust versus control, autonomy versus dependence, stability versus flexibility, inclusivity versus efficiency (Bryson et al., 2015; Cornforth et al., 2014; Provan & Kenis, 2008; Sandström et al., 2015; Saz-Carranza & Ospina, 2011; Stone et al., 2013; Vangen & Huxham, 2012). Vangen (2017) proposes that a paradox lens can help understand and make sense of collaborations and their tensions. Paradox in contexts such as public administration and organisational studies research refers to "persistent contradiction between interdependent elements" (Schad, Lewis, Raisch, & Smith, 2016, p. 6)—the notion that seemingly irreconcilable routes be followed concurrently. A paradox perspective, therefore, can help reassure practitioners searching for single best approaches by offering a framing which simultaneously pursues divergent—even opposing—solutions (Lewis, Andriopoulos, & Smith, 2014; Smith, Binns, & Tushman, 2010; Smith, Lewis, & Tushman, 2016; Tushman, Smith, & Binns, 2011; Vangen, 2017).

Paradoxical tensions become evident under environmental conditions of plurality, change, and scarcity (Smith & Lewis, 2011)—conditions which are present in most cross-sector collaborations. Despite this seemingly good fit, few studies have examined the endemic tensions of cross-sector collaborations through a paradox

lens. Jay's (2013) study of the Cambridge Energy Alliance found that paradoxes resulted in uncertainty as to whether outcomes were successes or failures, and he proposed a sensemaking process to navigate these paradoxes. Stadtler and Van Wassenhove's (2016) cross-sector collaboration study examined how collaborators make sense of paradoxes of belonging and performing. Sensemaking (Weick, 1995), the iterative process of retrospectively interpreting and ordering occurrences ('making sense'), has emerged as a way to work through paradox (Jay, 2013; Lüscher & Lewis, 2008; Stadtler & Van Wassenhove, 2016). We build on this work considering paradoxes in cross-sector collaborations.

Our narrative reveals several tensions which a paradox lens helps understand. Specifically, we note three competing demands: (1) seeking greater diversity of perspectives and capabilities amongst collaborators versus working with existing collaborators; (2) working with a collaboration as part of one's employment versus working voluntarily; and (3) the need to balance ambitious, long-term, visionary agendas with short-term, pragmatic expectations. We focus our discussion on the third observed tension as we believe it is more specific to large-scale climate initiatives because sustainability is inherently future-oriented and drives multigenerational thinking to make an impact.

Significant climate projects, such as attempts to transition a national economy to carbon neutral status, are inherently ambitious. Our narrative exposes how ambitious intentions do not easily translate into short-term actions or "small wins", and therefore these two distinct horizons need to be held simultaneously. Maintaining the space for collaborators to have different orientations is important because collaborative advantage results from the integration of collaborators' unique capabilities and resources (Vangen, 2017), however, similarities and differences between the goals of collaborators impact the effectiveness of a collaboration (Vangen & Huxham, 2012). Indeed, Das and Teng (2000) propose that short-term versus long-term orientation is one of the internal tensions which play out in alliances between collaborators. Vangen proposes that a "paradox lens offers a way of recognizing explicitly the interorganizational context of collaboration as one that is characterized by contradictions and compromises" (2017, p. 265).

Complex systems may necessitate pursuing conflicting actions (Huxham & Vangen, 2005; Lüscher & Lewis, 2008; Ospina & Saz-Carranza, 2010) and adopting a paradox perspective permits accepting that those differing approaches do not require reconciliation, but can, and should, be held simultaneously. We consider the tension over short-term versus long-term orientation to be a 'performing' paradox (Smith & Lewis, 2011), which refers to paradoxes that form when a range of stakeholders produce divergent goals (See Denis, Langley, & Rouleau, 2007; Jarzabkowski & Sillince, 2007). Most research on the influence of divergent goals in cross-sector collaborations focuses on the similarities and differences in *organisational goals* of collaboration members (For example O'Leary & Bingham, 2009; Provan & Kenis, 2008; Thomson & Perry, 2006; Vangen & Huxham, 2012). However, the short-term versus long-term tension in our narrative differs from existing research because it relates to the collaboration itself balancing distinct horizons as opposed to juggling the distinct objectives of the collaborating parties.

Although the collaborators had their own likely differing objectives, the principal challenge we encountered was the need for the collaborative initiative to find a balance between an ambitious, long-term, visionary agenda and a more short-term, pragmatic approach.

Our narrative outlines the formation of two distinct groups under the umbrella of the cross-sector collaboration, which seemed to be a viable way to balance short-term and long-term orientations. A "both/and" approach, as opposed to "either/or", is a recognised framing for dealing with paradoxes (Smith et al., 2016). Creating one group with a long-term, systemic orientation (the "big wheel" in our narrative) and a second group focused on outcomes and delivering short-to-medium-term impact (the "small wheel") appeared to represent a way to *both* think big *and* act small. However, the discrepancies and contradictions illuminated by a paradox lens can spur anxious thoughts and a sense of frustration for individuals struggling to reconcile the manifest tensions (Smith & Berg, 1987). The narrative notes how at one point the collaborators acknowledged the collaboration's sense of potential but this acknowledgement was coupled with frustration and uncertainty about how to realise the potential. Frustration and anxiety of this kind can lead to actions to that evade or ignore tensions rather than addressing them (Lewis, 2000), such as polarising contradictions by splitting into subgroups (Lewis, 2000). In our case, the frustration did result in actions which avoided rather than confronted the tension.

Splitting into two distinct groups to drive the collaboration in our narrative had an unintended polarising effect. First, it created additional tensions of terminology with the fear that the "short-term" label might be perceived as derogatory. Second, and more importantly, the splitting created an unintended and unhealthy hierarchy and thus dependency between the groups. This dependency was evident when the "small wheel" group at one point decried the lack of vision from the "big wheel". Although using two groups to accommodate *both* an ambitious long-term orientation *and* short-term results focused perspective seemed a wise approach, the resultant impact suggests this splitting approach did not satisfactorily address this paradox of the collaboration. Instead, splitting into two groups obfuscated the underlying tension and did not create the space for the collaboration to bring to bear a holistic climate approach which both thought long-term and acted in the present.

Conclusion

At the outset of our article, we suggested that a co-constructed autoethnography would improve our sensemaking of the narrated collaboration. There are learnings from this experience which we have not addressed in detail in our discussion. These include how to manage the sponsorship of cross-sectoral initiatives when confronted with changing employment relationships. Another learning related to the kind of leaders required to navigate the complexities of a large-scale climate-focused collaboration. It remains clear that seeking diverse perspectives can improve the richness of the collaboration, or the collaborative advantage (Bryson

et al., 2015; Provan & Kenis, 2008; Sandström et al., 2015; Saz-Carranza & Ospina, 2011; Stone et al., 2013; Vangen, 2017), which is particularly significant when collaborating to solve a wicked problem. Our focus in this discussion, however, has been on tensions between different time orientations within the collaboration, and on which we now offer some conclusions.

Transitioning to a low carbon economy is a slow process but driving systemic climate action requires momentum and building a groundswell of support, which the dualistic strategy of big and small "wheels" of the collaboration seemed to support. Eliminating tensions of divergent orientations in collaborations is not always required, but instead, tensions can be addressed in way that accommodate competing demands (Poole & Van de Ven, 1989). At face value, operating both big and small wheels aligned with a paradox perspective of using practical actions to support divergent foci (Vangen, 2017). The dual wheel approach could support the unique requirements of an ambitious climate initiative by balancing long-term orientations with the requirements for short-term progress and momentum-building. Further, the ambidextrous approach could also accommodate the different characteristics of collaborating individuals—the pragmatic doers and the systemic, visionary thinkers. Despite this, the overall ambition of the collaboration went unmet because the approach did not "honor" (Vangen, p. 266) both sides of the paradox.

While the two groups appeared to provide an inclusive and efficient way of operating and reconciling discordant goals, the labelling of them created an unintended dependency, with the action group returning to the vision group for direction. This experience suggests that "being structurally ambidextrous on an as-needed basis", as suggested by Bryson et al. (2015), can create additional tensions in a cross-sector collaboration. Similarly, the two groups revealed that establishing reciprocal interdependence (Ansell & Gash, 2008; Thomson & Perry, 2006) can create an unintended and unhealthy dependency. On reflection, honouring both sides of the paradox may have required holding the tension between an ambitious long-term orientation and short-term action within a single leadership entity of the collaboration, rather than splitting this responsibility. This combined responsibility may have better supported the bold vision of transitioning New Zealand to carbon neutral status while focusing on the shorter-term actions to support this ambition. We, therefore, conclude that simplistic explanations of the complex relationships in cross-sector collaborations should be treated cautiously: "Clarity must not come at the expense of oversimplification and trivialization of complex issues" (Senge et al., 2007, p. 47). The narrative and the experience of the collaboration confirm for us the proposition that "[t]he normal expectation ought to be that success will be very difficult to achieve in cross-sector collaborations" (Bryson et al., 2015). Nonetheless, successfully navigating tensions in a cross-sector collaboration improves the likelihood of a collaboration being effective, and our narrative hopefully provides detail of these challenges in a way that helps others to learn from our experience.

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Chapter 11
Greening the Supply Chain: A Framework for Best Practices

Aymen Sajjad

Introduction

The notion of green supply chain management has become a topical issue for academic discourse and industry practice. Min and Kim (2012, p. 39) argue that "a growing number of firms have explored 'greening' (environmental-friendly) initiatives as their competitive strategic weapon". Today, it is widely acknowledged that environmental responsibility of a firm is not limited to intra-organizational management of environmental issues (Vanalle, Ganga, Godinho Filho, & Lucato, 2017). However, currently firms are seeking ways to develop both their intra- and inter-environmental performance (Kovacs, 2008; Linton, Klassen, & Jayaraman, 2007; Sarkis, 2014) because a large portion of adverse environmental impacts arise from supply chain activities (Brickman & Ungerman, 2008; Chaabane, Ramudhin, & Paquet, 2012). The concept of green supply chain management takes a holistic view of environmental management (Mangla, Kumar, & Barua, 2015). It focuses on the management of environmental issues within a firm's operations and at the external level where it addresses issues such as industrial ecology, product life cycle management, green procurement, green logistics, extended producer responsibility, and product stewardship (Kleindorfer, Singhal, & Wassenhove, 2005; Srivastava, 2007).

Scholars have defined green supply chain management in different ways; however, most conceptualizations acknowledge that it is a broad concept that relates to the management of a set of activities and processes by which a product is sourced, designed, manufactured, transported, used, and disposed of at the end of its useful life. The purpose of this extended focus is to recognize the interconnected nature of systems by which a product is produced and to formulate suitable strategies to alleviate potential harmful environmental impacts associated with varied organizational systems, activities and processes using a systematic and coordinated approach.

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Srivastava (2007, pp. 54–55) defined green supply chain management as "integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life".

According to Esty and Winston (2009, p. 35), "the environmental concerns that are most urgent in any particular company will vary a great deal . . . [and] environmental issues evolve over time". A prudent manager needs to understand the dynamic nature of the environmental management issues and develop corporate strategies accordingly. For managerial guidance, Esty and Winston (2009) identified a generic list of top 10 environmental issues. Some of these issues include: climate change, energy and water consumption, biodiversity and land use, air pollution, ozone layer depletion, and deforestation. However, the most important issues for any particular firm depends on a range of contextual factors such as industry, size, location, and business model (Lai, Wong, & Lam, 2015; Sancha, Wong, & Thomsen, 2016; Wu, Wu, Chen, & Goh, 2014). It is pertinent to note that almost all of the above listed issues relate directly or indirectly to the greening the supply chain. Proactive firms are not only addressing environmental issues in their internal operations, but also seeking ways by which negative environmental impacts can be managed and reduced throughout their supply chain operations (Zhu, Qu, Geng, & Fujita, 2017).

Prior literature suggests that a variety of factors influence firms to adopt green supply chain management practices. At the organizational level, top management commitment, operational efficiency and competitiveness are frequently reported factors propelling firms to implement green supply chain management practices (Lee, Sung Rha, Choi, & Noh, 2013). For instance, several studies confirmed that adoption of green supply chain management practices lead to improved occupational health and safety at work; reduction in production, packaging, and logistics costs which help a firm to protect against environmental risk exposure and develop its competitive advantage (Cantor, 2008; García-Arca & Prado-Prado, 2006; Green, Zelbst, Meacham, & Bhadauria, 2012; Spekman & Davis, 2004; Zhu & Sarkis, 2004). Additionally, at the external level, green supply chain management practices also enable firms to develop strong market position and societal legitimacy. For instance, green supply chain management could assist a firm to enhance its reputation and brand value, customers' acceptance of its products and services, and shield against current and potential environmental regulations as well as pressures from non-governmental organizations (Giunipero, Hooker, & Denslow, 2012; Shekari & Rajabzadeh Ghatari, 2013; Walker, Di Sisto, & McBain, 2008).

While many firms recognize the significance of incorporating green practices (Baines, Brown, Benedettini, & Ball, 2012), in practice they often confront diverse barriers that inhibit adoption practices in their supply chain operations. Barriers to green supply chain management relate to both internal organizational issues and external constraints that limit a firm's capability to embrace these practices. Internal issues may emerge from lack of top management support, lack of knowledge and skills; inadequate management systems; lack of supportive systems and structures; financial restraints; organizational size and resources; and behavioral and

psychological barriers (Chkanikova & Mont, 2015; Hervani, Helms, & Sarkis, 2005; Walker & Brammer, 2009). External barriers could be linked to poorly designed regulations; lack of uniform performance management systems; poor supplier capability; lack of competitor pressure; and inadequate customer demand (Hervani et al., 2005; Jones, Comfort, & Hillier, 2008; Porter & van der Linde, 1995). Encouragingly, it is relatively easier to overcome some of the internal barriers such as lack of knowledge and skills of the employees through concerted educational efforts, and training and development programs. Nevertheless, external barriers are quite difficult to address, as a firm often holds a limited control over external factors such as activities of customers, suppliers and regulators. Some firms, however, are collaborating with their suppliers, and improving their capability and capacity to develop environmental performance (Tachizawa, Gimenez, & Sierra, 2015). For example, the USA-based multinational company Walmart has established environmental standards for suppliers and is also collaborating with its thousands of suppliers to improve their environmental profiles.

The remainder of the chapter is structured as follows: First, an overview of the current state of environmental issues and undertakings in New Zealand is presented. Then, drawing on the dominant theoretical perspectives on sustainability, the value of green supply chain management adoption is explored. In this regard, a case of New Zealand based firm—Sanford is considered to demonstrate the relevance of selected theoretical perspectives in the adoption of green supply chain management practices. Next, green supply chain management approaches are presented, followed by a discussion. The chapter concludes with directions for future research, and limitations section.

The State of Environmental Affairs in New Zealand

"The world is shifting to greener forms of growth—and so is New Zealand" (Ministry of Economic Development, 2011, p. 63). Accordingly, environmental conservation has become a significant issue for New Zealand. A recent report by the Green Growth Advisory Group notes that "New Zealand is recognized in global forums as an environmentally responsible nation (on the issues like marine life conservation, introduction of an ETS and renewable energy development). We are already perceived in world markets for goods, services and capital as a relatively green country" (Ministry of Economic Development, 2011, p. 15).

Although New Zealand is relatively a small country, it exports large quantities of horticulture and agriculture products. In addition, it is a popular tourist destination for international travelers. The country has branded itself as "100% pure" (Collins, Roper, & Lawrence, 2010). Internationally, there is a perception that New Zealand is a 'clean and green' country and a large proportion its population has a profound passion for and connection with the natural environment. New Zealand's Ministry for Environment (MfE) estimated that New Zealand's clean and green image is worth billions of dollars (MfE, 2001). For instance, at present, each year more than

three million tourist visit New Zealand, and the Ministry of Business and Innovation & Employment (MBIE) forecasted that by 2023 the international tourist arrival will reach 4.9 million with a total annual international visitor expenditure to $15.3 billion (MBIE, 2017). Furthermore, "New Zealand's 'clean green' image has been picked up by other industries and is now fundamental to many export products" (Foote, Joy, & Death, 2015, p. 716). However, the negative environmental impacts associated with the Dairy industry has prompted a critical debate around the viability of New Zealand's sustainable future, the '100% pure' campaign, as well as the global perception of its clean and green image. The practices of the dairy industry are far from achieving sustainable standards, and as a result, many of New Zealand's fresh water streams, wetlands, lakes, and rivers are slowly deteriorating (Bain & Dandachi, 2015; Foote et al., 2015).

On the other hand, the research also reported that environmental awareness and responsibility is steadily growing in the New Zealand business sector (Collins, Lawrence, Pavlovich, & Ryan, 2007; Collins et al., 2010; Eweje, 2011). Many firms are taking opportunities to enhance their environmental performance by integrating environmental management principles in their business operations. Furthermore, the interest and responsiveness of the New Zealand business sector can also be observed by their membership in various sustainability advocacy organizations—the Sustainable Business Council and Sustainable Business Network (Sajjad, Eweje, & Tappin, 2015). These organizations advise their members regarding enhancing knowledge and capability concerning the adoption of sustainable business practices, and sharing and promoting best sustainability practices.

Moreover, some proactive firms have already started incorporating the United Nations (UN) Sustainable Development Goals (SDGs) in the business models. For instance, Sanford, a leading seafood firm, has adopted the UN SDGs framework for directing and implementing its sustainability vision. The firm has also taken some proactive measures related to green supply chain management including replacing polystyrene bins and plastic packaging, fuel and energy saving initiatives, and supply chain collaboration for environmental improvements (Sanford, 2017). Some other notable New Zealand based firms that have shown interest in the UN SDGs and are in the process of integrating these goals into their business models include Fonterra, Auckland Council, Vodafone, Contact Energy, New Zealand Post, Toyota New Zealand, and Westpac (Sustainable Business Council, 2017).

Theoretical Underpinnings of the Green Supply Chain Management Concept

There are several theoretical and practical reasons why firms should adopt green supply chain management approaches. The following discussion explores critically the theoretical rationale of and practical justification for embracing green supply chain management at a firm's intra- and inter-organizational supply chain operations.

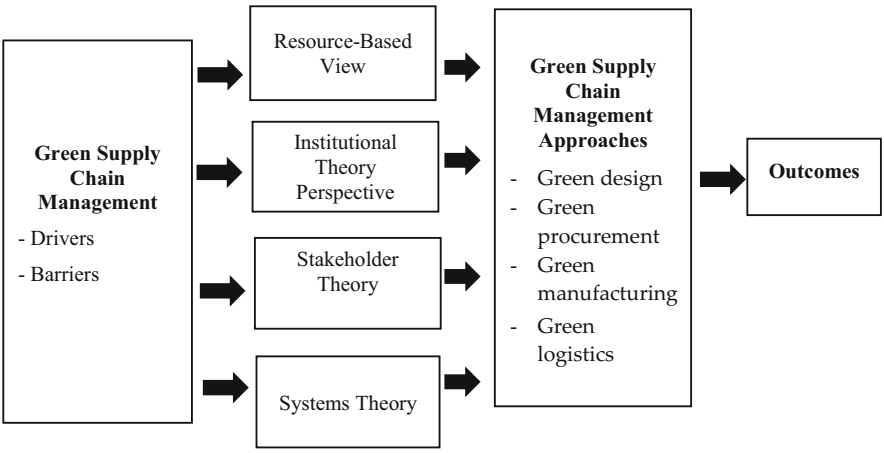

Fig. 11.1 A framework for best green supply chain management practices implementation

Thus, this chapter draws on four theoretical lenses—resource-based view, institutional theory, stakeholder theory, and systems theory—to explain the rational for GCSM implementation by firms. The framework for best GSCM practices implementation is shown in Fig. 11.1.

Resource-Based View

The resource-based view is primarily concerned with the relationship between a firm's resources and its competitive advantage (Barney, 1991; Hart, 1995). It suggests that a firm holds a bundle of resources that are valuable, scarce, imperfectibly imitable and imperfectly substitutable. A firm can achieve sustained competitive advantage by harnessing these resources (Barney, 1991). The goal of green supply chain management is to reduce a firm's pollution, waste, and other negative environmental impacts caused by its supply chain activities (Tseng, 2011); therefore, green supply chain management allows firms to simultaneously safeguard natural resources and save financial resources, making them more competitive and environmentally friendly (Hart, 1995; Shi, Koh, Baldwin, & Cucchiella, 2012).

Thus, the resource-based view of the firm supports the integration of green supply chain management in the firm's business operations and supply chain activities (Bowen, Cousins, Lamming, & Farukt, 2001; Gavronski, Klassen, Vachon, & do Nascimento, 2011; Lee et al., 2013). It further proposes that those firms, which integrate green thinking into their supply chain operations and develop environmental management knowledge and resources both at the inter- and intra-organizational supply chain levels (Gavronski et al., 2011) will be in a superior position to achieve sustained competitive advantage. Thus, an effective management of green supply chain management issues enables a firm to better manage its physical, informational, human and financial resources both at the intra- and inter-organizational levels that

in turns help the firm to differentiate itself from its competitors and improve its operational performance (Gold, Seuring, & Beske, 2010).

In addition, green supply chain management competency also enables a firm to reduce potential environmental harm, risk exposure, redundancies and waste across the supply chain, which otherwise could add substantial financial, legal, or environmental burdens on the firm. Furthermore, improved green supply chain management also permits a firm to better position itself in the marketplace by distinguishing its products and services from that of competitors, as customers become more aware of environmental issues and demand green or sustainable products (Zhu, Sarkis, & Lai, 2007). A similar logic can be applied in terms of acquiring financial capital, penetrating an existing market or expanding business to new markets. For instance, a firm can promote its products and services to new customers or acquire funds from investors by showcasing its green management capability, environmental responsibility, and eco-friendly profile (Zhu et al., 2007). Thus, green supply chain management can be a source of sustained competitive advantage providing that a firm develop its competencies, constantly improve its business operations, and actively collaborate with supply chain partners for developing environmental performance (Vachon & Klassen, 2007).

Institutional Theory Perspective

Institutional theory investigates how external pressures shape organizational actions (Hirsch, 1975). It provides a justification for implementing a green supply chain management approach. Institutional theory argues for promoting organizational practices that are socially expected, publicly endorsed, confirm to social perceptions and norms, and are considered legitimate. Thus, firms that adopt pro-environmental practices and responsible business behavior tend to develop and maintain societal legitimacy. Institutionalists argue that:

1. All organizations exist within a context of institutional rules—there is no such thing as 'the market': all markets are socially constructed;
2. All organizations are set within a context of social expectations, which constrain 'acceptable' actions; and
3. All managers are socialized into seeing the world in certain ways, thus constraining their understanding of opportunities (Johnson & Greenwood, 2007, p. 16).

Hence, it is an imperative for firms to operate within societal norms and legal boundaries. DiMaggio and Powell (1983) suggest three forms institutional isomorphism namely, coercive, normative and mimetic that influence firms in their approach to environmental practices. First, governments often exert coercive pressures in the form of regulations to develop green supply chain management policies and practices (Zhu, Sarkis, & Lai, 2013). Second, normative pressures are driven by the environmental or social expectations of customers to adopt green supply chain

management practices (Ball & Craig, 2010; Zhu, Geng, Fujita, & Hashimoto, 2010). Third, imitation has an important role developed nations where firms are increasingly required to implement comparable green supply chain management practices to align their actions to that of successful competitors (Zhu et al., 2013).

The element of coercive isomorphism indicates that environmental regulations and legislations are becoming more rigorously enforced, resulting in punitive actions when firms ignore environmental standards or are unable to meet such requirements. Accordingly, firms are bound to comply with these rules and codes of practice imposed by regulatory bodies. It is pertinent to argue that disregarding environmental standards poses great risk to firms in the form of substantial fines, legal penalties, trade barriers, lost productivity due to additional inspections, and potential closure of operations (Epstein, 2008; Rivera, 2004; Zhu et al., 2013).

Normative pressures from international buyers can be considered as key factors that drive firms to adopt green supply chain management practices (Sarkis, Zhu, & Lai, 2011). In fact, currently customer awareness is continually rising regarding environmental issues because of social media and advances in information and communication technologies. Thus, ignoring such expectations could be damaging for the long-term survival of the firm. Finally, green supply chain management approaches have now become a norm in most developed countries (Sarkis et al., 2011) and many firms are trying to align their environmental practices to that of exemplary competitors in their industry. Firms that do not follow green supply chain management practices could be at risk of losing their market share and profitability.

Stakeholder Theory

A stakeholder is "any group or individual who can affect or is affected by the achievement of an organization's objectives" (Freeman, 1984, p. 46). Stakeholder theory can be used as a valuable lens to assess a green supply chain management approach. The concepts of sustainability, responsibility, ethics and environmental management are primarily associated with the management of stakeholder concerns and their varied expectations (Garvare & Johansson, 2010). Particularly, stakeholder groups including media, public, non-governmental organizations, creditors, and customers have now became more aware and concerned with global environmental issues. These stakeholders are increasingly expecting firms to demonstrate leadership in addressing these issues and be accountable, transparent, ethical, and responsible for their business activities (Hassini, Surti, & Searcy, 2012; Plambeck, Lee, & Yatsko, 2012).

In addition, the current focus of stakeholders is increasingly shifting towards responsible management for supply chain activities, which is where the majority of the most pressing environmental issues lie (Schnittfeld & Busch, 2016; Wolf, 2014). For example, Walmart is actively working with its 70,000 suppliers to reduce waste, packaging, energy use and fuel consumption (Esty & Winston, 2009). Accordingly, these demands and expectations cannot be overlooked, as failure to account for

stakeholders' concerns could be detrimental to a firm's reputation and its long term survival. Hoejmose, Roehrich, and Grosvold (2014, p. 77) noted that "responsible supply chain management practices can help protect a firm's corporate reputation by shielding from negative media attention and consumer boycott". They further argued that responsible and sustainable supply chain practices can also improve a firm's reputation and image, enabling firms to obtain business contracts and access to new market segments.

Systems Theory

The concept of green supply chain management is reinforced by system theory perspective. As many global environmental problems are closely intertwined including air pollution, biodiversity loss, climate change, energy and food security and water shortage (Liu et al., 2015), it is necessary to address such interconnected problems holistically. A single firm could not resolve these complicated issues alone. Therefore, a systemic, integrative, inclusive and collaborative effort between supply chain members is an imperative to pragmatically resolve these issues. Accordingly, a systems perspective is a useful approach to understanding the complicated and dynamic relationships that emerge from managing green supply chain management activities along extended supply chains. According to O'Riordan (1981), systems theory provides conceptual roots and theoretical underpinnings to environmental management and related concepts. However, Holt and Ghobadian (2009, p. 935) argued that "much of the embryonic green supply chain management research has tended to focus on upstream activities, conversion processes, or the downstream activities rather than adopting a holistic approach propagated by SCM [supply chain management]". The theory postulates that impacts in one part of a system with have consequences elsewhere (Holt & Ghobadian, 2009) and understanding these connections and linkages between varied systems is important to devise a comprehensive and appropriate response to distinct but connected environmental problems (Clayton & Radcliffe, 2015). Thus, a green supply chain management approach holds enormous potential to addressing global environmental issues as it encourages systems-wide environmental improvements and inclusive focus in the globalized production networks. For example, by bringing key actors across the supply chain to a common platform and creating conditions where these actors share resources, knowledge and technology could enable interconnected firms to successfully achieve their of environmental goals.

Integrating Theoretical Perspectives with the Practical World: The Sanford Case

As demonstrated, there are several practical reasons why firms should embrace green supply chain management practices. Next, it is pertinent to focus how selected theoretical perspectives relate to the practical world. In this regard, the following discussion specifically investigates the case of Sanford, a New Zealand based seafood firm, to examine how the concept of green supply chain management is practiced in the firm and its relationship with the theoretical perspectives.

To improve value creation for its stakeholders, Sanford focuses on six types of capital namely, natural capital, intellectual capital, social and relationship capital, human capital, manufactured capital and financial capital. Linking this to a resource-based view, green supply chain management practices are particularly useful in terms of developing a firm's natural capital resources, manufacturing capacity, and financial capital base. For instance, Sanford's 2017 annual report states that the firm saved more than $2 million through delivering key procurement projects (Sanford, 2017). This was achieved through several supply chain initiatives targeted at greening the supply chain including fuel and electricity reduction, climate friendly refrigeration, sustainable packaging (replacing polystyrene bins and plastic packaging) initiative, waste minimization, and collaboration with supply chain partners (Sanford, 2017). Thus, it can be argued that green supply chain management practices enable a firm to improve its performance in terms of enhancing natural, financial, manufacturing and relationship capital base.

From an institutional theory viewpoint, regulatory and customer pressures are instrumental for firms to promote green supply chain practices. Sanford not only focuses on fundamental regulatory requirements but has several beyond compliance initiatives by which it addresses the needs of its varied stakeholders. For example, Sanford demonstrates its environmental commitment by achieving environmental and food safety accreditation for its processes and products through international certification bodies such as ISO 14001, Marine Stewardship Council Certification, FSSC 22000—Food Safety Management System, and Marine Farm Association Certification (Sanford, 2017). These initiatives enable Sanford to align its operations with the best industry practices, which in turn is helping the firm to achieve social legitimacy and promote responsible seafood manufacturer image amongst its competitors and customers.

Stakeholder management is considered as an integral part of Sanford's strategy. The firm uses a five step process to engage with its stakeholders in relation to social and environmental issues (Sanford, 2017). The specific steps of the process include: identify stakeholders, interview stakeholders, ask stakeholders to score each issue, produce a materiality matrix and radar, and sense-check. The Sanford 2017 annual report states that "we work in partnership with our stakeholders to ensure that we responsibly consume and produce seafood" (Sanford, 2017, p. 56). It is further noted in the report that "climate change is affecting every country and the disruption is likely to have a significant impact on all our customers. We are conscious of the

impact that climate change could have on the oceans and the inherent risk to our business model" (Sanford, 2017, p. 96). Accordingly, the firm adopts various internal environmental initiatives and supply chain related improvements in response to fulfil stakeholders expectations. And in this context, stakeholder theory provides an ample justification for embracing green supply chain initiatives.

Sanford utilizes a business excellence framework, which allows the firm to understand and address its core issues in a holistic way (Sanford, 2017). It also provides a structured and considered approach which supports an integrated value creation across the business. System thinking reflected in the business excellence framework could be considered as a valuable approach to understand the linkages between a firm's materiality issues as well as the relationship between diverse set of actors involved in the value creation process for Sanford. The firm has established an inclusive system by which it manages it impacts both at the intra- and inter organizational levels. In particular, Sanford's adoption of various environmental practices and collaborative initiatives with external stakeholders demonstrate that the firm is aware of its wider environmental influence on a range of stakeholder groups and thus applying a system thinking approach to manage and improve its supply chain impacts.

Green Supply Chain Management Approaches

Green supply chain management involves a wide range of environmental related initiatives and practices that help a firm to reduce its environmental impacts and improve environmental performance. The following discussion presents some of the main green supply chain management approaches examined in the literature. This includes: eco-design, green procurement, green manufacturing, and green logistics management.

Eco-Design

Eco-design refers to incorporating life cycle thinking and environmental consciousness in the product design phase so that negative environmental impacts of the product can be minimized throughout its extended life cycle. Eco-design focuses on the development of green products, which are described as "products with an alternate design such that less physical resources are required during its life cycle" (Janssen & Jager, 2002, p. 288). Thus, eco-design enables a firm to carefully plan and analyze a product's environmental impacts at the product development stage (Eltayeb, Zailani, & Ramayah, 2011; Srivastava, 2007). Eltayeb et al. (2011, p. 497) define eco-design as "actions taken during product development aimed at minimizing a product's environmental impacts during its whole life cycle—from acquiring materials, to manufacturing, use, and ultimately to its final disposal". Gunasekaran

and Spalanzani (2012) estimated that about 30–80% of the environmental impacts of a product are directly or indirectly linked to the product design stage. Accordingly, systematic planning and detailed assessments of a product at the design stage could have substantial promising implications for subsequent stages of product life cycle including production, packaging, transportation, storage, use, and the end of life management of a product.

Furthermore, early identification and assessment of potential harmful impacts of products provide an opportunity for a manufacturer to avoid, mitigate or totally eliminate undesirable environmental issues that may subsequently endanger a firm's reputation and image or could potentially make it liable to legal implications (Dangelico & Pujari, 2010; Gottberg, Morris, Pollard, Mark-Herbert, & Cook, 2006). Further, the assessment of conceivable environmental impacts puts a firm into a promising position to improve business competitiveness by improving the manufacturing processes and systems, eliminate redundancies, substitute hazardous materials and substances, devise waste reduction, remanufacturing, and re-utilization plan, and enhance resource efficiency (Dangelico & Pujari, 2010).

Green Procurement

Green procurement focuses on the management of environmental issues related to buyer-supplier relationship with reference to the purchase of environmentally friendly products and services. Green procurement includes supplier selection based on their environmental competence and performance, technical and eco-design capability, environmental collaboration, and supplier evaluation for environmental standards (Paulraj, 2011). These practices generally fall into two categories—(1) procurement of certified products or services, and (2) environmental monitoring and collaboration with suppliers (Tachizawa et al., 2015). The first approach suggests that firms demand their suppliers to attain product or process-specific standards in order to ensure supplier meets certain standards (Gimenez & Sierra, 2013; Raynolds, 2004). For example, many firms demand their suppliers to hold an up-to-date ISO 14001 certification, which provides a buyer some level of assurance and confidence that a supplier has appropriate systems and procedures in place to manage its environmental impacts. While this approach has its advantages, it is relatively less effective it terms of facilitating a long-term buyer-supplier partnership where they can mutually develop environmentally friendly innovative products and processes.

Conversely, several leading firms are presently engaging with their suppliers for environmental improvements and green product development initiatives. For example, General Electric and IBM have used supply chain collaboration as an important vehicle to establish environmental guidelines and innovative approaches to overcome pertinent environmental issues. Collaboration with suppliers include activities such as supplier remediation and capacity building, sharing resources, and training and development (Sisco, Chorn, Pruzan-Jorgensen, & Compact, 2011). The current

body of knowledge suggests that collaboration with suppliers enables a focal firm to develop long-term partnership with suppliers, trust-oriented relationships, and innovative green products, as well as promoting green supply chain management performance across the supply chain network (Klassen & Vachon, 2003; Tachizawa et al., 2015; Vachon & Klassen, 2006; Vereecke & Muylle, 2006).

Green Manufacturing

In recent years, green manufacturing and cleaner production methods have attracted considerable interest and firms are increasingly incorporating green manufacturing principles in their business operations. For instance, Tesco, IKEA, McDonalds, IBM, Patagonia, Walmart, and Sony have adopted a range of green initiatives to make their manufacturing processes environmentally sustainable (Baines et al., 2012; Dubey, Gunasekaran, & Papadopoulos, 2017). Green manufacturing is defined as "a collection of activities that involves conversion of inputs into desired products, such that emissions of hazardous substances which are harmful to human health and the environment are minimized without compromising product quality in an economical way" (Dubey et al., 2017, p. 197). The literature identifies several approaches and practices that help firms transform their traditional production methods into cleaner production systems. The following discussion presents the key green manufacturing approaches used in the current industrial systems to promote eneviormemntal management and achieve environmental performance.

An environmental management system (EMS) is a voluntary environmental approach, which is defined as "a transparent, systematic process known company-wide, with the purpose of prescribing and implementing environmental goals, policies, and responsibilities, as well as regular auditing of its elements" (Steger, 2000, p. 24). Environmental management systems are intended to assist organizations to incorporate environmental practices within the overall operational framework in order to protect the natural environment. The goal of Environmental management system is make environmental conservation an integral part of business strategy and operational activities. Currently, many firms globally have adopted international environmental management system standards and certifications. These standards provide detailed guidelines and a coherent framework for implementing programs by which firms obtain environmental certifications. Some of the popular environmental management system standards include ISO 14001, British standards (BS) 7750, and the European Eco-Management and Audit Scheme (EMAS).

The term eco-efficiency was introduced by the World Business Council for Sustainable Development (WBCSD) in 1992. The WBCSD states that "eco-efficiency is achieved through the delivery of competitive-priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the Earth's estimated carrying capacity" (IISD, 2018). The key focus areas for eco-efficiency include: reduction in material and energy intensity of goods

and services, minimized use of toxic materials, maximum use of renewable resources, reduction of greenhouse gases emission, improved recycling, and greater durability of products (DeSimone & Popoff, 2000; IISD, 2018). While the benefits of implementing eco-efficiency are well argued (DeSimone & Popoff, 2000), its critics note that there are several inherent limitations in this approach. For instance, it is argued that despite good motivations, production systems based on the eco-efficiency logic still generate large quantities of waste and pollution (Kopnina & Blewitt, 2015). Therefore, eco-efficiency promotes unsustainable production and consumption systems without addressing the root causes of the problem.

Green Logistics

Traditional logistics activities focus on the supply of goods from manufacturer to the end user; however, green logistics deals with the management of goods from manufacturer to end-user as well as the disposal of goods at the end of its useful life (Lippman, 2001). Green logistics relates with "sustainable transportation, hazardous material handling and storage, inventory control, warehousing, packaging, and facility location-allocation decisions that aim to reduce carbon footprints" (Min & Kim, 2012, p. 41).

Green Supply Chain Management and Firm Performance

The extant body of knowledge has extensively investigated the relationship between green supply chain management and firm performance. The performance impacts of green supply chain management implementation can be categorized into four dimensions, namely economic performance, environmental performance, operational performance and stakeholder value (Geng, Mansouri, & Aktas, 2017). First, the relationship between green supply chain management and a firm's economic performance is explored in several past studies. For instance, prior studies examined the impacts of green supply chain management adoption on some of the key economic variables such as growth in sales, profit, and market share. These studies suggested a positive link between green supply chain management practices and a firm economic performance (Kuei, Chow, Madu, & Wu, 2013; Zhu & Sarkis, 2004). Second, green supply chain management is associated with improving the environmental performance of the firm. In this regard, past studies revealed a positive relationship between green supply chain management practices and environmental performance (Kuei et al., 2013; Lee, Tae Kim, and Choi 2012; Tachizawa et al., 2015; Zhu & Sarkis, 2004). These studies specifically looked at key environmental variables such as energy savings, waste reduction and emissions control and their association with green supply chain management.

Third, operational performance is a central issue in supply chain management including scrap reduction, delivery time, improved inventory controls, warehouse management and capacity utilization (Corbett & Klassen, 2006). Studies reported that green supply chain management practices enable firms to enhance their operational performance (Kuei et al., 2013). Fourth, some studies have also examined the stakeholder implications of implementing the green supply chain management practices (Zailani, Eltayeb, Hsu, & Choon Tan, 2012). These studies reported that green supply chain management positively influence both internal and external stakeholder perceptions and performance of the firm. At the organizational level, green supply chain management adoption improves a firm's performance in terms of management occupational health and safety standards. Conversely, at the external level green supply chain management promotes customer loyalty and satisfaction and the firm's image management and reputation among its stakeholders.

Conclusion, Limitations, and Future Directions

This chapter critically examined the concept of green supply chain management in the New Zealand business context. The best practices framework for greening the supply chain is introduced that explicates the significance of adopting the green supply chain management approach by systematically integrating the assumptions of dominant theoretical perspectives on sustainability with the green supply chain management concept. Furthermore, the framework expounded the relationships between green supply chain management drivers and barriers to adoption, theoretical foundations and reasoning for green supply chain management implementation, key green supply chain management approaches and the performance outcomes achieved through implementation of green supply chain management concept.

The chapter contributes to theory by integrating multiple theoretical perspectives on sustainability with green supply chain management concept. Prior research has made some efforts to integrate knowledge of management theories with green supply chain management; however, there are few dedicated efforts where scholars combined multiple theories to understand the value of promoting green supply chain management approach. From a managerial perspective, the chapter offers some practical suggestions for implementing green supply chain management practices. It is argued in this chapter that green supply chain management should be viewed as a holistic concept, which suggests that improved environmental and economic outcomes can only be attained when interactions and linkages between distant but interconnected green supply chain management approaches are thoroughly aligned. Otherwise, at best, only marginal gains could be achieved by implementing isolated green supply chain management practices.

This study has some limitation. First, only secondary data were used to investigate the green supply chain management concept. Thus, future research should address this limitation by empirically investigate the implementation of green supply chain management concept in the New Zealand business context. There is ample

opportunity for future research in the Australasian context as the prior research has insufficiently addressed the issue of green supply chain management the Australasian context. Second, the theoretical framework proposed in this chapter is mostly generic in nature, not targeting any particular sector or industry. Thus, to determine the unique green supply chain management dynamics and needs for relevant practices in a particular sector, a sector specific research is suggested that could provide an in-depth understanding of appropriate issues and potential strategies to address these issues.

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Chapter 12
The Impact of Sustainability Reporting Determined from the Response of Mining Corporations to Environmental Risk

Kumudini Heenetigala and Anona Armstrong

Introduction

Corporate social responsibility (CSR), corporate citizenship, triple-bottom-line and sustainability are all related terms that espouse the principles that corporations should behave responsibly towards their environment. As early as 1979 Carroll (quoted in Benn & Bolton, 2011, p. 56) defined CSR as "encompassing the economic, legal, ethical and discretionary expectations that society has of an organisation at a given point in time". The UN's Global Compact initiative of 2002 acknowledged the pursuit of corporate citizenship through CSR activities as offering value to both society and to business. The triple-bottom-line referred to the collection of social, economic and environmental data. By 2003 the concept of CSR was no longer thought of as provocative or new but as a natural addition to management (den Hond, de Bakker & Neergaard, 2007). By 2009 all but one of the global 100 companies by revenue had published a report on CSR.

Within the next few years, interest turned to the development of specific CSR guidelines such as the AA1000 standard, and in Australia, AS 8003-2003. This provided a framework for an effective CSR program that would be monitored and assessed. Among the elements to be assessed and reported on were measures of social and environmental performance that would complement traditional financial measures of performance and ensure the sustainability of both the future of the environment and of the businesses.

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During the next 10 years, various indices to measure non-financial information appeared. In the USA, the Dow Jones sustainability index claims to be the first global index designed to monitor and assess not only economic but also social and environmental performance (Benn & Bolton, 2011). In the UK, the FTSE4Good index dealt with environmental sustainability, stakeholder relationships and supporting universal human rights. Many international organisations produced sustainability guidelines. Examples were the Organisation for Economic Co-operation and Development's (OECD) Guidelines for Multinational Enterprises (OECD, 2011) and the UN-supported Global Reporting Initiative (GRI, 2011, 2013a). A number of industry associations, including the International Council on Mining and Metals, and the Mining Association of Canada, have also endorsed the principles of sustainable development.

A survey by KPMG (2017) found that 93% of the world's largest 250 corporations report on their sustainability performance. The sustainability reports present an organization's values and governance model, and enable them to report publicly on their economic, environmental and social impacts and show how they contribute towards sustainable development.

What Is Sustainability?

Sustainability is defined as the "potential for long-term well-being of the natural environment, including all biological entities as well as the interaction among nature, individuals, organisations and business strategies" (Thorne, Ferrell, & Ferrell, 2011, p. 400).

The United Nations adopted the Bruntland (1987) Report in which sustainable development is the guiding principle for economic, environmental and social development that aspire to "meets the needs of the present without compromising the ability of future generation to meet their own needs" (n. p.). Emas (2015) states that the overall goal of sustainable development is the "long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision making process" (p. 2).

Accordingly, researchers have investigated synergies in environmental, social and economic improvement. For example, a high quality environment can result in sustainable tourism from which local communities benefit economically (Gurung & Scholz, 2008). Research by Vatalis, Manoliadis and Charalampides (2011) reported how sustainable construction led to a reduction in the use of non-renewable energy which resulted in economic savings. In other studies conducted by Dalton and Lewis (2011) the development of innovative technologies for generating power from renewable energy sources such as wind or sun created positive economic benefits through job creation which triggered economic growth while saving non-renewable resources and reducing CO_2 emissions.

However, due to the difference in economic and social systems and ecological conditions in different countries, there is no consensus on the meaning of sustainability. Irrespective of these differences, the concept of sustainable development is seen as a global objective (WCED, 1987). The aim of WCED was to guide businesses through policies orientated towards balancing economic and social systems and ecological conditions. Business is seen as contributing to this development.

Sustainability in Business

Sustainability in business is the ability of a corporation to continue in the long-term (Zadek & Raynard, 2004). The word sustainability also refers to the actions that companies take to reduce the negative impact of companies' operations on places, animals, human beings, oceans, waterways, land and the atmosphere. It is about maintaining a license to gain access to natural resources and ensuring that a company builds long-term relationships with the shareholders, employees, contractors, communities, customers and supplier (BHP Billiton, 2014).

The McKinsey Global Survey 2014 report states companies are increasingly seeking to align sustainability with their overall business goals, mission or values (McKinsey & Company, 2014). The latest McKinsey Global Survey (2017) showed that companies (96%) are more active than ever in pursuing sustainability. The three top reasons were again business goals, mission and values (46%), building reputation (36%) and meeting consumer expectations (21%). Organisations have increased their recognition of sustainability as a more strategic and integral part of their business: 90% have established some form of governance and 16% now have a sustainability board committee.

What Is Sustainability Reporting?

Sustainability reporting is the "communication which corporations make concerning their corporate social responsibility (CSR) activities, including social and environmental impacts in addition to financial performance" (Soderstrom, 2013, n. p.). Sustainability reporting is defined by Global Reporting Initiative (GRI, 2011) as,

> Sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development. 'Sustainability reporting' is a broad term considered synonymous with others used to describe reporting on economic, environmental, and social impacts (e.g., triple bottom line, corporate responsibility reporting, etc.). A sustainability report should provide a balanced and reasonable representation of the sustainability performance of a reporting organization—including both positive and negative contributions.

The Global Reporting Initiative is an independent organisation which has combined its original standards (GRI standards), introduced in 2009, with the UN's

10 principles of its Global Compact to produce the most widely adopted global standards for sustainability reporting. The GRI (2011) refers to sustainability reporting as "the practice of measuring, disclosing and being accountable to internal and external stakeholders for organisational performance towards the global sustainable development" (p. 3).

Sustainability reporting assists organizations in understanding the links between "sustainability related issues and an organization's plans and strategy, goal setting, performance measurement and managing change towards a sustainable global economy" (GRI, 2013b, p. 5). This is a process that combines the profitability of a company with the social responsibility and environmental care. Accordingly, sustainability reporting should provide a balanced and reasonable representation of the sustainability performance of a reporting organisation, including both positive and negative contributions (GRI, 2011). It is a more forward looking business approach which creates long-term shareholder value by embracing opportunities and managing risks derived from economic, environmental and social development.

Why Is Sustainability Reporting Important?

Sustainability reports originated in the last century to meet the social and political climates that prevailed during the time. Up until the 1960s non-financial information in the corporate reports focused on human resources, employee relations, commitment to provide quality products and community involvement (Nehme & Wee, 2008). However, since the late 1960s, environmental catastrophes such as fire, which caught Cleveland's oil contaminated Cuyahoga River and the Bhopal tragedy in India, which killed over 20,000 people and left almost 600,000 people physically damaged brought the importance of environmental disclosures to the forefront (Soderstrom, 2013). As a result, sustainability reporting is gaining in prominence. Communicating the actions of the companies that impact on society enhances the quality of the relationship with internal and external stakeholders. Two principal factors have driven sustainability reporting. Firstly, issues related to sustainability affect a company's long-term economic performance materially. Secondly, the business community needs to respond appropriately to the issues related to sustainable development (KPMG, 2008).

Accordingly, sustainability performance data is considered a powerful tool for assessing an organization's current health and future prospects (GRI, 2013b). Ninety five percent of the world's largest corporations publish some form of sustainability reports (GRI, 2013b). In Australia, Australian Council of Superannuation Investors (ACSI, 2014) reported that 85% of ASX 200 companies provided some level of reporting on sustainability factors.

But, how many from the mining sector reported the results of their sustainability activities? Heenetigala, De Silva Lokuwaduge, Armstrong and Ediriweera (2016) investigated the extent of sustainability reporting in the mining sector companies in

Australia and their assurance of the reports. The study revealed the areas reported, the types of issues reported and the criteria used for assurance of the reports.

In the mining industry, non-financial reporting was dominated by environmental concerns. They found that approximately a third of the companies in a sample of 200 companies published a single integrated report (33%, n = 66) that included financial, social and environmental information. Fourteen percent published a separate sustainability report and 10% included sustainability information only on their website. Over 40% did not report any sustainability information from their companies. The most used criteria for reporting information were the GRI guidelines, although only 12% assessed their performance directly against all the guidelines. The body usually responsible for the reports was a Corporate Board's audit and risk management committee. Assurance of the reports was conducted by 37% of the companies with a sustainability report. Eighty percent of assurers were from the accounting profession. The criteria most often used to assess the reliability of the reports were materiality, accuracy, inclusivity, responsiveness and consistency.

The results of this original study raised further questions about sustainability reporting in the mining industry and how the business activities of mining companies take into account the management of the environments in which they operate. This was gauged through a study of the sustainability information available on websites. The sustainability or CSR reports from the ten leading companies by asset level listed on the Australian Securities Exchange in the Metal and Mining sector in Australia were selected for analysis. The research questions were: What motivates companies to engage in sustainability reporting? What mining companies report as 'sustainability'? How many report on environmental concerns? Do they report risks to the environment? Do they discuss how to manage the risks? How many comply with international standards? How many have taken actions to reduce their impact on the environment? What do they report? How many are engaged in consultation with their stakeholders? What indicators do they use to measure sustainability?

Motivation to Engage in Sustainability Reporting

Several related theories, as well as the practical commercial benefit of sustainability reporting, explain a company's motivation to disclose ESG information.

The premise underlying social contract and stakeholder theories is that companies have a series of social contracts between members of society and society itself (Gray, Owen & Adams, 1996).

Social Contract Theory

Social contract theory "implies some form of altruistic behaviour—the converse of selfishness" (Crowther, 2008, p. 58). They describe corporate self-interest or

selfishness, driven by shareholder and manager interests, as that which opposes the public good and tends to be associated with an unequal distribution of economic and social benefits. He suggests that even if a corporation behaves altruistically there is always a suspicion that such behaviour is self-serving. Nevertheless, the recognition that corporations are accountable to their stakeholders has promoted the principles and measures upon which accountability should be based and enabled more pressure to be brought to bear upon corporations by their various stakeholders.

Stakeholder Theory

Stakeholders are any group or individual who is affected by or who can affect the achievement of an organisation's objectives (Freeman, 1984). The theory suggests that the mangers of an organisation should take into account the impact of its decisions on the stakeholders before making a decision. Practical reasons for this are that a corporation needs the support of stakeholder groups if it is to remain viable and that stakeholder management is seen as a means of improving performance. If society is not satisfied, the theory is that society will revoke the contract. This could be through withdrawal of supplies or labour, consumer demand, or boycotting services. The theory is criticised on two accounts. First, is the difficulty of agreeing on who are the stakeholders and identifying the views and needs of different stakeholder groups, and second, due to the conflicting needs of different stakeholders it is necessary for managers to balance various trade-offs (Crowther, 2008). While it is morally and ethically correct to consider the wider needs of society rather than simply profit or self-interest, in fact, most organisations use stakeholder analysis as a means of managing risk. Certainly, failure to take into account the impact of mining activities on local communities, has led to disastrous outcomes for communities and serious penalties for companies. A recent example was what happened with BHP's mining disaster in Brazil which left 19 people dead and hundreds homeless. The cost to the company $30 billion in penalties (Szoke, 2015).

Legitimacy Theory

Literature on social and environmental reporting has cited legitimacy theory as the most relevant theory to explain the social responsibility that a firm owes to society. Kaplan and Ruland (1991, p. 370) states "Underlying organizational legitimacy is a process, legitimation, by which an organization seeks approval (or avoidance of sanction) from groups in society". Matthews (1993, p. 350 cited in Tilling, 2004) provides a good definition of legitimacy "Organisations seek to establish congruence between the social values associated with or implied by their activities and the norms of acceptable behaviour in the larger social system in which they are a part. In so far as these two value systems are congruent we can speak of organisational legitimacy.

When an actual or potential disparity exists between the two value systems there will exist a threat to organisational legitimacy". Legitimacy theory is also based upon the notion that there is a social contract between society and an organisation (Donaldson, 1983). Society provides corporations the authority to own and use natural resources and to hire employees (Deegan, 2004). As a firm receives this permission to operate from society, it is ultimately accountable to the society for how it operates and what it does.

The underlying premise of legitimacy theory is that an organization must consider not only the rights of the public at large, (not merely the rights of investors) and in addition to a social contract, it must give credence to the values and culture of the society in which it operates. Failure to comply with societal expectations may result in sanctions being imposed in the form of restrictions on firms operations, resources and demand for its products, and regulation. Much empirical research using legitimacy theory to study social and environmental reporting proposes a relationship between corporate disclosures and community expectations (Deegan, 2004).

As noted above, a major issue in the past has been whether companies have the right to pursue objectives other than those singularly directed at profit that will maximise shareholders value and wealth (Friedman, 1962; Sundaram & Inkpen, 2004). Stock Exchanges around the world have moved away from this position. Because the contributions of all stakeholders are important to the success of a firm, a firm has a moral obligation, not only to shareholders, but to its stakeholders. The Australian Securities Exchange also recognises compliance with ethics as a risk management strategy (Francis & Armstrong, 2003).

The Australian Securities Exchange (ASX) in their Corporate Governance Principles Guidelines for listed companies states:

> Acting ethically and responsibly goes well beyond mere compliance with legal obligations and involves acting with honesty, integrity and in a manner that is consistent with the reasonable expectations of investors and the broader community. (Principle 3, p. 19)

Various initiatives have emerged from different sectors in the business community to support both integrity and honesty in business and care for the environment. The World Business Council for Sustainable Development (WBCSD, 2010) for example, issued the Vision 2050 report which provides suggestions for incorporating the costs of externalities such as carbon, ecosystem services and water into the structure of the market place, and promoting energy efficiency. International organisations such as the OECD, the United Nations, the World Bank and the International Council on Mining and Metals (2015) have endorsed principles of sustainable development. Of particular relevance here are Principles 1, 2 and 6:

- Apply ethical business practices and sound systems of corporate governance and transparency to support sustainable development;
- Respect human rights and the interests, cultures, customs and values of employees and communities affected by our activities;
- Pursue continual improvement in environmental performance issues, such as water stewardship, energy use and climate change;

While these initiatives are welcome, the problems of major mining corporations, such as BHP in Bougainville and Brazil, Shell in Nigeria and CRA in New Guinea, were due not in small part to the lack of attention to the community and other stakeholders who were impacted by actions that reflected a rejection of the companies' social responsibility.

In the past, a major issue has been whether companies have the right to pursue objectives other than those singularly directed at profit that will maximise shareholders value and wealth (Friedman, 1962; Sundaram & Inkpen, 2004). Because the contributions of all stakeholders are important to the success of a firm, a firm has a moral obligation, not only to shareholders, but to its other stakeholders and society. The disastrous performance of many significant corporations associated with the global financial crisis, the continuing lack of ethics and loss of trust in business and institutions, and the uncertainty brought by technology and disruption to traditional businesses and markets have driven calls for more ethical and trustworthy businesses.

Legislation is often the last resource in a bid to constrain undesirable practices in mines that impact on their communities. An example is the response to the fire in the Hazlewood mine in Australia. On 9 February 2014 fires took hold in the Hazelwood mine as a result of embers spotting from bushfires. The Hazelwood Power Station was a brown coal-fuelled thermal power station located in the Latrobe Valley of Victoria, Australia. Built between 1964 and 1971, the 1600 megawatt capacity power station was made up of eight 200 MW units, and supplied up to 25% of Victoria's base load electricity and more than 5% of Australia's total electricity demand (Farnsworth, 2014).

The station was listed as the least carbon efficient power station in the OECD nations in a 2005 report by WWF Australia. The WWF reported that the power station produced 1.58 tonnes (1.56 long tons; 1.74 short tons) of CO2 per megawatt-hour of electricity generated in 2004 (official result was 1.55), which was a reduction of 6.6% from the 1996 levels of 1.66 Mt/TWh when the plant was privatised. This is still 50% more polluting than the average black coal power station in NSW or Queensland. Hazelwood emitted up to 15% of Victoria's annual greenhouse gas emissions and 3% of Australia's greenhouse gas emissions before closure.

Thousands of residents in nearby towns were affected by smoke and ash from the fire. All preschools and maternal and child health centres in the Council area and the Chief Health Officer of Victoria advised the vulnerable groups of people in Morwell South to temporarily relocate due to the danger of PM2.5 particles. The mine fire burned for 45 days. The Hazelwood Mine Fire Inquiry Report was published in 2016 and stated that the community has experienced adverse health effects and may be affected for an indeterminate period into the future. The inquiry found that 11 premature deaths were attributed to the mine fire. Many people and local businesses experienced financial impacts for a range of reasons including a downturn in business, medical costs, veterinary costs, time taken off work, relocation from their homes, cleaning their homes and businesses, and possible decreases in property value. The Board estimated the total cost borne by the Victorian Government, the local community and the operator of the Hazelwood mine, GDF Suez, to exceed

$100 million. In July 2015, Hazelwood owners GDF Suez announced that the company would refuse to pay the 18 million dollar bill for fighting the fire presented by the Country Fire Authority. According to a statement released by the company, the firefighting effort should be provided to it at no further charge as it had already paid routine taxes and levies in previous years, although the inquiry identified that the areas of the mine which burned were un-rehabilitated, whereas rehabilitated areas did not catch fire (Farnsworth, 2014; Victorian Government, 2014).

Apart from the impact of the disaster on residents, the report from the inquiry made a significant recommendation to The State Government of Victoria to bring forward the commencement date of the review of s.16 of the Mineral Resources (Sustainable Development) Amendment Act 2014 (Vic), to facilitate the requirement that approved work plans specifically address fire prevention, mitigation and suppression; and acquire the expertise necessary to monitor and enforce compliance with fire risk measures adopted by the Victorian coal mining industry under both the mine licensing and occupational health and safety regimes.

The aim was to ensure that the mine managed risk and the achieved socially, environmentally and economically sound outcomes. This was specified in Sections 16 (b) and (c):

- 16. (b) identify the risks that the work may pose to the environment, to any member of the public, or to land or property in the vicinity of the work; and
- 16. (c) specify what the licensee will do to eliminate or minimise those risks as far as reasonably practicable.

The Act further required a mine licence holder to prepare a work plan to be approved by the Department, which included consultation with the community (a community engagement plan) throughout the period of the licence and rehabilitation plan for the land proposed to be covered by the licence.

The above disaster highlights the conflicts of interest experienced by senior management in the mining industry. Even though the industry has economic benefits related to employment and wealth creation, on the other hand it has a variety of environmental impacts, including depletion of non-renewable resources, disturbance of the landscape and above-average threats for health and safety of workers and citizens (Azapagic, 2004). Mining is regarded as one of the most environmentally and socially disruptive activities undertaken by business. According to Warhurst (2001) most incidents related to environmental disasters and abuse of human rights are related to mining or petroleum industries.

Maintaining legitimacy and a licence to operate is a constant challenge for mining sector companies. A commitment to profit over people and planet are the cause of many of the social and environmental problems that have become the concern of the political and public debate (Brueckner, 2011, p. 3). As a response to this corporations have turned to sustainability reporting.

As noted above, a majority of the world's largest corporations publish some form of sustainability reports and 85% of ASX 200 companies in Australia provides some level of reporting on sustainability factors (ACSI, 2014). However, little is known

about the actions of mining companies. The following reports the results of a study of sustainability reporting by the top mining companies in Australia.

Sustainability Reporting: What Mining Companies Reported

The mining sector has been associated with negative environmental impacts, social and cultural disruption, and local economic instability (Prno & Scott Slocombe, 2012), Sustainability requires recognising the factors that have a risk to the environment and society, such as water scarcity, loss of biodiversity, ecosystem degradation, competition for natural resources and energy and the needs of the community.

All the companies in the sample reported their action on sustainability except for two, one which had a CSR report and one had their sustainability actions included in an annual review.

Companies in the study reported on community initiatives, health, safety, climate change, ethics and environment. A part from the above some reported on value chain, sustainability, taxation and sustainable manufacturing.

How Many Companies Report on Environmental Concerns?

All the companies in the sample reported on environmental concerns related to water, waste, bio-diversity, emissions, energy and managing tailings. All the companies in the sample reported on various water management aspects and 90% reported on waste management. Bio-diversity and emissions were reported by 60% of the companies, 30% reported on energy and 20% reported on Management of tailings. Apart from the above they reported on mine closures, land rehabilitations and protecting the culture. Forty percent also reported on environmental compliance.

Do They Report Risks to the Environment and How Do They Manage the Risks?

Risk to the environment was reported by 40% of the companies selected. These included reporting to the regulators and community on disposal or storage of waste hazards complying with regulations and internal standards, mitigation measures, education of employees and engagement with communities.

All were engaged in strategies to manage environmental risks. Results also showed that all the companies have taken actions to reduce their impact on the environment.

How Many Are Engaged in Consultation with Their Communities?

Ninety percent of the companies are engaged in community consultations. These include supporting local communities for economic & social growth, Community engagement, Culture and Heritage, Training and Education, Diversity, indigenous people, charities, health and wellbeing, supporting local suppliers and creating employment for local people. Seventy percent are engaged in various activities to support the local communities for economic & social growth and Community engagement and 40% reported on Culture & Heritage and Training & Education.

How Many Comply with International Standards?

Eighty percent of the companies in the study reported complying with international standards. All complied with Global Reporting Initiative's Sustainability Guideline (GRI) and 20% with the International Council on Mining & Metals Sustainable Development Framework.

What Indicators Do They Use to Measure Sustainability?

Currently, there are few regulatory standards that identify criteria to measure sustainability. A study conducted by Caron, Durand, and Asselin (2016) identified principles and criteria for sustainable development. Our study found that companies used similar criteria. Safety indicators and GHG emissions used by 60% of the companies were the most used indicators. Water usage, fatalities, community participation and gender information were the next most used indicators by 40%. Health, energy consumption, environmental events were the next most used indictors by the mining and metal sector companies. These were reported by 30% of the companies in the sample.

Conclusion

The practice of sustainability reporting has been increasing since the commencement of the twenty-first century. This is particularly seen among listed companies such as those included in our sample. Over 50% of the companies report financial and sustainability information in integrated reports, sustainability reports and/or on

their websites. The benefits they receive are better understanding of the relationship between financial and nonfinancial performance, improved internal measurement and control systems for producing reliable and timely nonfinancial information, lower reputational risk, greater employee engagement, more committed customers who care about sustainability, more long-term investors who value sustainable strategies, and improved relationships with other stakeholders (Eccles, Krzus, & Watson, 2012).

The impact of activities of companies on the environment has brought attention to the importance of how companies do business. All the companies in the sample in the study described above reported on business activities that could impact on the environment. It appears that companies are accepting their environmental responsibility, perhaps recognising that a lack of responsibility could harm the environment and their companies. At the same time, more and more companies are seeking development of products and processes that are more efficient and effective and will have less impact on the environment (Hart, 1997). This is one of the ways in which environmental responsibility is associated with competitive advantage and firm value.

Based on the premise that environmental, social and governance risks have a material effect on the long-term viability of companies, disclosure of information regarding their performance in these areas, broadly referred to as sustainability risks, is integral to quality investment decision-making (ACSI, 2011). This study also shows that companies are increasingly engaged in implementing strategies to reduce environmental risks.

Compliance with international standards was also investigated in this study. All the companies that had a separate sustainability report also reported according to GRI guidelines. However, a very small number complied with the ICMM framework, especially designed for the mining companies. GRI is considered the de facto sustainability guidelines recognised internationally (KPMG, 2014).

The purpose of the study described above was to examine the sustainability reporting practices of the top Australian mining companies. The adoption of sustainability measurement gives some support to the premise, that companies have a social contract with their stakeholders, underlying social contract, stakeholder and legitimacy theories. This study showed that 90% of the companies in the sample engaged in community activities that supported the economic and social growth of their communities. Despite some significant environmental disasters that occurred when communities were damaged by the failure of corporations to take responsibility for the environment, as was the case in the BP and BHP examples, mining companies in our sample are engaging with their stakeholders. Even if consideration of stakeholder concerns is motivated only by the risks associated with not giving them sufficient attention, investment in various community activities generates a positive social impact (Brueckner, 2011, p. 130). A question remaining is: how much does sustainability reporting contribute to the future performance of a business? This is a topic for future research.

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Chapter 13
Attitudes of Incumbent Regimes to a Renewable Energy Transition: A Case Study of Queensland, Australia

Breda McCarthy and Lynne Eagle

Introduction

There is growing recognition that the use of greenhouse gas-producing fossil fuels in the electricity system must be phased out due to the threat of climate change (Nelson, 2016). Climate change causes variances in the frequency, intensity and timing of extreme climate events such as heat waves, drought, wildfire, floods, and coastal storms (Field et al., 2013). In the long run, climate change poses substantial economic loss to Australia due to the prospect of extreme weather events and coral bleaching within the Great Barrier Reef Marine Park (Department of the Environment, n.d.; CSIRO, 2015; Garnaut, 2008). The state of Queensland, in particular, has a long history of extreme weather events (Heazle et al., 2013), which threatens the tourism industry. During 2015–2016, record temperatures triggered a major episode of coral bleaching, with scientists calling for immediate, global action to curb future warming (Hughes et al., 2017). As part of a climate change adaptation strategy, Queensland is positioning itself as the 'solar state'; yet tensions have appeared over the extent to which energy policy should be reliant on renewable energy sources and the ramifications for both energy security and the economy. Renewable energy (RE) sources such as wind and solar are increasingly seen as cheaper, as well as cleaner, than fossil fuels. According to the Climate Council (2017a), solar costs are now so low that large, industrial-scale solar plants are providing cheaper power than new fossil power. This energy scenario has implications for regions that are traditionally associated with fossil fuel extraction and can lead to tensions and debates over the most suitable mix of energy sources. Plans to build a $21.7 billion Carmichael mine (the Adani mine) in central

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Queensland, one of the biggest in the world, has attracted a good deal of controversy in Australia. It has been described as fundamentally at odds with global efforts to tackle climate change effectively, and "runs contrary to good government policy to transition the Australian economy in a planned way, consistent with our Paris Climate Agreement commitments" (Steffen, Bambrick, Alexander, & Rice, 2017, p. 9). A former leader of the Greens Party called the plan to build the coal mine as the "environmental issue of our times" (Chang, 2017, n. p.). Despite having abundant energy resources, Australia, as a nation, is grappling with complex energy issues, including blackouts in South Australia, high electricity prices and gas shortages, which were outlined in the recent 'Finkel review' of the sector (Commonwealth of Australia, 2017).

This book chapter addresses current debates over renewable energy transitions and explores various themes, or frames of references, such as cost to the economy, energy security and climate change. The authors do this through an analysis of texts from various stakeholders from a 5-year period, 2012 to 2017. It is concluded that while debates about renewable energy are characterised by the normalisation of certain perspectives ('cost to the economy versus climate change mitigation'), others are absent, silent or de-legitimised ('stranded asset risk', 'responsibility to future generations').

There is a growing body of literature focusing on the social acceptance of renewable energy (Jacobsson & Lauber, 2006) and renewable energy policies (Lewis & Wiser, 2007). Our study follows this literature and compliments it by providing a qualitative analysis of the social acceptance of renewable energy in Australia. The paper starts with a discussion of the challenges faced in transitioning to RE, followed by an overview of social acceptance and renewable energy transitions, then the research methods are clarified and data findings are outlined. Findings are discussed in the context of the literature on energy transitions and a theoretical framework focusing on social acceptance is applied to the Australian energy sector.

Renewable Energy Transitions and Social Acceptance

Renewable energy transitions, as a narrative, refers to a transition away from fossil fuels, such as coal, gas and oil, in order to mitigate the effects of climate change (Araújo, 2014). It is argued that organising an energy transition is the major challenge of the twenty-first century (Urry, 2014). Numerous studies conclude that system-wide transformations are required to grapple with climate change and move to a low-carbon economy (Geels, 2012; Jacobsson & Lauber, 2006). The difficulty of overcoming 'path dependency' (which is a tendency of past practices to continue) and 'carbon lock-in' (which refers to market and policy failures which inhibit the diffusion of carbon-saving technologies despite their apparent advantages) is highlighted (Unruh, 2000), and there is a growing focus on how to govern and trigger system-wide transitions (Tukker & Butter, 2007). Technological innovation and persistent, well aligned policies are needed to stimulate an energy transition

(Grubler, 2012; Verbruggen et al., 2010). Despite the challenges, shares of renewable energy in many power grids and jurisdictions around the world are reaching 20–40%, and a wealth of knowledge on how to overcome technical problems is being amassed (Martinot, 2016).

In a country such as Australia, which has substantial domestic supplies of fossil fuels (particularly coal and gas), organising an energy transition is particularly challenging. Coal is particularly rich in carbon: when black coal is burnt, it can produce more than twice its weight in carbon dioxide (Hong & Slatick, 1994), yet the owners of this resource take little, or no, responsibility for the cost of emitting carbon into the atmosphere (Connor, 2016). With the recent commitment of the Federal government to the 2016 Paris Climate Agreement, it has been argued that a transition to renewables (and away from coal) needs to be at the centre of Australia's climate change mitigation effort (Kallies, 2016). To address climate change, scholars and policy advisors suggest that RE targets or carbon pricing (such as an emissions trading scheme or clean energy target implemented nationally) is essential and is likely to be an effective enabler of new RE capacity (Edenhofer, Knopf, & Luderer, 2013; Finkel, 2017; Meadowcroft, 2011; Queensland Renewable Energy Expert Panel, 2016). However, the federal government has shown inconsistent support for climate change and the 'stop/start' nature of RE policy is seen as ill-suited for triggering an energy transition (Nelson, 2016). Investors in power generation require stable policy frameworks before they commit to long-term infrastructure investment (Nelson, Nelson, Ariyaratnam, & Camroux, 2013). Scholars (Grubler, 2012) highlight the need for a set of consistent, contradiction-free policy signals, yet in Australia, currently, it is estimated that subsidies, estimated at $5 billion per annum, are given to fossil fuels (Dzonzi-Undi & Li, 2016; Makhijani & Doukas, 2015), which is a stark reminder of the problem of un-alignment. It should, however, be noted that solar also received subsidies, with the cost of incentives for adoption of solar power being funded by levies on all electricity consumers, impacting on low income groups who are least likely to afford solar (Sommerfeld & Buys, 2014).

According to Geels (2014, p. 21), the resistance by incumbents, such as coal, gas and nuclear regimes, to fundamental change, suggests that "future agendas in research and policy should pay much more attention to the destabilization and decline of existing fossil fuel regimes". Scholars have highlighted power and politics that underpin the development and implementation of specific policies (Meadowcroft, 2011; Smith, Stirling, & Berkhout, 2005). The basic idea is that policymakers and incumbent firms can form a core alliance, which is oriented towards maintaining the status quo (Geels, 2014). In Australia, research has shown that incumbents strongly opposed RE objectives when they were first introduced (Simpson & Clifton, 2014). Scholars note that owners of fossil fuels are a powerful lobby group and are able to obstruct ambitious climate policy quite effectively because their business models are based on the use of cheap fossil fuels, the costs of which do not consider externalities. They are strongly impacted by the costs of climate protection, are well-organised (Biggs, 2016; Edenhofer & Flachsland, 2013; Hall & Taplin, 2008) and hence the environment "appears rather unfertile for cultivating a low-carbon economy" (Biggs, 2016, p. 1).

Social acceptance is a concept that significantly shapes the implementation of renewable energy technologies and achievement of targets (Moula et al., 2013). Scholars (Batel & Devine-Wright, 2015; Batel, Devine-Wright, & Tangeland, 2013) have written extensively about public responses to large-scale energy infrastructures. Despite increased academic attention, no clear definition of social acceptance of renewable energy technologies exists (Wüstenhagen, Wolsink, & Bürer, 2007). According to Wolsink (2010, p. 303), "Social acceptance is not simply a set of static attitudes of individuals; instead it refers more broadly to social relationships and organisations, and it is dynamic as it is shaped in learning processes". A highly cited framework proposes that social acceptance is composed of three dimensions, such as socio-political, community and market acceptance (Wüstenhagen et al., 2007; Wolsink, 2012). A revised version separates the political from the societal/community (Sovacool & Ratan, 2012). Figure 13.1 depicts these dimensions. The socio-political dimension is the broadest dimension and it concerns the ability of regulators and policy-makers to craft effective polices. It refers to the institutional framework which can create favourable conditions and it can foster, or impede, acceptance in the other two dimensions. It can also refer to influences on policy-making at multiple levels, from international to local (Devine-Wright et al., 2017). Wolsink (2012, p. 826) highlights that current energy supply systems are highly institutionalised and are full of regulations, norms and socio-culturally defined patterns of thinking. For instance, this dimension concerns the willingness of policy makers to price electricity accurately, taking into account externalities, and apply policy instruments, such as 'green tariffs' or 'feed in tariffs' (FiTs). In order to make a transition to a low-carbon energy supply, institutional barriers such as price distortions or discriminatory grid system access, need to be overcome. The second dimension is community acceptance, which concerns territorial acceptance (siting of generating facilities in specific locations), effective support or satisfaction with energy infrastructure, how benefits are shared and whether it meets economic and social needs at a local level. The literature shows the need for developers to collaborate with the local

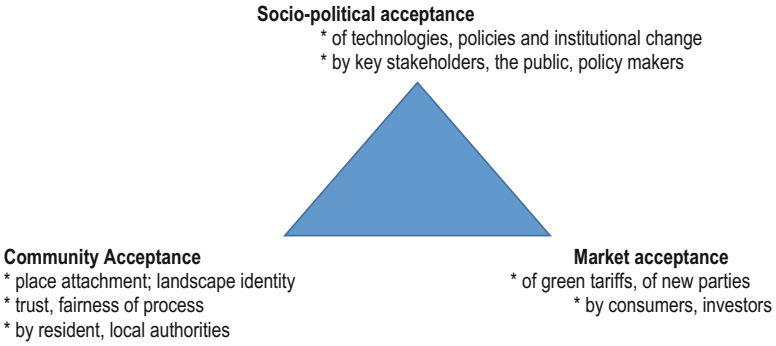


Fig. 13.1 Three dimensions of social acceptance of renewable energy innovations. Source: Wolsink (2012) and Wüstenhagen et al. (2007)

community about siting decisions. The third dimension, market acceptance, is focused upon industry actors and incumbents, and the willingness of energy companies, utilities, new innovators, investors, banks along with the community, to invest in RE assets. These three dimensions operate as a sort of nexus or triangle, implying that each form of acceptance is insufficient on its own to promote an energy transition.

In this chapter, our focus is on two dimensions, specifically on the market and socio-political lens in anticipation that empirical research might tell us something about how incumbents view the policy framework and how they defend themselves and resist transitions. For instance, coal is increasingly being (re)positioned as an answer to energy security and affordability; innovations such as coal gasification and carbon capture and storage (CCS), have given rise to a 'clean coal' discourse, which is used by government to legitimate its support for coal (Geels, 2014). By exploring the views of incumbents through submissions, it might be possible to counter or diffuse opposition to a renewable energy transition. Important questions to answer are: what are incumbents saying about energy transition options and policy instruments, do they accept transitions and what consequences do they foresee? According to Verbong & Geels (2007, p. 1025), "But although policy makers are important, other actors are also involved in renewable options (e.g. firms, utilities, special-interest groups, consumers). A proper explanation should also include perceptions, strategies and actions of these groups". This focus on two dimensions is important since Devine-Wright et al., (2017) notes that few empirical studies have encompassed more than one of the three aspects in their analytical frame and the framework is weakened by a lack of emphasis upon how each dimension interrelated across different geographic scales, such as international, national and local. Here we propose a national scale of analysis. More specifically, the book chapter argues that incumbents are moving towards acceptance, but it is still at a low level.

Research Questions

This empirical study examines how key stakeholders view renewable energy. The objective is to investigate how RE is represented in submissions to the government, whether submissions from specific stakeholders are negatively or positively disposed towards RE, what elements of the debate the stakeholder chose to emphasise, and whether there are differences between key groups. Specific questions for the analysis are:

- How much attention is given to climate change in the submissions?
- How are fossil fuels viewed in the energy mix relative to renewable energy options?
- What themes are present in the submissions?

Research Methods and Sample

Qualitative content analysis is used in this study. Content analysis is an unobtrusive research technique that allows objective, systematic, and quantitative description of human communications to be obtained (Babbie, 2004). According to Boote and Mathews (1999, p. 20), content analysis is a research method that provides the "least response bias of any research methodology", since it often entails looking at what people do, rather than what they say they do. The content analysis is based on submissions to the state and federal government. A rationale for using this approach is that submissions are highly applicable to the concept of acceptance, furthermore, this methodology has been used in similar studies, such as studies on local planning (Berke & French, 1994); studies reviewing climate action plans (Bassett & Shandas, 2010; Baker, Peterson, Brown, & McAlpine, 2012; Tang, Dai, Fu, & Li, 2013; Baynham & Stevens, 2014) and in studies of barriers to renewable energy targets (Martin & Rice, 2012; Simpson & Clifton, 2014). There are practical reasons for choosing submissions for the analysis. The federal government has shown a high willingness to roll back support for renewable energy (Kallies, 2016), and there have been several enquiries into the electricity sector and RE targets, dating back to 2012. With the recent commitment of the federal government to the Paris Climate Agreement, there has been further enquiries relating to climate mitigation strategies and the electricity sector. Submissions are important in informing the opinion and knowledge of government policy makers and in shaping policy (Tang et al., 2013). Authors are explicit about their affiliations, and perhaps biases, and they write with an express purpose to advocate for a particular outcome. Perspectives in submissions tend to be detailed, and in contrast to newspaper articles, the authors don't face the same pressure to simplify complex debates, or share the same urgency for readership rates. Submissions are also freely available on websites and easy to discover.

Table 13.1 outlines the data sources such as the producer of the submission, the name of the plan and the year in which it was published. The sampling units were submissions produced by three sectors: mining (including coal), business and utilities/energy. The focus of this study is on the key players, those who may obstruct an energy transition. The literature highlights the power of incumbent regimes (Geels, 2014), so submissions from actors operating in Queensland, a state dominated by fossil fuel interests, were included in the sample. Coal-fired generation remains the dominant supply technology in Australia. Queensland (along with Victoria and New South Wales) relies on coal more heavily than other regions and has nine coal-fired power stations (AER, 2017). Submissions from individuals and environmental or non-government organisations (NGOs) were not included in the sample. The reason for this omission is that submissions from individuals tend to be ideologically averse to coal. NGOs tend to be fragmented in their approach, lack power, and compared to the political and business elites, their voices are generally "infrequent and weak" (Lindblom, 2001, p. 223). The most recent submissions were collected along with some of the earlier submissions. The latter considered issues that are no longer relevant (e.g. views on premium FiT tariffs which were paid for

Table 13.1 Key themes relating to climate change and energy policy

Theme	Description	No. of references	Exemplary quotes
Economic burden	An energy transition is too costly for industry, reduces competitiveness and increases electricity prices. Australia has comparative advantages in fossil fuels and gas. Coal is essential to Australian economy	136	The "transition from the mining investment boom" narrative resonates among the public as a transition away from mining full stop. This is incorrect and emboldens the opponents of resources whilst providing public misinformation that resources and mining are not important to Australia's economic future (Association of Mining and Exploration Companies, 2017, p. 1)
Policy framework	Investment in energy is hampered due to inconsistent policy and failures in government energy policy, need for technology-neutral approach. Calls to repeal renewable energy targets	99	Recent price and reliability events are not the result of the electricity market failing, but the result of sustained policy interference. The market has been signalling new generation to enter the market, but this investment remains impaired by sustained national policy uncertainty and arbitrary constraints on gas supplies (Australian Energy Council, 2017, p. 1)
Climate change	Support for the Paris Climate Agreement; criticisms of the global agreement, proposals and strategies relating to emissions reduction	46	We believe the world must pursue the twin objectives of limiting climate change to the lower end of the IPCC emission scenarios in line with current international agreements, while providing access to reliable and affordable energy to support economic development and improved living standards (BHP Billiton, 2017, p. 9)
Energy security	Fossil fuels are a way of protecting the nation's energy security and help overcome the intermittent nature of RE	36	Recent concern has emerged about how characteristics of renewable energy come at a cost to system security. The levelised cost of electricity from renewable projects does not factor in external costs, and hence investment

(continued)

Table 13.1 (continued)

Theme	Description	No. of references	Exemplary quotes
			decisions continue without regard to the impact on system security (The Australian Chamber of Commerce and Industry, 2017)
Technological progress in fossil fuels	Australia should support the testing and deployment of Carbon Capture and Storage (CCS) technology or HELE (high efficiency, low emissions technology) technology (i.e., clean coal)	22	Carbon capture and storage is essential to reducing emissions from the use of fossil fuels—including both coal and gas—yet it is discriminated against by the RET and other complementary measures such as the Clean Energy Finance Corporation (Australian Coal Association, 2012, p. 1)
Technological progress in renewable energy and wider energy sector	Technological progress will solve some of the current problems in Australia's energy sector	21	Innovation in the electricity market has tended to focus around new types of generation and opportunities for storage. This has resulted in the exploration of new zero or low emissions technologies including, but not limited to, wind, solar PV, solar thermal, geothermal, wave energy, carbon sequestration, new chemical storage technologies and a range of physical storage technologies including molten salts and pumped hydro. These reflect the growing need to provide reliable and cost-effective electricity at scale with reduced greenhouse emissions... More broadly, the potential for innovations to impact the electricity market are almost limitless (The Australian Energy Council, p. 9)

electricity fed back into the electricity grid from domestic solar systems, but they have since been discontinued) but some of these submissions were still analysed for insights into social acceptance of renewable energy. A total of 45 submissions were analysed. The nature of the submissions are outlined below:

- Review of submissions to the Climate Change Authority, which is a statutory body which was established to provide independent expert advice on Australian Government climate change mitigation initiatives (Climate Change Authority, 2012). The reports were downloaded from its website. The most recent report, *Special Review on Power System Security, Electricity Prices and Emission Reductions* (2017), was designed to provide advice on policies to enhance power system security and to reduce electricity prices consistent with achieving Australia's emission reduction targets in the Paris Agreement. Previous submissions were as follows: *Draft Report on Australia's Climate Policy Options* (2015); *Comparing Emissions Reduction Policies for The Electricity Sector* (2015); *Australia's Future Emissions Reduction Targets* (2015); *2014 Renewable Energy Target Review; Targets and Progress Review* (2013) *and the 2012 Renewable Energy Target Review* (Climate Change Authority, 2017).
- Submissions to the Department of Industry and Environment under the *Independent Review into the Future Security of the National Electricity Market*. The purpose of the consultation was to provide advice on policies to enhance power system security and to reduce electricity prices consistent with achieving Australia's emission reduction targets in the Paris Agreement. More than 360 submissions were received and all submissions were published on the authority's website in 2016 (Commonwealth of Australia, 2017).
- Submissions to the Federal Government (the Senate Standing Committee on Environment and Communications) on the Closure of Coal Fired Power Stations (2016). This was an inquiry into the case for planned closure of coal-fired power stations, policy mechanisms to encourage the retirement of coal-fired power stations from the National Electricity Market (NEM), and policy mechanisms to provide a just transition for affected workers and communities. The total number of submissions was 139 and they were obtained from a government website (Parliament of Australia, 2017).

Sample

The sample consisted of the following:

1. Mining sector (n = 15)
    - The Minerals Council of Australia[1] which represents Australia's exploration, mining and minerals processing industry, nationally and internationally.
    - Rio Tinto, a global producer of minerals and metals and a major energy-intensive business.
    - BHB Billiton—has an extensive presence in Australia, including metallurgical coal assets (used for steel-making), known as Queensland Coal, and it is a major consumer of electricity from the NEM.

[1]The Minerals Council of Australia (MCA) also includes the Australian Coal Association (ACA), which ceased its operations and was integrated with the MCA in 2013.

2. Business (n = 10)
   - The Business Council of Australia (BCA), which brings together the chief executives of more than 100 of Australia's leading companies, including mining, retail, manufacturing, infrastructure, information technology, financial services and banking, energy, professional services, transport and telecommunications.
   - The Australian Chamber of Commerce & Industry (ACCI) which is a leading national association representing the interests of Australian business, including SMEs. It includes comprises state and territory chambers of commerce and national industry associations.
3. Utilities, energy associations and electricity generators with assets in Queensland (n = 20)
   - Stanwell is a Queensland Government owned generator, which has the capacity to supply more than 45% of the state's peak power needs. Stanwell is a diversified energy company, with an energy portfolio comprising coal, gas, diesel and hydro power generation facilities geographically dispersed across Queensland. It owns a coal fired station (black coal) in Queensland. Coal production and power generation is integrated within a single business.
   - Ergon, a retail entity and distribution network service provider in Queensland.
   - The Australian Energy Council—represents the policy positions of Chief Executives of electricity and downstream natural gas businesses operating in wholesale and retail energy markets. These businesses collectively generate the majority of electricity in Australia. These businesses own and operate billions in assets, are large employers and significant contributors to the nation's Gross Domestic Product. It includes the former *Energy Supply Association of Australia* (ESAA)[2], the *Energy Retailers Association of Australia* (ERAA), which is the peak body representing the core of Australia's energy retail organisations and the *Energy Network Association* (ENA), the peak body for Australia's electricity transmission and distribution and gas distribution businesses.

Data Analysis

A qualitative research method has been used for this study in order to collect, structure, and analyse the written submissions. The submission was the unit of analysis for the study. The submissions, which were all pdf files, were entered into the NVivo qualitative statistical package. It is worth-mentioning that although NVivo was used in managing the coding process, all coding was performed manually, with the written responses interpreted in context rather than as target words or phrases. This allows for nuance and greater understanding. The identification of themes, which refers to elements identified from text, such as words, phrases and

[2]The Energy Supply Association of Australia (ESAA) ceased operating in 2016 and merged with the Australian Energy Council and Energy Networks Australia.

arguments, is endemic in qualitative research. The guidelines offered by Bazeley (2009) for performing high quality analysis were adopted such as using comparison and pattern analysis to refine themes; using divergent views and negative cases to challenge generalisations and returning to the theoretical literature.

There are two main methodological approaches to identifying themes: inductive—the identification of themes occurs as the researcher is reading and analysing the texts, associated with grounded theory approaches (Glaser & Strauss, 1999) and deductive—the themes are defined before the content analysis is conducted. The literature on renewable energy is extensive and it was used to inform the themes and a provisional 'starting list' of codes was created, such as economic burden; climate change and energy security. Identifying these themes a priori assisted the researcher to move the raw data from general to more specific themes. After the first round of coding, all textual data was re-analysed and new codes were developed. For example, several authors of the submissions mentioned the importance of adopting a 'technology neutral' approach so the literature was revisited and this became a new theme. The process followed the guidelines of Miles and Huberman (1994) being comparative and iterative in nature.

Limitations of Research Methodology

There are some drawbacks associated with the use of written statements. Firstly, submissions are not always influential and although reports which draw on submissions are tabled in parliament, they are not binding on the government (Singleton, Aitkin, Jinks, & Warhurst, 2003). Smith and Weller (1978, p. 3) bluntly described one function of a public inquiry as "to show concern about a subject without actually having to do anything", and that "such inquiries may have a large symbolic content... to allow the expression of grievances". Hence, pressure groups need to be mindful of this before committing resources to submission-writing (Hall & Taplin, 2008). Secondly, a key challenge is engaging the participation of key stakeholders and ensuring all voices are heard. The submissions may not be representative of the broader constituency (Brackertz & Meredyth, 2008). Thirdly, consistent with legitimacy theory (Dowling & Pfeffer, 1975), companies may choose to soften, or withhold, statements that could threaten their legitimacy or that could create negative reactions from stakeholders reading the reports (see Table 13.2).

Findings

The following section discusses six themes: economic burden; inconsistent policy framework and technology neutrality; climate change; energy security and technological progress in fossil fuels and in renewable energy. These themes are summarised in Table 13.1. These themes are also addressed in the discussions section and linked to the theoretical framework on acceptance (see Fig. 13.2).

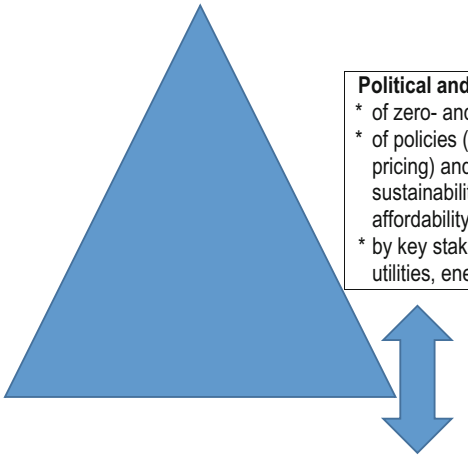
Table 13.2 Details of submissions consulted for the content analysis

Organisation or industry association	Sector	Title of submissions	No.
Australian Energy Council	Energy	Climate Change Authority's Special Review Second Draft Report (2016) Independent Review into the Future Security of the National Electricity Market (2017) Retirement of Coal Fired Power Stations (2016, Nov)	3
Energy Supply Association of Australia (ESAA)	Energy	Climate Change Authority's (CCA) review of the Renewable Energy Target (2012, Sept) Climate Change Authority's (CCA) review of the Renewable Energy Target (RET) discussion paper (2012, Nov) Climate Change Authority's (CCA) draft report into reducing Australia's greenhouse gas emissions—Targets and Progress review (2013, Dec.) Climate Change Authority's (CCA) Caps and Targets Review Issues Paper (2013, June) Climate Change Authority's (CCA) special review into Australia's future emissions reduction goals (2015, March)	6
The Energy Retailers Association of Australia (ERAA)	Energy	Renewable Energy Target Review—Discussion Paper (2012, Nov) Renewable Energy Target Review—the Issues Paper (2012, Sept)	2
Energy Networks Australia (ENA)	Energy	Independent Review into the Future Security of the National Electricity Market (2017, March) Retirement of Coal Fired Power Stations (2016, Nov)	1
Energy Networks Association (ENA)	Energy	Climate Change Authority Review of the Renewable Energy Target (2014) Renewable Energy Target Review Issues Paper (2012, Sept) Response to the Climate Change Authority Review of the Renewable Energy Target (2014, Nov) Climate Change Special Review Second Draft Report on Australia's Policy Options (2016, March)	4
BHP Billiton	Mining	Submission on the Renewable Energy Target Review Issus Paper (2012) Independent Review into the Future Security of the National Electricity Market (2017)	2
Australian Chamber of Commerce and Industry	Business	Submission to the Climate Change Authority regarding the Caps and Targets Review Issues Paper (2013, June) Response to the Climate Change Authority's Second Draft Report: Australia's Climate Policy Options (2016, Feb) Submission to the Independent Review into the Future Security of the National Electricity Market (2017, March)	3

(continued)

Table 13.2 (continued)

Organisation or industry association	Sector	Title of submissions	No.
Business Council	Business	Submission to the Climate Change Authority Review of the Renewable Energy Target (2012, Sept.) Discussion paper on the Renewable Energy Target by Climate Change Authority (2012, Nov) Submission to the Climate Change Authority regarding the Caps and Targets Review Issues Paper (2013, June) Submission to the Climate Change Authority on the Reducing Australia's Greenhouse Gas Emissions: Targets and Progress Review Draft Report (2013, November) Modelling illustrative electricity sector emissions reduction policies: consultation paper (2015, June) Australia's Climate Policy Options, (2016, March) Independent Review into the Future Security of the National Electricity Market (2017, March)	7
Australian Coal Association	Mining	Submission to the Review of the Renewable Energy Target (RET) Scheme's Discussion Paper (2012, Nov)	1
Minerals Council of Australia (MCA)	Mining	Renewable Energy Target Review (2012) Submission on the Issue Paper for the Climate Change Authority's 2014 Caps and Targets Review (2013, May) Submission to the Review of the Renewable Energy Target (2014, May) Letter in relation to upcoming review of RET (Oct, 2014) Submission to the Climate Change Authority's Special Review (2015, March) Report by Trading Nation prepared for the MCA in relation to Climate Change Authority's Special Review (2015, March) Submission to the Climate Change Authority's Special Review Second Draft Report (2016, Feb) Submission to the Inquiry into the Retirement of Coal Fired Power Stations (2016, Nov) Submission to the Independent Review into the Future Security of the National Electricity Market (2017, March)	9
Rio Tinto	Mining	Submission to the Climate Change Authority's Review of the Renewable Energy Target (RET) Issues Paper (2012, Sept) Feedback on the Climate Change Authority's Renewable Energy Target (RET) Review Discussion paper (2012, Nov) Special Review—Australia's Climate Policy Options (2016, Feb)	3
Stanwell	Energy	Submission to the Climate Change Authority's 2014 Renewable Energy Target (RET) Review (2014) Renewable Energy Target (RET) Review Discussion Paper (2012, Nov)	2
Ergon	Energy	Climate Change Authority's—Renewable Energy Target Review Issues Paper (2012, Sept)	2
	Total number of submissions		45



Political and market acceptance
* of zero- and reduced-emissions energy technologies
* of policies (e.g. Paris Agreement, RE targets, carbon pricing) and institutional change (reform of NEM, sustainability norms in addition to energy security and affordability norms)
* by key stakeholders – government, mining, business, utilities, energy

Source of resistance/arguments
* priority placed on energy supply security
* priority placed on safeguarding the economy
* perceived lack of understanding on economic costs of transitioning away from fossil fuels
* perceived need for modelling of the costs-benefits of transitioning to a low carbon economy
* perceived fairness of process, e.g., technology-neutral, access to R&D funding, sharing the carbon burden
* mechanisms for industry to give feedback on emissions targets (i.e., to avoid overshooting the target)
* perceived ignorance of public on electricity generation
* perceived ignorance of the role played by coal in energy security
* recognition of complexity of electricity system
* recognition that coal provides essential technical services to grid
* recognition of coal's positive contribution to economy
* recognition of Australia's uniqueness in global climate change agreements
* perceived limitations of RE targets at state level and federal/state inconsistency
* mechanisms for input into setting of RE targets (e.g., percentage figure of national generation or fixed GWH figure)
* perceived limitations of Paris agreement
* measured energy transition
* cautious action on climate change adaptation
* appropriate balance between energy affordability, security and low emissions objectives (energy trilemma)
* support for a broad-ranging emissions trading scheme and lowest cost emissions-abatement policy
* priority placed on a consistent policy framework
* perceptions of low security for private investors due to uncertain government policy (e.g. returns)
* claims that innovation and expert knowledge will address emissions (i.e., HELE)
* claims that prior investments (i.e., coal gasification, CCT) shows commitment to climate change mitigation

Fig. 13.2 Market and political dimensions of social acceptance. Source: Adapted from Wolsink (2012) and Wüstenhagen et al. (2007)

Theme 1: Economic Burden

The argument that climate policies and RE targets could damage the economy were prevalent in the submissions. There were 136 references in total. Ergon Energy suggested that higher RE targets, supported by subsidies, would result in higher electricity costs for consumers. The Minerals Council of Australia (2017, p. 8) stated that "In just over a decade, Australia has moved from having some of lowest cost electricity and gas in the OECD to among the most expensive... The independent review appears to accept price rises to this point as inevitable, yet fails to appreciate the very real impact this will have on Australia's international competitiveness over the next decade." Electricity price rises were linked to government policies designed to decarbonise electricity supply, the entry of intermittent generation into the market, the closure of baseload power generation and the subsequent high levels of systems integration costs (i.e., the grid and transmission cost involved in integrating intermittent power and balancing supply and demand). The Australian Energy Council attributed electricity price rises to several factors, such as the increasing cost of supply, rising prices for key fuels such as gas and coal, rising infrastructure costs and the increased cost of meeting peak demand events. Retail schemes that subsidised the cost of electricity to vulnerable groups and regional communities were also mentioned.

The ramifications of reduced energy affordability for the Australian economy were outlined in depth, such as detrimental impact on future investment decisions by the minerals sector, erosion of competitive advantage by Australian business (who historically have benefited from affordable energy prices) and on the energy–intensive sector. BHP Billiton emphasised that it is a producer of energy, but also a major use of electricity, and that electricity price increases challenges its ability to be globally competitive (BHP Billiton, 2017). The Minerals Council (2017) warns of investment moving overseas if rising energy prices are not tackled. The environment versus the economy frame are captured in the following quotation by the Australian Chamber of Commerce (2017, p. 8): "The review acknowledges much public discussion about Australia needing a better integrated energy and climate policy... the answer should not mean that we pursue security or climate policies that cause unsustainably high levels of electricity prices that places a disproportionate cost on business". The business sector saw the deployment of renewables as a tax on electricity, an essential business input. The Coal Association (2012) notes that coal provides low cost electricity and that it is partly due to the externality of their permissions being unpriced. The adverse impact of an energy transition on coal workers was also mentioned. The Energy Supply Association claimed that the onus was on government to create opportunities for displaced workers and affected communities, if an energy transition resulted in the exit of coal-fired power stations.

The coal and minerals industry saw a minor and complimentary role for RE in the energy system, but didn't see it as displacing coal-fired electricity. The Minerals Council (2017, p. 17) argued that "The notion of a transition is a distraction. It has become synonymous with 100% renewable energy. There is no evidence that this is

even possible let along inevitable... Policy should not be focused on creating a pathway to some pre-ordained energy mix destination in 2050. Distributed energy can be an important component but artificially incentivising it likely reduces the use and value of the existing network." The Australian Coal Association (2012, p. 2) stressed the centrality of coal to Australia's economy and argued for the continued exploitation of abundant coal resources, in which Australia had a comparative advantage: "The continued use of coal is integral to national competitiveness, employment and prosperity. Not only does coal underpin our standard of living, it also underpins the competitiveness of Australian industry..." The following statement shows that coal industry did not foresee the large-scale exit of coal-fired power from energy systems. According to the Coal Association (2012, p, 10), "There is little scope—at least at present—for economies to replace a significant fraction of their fossil fuel energy; most of the benefits of modern life, including transport, industry, heating and cooling, require a secure, affordable and uninterrupted supply of energy."

Theme 2: Inconsistent Policy Framework and Technology Neutrality

The submissions were deeply critical of inconsistent government policy. The Australian Energy Council (2017) stated that investment in new generation was impaired by policy uncertainty. They argued that there was a mismatch between commonwealth and state policies (e.g. state-based RE targets, state bans on gas development) and called for a durable, stable and integrated national climate and energy strategy, along with greater cooperation between state and federal policies and both major parties. Likewise, the Business Council of Australia (2017, p. 5) stated that "electricity infrastructure involves capital intensive, long-lived assets and stable policy settings, and clear market price signals are critical to support investor confidence.

Policies that suddenly shift from one place to another or see governments entering markets risk jeopardising, or at the very least confusing, this investment". Likewise, the Australian Chamber of Commerce advocated for a single, bipartisan, consistent national response to climate change policy. They argued that multiple local, state and federal schemes imposed compliance costs on business and could distort the effect of a national market-based scheme. There was consensus that the principle of 'technology neutrality' should be embedded in climate change and energy policies. There many calls for the repeal of state-based renewable energy targets on the grounds that they drove up electricity cost and compromised energy security. It was argued by the Business Council that RE targets were not aligned with the principle of technology neutrality. The Australian Chamber of Commerce argued that technologies should have equal footing in being able to demonstrate that they can be cost-effective and deliver against integrated climate and energy objectives. Likewise, the Business

Council argued that a range of electricity generation technologies are needed to meet emissions reduction targets and that no options, including coal or gas-fired generation, should be excluded from the energy mix. Both the Minerals Council and the Business Council argued that nuclear power should not be ignored.

Theme 3: Climate Change

The stakeholders concerned did not dispute the scientific evidence for climate change. There was acceptance of the Paris Agreement and there was broad consensus that emissions had to be reduced in the energy sector. However, there was no mention of ethics, i.e., that mitigating climate change was the morally correct thing to do for future generations. There was support for putting a price on carbon emissions for the electricity sector, which could result in a range of generation technologies (including coal, wind, solar, gas, hydro) being implemented and offered to the market. This was favoured over RET, which was seen as a costly approach to carbon abatement. However, the perceived limitations of the Paris Climate agreement were outlined, such as the lack of a "robust global agreement" (Business Council of Australia, 2012, p. 10) and the inability to credibly verify the domestic action of major emitters. Both the Business Council of Australia (2013, p. 13) and the Minerals Council highlighted the importance of countries bearing their *"fair share"* of the economic burden posed by global climate change negotiations. Both groups argued that Australia's per capita emissions are high since it is measured on a production basis and not on the basis of consumption. It was argued that "a narrative needs to be developed around our national differences" (i.e., its resource endowments and the pace of economic and population growth) and that Australia's burden of abatement should be "fair" and no greater than the burdens borne by other advanced countries, as measured by the impact on GDP (Business Council of Australia, 2013, p. 1). The Minerals Council argued that heavy energy users should be shielded or compensated for the costs of mitigation, to address the failure of trading partners to adopt similar policies. The business sector argued that Australia should pursue national self-interest and adopt a cautious and conservative approach to climate change policy. Likewise, the Minerals Council stated that a measured transition to a low emissions economy was needed. A commonly used phrase was 'low-cost' in the context of carbon abatement and climate change. For instance, Stanwell, the electricity generator (2014, p. 1), supported "efficient, industry-wide emissions abatement at least cost to the Australian economy". The Business Council favoured climate adaptation options that would deliver the lowest possible cost to the Australian economy. There were calls for economic modelling on the effects of climate change on the Australian economy. While the need to reduce emissions was acknowledged, the Mining and Business sectors made little or no reference to the costs of dangerous climate change to business, which contrasted with the utilities/energy sector. Energy Networks Australia (2017) did address climate risk in its submission and the Australian Energy Council (2017) also acknowledged that climate risk was becoming a financial problem.

Theme 4: Energy Security

The variable, intermittent nature of renewables was emphasised. This was linked to high system costs. Rio Tinto argued that the variability and uncertainty of intermittent renewables required power stations to hold more operating reserves to ensure that demand for electricity could be met at all times, which had to be maintained and paid for. Vigorous technical arguments are put forward by the Minerals Council to support the role of coal in the energy mix. It is claimed that there is a lack of understanding of electricity and the role played by fossil fuels (gas, coal-fired plants, hydro) in the energy mix. The Australian Coal Association (2012, p. 6) emphasised the unique attributes of coal, stating that "Coal is Australia's principal source of competitively priced, reliable baseload power underpinning energy security domestically. There is no other fuel—fossil or renewable—that can perform this competitive role in the power generation mix". The Australian Energy Council supported more renewable energy to reduce emissions and, unlike coal, did not blame renewables for the energy security problem, remarking that this was a planning and policy problem. Moratoria and outright prohibitions, which are in place currently, on onshore petroleum exploration were sharply criticised in the submissions for driving higher electricity prices and weakening energy security. The Australian Energy Council argued that gas policy needed to address the lack of supply and recognise the technical services (e.g., inertia[3] and frequency control) that gas generators provided to the NEM.

Theme 5: Technological Progress in Fossil Fuels

Rio Tinto, BHB Billiton and the Minerals sector argued that 'clean coal' technologies, such as high efficiency, low emissions coal (HELE) and carbon capture and storage (CCS), would play a vital role in meeting emissions reduction goals cost-effectively. They argued that a focus on clean coal technology was pragmatic, given Australia's endowment of coal and the fact that coal accounted for two thirds of Australia's electricity. They referred to coal levies that support research in this area and cited their achievements. They claimed that government spending was best focused on research and development. Likewise, the business sector recognised that providers of fossil fuels had a role to play in reducing emissions, and they acknowledged that the costs of CCS were very high.

[3]Certain types of power plants and energy storage systems provide "inertia" which helps to maintain power when supply and demand become unbalanced, or unequal over short time periods (Climate Council, 2017b).

Theme 6: Technological Progress in Renewables

There were several references to technological developments in the energy sector, including electric vehicles, digital metering and battery storage, and how technology could reduce per capita electricity consumption, emissions and costs. The Australian Energy Council agreed that renewables, with additional technology, could potentially offer ancillary services to the grid, and make intermittent renewables less intermittent. BHB Billiton stated that the development of large-scale battery storage had the potential to improve stability of supply as the contribution of intermittent renewable generation increased. The Business Council of Australia stated that an energy transition would be supported by technological disruption, but warned that a transition would be risky and costly, unless the performance and costs of grid-scale solar energy and battery storage dropped even faster than expected.

Discussion

In this paper, we have attempted to identify the level of acceptance for an energy transition in Australia. Socio-political acceptance is present but exists at a low level. Figure 13.2 shows how key stakeholders seek to defend their positions and legitimise their business goals. Submissions highlighted the centrality of fossil fuels to the Australian economy and society. There were common patterns in the submissions around an energy transition. There were numerous references to energy security, the variability or 'intermittency' of renewable energy sources, the sharp rise in electricity prices and the ways in which a transition was affecting, and could alter, the Australian economy. The business sector, in particular, was first and foremost guided by economic concerns, with deep concern over electricity price rises. There was considerable resistance to ambitious RET targets from this quarter. From the literature, there is an argument that coal assets risk becoming stranded, which means that operating mines only covering their marginal costs, and subsequently fail to provide a sufficient return on investment (Kallies, 2016). If a renewable energy transition is realised, and the increase in renewables comes at the cost of coal-fired electricity, coal plants would exit the marketplace and this would push up prices in the short term. Indeed, the high uptake of wind in South Australia, has been one of the main reasons for the closure of the last existing coal-fired power station in the state (Kallies, 2016). Molyneaux, Froome, Wagner, and Foster (2013) suggest that many groups "share the view that renewable energy is too expensive and unreliable to be a major component of the energy generated to meet demand". Others note that while there are significant challenges involved with balancing supply and demand in an electricity system with high levels of variable or intermittent energy sources (Qvenild et al., 2015), these challenges are not insurmountable barriers. Wolsink (2013) notes that the intermittency of renewable sources is not a technological failure relating to their performance, but reflects a lack of socio-political acceptance to include externalities in electricity prices.

All key interest groups accepted the Paris Agreement and the international community's stated intention to limit global warming to 2 °C. BHP Billiton supported emissions reduction targets, either on an economy wide or a sector-by-sector basis. Both the energy supply association and the business sector supported an integrated climate and energy policy to help Australia meets its commitments. Bulkelery (2000) notes that the coal sector accepts human-induced climate change and the submissions support this finding. Yet, business and industry attach many caveats to an energy transition and do not accept a world 'beyond coal'. They are unlikely to support Australia's efforts to decarbonise its energy systems, if the perceived economic risks become too high. State-based RE targets were seen as costly forms of abatement, a means of favouring one technology over another and an example of policy inconsistency. However, RE targets enabled "the states to innovate on emissions abatement where the federal government has been recalcitrant" (Crowley, 2007, p. 124). Writers take the position, like some scholars (Edenhofer & Flachsland, 2013), that national action, in the absence of global agreement, will not be effective and efficient in managing climate change. With the withdrawal of the US from the Paris agreement and attempts to legitimise 'climate skeptics' or 'denialists', (Foran, 2016), it is possible that support for an emissions trading scheme may wane in Australia. McDonald (2005, p. 153) notes that Australia is a ready follower of the US due to "a particular conception of Australian history, culture, identity and values". The 'environment versus the economy' frame found in the submissions is not surprising. There has been considerable analysis of Australia's self-interested behaviour in relation to global climate agreement and the drive to protect its fossil fuel industry (Crowley, 2007). According to Verbong and Geels (2007, p. 1036), "environmental problems are receiving more attention in the regime, but in terms of guiding principles, they rank below the issues of low cost (as part of industrial policy), reliability, and diversification".

The data suggests that debates about renewable energy are characterised by the normalisation of certain perspectives ('cost to the economy versus climate change mitigation') and others are absent, silent or de-legitimised. The externalities linked with the large scale coal extraction, such as loss of biodiversity, water shortages, environmental damage to agricultural land and depopulation of communities (Connor, 2016) were largely ignored in the submissions. Likewise, business risk associated with climate change was downplayed by key actors, such as mining and the business sector. For instance, damage to energy infrastructure from extreme weather events is a risk factor. Furthermore, it is proposed that company directors who do not properly consider climate change related risks could be held legally liable for breaching their duty of due care and diligence (McLeod & Wiseman, 2016).

Political scholars tend to portray the fossil fuel sector as a powerful lobby group in society, and argue that big business has 'structural power', because states depend on industries to provide jobs, taxes, economic growth and dynamism (Newell & Paterson, 1998, p. 691). This power of incumbents has been noted previously with concepts such as the 'techno-institutional complex' (Unruh, 2000, p. 817); the 'hegemonic power' of fossil fuels (Evans & Phelan, 2016, p. 331) and 'carbon capital' (Urry, 2014, p. 15). Geels (2014, p. 35) argues that existing regime actors

must be conceptualised as "actively resisting fundamental change, rather than as locked-in and inert". Likewise, Baer (2016, p. 199) notes that "the capacity of the coal mining sector to translate relatively marginal economic power into political influence to maintain and extend structures of advantage in state policy, is remarkable". While the coal lobby has considerable power, this study suggests that changes are taking place and that there is a certain level of acceptance for a transition to renewable energy. Such a transition is unlikely to occur in fossil-fuel dependent economies if the concerns of incumbent regimes are not addressed. Probably the most important question is under what conditions are the key actors willing to accept an energy transition? The answer is a 'measured' or slow energy transition, and market-based measures that are technology neutral and that promote lowest cost abatement. Furthermore, the submissions were deeply critical of the uncertain policy framework surrounding the energy market. Lack of policy certainty was seen as a factor that inhibited investment and undermined energy security. The lack of a co-ordinated, co-operative approach to dealing with energy is a well-established theme in the literature (Jones, 2009). The call for a 'technology neutral' approach by policy makers is common in the submissions. The Minerals sector argues that the market should decide about low-carbon innovations, such as HELE and carbon capture and storage (CSS) technologies. The author of the Garnaut Review (2008) (who was commissioned by the Australian Government to provide independent advice on climate change) considers that these arguments are adequate and that government incentives for investment in low-emissions technology and in demonstration projects are justified. Recently, the federal government announced that the Clean Energy Finance Corporation (CEFC) will be allowed to invest in CSS technologies (ESDNews, 2017). It is, however, a contentious issue with some experts arguing that these technologies are not yet commercially feasible (Steffen et al., 2017). Geels (2014) notes that while this ideological, 'hands-off' approach sounds neutral, it in effect means that the government privileges powerful regime actors with more capabilities, financial resources and established market positions. Likewise, Marshall (2016) notes that the clean coal discourse in Australia functions as a defence mechanism and is a distraction against tacking the connection between coal and climate change. Scholars argue that politicians are more interested in achieving a broad buy-in from key interest groups than in implementing efficient or optimal policies; hence they seek 'co-benefits' from policy instruments (Edenhofer, Seyboth, Creutzig, & Schlömer, 2013), such as jobs and the promise of emissions reduction.

There was support for a broad-based emissions trading scheme in the submissions and this sounds reasonable. Tackling emissions from other sectors such as transport and agriculture, and not just stationary energy, sounds rational. Yet, commentators have argued that "There is a risk that Australia is not bold enough to rely on a market-based emissions trading scheme... There will be pressure from interests that stand to lose from high permit prices for caps on price that would compromise the emissions reduction objectives. Political resistance to the implications of carbon pricing on costs for some products may drive demands for truncation of sectoral coverage" (Garnaut, 2008, p. 546). Buckman and Diesendorf (2010) note that while

there are many areas where Australia could make major cuts in its GHG emissions, the most feasible are in electricity generation and use. Electricity is easier and less expensive to reform than other major sources of its emissions, such as agriculture and transport. It is also a prime target because electricity GHG emissions make up a larger proportion of Australia's national GHG emissions than they do for any other OECD country (i.e., due to its dependence on coal-fired electricity).

The concept of social acceptance (Wolsink, 2010) shows that coal dependence is not simply a technological or policy question, it is also a socio-political issue. This research presented a social acceptance framework to better understand the response of business and industry to an energy transition. Based on content analysis of submissions to the Australian government, we are somewhat pessimistic about the level of social acceptance for a major systems change in the electricity sector. One the one hand, there was consistent alignment of opinion on the need to tackle emissions at national level, but on the other hand, economic concerns came to the fore. The institutional framework that is needed to turn the promise of an energy transition into a reality will most likely be weak. It is imperative that federal and state government work together, along with the energy sector, to bring about the much-needed policy certainty in the stationary energy sector. There is a risk that the current, carbon-intensive patterns of electricity generation in Australia will continue for some time to come. In the meantime, it is essential that public support for renewable energy (Eagle, Osmond, McCarthy, Low, & Lesbirel, 2017), along with social pressures arising from disaffected politicians, the Greens, the anti-coal movement, climate action groups and environmental NGOs (Baer, 2016), be harnessed so that the Australian economy can move to a world 'beyond coal'. There will eventually come a time when policy-makers will take measures at a national level to mitigate climate change which should facilitate a transition to renewable energy.

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