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Broadening Cultural Horizons in Social Marketing

Comparing Case Studies
from Asia-Pacific

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Rachel Hay · Lynne Eagle · Abhishek Bhati
Editors

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Introduction

Broadening Cultural Horizons in Social Marketing: Social Marketing Case Studies in the Asia-Pacific region brings together a unique series of health, social and environmental case studies and empirical papers from community change agents from across Asia Pacific. In a collaboration to share the latest tools and approaches to changing behaviours for societal well-being, the book provides insight from a cross-cultural perspective into the application of social marketing to address gaps in changing lifestyles among its targeted community. It allows the reader to learn new insights from academic, practitioner and industry experts. The book uses case studies to challenge people's beliefs about societal well-being through cross-cultural perspectives. The case studies propose to use theory in new ways, providing the reader with an insight into theory application to the area of social marketing.

The content's focus is to bring ideas on social change from around the Asia-Pacific into the social marketing community. It presents case studies on topics relevant to social marketing and social change. In particular, it highlights unique challenges around behaviour and social change across the Asia-Pacific, showcasing successful social marketing interventions across the region. This book is intended for academics, graduates, policymakers, researchers, practitioners and industry specialists.

Broadening Cultural Horizons in Social Marketing: Social Marketing Case Studies contains a variety of case studies and empirical papers on topics such as health and well-being, policy, legislation and upstream social marketing. It includes innovative new methods in social marketing and social change research in undeveloped, underdeveloped, and developing countries. The case studies and empirical papers also cover topics such as the environment and sustainability, cross-cultural issues in social marketing, individual, group, community and/or organizational well-being, and transformative services and midstream social marketing.

Part I of the series is dedicated to environmental issues in renewable energy, reef protection and food waste. Part II contains a range of healthcare-related social marketing issues including co-creation in social media health promotion, men's counselling towards the prevention of violence against women, organ donation and

coordinated mental health crisis communications. The final category in this edited volume is devoted to behavioural change in the societal context. Several case studies show innovative campaigns, especially run by the government, resulting in desired behavioural change in targeted communities.

In this edited volume, internationally recognized expert contributors write thirteen case studies, covering specific environmental, social and health issues related to social marketing with a specific emphasis on cross-cultural perspectives in Asia Pacific. We hope that these interesting cases will encourage further discourse in the ever-interesting research field of behavioural change. Above all, we are most grateful to our contributors' insights and for their time and effort in developing these useful cases. We hope you will enjoy the cases and become inspired to contribute to behavioural change through social marketing.

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Part I

Environmental

Winds of Change: A Study of the Acceptability of Renewable Energy in Regional Australia chapter discusses stakeholder's resistance to the generation of renewable energy in Australia. Opposition appears to centre on dislike of the visual impact of windmills, turbine noise, potential dangers to wildlife and claimed human health impacts. Several studies have concluded that there is no medical evidence of a direct link between turbine operation and human health.

Finding the Sweet Spot chapter seeks to establish whether social marketing can encourage farmers to change practices for water quality outcomes in the Great Barrier Reef catchment. It applies a community-based social marketing approach to increase adoption of practice changes to reduce excess irrigation and nutrients in the runoff flowing into nearby wetlands to respond to increasing pressure from the cumulative effects of climate change, land-based runoff, coastal land-use change and direct use impacts.

The final chapter in the category, *Waste Not Want Not: A co-created food waste pilot*, reports on the application of co-design, which centres programme design on the target to identify potential strategies, one of which was used to design and implement a social marketing programme. The outcome of the programme aims to understand if co-designed social marketing can reduce food waste, focusing research attention on one food waste behaviour.

Chapter 1

Winds of Change: Engaging with Conflicting Perspectives in Renewable Energy



Breda McCarthy and Lynne Eagle

Abstract This study examines public attitudes towards climate change and policies to limit greenhouse gases such as through the expansion of renewable energy sources. The study includes a critical examination of the apparent contradiction between belief in climate change and generalized support for renewable energy, as revealed in this survey, and of opposition to the placement of large-scale renewable energy generators such as wind farms. The literature identifies significant psychogenic influences leading to opposition to specific wind farm sitting as well as strong policy support for coal mining in Australia, but these appear to be ignored or dismissed by environmentalists, leading to ineffective communication on the issues and, ultimately, to entrenched opposition to an energy transition. We use social marketing benchmarks to identify engagement strategies that may increase understanding of the need to reduce fossil fuel consumption, alleviate anxiety about wind farm impacts and improve acceptance of renewable energy generation strategies overall.

Keywords Renewable energy · Acceptance of wind farms · Fossil fuels · Social marketing

1.1 Introduction

Climate change, and the need to reduce carbon dioxide (CO₂) and other greenhouse gas emissions, is one of the most urgent issues facing the global community. Climate change is often called a ‘wicked problem’ since policymaking around climate change is characterized by complexity, uncertainty and divergence of values (Head 2008). The United Nations (UN), guided by reports from the *Intergovernmental Panel of Climate Change* (IPCC), has set a target of limiting average warming to 2 °C above pre-industrial temperatures (IPCC 2014). Recent reports highlight that even a warming of 1.5 °C above pre-industrial levels could result in climate impacts that may be long lasting or irreversible, such as the loss of some ecosystems (IPCC

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2018). There is concern that irreversible ‘tipping points’ could be activated on Earth, such as the melting of the Greenland and Antarctic ice sheets and dieback of the Amazon rainforest (Lenton 2011). Experiences of extreme weather and climate events, such as heat waves, hurricanes, cyclones and floods over recent years in Australia, the USA and elsewhere, highlight that delaying action on climate change will come at a great cost to society. The socioeconomic impacts of natural disasters, caused by storms, floods and bushfires are extensive, with billions in financial costs arising from damage in Australia alone (UNISDR 2015). The energy sector is the largest contributor to global greenhouse gas (GHG) emissions (IPCC 2014). Globally around half of global emissions were the result of electricity and heat production in 2014, with transport, buildings, industry, agriculture, residential and commercial sectors also contributing to emissions (Ritchie and Roser 2019). Global energy-related CO₂ emissions grew by 1.7Gt CO₂ in 2018 to reach a historic high of 33.1Gt CO₂, due to a robust global economy as well as from weather conditions in some parts of the world that led to increased energy demand for heating and cooling (IEA 2018). Hence, there is a strong focus on reforming the world’s energy system and implementing measures such as replacing fossil fuels with renewables, as well as reducing energy consumption, increasing energy efficiency, deploying nuclear power and exploiting carbon dioxide capture and storage (Edenhofer and Flachslund 2013; Kallies 2016; IPCC 2014).

Renewable Energy (RE), as outlined in the Intergovernmental Panel of Climate Change (IPCC) report (2014), refers to energy sources such as bioenergy, direct solar energy, geothermal energy, hydropower and ocean and wind energies. Sustainable energy transitions, which typically means moving away from fossil fuels towards renewable resources (Dowling et al. 2018), have been the subject of intense debate in academic and political spheres (Geels 2014; Hall and Taplin 2008). In Australia, a country rich in both fossil fuels and renewable energy, electricity is mainly generated from fossil fuels (Djerf-Pierre et al. 2015). Within this context, this chapter examines acceptance of renewable energy in regional Australia, along with the narratives and tensions that underlie the phase-out or closure of coal-fired stations along with the building of large-scale renewable energy infrastructures. Examining these tensions will provide policymakers in countries that are slow to embrace an energy transition with a greater understanding of barriers to, and potential enablers of, attitudinal and behavioural change. The social sciences are therefore now seen as a key contributor towards understanding the sociocultural complexities (as opposed to the technical barriers) of a renewable energy transition (Minsch et al. 2012; Sovacool 2014). We draw on this field, particularly social marketing, to analyse the reasons for opposition and to identify new approaches to engaging with opponents in order to increase understanding and acceptance around the need to transition away from coal, alleviate anxiety about wind farm impacts and, ultimately, to support a renewable energy transition.

1.2 Explaining Support for Coal: Politics, Ideology and Economic Rationalism

Coal-fired electricity generation is the single largest source of the global temperature increase, accounting for 30% of global CO₂ emissions (IEA 2018). Coal is particularly rich in carbon, and the burning of black coal generates carbon dioxide that is more than twice its weight (Hong and Slatick 1994). In a growing number of countries, the elimination of coal-fired generation is a key climate goal, while in others coal is abundant and affordable and remains the key source of electricity (IEA 2018). With the commitment of the Australian government to the Paris Agreement (UNFCCC 2015), scholars and policy advisors suggest that carbon pricing, such as an emission trading scheme or a national clean energy target, is essential (Edenhofer and Flachsland 2013; Finkel 2017; Queensland Renewable Energy Expert Panel 2016; Meadowcroft 2011). However, the federal government has shown inconsistent support for climate change (Nelson 2016), and according to the Clean Energy Council (2019), this uncertainty surrounding energy and climate policy is a deterrent to investors. In 2018, the Federal government did not implement its own National Energy Guarantee (NEG), hence a bipartisan solution on energy policy remains elusive (Clean Energy Council 2019). During the Federal election in 2019, the National-Liberal Party pledged its support for the Paris Agreement and to the carbon emission reduction target, which is 26% by the year 2030. However, it did not rule out the building of new coal-fired power stations (Chang 2019). Unlike the opposition party, labour, it did not raise the emission reduction target and the focus was on measures to reign in rising electricity prices (Clean Energy Council 2019). According to some commentators, the election of Scott Morrison, a Prime Minister who famously brought a lump of coal into Parliament, is a signal of a divided society and suggests that progressive climate policy is not on the political agenda (Lucas 2019).

Barriers such as the strength of the coal lobby, the emphasis placed on coal's contribution to the Australian economy and the way in which politics impedes an energy transition in a fossil-fuel dependent nation are well documented in the literature (Dowling et al. 2018; Cheung and Davies 2017; Muenstermann 2012). Cheung and Davies (2017), after analysing four Australian Prime Ministers, suggest that personal ideology drives energy politics. They suggest that there is an inherent contradiction with respect to Australia's energy policy, because despite actions towards renewables, there remains an on-going political disposition to subsidise the fossil fuel industry. Likewise, Warren et al. (2016) conclude that the failure to integrate climate and energy goals has hampered a renewable energy transition, evident in the contests between the neoliberalism and sustainable development discourses. Hence, the twin 'pillars' of energy policy, affordability and security of supply, have been given overwhelming priority over climate interests. As noticed by Sovacool (2016), political leadership and adequate incentives are essential elements for an energy transition. Traditionally, management has been strongly influenced by the philosophy of neoconservatism or economic rationalism (Dunphy 2003), and arguably, the coal industry is no exception. CEOs may accept the need for change, but ultimately the logic of

profit, shareholder return and market competition drive their acceptance, rather than a clean energy agenda.

Globally, renewable energy sources increased by 4% in 2018, now accounting for over 25% of global power output (International Energy Agency 2018). There are significant differences across countries in terms of per capita installed renewable energy generation. Australia's reliance on non-renewables for electricity generation is shown in Table 1.1. It shows that Australia relies much more heavily on coal than all other member countries of the OECD. Natural gas has a 17.9% share of the energy mix. Gas is seen as a transition fuel, meaning that it allows for a reduction in emissions from power generation through a gradual substitution of coal (Guidolin and Alpcan 2019). The share of renewables in the energy mix is dominated by hydro, wind and solar. Australia has a slightly lower share of renewables in the energy mix, compared with other OECD countries, even though Australia has the highest solar radiation per square meter of any continent, and some of the best solar and wind resources in the world (Geoscience Australia 2010). In recent years, performance in renewables has improved significantly. An increase in 21% of total power generation in 2018 now puts renewables at its ever highest level (Clean Energy Council 2019).

Notes: Combustible renewables, according to the International Energy Agency (2019), refer to solid biofuels, biogases, liquid biofuels and municipal renewable

Table 1.1 Energy resources (2018)

Australia	Gigawatt hours (GWh)	Share—Australia (%)	Share—OECD total (%)
Conventional thermal	194,509	80.4	58.2
Coal	146,439	60.6	25.3
Oil	1,204	0.5	1.9
Natural gas	43,341	17.9	27.7
Combustible Renewables	3,525	1.5	2.7
Other combustibles	—	—	0.6
Nuclear	—	—	17.4
Hydro	17,642	7.3	13.8
Wind	17,414	7.2	6.9
Solar	12,275	5.1	3.0
Geothermal	0	0.0	0.5
Other renewables	—	—	0.0
Non-specified	—	—	0.3
Renewables	50,856	21.0	26.9
Non-renewables	190,985	79.0	73.1

Source International Energy Agency (2019)

Table 1.2 Coal power generation: gigawatts per capita ranking (selected countries) 2018

Country	GWh	GWh per capita	Ranking
Australia	146,439	5953	1
USA	1,183,559	3617	2
Germany	224,160	2708	3
Canada	55,571	1499	4
Greece	15,679	1456	5
Portugal	11,576	1123	6
Denmark	6103	1062	7
Spain	37,430	801	8
Ireland	3328	696	9
New Zealand	1519	317	10
Sweden	1964	196	11

Source International Energy Agency (2019). *Note* per capita figures are author-derived

wastes. Other combustibles refer to production from all other combustible fuels (such as industrial and non-renewable municipal solid wastes). Other renewables refer to electricity generated from tide, wave, ocean and other non-combustible sources.

Table 1.2 shows that Australia ranks number 1 out of a list of OECD countries in terms of coal power generation. The high level of dependence of Australia on ‘extraction and production of non-renewable resources’ (Djerf-Pierre et al. 2015, p. 635), such as coal for export, is put forward as a reason for its historically low level of renewables in the energy mix.

1.3 Social Acceptance and Wind Energy in Australia

Widespread public support is needed when developing large-scale energy infrastructures, such as wind farms (Batel and Devine-Wright 2015). Social acceptance is a concept that significantly shapes the implementation of renewable energy technologies and achievement of renewable energy targets (Moula et al. 2013; Wolsink 2012, 2013). Scholars (Batel and Devine-Wright 2015; Batel et al. 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 et al. 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 organizations, and it is dynamic as it is shaped in learning processes*”. Scholars note that the drivers of social acceptance have not received adequate attention in the literature (Friedl and Reichl 2016).

There is a considerable body of literature noting that, while support for renewable energy is, in general, high, substantial opposition becomes evident regarding the

sitting of generation facilities such as specific wind farms (see, for example, Bell et al. 2013; Batel and Devine-Wright 2015). The ‘social gap’ or ‘attitude-behaviour gap’ between general support for the concept versus opposition to specific citing’s of facilities is receiving increasing focus (Lennon and Scott 2015; Larson and Krannich 2016), with the recognition that *“the social dimension of the implementation of wind farms has emerged as a factor of at least equal importance to technology”* (Fournis and Fortin 2017).

High levels of localized resistance—particularly to wind power—were predicted to significantly hamper renewable energy targets set by the Australian federal, state and territory governments (Hall et al. 2015). Community opposition to sitting decisions has been somewhat dismissively classified as NIMBYISM (‘Not In My Back Yard’), and the term has been used uncritically in both policy and academic material (Beben 2015; Petrova 2016). Opposition appears to centre on four factors: dislike of their visual impact (Knopper and Ollson 2011), turbine noise (Botelho et al. 2015; McCunney et al. 2014), potential dangers to wildlife (see, for example, Marques et al. 2014) and claimed human health impacts. Government inquiries and reviews have been conducted in several countries, including Australia, and they have concluded that there is no medical evidence of a direct link between turbine operation and human health, although the poor quality of the data has been noted (Chapman et al. 2014; Knopper and Ollson 2011).

Wind energy is seen as a key component of sustainable power development, decreasing reliance on fossil fuels and thus reducing greenhouse gas emissions and helping address climate change challenges (Crichton and Petrie 2015a, b; Duić 2015). Wind energy is the fastest-growing electricity generation form in the world (Blanes-Vidal and Schwartz 2016) and is claimed to be the most profitable (Read et al. 2013). It is also claimed to be able to produce over five times the current global energy demand (Sahu 2018). A study in Australia showed that the cost of new wind and solar is now lower than the cost of new coal generation (CSIRO 2018).

There is a wide variation in the amount of electricity generated by wind: in 2010, it was estimated that Denmark generated 25.5% of its electricity from wind energy sources, compared with only 2% in Australia, although there were substantial differences by state, with South Australia generating 20% of electricity from wind (Aparicio et al. 2012). By 2018, Australia’s wind energy production stood at 7.2% of total electricity generation, which is slightly above the OECD average at 6.9% (IEA 2019). Table 1.3 shows the gigawatts per capita ranking of OECD countries and Australia is ranked ninth out of 11 countries. While this is an improvement on previous years, Australia still lags far behind Denmark, a country that has demonstrated rapid increases in wind power and has made a commitment to increase wind power share to 50% of electricity consumption by 2020 (Hvelplund et al. 2017).

Table 1.4 shows that wind generation in Australia in 2018 was 16,172 gigawatt hours and a breakdown by state is given. Wind generation now accounts for 33.5% of renewable energy generation and another 24 wind farms, with a combined capacity of 5.69 GW, were financially committed or under construction at the end of 2018 (Clean Energy Council 2019).

Table 1.3 Wind power generation: gigawatts per capita ranking (selected countries) 2018

Country	GWh	GWh per capita	Ranking
Denmark	13,899	2418	1
Ireland	8391	1754	2
Sweden	16,623	1663	3
Germany	110,891	1339	4
Portugal	12,,513	1214	5
Spain	49,571	1061	6
USA	275,064	841	7
Canada	29,357	792	8
Australia	17,414	708	9
Greece	6300	585	10
New Zealand	2047	427	11

Source International Energy Agency (2019). Note per capita figures are author derived

Table 1.4 Current wind generation (Clean Energy Council 2019)

	Current (end of 2018)	
	Share (%)	Capacity (GWh)
<i>Breakdown by state</i>		
South Australia	35.1	5692
Western Australia	9.9	1594
New South Wales	19.3	3124
Victoria	28.0	4528
Tasmania	6.8	1093
Queensland	0.9	141
Total National	100	16,172

Although high levels of localized resistance were predicted to hamper renewable energy investment (Hall et al. 2015), the Clean Energy Council found that incentives provided by the Federal Renewable Energy Target (RET) and other state policies propelled investment in renewable energy in 2018. Queensland, the second largest state by area in Australia, is increasingly hosting large-scale projects. The government also delivered its *Solar Farm Guidelines* in 2018, designed to ensure that large-scale projects maintain a strong social license to operate (Clean Energy Council 2019). The next section examines the factors that affect social acceptance in more detail.

1.4 Explaining Opposition to Large-Scale Energy Infrastructures: Health and Environmental Impacts, NIMBYISM and Information Deficit Assumptions

There is an increasing body of work showing that developing renewable energy as a climate mitigation option leads to a range of cobenefits for society, e.g. reduced health impacts due to lower air pollution (Xue et al. 2015). Renewable energy supply options have many advantages, but they also have drawbacks and differ with regards to their overall health and environmental impacts (Ellabban et al. 2014). Debates around granting a social license to (the now already established) coal mines were intense, with academics drawing attention to externalities, unpaid social and environmental costs, such as pollution, coal mining accidents and occupational health hazards (Byrnes et al. 2013; Lockie et al. 2008). Coal is a source of mercury and other toxic metals, harming ecosystems and potentially human life; the surface mining of coal causes a substantial change in land use and leads to mining waste (IPCC 2014). There are similar debates surrounding the impacts of wind energy today. Opposition towards wind energy appears to be driven more by emotions and psychological issues, rather than rationality (discussed in the next section). Given the intended expansion of wind energy, it is important to understand the nature and impact of any organized opposition to its development. These factors are discussed in more detail below.

Some early analyses gave localized opposition to the development of the pejorative term NIMBYISM ('Not In My Back Yard'), representing selfishness, ignorance and irrationality, but this concept is now acknowledged as not providing an effective framework for understanding the actual reasons for the opposition (Petrova 2016). Additional criticisms are that the term is simplistic and inaccurate (Burningham et al. 2015), and that the actual causes of opposition are obscured rather than explained (Wolsink 2012). In spite of this, the term continues to be used in an uncritical way in both policy documents and academic material (see, for example, Beben 2015). Often neglected in the debates is an "*inverse NIMBY syndrome*" where those living close to wind farms are the strongest supporters, often after initial concerns based on perceptions of potential negative impacts have not been realized (Warren and Birnie 2009; Enevoldsen and Sovacool 2016).

Even without invoking the NIMBY perspective, there are assumptions that wind power opposition is 'deviant', founded on ignorance and misinformation (Aitken 2010).

The assumption that opposition to a concept, issue or development is based partly on an information deficit (i.e. ignorance) and that it can be overcome by simply providing information is widespread, encompassing issues as diverse as climate change and vaccine hesitancy (Brulle et al. 2012; Yaqub et al. 2014) as well as for renewable energy (Bidwell 2016). Reliance on this assumption may explain why communication among stakeholders involved in specific scenarios is acknowledged as frequently inefficient and ineffective (Chen et al. 2015). Wind farm opponents may be a minority of any specific population but can have significant influence on

sitting decision processes and approvals (Bidwell 2016), resulting in cost escalations, project delays or rejection (Enevoldsen and Sovacool 2016). Social pressure from others has been shown to predict intentions to oppose wind farm development (Read et al. 2013), therefore information provision alone is unlikely to overcome these pressures. Like the NIMBY concept, the information deficit assumption continues to feature in policy documents across topics as diverse as sustainability, climate change and vaccination hesitancy (Eagle et al. 2015; Lorenzoni et al. 2007; Marteau, Sowden, & Armstrong (2002).

In addition to the NIMBYISM and information deficit perspectives presented above, opposition to wind farm centres on four main factors:

- (1) dislike of their visual impact (Knopper and Ollson 2011)
- (2) noise from the turbines (Botelho et al. 2015; McCunney et al. 2014)
- (3) potential dangers to wildlife (see, for example, Marques et al. 2014) and
- (4) a range of human health impacts.

The first three factors are now reviewed briefly before a more detailed examination of the claims regarding health effects.

Visual Impact: Visual impact is a complex area, with much debate based on subjective views such as whether they are ugly or attractive in appearance (Wilson and Dyke 2016), with former Australian Prime Minister Tony Abbott publicly declaring in 2013 that wind farms were ‘*ugly and noisy*’ (Green 2016). Others see wind turbines as graceful and visually ‘*magnificent*’ (Wilson and Dyke 2016). Some concern relates to the siting of wind farms in areas that are ‘*ecologically sensitive and valued for their scenic qualities*’ (Larson and Krannich 2016). There is a growing body of literature investigating the impacts of wind farms on tourism (see, for example, Riddington et al. 2010; Broekel and Alfken 2015). A detailed discussion of this sector is beyond the scope of this paper. Concern about visual impact may also reflect ‘*place attachment*’ (i.e. emotional bonds that form between people and their physical surroundings), and this is increasingly seen as a more significant explanation for resistance to local development than NIMBYISM (Devine-Wright 2009);

Noise: Noise appears to be addressed in multiple ways, including modern designs but, more importantly, on regulations regarding turbine size and distance (“set back”) from homes in order to reduce annoyance from turbine noise (Hall et al. 2013; Onakpoya et al. 2015).

Wildlife impacts: Claims of mass deaths of wildlife due to turbines appear to be overstated. A review of Canadian avian mortality found that turbine-related deaths were much lower than cat predation, collisions with windows, vehicles and transmission lines (Calvert et al. 2013). This does not mean that efforts should not be made to minimize turbine-related fatalities: harm minimization strategies appear to be part of modern planning processes (Marques et al. 2014; May et al. 2015) and a detailed discussion of this area is beyond the scope of this paper.

The focus on the next section is on the adverse health impacts of wind due to the significance of claims made in this area.