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# **The Impact of Energy Resources on Climate Policy: Case Studies of Hawaii and Victoria**

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# Table of Contents

Abstract	3
Statement of Originality	4
Abbreviations	5
Introduction	7
Hawaii vs. Victoria; Comparative Contributions; Advocacy Coalition Framework; Research Methods	
Chapter 1: Climate Policy Drivers and the ACF	20
Climate Policy Drivers; Advocacy Coalition Framework	
Chapter 2: Hawaii	36
Energy Policy Subsystem – Act 95; Global Warming Policy – Act 234; Insights from Hawaii	
Chapter 3: Victoria	62
The Advocacy Coalitions; The Advocacy Coalition Contest; Pro-environment Success; Insights from Victoria	
Chapter 4: Comparative Conclusions – It’s All About the State	83
Energy Resources and Counter Balancing Factors; Institutional Political Structures; Application of the ACF; Conclusion	

# Abstract

This research considers the key drivers and inhibitors to climate policy development with a particular focus on the role of a jurisdiction's underlying energy resource. The states of Hawaii in the United States and Victoria in Australia are chosen as case studies given their differing energy resources: Hawaii has no native fossil fuels resources but abundant renewable energy options while Victoria has an economy traditionally reliant on cheap, plentiful brown coal. The Advocacy Coalition Framework is applied as the analytical tool to understand why the two states, despite the different incentives provided by their energy resources, developed similar climate policies in the earlier period of policy response to global warming. Analysis finds that the stable parameter of natural resources is counter-balanced by other fundamentals and policy drivers including enhanced path dependency and public opinion. The state-level analysis indicates subnational governments may offer a different context for climate policy development and supports the other limited academic work that promotes the role of states within federal political structures taking a lead on responding to climate change.

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# Statement of Originality

The research and writing of this thesis was conducted wholly during my time enrolled as a Masters of Research candidate at Macquarie University. The work has not been submitted in part or in whole to any another university or other institution for degree or diploma credit. The thesis is my own original work and, to the best of my knowledge, does not include material previously written or published by other authors, unless specifically cited in the document.



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# Abbreviations

ACF	Advocacy Coalition Framework
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCA	Division of Consumer Advocacy
DSM	Demand side management
EPA	Environmental Protection Agency
EU	European Union
GHG	Greenhouse gas
HCEI	Hawaii Clean Energy Initiative
HDBEDT	Hawaii Department of Business, Economic Development and Tourism
HDoH	Hawaii Department of Health
HECO	Hawaiian Electric Company
HEPF	Hawaii Energy Policy Forum
HES	Hawaii Energy Strategy
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Planning
KIUC	Kauai Island Utility Cooperative
MDSD	Most different system design
MRET	Mandatory Renewable Energy Target
mtCO <sub>2</sub> e	Million tons CO <sub>2</sub> equivalent
NETT	National Emissions Trading Taskforce
NGOs	Non-government organisations
PUC	Public Utilities Commission

RET	Renewable energy targets
RPS	Renewable portfolio standards
SECV	State Electricity Commission of Victoria
UNFCC	United Nations Framework Convention on Climate Change
US	United States
USDoE	United States Department of Energy
VDNRE	Victoria Department of Natural Resources and Energy
VFI	Vertical fiscal imbalance
VGS	Victoria Greenhouse Strategy
VRET	Victoria Renewable Energy Target

# Introduction

“... climate change represents one of the greatest moral, economic and environmental challenges of our age”

*Australian Prime Minister Kevin Rudd*

*Address to the UN Climate Change Conference, December 2007*

“Global warming is a total and very expensive hoax!”

*US Presidential candidate, now President Donald Trump*

*@realDonaldTrump Twitter account, December 2013*

Climate policy has been a complicated and divisive issue, invoking a diverse range of policy responses. While the United States (US) continues to eschew global climate change treaties, the European Union (EU) pursues strong domestic policies and international cooperation. Australia, meanwhile, walks a fine line of implied global participation supported by weak domestic policy. At the subnational level, some states, such as California, have stepped in to fill the gap of national inaction while others, such as Louisiana, resist policy change despite direct experience of projected climate change impacts. Why has climate policy been pursued in one jurisdiction and not another? What were the drivers that allowed policy to be accepted and implemented? Or what were the factors that prevented its realization?

This thesis examines these questions with a particular focus on the role of energy resources. Over one-third of the world’s greenhouse gas (GHG) emissions are produced through stationary production of energy (IPCC 2014). Thus, reducing emissions from energy production is a critical goal for climate change abatement policies. It follows that the type of energy resource a jurisdiction holds, for example,

oil, coal, gas or renewables, would be an important factor influencing policy decisions. The question asked is how strong an influence on climate policy is the underlying energy resource of a region? Do the availability, cost, and emissions intensity of the energy resource dictate the development of abatement policy? Or are there other drivers that are more important?

To address these questions, two case studies are selected based on their differing energy resources but similar policy outcomes: Victoria in Australia and Hawaii in the US. Climate policies relevant to emissions from energy sources, in particular renewable energy targets and emissions caps, are studied at the state level to provide a narrower focus, minimizing the complexities of a larger nation that encompasses a greater diversity of energy resources and needs. The period 1992 to 2007 is considered to understand policy development in the earlier years of the climate issue debate.

### **Hawaii vs Victoria**

#### *Energy Resources and Incentives*

Hawaii and Victoria present two very different pictures in terms of energy resources. Victoria's dominant resource has been coal, providing 95% of the State's electricity during the study period (VDNRE 2002a) and remaining the major energy source today (AEMO 2016a). Coal reserves are abundant, estimated at greater than 400 years



(VDNRE 2002a) and representing a sizeable portion of the world's total resources (VDEDJTR 2016). Located near the surface, the reserves are relatively easily and inexpensively mined (VAGO 1993).

Hawaii, on the other hand, has no native fossil fuel sources. It has, however, access to abundant renewable energy resources, including solar, wind and geothermal. Hawaii's renowned sunshine and high solar insolation ratings<sup>1</sup> make it ideal for solar power. Its reliable trade winds are perfect for wind energy and its volcanic geology can readily provide geothermal power.

*Prima facie*, these differing energy resources should result in different incentives to take action on climate change. Victoria's easy access to coal provides an inexpensive source of electricity that underpins the state's important manufacturing sector (VDNRE 2000, 2002a). As described by Weller, "Victoria has a large manufacturing sector which is a major source of employment. Its competitiveness is predicated on an abundant supply of inexpensive electricity" (Weller 2012, p.

1269). The GHG implications for Victoria are amplified by the "dirty", high-emissions nature of its brown coal (VDNRE 2002a). For Victoria to shift from its low-cost but high-emissions energy to an alternative low-emissions source would incur sizeable costs (Weller 2012). One would expect such a cost to serve as a strong disincentive to take action on climate change. Symons describes the "extreme political challenge" of

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<sup>1</sup> Solar insolation is a measure of solar radiation energy received on a given surface area in a given time (Solar Insolation 2012).

“internalizing the cost of future climate impacts” today in exchange for only a “promise of future benefits” (Symons 2012, p. 5).

Hawaii has a very different situation. During the period under study, Hawaii imported fossil fuels to generate over 90% of its energy needs (HDBEDT 2008c). Importing fuel is extremely expensive, as reflected in Hawaii’s cost of electricity, the highest in the US, both then and now (Alber 2000; USEIA 2017). Importing oil also poses risks to the state in terms of energy security and price fluctuations, a concern highlighted as early as the 1970s with the OPEC oil embargoes (Alber 2000). These factors presumably provide incentive for Hawaii to switch to a lower-emissions energy source given the smaller cost differential and the benefit of mitigating energy-security risks. This assumption mirrors Christoff’s conclusion that “energy-import dependent states” will be more open to new low-emissions opportunities (Christoff 2012, p. 225).

### *Similar Policy Outcome*

Despite the expectation these differing energy resources would result in different policy incentives, Hawaii and Victoria developed essentially the same policy response to climate change. As of 2007, both states had implemented similar renewable energy targets (RET), generally referred to as “renewable portfolio standards” (RPS) in the US. In 2004, Hawaii’s Act 95 established an RPS requiring renewable energy sources to provide 15% of sales by 2015 and 20% by 2020. Victoria implemented a comparable target of 10% by 2016 as part of its *Victoria Renewable Energy Act 2006*. Though the

targets are somewhat different in timing and stringency, the legislation is considered similar in terms of scale with Victoria's 2007 emissions being five times greater than Hawaii's (ICF 2008; ADEE 2017)<sup>2</sup>.

Both states were also pursuing systems to cap and manage GHG emissions. Hawaii's 2007 Act 234 established a process for achieving state emissions reductions to 1990 levels by 2020. The Act created a cross-sector task force to determine actual emission levels and propose a plan for achieving "the maximum practically and technically feasible and cost effective reductions in greenhouse gas emissions" (Hawaii Legislature 2007, p. 4). Victoria had been dealing with similar issues, working in conjunction with the other Australian states and territories to design what they considered the optimum policy option, an emissions trading scheme. The National Emissions Trading Taskforce, convened in 2004, produced their final report in 2006 (NETT 2006) and, although not technically adopted by Victoria, the advice framed the basis for future Commonwealth emissions legislation.

There were detailed differences between Hawaii and Victoria's emissions policies. Hawaii had a legislated target but was still determining how to manage emissions and what the actual target should be, a planning process that ultimately took considerable time and remains confused to date. Victoria had an existing measuring and reporting framework, thanks to the Federal Government's *National Greenhouse and Energy Reporting* legislation, and it had a preferred policy plan for emissions management.

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<sup>2</sup> Using 2007 as the comparison year, Hawaii had emissions for 24.3 million tons CO<sub>2</sub> equivalent (mtCO<sub>2</sub>e), excluding sinks and air transport (ICF 2008). Victoria in 2007 had 124.6mtCO<sub>2</sub>e, excluding land use sinks and activities (ADEE 2017).

However, it had not legislated a cap. Viewed in the broader perspective, both governments were taking active policy positions to cap emissions.

In summary, despite their different underlying energy resources, Victoria and Hawaii, as of 2007, were employing similar policies in response to climate change.

### **Comparative Contributions**

What is to be learned from comparing the policy dynamics in Hawaii and Victoria? As stated by Selin (2011), there is “no shortage” of literature on climate change with numerous books and at least five international peer-reviewed journals focusing on the topic<sup>3</sup>. Nevertheless, there remain several gaps in the literature that this research seeks to address. First is the focus of climate policy development at the subnational level. Spanning a variety of disciplines from economic considerations to policy option debates, the bulk of policy literature comes from the international relations perspective (Harrison and Sundstrom 2010). A relatively smaller portion considers policy developments within nation states (Purdon 2015). Research on subnational climate policy is yet a smaller segment, with the majority examining the role of US states in the absence of federal action (Jones 2014), Rabe’s (2004) seminal work being a prime example. This research builds on the existing literature, contributing to understanding of climate policy development at the state level, including analysis in a context outside that of the United States.

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<sup>3</sup> See, for example, *Climate Change, Climate Policy, Nature Climate Change, Global Environmental Change, Climate and Development, Journal of Climate Change strategies and management*.

Second, this research contributes to existing literature that canvasses the role of energy resources. A number of authors have considered the link between a country's fossil fuel sources and its action on climate change (Christoff 2012, Harrison and Sundstrom 2010, Bulkeley 2000). Of the more limited subnational climate policy research, few directly address the role of energy resources with two empirical studies at the state level providing the exception (Lyon and Yin 2010, Huang et al. 2007). Examining Hawaii and Victoria sheds further light on these studies by examining the drivers behind the observed empirical outcomes.

Finally, the research provides the opportunity for further development of the policy analysis tool, the Advocacy Coalition Framework (ACF), discussed below.

### **Advocacy Coalition Framework**

Developed in the late 1980s, the ACF is recognized today as one of the primary theories of policy development (Cairney 2015). The framework focuses on the policy subsystem and considers the roles of beliefs and policy learning, scientific in particular, that lead to policy change over a period of a decade or more (Sabatier 1993; Sabatier 1988).

The ACF has been chosen as the policy analysis tool for a number of reasons. Its focus on beliefs is well suited to addressing "wicked" problems such as climate change that involve numerous actors across many jurisdictions dealing with significant conflict

(Sabatier and Weible 2007). Further, the ACF's attention to scientific learning as part of the policy process makes it appropriate for environmental and energy policies that involve technical learning (Cairney 2015). Finally, the ACF incorporates two concepts that are helpful for the selected case study comparison. *Relatively stable parameters*<sup>4</sup> is an ACF term that captures the influence of fundamental aspects of a jurisdiction such as legal structure, cultural values and natural resources, including, relevant to this study, energy resources. The ACF concept of *long-term coalition opportunity structures* addresses the relative flexibility provided by different institutional settings for policy change (Sabatier and Weible 2007) and is helpful to this study given the different political institutional structures of the US versus Australia.

Application of the ACF provides the opportunity to contribute to its further development. Despite extensive application of the framework and numerous revisions (Cairney 2015), little work has been done on the role of stable parameters in the policy process. Weible, Sabatier and McQueen (2009) note the majority of ACF applications do not reference stable parameters and Henry et al. (2014) identify questions around the impact of stable parameters. The choice of the ACF for comparison of Hawaii to Victoria also fills an identified gap in comparative application of the theory (Jenkins-Smith et al. 2014). It should be noted that thorough testing of the ACF requires quantitative analysis that, given time and word limitations, is not possible for this thesis. This research therefore employs a broad application of the ACF to assist in

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<sup>4</sup> For ease of reading, the term *relatively stable parameters* is shortened to *stable parameters*. The ACF includes "relatively" in recognition that such parameters may change over time, but assumes that such parameters are essentially stable over several decades (Sabatier 1993).

identifying comparable policy drivers, and any ACF findings remain subject to further detailed research.

## **Research Methods**

### *Case Selection*

The states of Hawaii and Victoria are chosen based primarily on their different energy resources but similar climate policy outcomes. This selection aligns with comparative politics' *most different system design (MDSD)*, which seeks to maximise differences in order to identify a hidden similarity that results in the shared common outcome (Landman 2003). Hawaii and Victoria, differing in most regards, are well suited to MDSD. In addition to energy resources, the states differ in terms of population, geology, economic drivers and political institutional structure. Hawaii is a small, isolated island state with a 2005 population of only 1.3 million (HDBEDT 2012) and an economy focused on tourism, military and agriculture (Latzko 2004). Victoria, on the other hand, is a relatively flat continental state with a 2005 population of 5.0 million (ABS 2006a) and an economy built primarily on manufacturing and professional services (ABS 2006b).

With regards to political institutional structure, although Hawaii and Victoria are both constituents of federated political systems, the form of federalism differs in terms of centralization, cooperation and fiscal allocations. The US is a presidential system that is

considered relatively decentralized compared to Australia's Westminster system, which is recognized as one of the most centralized federations (Parker 2015; Fenna 2007). Australia is acknowledged as having a reasonably cooperative federal structure, spearheaded by the intergovernmental body, the Council of Australian Governments (COAG) (Parker 2015). Cooperation in the US, on the other hand, is considered low, hindered, in part, by sheer size with more subnational governments than any other federation (Parker 2015). In terms of funding autonomy, Australian states, with no ability to levy income tax, rely heavily on the federal government for funding. This "vertical fiscal imbalance" (VFI) is considered very high relative to that of the US states that have independent taxing authority (Parker 2015).

A final factor to consider is the federal position on climate change. As of 1992, both countries had been actively engaged in international climate negotiations, having signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC)<sup>5</sup>. From here, their paths diverge. Under the Clinton Administration, from 1992 to 2000, the US promoted action on climate change and pursued development of the Kyoto Protocol<sup>6</sup>, a global treaty to limit CO<sub>2</sub> emissions. Vice President Al Gore signed the Kyoto Protocol in 1997, but, with growing dissent in Congress and the election of George Bush in 2000, the US Federal government moved away from emission reduction commitments and never ratified the Kyoto agreement (Harrison 2010, Byrne et al. 2007, Sewell 2005, Rabe 2004). Australia played the situation

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<sup>5</sup> Established at the Rio Earth Summit in 1992, the UNFCCC is an international treaty providing a framework for cooperative action to combat climate change.

<sup>6</sup> Negotiated under the UNFCCC and signed in 1997, the Kyoto Protocol set an overall target of a 5.2% reduction in global emissions by 2012 with developed (Annex 1) countries committed to specified reduction targets. The Protocol came did not come into force until 2005.



differently. Although it engaged in international negotiations, Australia maintained a steadfast position of prioritizing its economy and successfully negotiated a national increase in emissions under the Kyoto Protocol, one of only three countries to do so. Sentiment shifted and, by the end of the study period, the Commonwealth Government was pursuing the design of an emissions trading scheme and, ultimately, ratified the Kyoto Protocol in 2007 (Glover 2012; Crowley 2010; Taplin 1994).

### *Climate Policy Definition*

The term “climate policy” incorporates a wide variety of policy levers, ranging from adaptation measures to carbon taxes. To manage the scope of this research, the definition is limited to two specific types of policy: renewable energy targets and emissions cap instruments. These policies are chosen given their direct association to energy generation that relates to the focus of this research, energy resources. They are also identified as being two of the more common policies for states to implement (Rabe and Borick 2009).

Energy efficiency initiatives, which also address generation emissions and play an important role in carbon abatement, are not scrutinized in this study. The quantum and range of energy efficiency initiatives are hard to compare and risk a diverted research focus into program detail. A broad review of Hawaii and Victoria’s energy efficiency policies confirmed that both states had adopted a comparable range of energy initiatives, including solar-hot water rebates, energy performance ratings for appliances, efficiency standards for new homes and across-government energy

reduction programs (RMI 2008; HDBEDT 2004; VDSE 2005, 2006). This review supported the conclusion that both states had reached similar climate policy platforms and, for the purposes of this thesis, no further analysis is undertaken to understand the drivers behind specific energy efficiency initiatives.

### *Time Period*

The time period of study covers the initial 15-year development phase of political response to the climate change issue, 1992 to 2007. Supported by the earlier release of the first Assessment Reports by the Intergovernmental Panel on Climate Change (IPCC) that identified scientific concerns, the establishment of the UNFCCC in 1992 marked global recognition of climate change as a policy problem (Pralle 2009). 2007 is selected as the closing year due to a number of events that subsequently confuse analysis. First, counter to expectations, no global climate agreement was reached at the 2007 UNFCCC Copenhagen meeting. Second, the growing impact of the global financial crisis altered the perceived importance of climate change with economic issues taking a much greater priority (Chestney 2013; Andresen 2012). Finally, specific to Australia, the Commonwealth Government ratified the Kyoto Protocol in 2007, thus changing the role of the Australian states. The chosen time period meets the ACF requirement of analyzing a decade or longer to understand policy change. By focusing on the early rather than later years, the study hopes to better understand initial development of policy response. It is noted that, subsequent to 2007, Hawaii experienced significant energy policy changes that impacted its carbon abatement potential and altered its comparative position to Victoria. Nevertheless, emphasis on

the selected time period provides insights into the strength and interplay of various policy drivers during this earlier period.

### *Sources*

Information on the beliefs and policy preferences of identified advocacy coalition members including government agencies, politicians, interest groups and corporate industry has been sourced from publicly available information on the web and in state archives. Secondary resources including media and academic analysis have been used for added commentary and perspective.

### *Outline*

The research is presented in four chapters. The first provides an overview of frequently cited drivers of climate policy and further discussion of the ACF. The next two chapters scrutinize policy development in each of Hawaii and Victoria with the final chapter drawing conclusions from a comparative analysis of the results.

# 1. Climate Policy Drivers and the ACF

## Climate Policy Drivers

The substantial body of literature on climate policy comes from a range of perspectives not necessarily focused on policy development analysis. Nevertheless, the literature provides insights into factors frequently identified as supporting, or inhibiting, policy change. Consideration of these factors provides a basis to compare how the experiences in Hawaii and Victoria parallel or differ from other findings.

### *Energy Resources*

One of the factors most relevant to this research is energy resources. As referenced earlier, analysis at the national level indicates a direct link between a country's underlying energy resource and establishment of climate policy. Harrison and Sundstrom (2010), considering the strategies of six of the largest countries with Kyoto Protocol commitments, and Christoff (2012), comparing the climate policies of the 20 highest-emission countries, both found that established fossil fuel sources associated with high emissions acted as a block to climate policy. Bulkeley's analysis of Australia concluded similarly, citing the strength of the "resource-based policy community" in opposing action on climate change (Bulkeley 2000, p. 736).

Specific work on the role of energy resources at the state level is minimal. The two exceptions noted, Huang et al. 2007 and Lyon and Yin 2010, are empirical studies that test, among other factors, the link between the existence of a coal or oil industry and the implementation of renewable energy targets. Counter to conclusions of the national level analysis, these studies found there was no statistically relevant correlation. This research seeks to address this national versus state finding.

### *Political Institutional Structure*

Political institutional structure, important to this research given the two different jurisdictions, is another factor frequently identified as playing a major role in policy development. A considerable body of policy work indicates the US system is generally more likely to inhibit policy change than Australia's version of the Westminster structure. Two conventions of the Australian system are particularly relevant. First, the Westminster system is based on the concept of "ministerial responsibility" by which the executive arm of the government comes from and is representative of the majority party within the Lower House (Rhodes, Wanna and Weller 2009). While Australia's model is distorted by the incorporation of federalism, the resulting "Washminster" hybrid structure (Thompson 2001) retains the feature of the executive derived from the legislative majority. This differs from the US system in which the executive represents a third and separate arm of government with veto power over legislation. The result is a Presidential system that offers more venue choices and veto options, thereby requiring a greater level of agreement across a more horizontally diffused power base for policy change to occur (Pal and Weaver 2003). A second

feature of the Australian Westminster system is the high level of political party discipline (Brown 2012; Weller 2004). Within one political party, once a policy position is decided, all members of that party commit to advocating the position, regardless of a member's own personal views or electorate preference. Unlike in the US, it is rare that a party member will "cross the floor" and vote against the agreed party policy (Quiggin 2005).

Various environmental policy case studies demonstrate the role of political institutional structure. Sotirov and Memmler (2012) in their consideration of various natural resource policy issues found the greater level of consensus needed under the US system as a block to policy development. Specific to climate policy, Harrison and Sundstrom's (2010) analysis of Kyoto Protocol member states concurred that horizontal dispersion had a predictive impact on policy change but found that the impact of specific federal, or vertical power structures, depended on the interplay of other factors, including public opinion.

Some analysis of the impact of political institutional structures has also been done at the state level with differing outcomes. Burke and Ferguson (2010) found the political institutional differences between US states and Canadian provinces had only a minor impact with two sets of comparisons, Massachusetts versus Ontario and Washington versus British Columbia, demonstrating similar climate policies. Jones (2014) compared Victoria's later climate policies to those of Ontario and argued the fiscal imbalance in Australia's federal system constrained Victoria's policy initiatives.

This research will contribute further to this limited analysis of the role of such structures on state climate policies.

### *Framing*

A third commonly noted driver of climate policy development is the *framing* of the climate change issue. Framing is recognized in several policy theories that consider the importance of how an issue is transformed into a perceived problem and how the problem definition thereby determines possible policy responses and decision venues (Kingdon 2003; Cobb and Ross 1997; Baumgartner and Jones 1993). Specific to climate change, Rabe and Borick (2012) found the characterization of the climate issue as providing environmental and economic development benefits proved beneficial to policy development for US states. They also highlighted the benefit of framing the specific policy response in terms that avoided direct reference to increased cost. For example, carbon taxes proved unpopular while indirect charges, such as renewable energy mandates, were more common.

### *Securitisation*

Securitisation theory argues that once a problem is deemed to represent a security risk to a country, governments are granted exceptional authority to take action to address the risk (Emmers 2010). McDonald (2012) argued the climate change issue was securitized in Australia but failed to result in action because economic risks were

deemed greater. Bang (2010) and Christoff (2012) argued similarly for the US but credited in part the US political structure as the countering block to climate policy.

### *Political Ideology*

Focusing on politics, numerous papers highlight the polarization of the climate change issue and the alignment of climate views with political ideology. McCright and Dunlap (2011) found moderate/left-wing parties are generally supportive of climate policies while conservative parties are more resistant to climate policy progress. Hamilton in his review of Australia noted the “raging battle over climate change between the Left and the Right (Hamilton 2012, p. 726). Rabe and Borick (2009) in their analysis of US states concluded that political party allegiance was the most determinant factor of states’/individuals’ views on climate change. Other empirical studies also support this finding (Lyon and Yin 2010; Chandler 2009; Huang et al. 2007).

### *Policy Broker*

The policy “broker”, also referred to as “entrepreneur”, is identified as a primary driver of climate policy by several authors. Ingold (2011) identified the Swiss Federal Office of Energy as a broker that chose to abandon its original policy preferences to achieve policy resolution. In Australia, Jotzo and Hatfield-Dodds (2013) cite Ross Garnaut and the information he disseminated as a key facilitator of climate policy progress under Prime Minister Rudd. At the subnational level, Rabe (2004) and Rabe and Borrick



(2012) identified the important role of policy entrepreneurs in developing climate policy in many US states and Canadian provinces.

### *Path Dependence*

Knox-Hayes (2012) takes an institutional approach and argues the importance of path dependency in climate policy. She credits Californians' established trust of the state's Environmental Protection Agency (EPA) to implement air pollution controls as the reason California could so readily pass carbon emissions regulation in the form of emissions trading. Though not frequently highlighted in other papers, path dependency is identified as a key feature in relation to Hawaii.

### *Norms, Values and Beliefs*

Any analysis of climate policy development must consider the role of norms, values and worldviews and this is reflected in existing climate policy research. Schreurs and Tiberghien (2007) consider the EU norms of social equity and burden-sharing as a contributing factor to the EU's leadership role on climate change. Leiserowitz (2006) argues that values and worldviews dictated the US public opinion that demonstrated a paradox of concern for climate change but reluctance to take action. Harrison and Sundstrom conclude the climate responses of six countries considered were primarily driven by the voters' "sustained normative commitment" to climate change (Harrison and Sundstrom 2010, p. 286).

Related to values is the role of environmental non-government organisations (NGOs). Several papers found that the ability for NGOs to organize and lobby was key to climate policy success. Schruers and Tiberghien (2007) noted the public funding of NGOs in the EU helped facilitate its leadership on climate change. Rabe, speaking more broadly than just NGOs, referenced the easier ability to form “epistemic communities and policy networks advocating climate policy” at the more local, state level as facilitating progress on climate change (Rabe 2008, p. 107). Empirical studies by Jenner et al. (2012) and Lyon and Yin (2010) supported the role of NGOs, finding a statistically meaningful link between the existence of an active solar lobby group and the implementation of renewable energy targets at the state level.

### **Advocacy Coalition Framework**

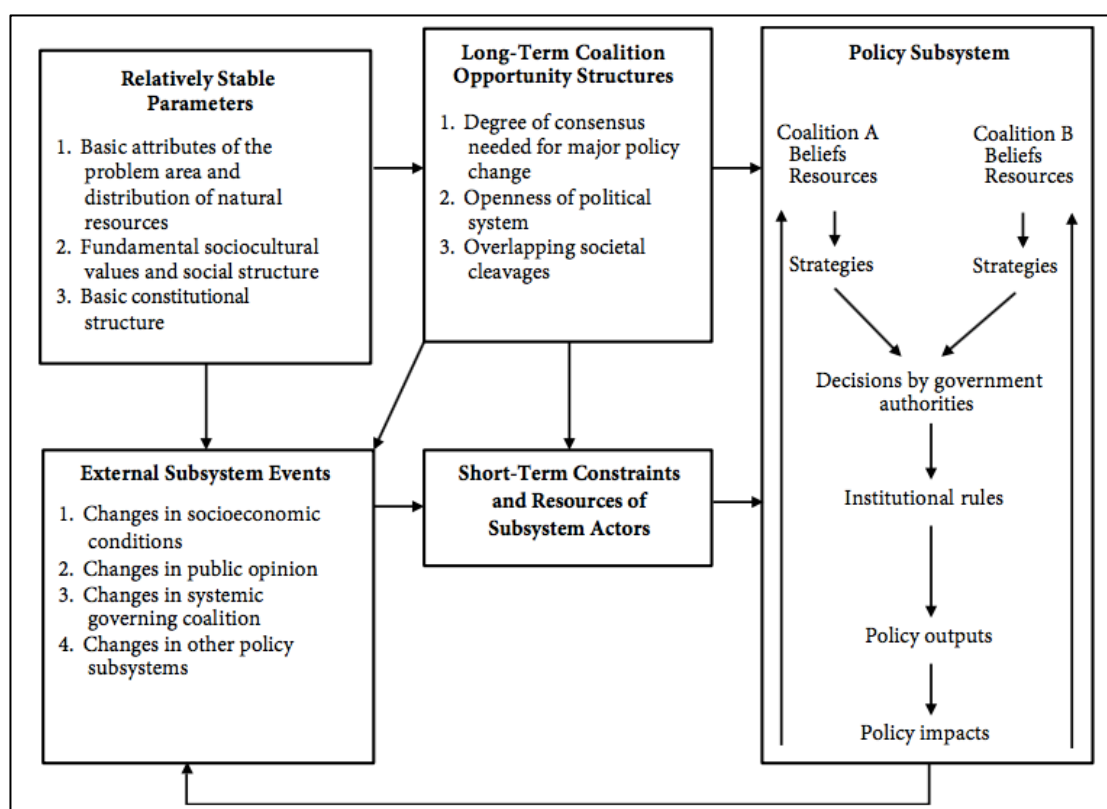
#### *ACF Outline*

Consideration now turns to the framework that will be used to analyse policy development, the ACF, depicted in Table 1 below. Discussion of the ACF is based on work of the original authors, Paul Sabatier and Hank Jenkins-Smith, and their colleagues (Jenkins-Smith et al. 2014; Weible et al. 2011; Sabatier and Weible 2007; Sabatier and Jenkins-Smith 1999, 1993; Sabatier 1998, 1988).

The primary unit of study within the ACF is the policy subsystem. The policy subsystem consists of a wide range of actors that are actively concerned about a particular policy area. Subsystem participants include not only the traditionally accepted “iron triangle”

of administrative agencies, legislative committees and interest groups but also multiple tiers of government representatives, academics and, unlike many other policy theories, the media. The boundaries of a subsystem may be narrow or quite broad, incorporating international, national and regional players.

**Table 1**



*Source: Jenkins-Smith et al 2014, p. 194*

Within the subsystem, advocacy coalitions of actors form based on a system of shared beliefs and a desire to translate those beliefs into policy. The ACF categorises the beliefs in a three-level hierarchy with increasing susceptibility to change. At the primary level are *deep core* beliefs that reflect an individual's basic normative values and ontological beliefs that shape one's personal philosophy of life. Deep core beliefs

are extremely hard to change, equating to a “religious conversion” (Sabatier 1998, p 104). At the next level are *policy core* beliefs, relating to relative value beliefs (for example, environmental protection versus economic growth) and perceptions of where/for whom welfare should be prioritised. Policy core beliefs are specific to the relevant policy subsystem and are slightly more open to change than deep core beliefs. *Secondary aspects*, the ACF’s third tier of beliefs, generally concern parts rather than the whole of the policy subsystem and relate to aspects such as preferred strategies for effecting change and favored policy instrument. Secondary aspects are the most open to change and will be most readily impacted by policy learning.

The importance of policy core beliefs as the “fundamental glue holding coalitions together” (Jenkins-Smith and Sabatier 1994, p. 195) is a core premise of the ACF that has been subject to debate. Discussed in more detail later are questions around the interplay of “self-interest” and core beliefs and arguments around translating individual beliefs into coordinated coalition advocacy. Subsequent reviews of the ACF have also questioned the validity of the three-tiered belief system. Jenkins-Smith et al. (2014) describe the difficulty in identifying, separating and measuring the three different categories of beliefs, in particular the difference between policy core and secondary aspects. A revised application of the framework considers the *Belief Homophily Hypothesis* which assumes coalitions form based on shared beliefs but the belief system is not tiered and additional drivers outside beliefs, such as the presence of a common enemy, may play as important a role in coalition formation (Henry, Lubell and McCoy 2011; Ingold 2011; Matti and Sandstrom 2011). As noted earlier, this thesis has adopted a generalized application of the ACF and, in this regard, the broader

approach to belief definition is adopted. The analysis seeks to identify groups with basic agreement on desired policy outcomes rather than identifying tiered specification.

The ACF posits that policy change operates within the context of four system-wide parameters. Already discussed are *relatively stable parameters*, including energy resources. A second factor, also referenced earlier, is *long-term coalition opportunity structures*, a concept that accommodates differing levels of consensus required for policy change depending on the political institutional system, for example Westminster versus Presidential (Sabatier and Jenkins-Smith 1999). *Short-term constraints and resources*, a third system-wide parameter, captures the evolving power sources of coalitions. As changes occur externally to the system, different coalitions may gain or lose resources, such as funding or legal authority, that give them more or less power within the policy subsystem. Finally, *external subsystem events* references changes, such as elections or a change in public opinion, which may impact the policy subsystem.

Policy change per the ACF occurs as the result of four possible mechanisms: external subsystem events noted above, internal perturbations, including, for example, crises or scandals within the policy subsystem, “policy-oriented learning” and “negotiated agreement” (Jenkins-Smith et al 2014, p. 203). The ACF has a specific focus on *policy-oriented learning* whereby coalitions may alter their beliefs, secondary in particular, based on experience, technical research and policy feedback loops (Sabatier 1988). *Negotiated agreements* may result from a variety of situations including, a “hurting

stalemate” in which opposing coalitions find no other alternative to a mutually unacceptable situation (Jenkins-Smith et al. 2014, p. 203).

The ACF theorises that policy change may result from one or a combination of these factors but such events may not be “sufficient” to result in change. For policy change to occur, a relevant advocacy coalition must mobilise to take advantage of the change, thus improving its position within the policy subsystem. The dominant coalition in a subsystem will impose its beliefs in the form of the policy of its choice. Policy, therefore, remains stable until a new coalition with differing beliefs gains dominance.

#### *Additional ACF Concepts*

The ACF incorporates a number of other concepts relevant to the analysis of climate policy development in Hawaii and Victoria.

As noted above, policy brokers have been identified as playing a key role in climate policy development. The ACF acknowledges this and includes the role of policy broker in its framework. Sabatier (1988) describes the role of a policy broker, an actor, potentially from any coalition, that seeks to achieve a compromise in order to constrain conflict. A broker will typically support more moderate positions within a coalition, with academics and public agents often candidates for the role (Sabatier 1998; Sabatier 1993). The concept of policy broker is also acknowledged in Kingdon’s (2003) Multiple Streams policy theory, defined under the term “policy entrepreneur”.

Though arguably different in technical definition (Ingolde and Varone 2012), the two terms are used here interchangeably.

Two other relevant ACF concepts relate to the developmental stage and delineation of the policy subsystem. In regards to the former, Sabatier and Jenkins-Smith (1999) describe “nascent” versus “mature” policy subsystems. Mature systems have existed for a decade or more, have a “semiautonomous community” of experts on the policy topic and demonstrate “organisational residue”, meaning institutional agencies and advocacy organisations have specific departments or teams focused on the issue (Sabatier and Jenkins-Smith 1999, p. 136). Australia’s tax policy, for example, is a mature policy subsystem with established government departments, the Australian Tax Office, and a variety of lobby groups such as the Tax Institute and the Australian Taxpayers Alliance. In contrast, nascent systems are in the process of developing, having come into being as a spin-off of an existing subsystem or as the result of a new issue coming to the fore.

In terms of defining policy subsystem limits, a subsystem may either overlap with or be “nested” within another policy subsystem. In the case of overlapped subsystems, two policy areas may interact enough that a group of actors/organisations are members of both. With energy generation producing a large percentage of emissions, climate policy generally demonstrates a sizeable overlap between the “energy” policy subsystem and the “climate” policy subsystem. As described by Sewell (2005), such overlap can serve as a block to policy progress if the dominant coalition of one subsystem does not share the same beliefs as the dominant coalition of the other.

Nested subsystems describe the situation in which one policy issue is a subset of a larger issue. ACF literature often provides the example of the automotive pollution policy subsystem being a subset of the larger air pollution subsystem. The Hawaii and Victoria case studies provide examples of both overlap and nesting in relation to energy policy, with Hawaii displaying a counter-intuitive outcome.

### *ACF Considerations*

A number of aspects of the ACF have been questioned and remain subject to debate. One of the original criticisms of the ACF was a lack of explanation of coalition formation in terms of coordinated action among members. The ACF describes coalitions as groups of actors that share beliefs and “engage in a nontrivial degree of coordinated activity” (Sabatier and Jenkins-Smith 1999, p. 120). Schlager (1995) in particular argued there was not clear justification of why actors would agree to cooperate given the transactions costs of working together, disagreement on fair distribution of achieved benefits and the disincentive of the “free-rider” option. Sabatier and Jenkins-Smith (1999, 1993) counter this critique, arguing that the benefits perceived by coalitions are greater than Schlager assumes and costs are over emphasized. In terms of benefits, Sabatier and Jenkins-Smith argue coalitions tend to exaggerate the opposition’s capabilities, a concept they describe as *devil shift*<sup>7</sup>, and this in turn produces a higher perceived value of mutual cooperation. In terms of costs, they reason that coordination within the confines of a shared-belief coalition

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<sup>7</sup> *Devil shift* is the idea that an opponent is considered to be more powerful and more evil than in reality. See Sabatier, Hunter and McLaughlin 1987 for full discussion.



offers a lower transaction cost option than other joint efforts. This question of “coordinated activity” is raised later in relation to the Victoria case study.

Even more fundamental to the ACF is debate around the role of beliefs versus self-interest. Sabatier states, “... the framework explicitly rejects the view that actors are primarily motivated by their short-term self-interest” and argues instead beliefs, which are highly correlated with self-interest, are “more inclusive and more verifiable than interests” (Sabatier 1993, ps. 27, 28). Nevertheless, acknowledging contrary arguments and case study evidence (Nohrstedt 2005; Schlager 1995; Jenkins-Smith, St Clair and Woods 1991), the ACF has recognised the need to place more focus on the role of individual and organizational self-interest (Sabatier and Weible 2007; Sabatier 1998) and has adopted the concept of “purposive” versus “material” coalitions.

Purposive groups form around an ideological cause such as protecting the environment. Such groups are seen to coalesce based on shared core beliefs and are expected to remain stable over time. Material groups, however, form based on “‘bottom-line’ self interest” (Sabatier and Jenkins-Smith 1993, p.223) in relation to achieving specific industry or business outcomes. Sabatier and Jenkins-Smith (1999) acknowledge that, in the case of material coalitions, coordination disincentives such as the issue of free-riding and resolution of distributional conflicts may prove more problematic. As a result, material groups may not be as stable as their purposive counterparts (Jenkins-Smith, St Clair and Woods 1991). It is worth noting that a distinction of purposive versus material groups may not be straightforward with a mixture of member type and motivation. For example, while a right-wing think tank

such as the Institute of Public Affairs in Victoria could be deemed “purposive”, their advocacy of privatization of state owned assets served material, self-interest benefits (Cahill and Beder 2005). Similarly, the Australian Wind Energy Association had material self-interest objectives but was a member of the “purposive” “pro-environment” coalition, as discussed in Chapter 3.

What is not addressed in the above discussion of self-interest is a situation in which a key actor’s apparent core beliefs differ from their self-interest. Nohrstedt raises this question in relation to politicians and their desire to be elected. He concludes, “Sometimes policy makers may compromise policy core beliefs to preserve short-term political interests” (Nohrstedt 2010, p. 320). This, he argues, can particularly be the case when an issue is highly divisive in society at which point the political situation may become the decisive factor. Similarly, “coalitions of convenience” may be established based on self-interest motives. While these coalitions are assumed to be short-lived and unstable, they may be employed as a tool of a minority advocacy coalition desperate to take advantage of an external perturbation (Sabatier and Jenkins-Smith 1999). Australian federal climate policy development provides clear examples of political self-interest (Howard 2013; Readfearn 2013) and coalitions of convenience (Holmes and Fernandes 2012; Rodgers 2010) and such features are anticipated to be evident at the subnational level as well.

#### *Relevant ACF Applications*

The ACF has been previously applied to other climate change, and, more broadly, environmental policy case studies (Elgin and Weible 2013; Ingold and Varone 2012; Ingold 2011; Sewell 2005; Bulkeley 2000). These studies generally undertook empirical analysis to test aspects of the ACF theory, and findings, therefore, focused on the evaluation outcome rather than identifying policy drivers. An outcome relevant to this research, however, is that, across all the cases, two primary advocacy coalitions were identified. Though termed differently, the two coalitions represented a “pro-environment” belief system on the one hand and an “economy as priority” perspective on the other. This division aligns with the ACF conception of *deep core* beliefs that relates to the “relative priority accorded freedom versus equality” that, as noted by Sabatier, represents “ a conflict underlying many policy disputes” (Sabatier 1988, p146). This divide is evident in Victoria while Hawaii provides a surprising, alternative storyline, to which we now turn.

## 2. Hawaii

Hawaii's policy response to climate change developed in two separate, but in ACF terms, nested policy arenas. Act 95, the *Renewable Portfolio Standards Act* of 2004, meets this research's definition of "climate policy". It evolved, however, within a clearly defined *energy* policy subsystem. While providing the additional benefit of GHG abatement, Act 95 resulted from an advocacy coalition debate focused on how energy was sourced, not how best to reduce emissions. The *Global Warming Solutions Act* of 2007, Act 234, developed around a separate issue but with many of the same energy subsystem players. It represented an opportunistic step to formalize the GHG benefits already advanced by Act 95 in the evolving energy policy subsystem.

Outlined below is the background and developments leading to Act 95 within the energy subsystem, followed by consideration of Act 234 in which the specific issue of climate change comes more to the fore. Discussion is presented in accordance with the ACF structure: first the context-setting stable parameters are described, followed by introduction to advocacy coalitions and then a chronologically ordered discussion of key events that impacted coalition balance. Conclusions are then drawn about the drivers of climate policy and applicability of the ACF.

### **Energy Policy Subsystem – Act 95**

### *Stable Parameters*

On 16 November 1886, King Kalakaua made history by illuminating Iolani Palace with electricity (HECO 2017a), making the small island nation of Hawaii one of the first to have electricity in the royal residence and setting the path of energy deployment for decades to come. Within five years, an energy partnership was formed between four “haole”<sup>8</sup> businessmen that became, in 1891, the Hawaiian Electric Company (HECO), the company that continues to be Hawaii’s dominant electric utility to this day.

Along with HECO’s established presence, several other factors constitute stable parameters influential to energy policy development in Hawaii. As of 1992, Hawaii imported oil for 90% of its electricity needs (HDBEDT 1992). Renewable energy played only a small part with biomass used by the sugar refineries providing approximately 8% of energy. The remaining 2% was sourced from a mix of other small renewables plus a fractional but growing amount of coal (HDEBEDT 1992). In terms of consumption, electricity accounted for 32% of Hawaii’s imported oil while transport, in particular the airline sector, consumed a dominant 56%. Focusing solely on the electricity sector, this research will not address the numerous steps taken by Hawaii to reduce transport oil consumption, but its importance and Hawaii’s recognition of the transport issue should be noted.

The structure of the electricity sector in Hawaii remains today largely as it was in 1992.

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<sup>8</sup> “Haole” is a Hawaiian term for a non-native, white person.

HECO and its subsidiaries<sup>9</sup> provide electricity to consumers on all islands except Kauai where Kauai Island Utility Cooperative (KIUC)<sup>10</sup> is the electricity provider. HECO is the considerably more dominant player, providing 95% of the state's electricity (HDBEDT 1992, HECO 2017b). The utilities operate as integrated monopolies in their respective markets, controlling all aspects of energy production and distribution. They are regulated by the Public Utilities Commission (PUC) which has "broadly defined powers and duties" to oversee utility operations including determining "utility tariffs and fees and all aspects of the operation, financing and management of public utilities." (Freedman and Lazar 2003, p. 21). The Division of Consumer Advocacy (DCA) also plays an oversight role, charged with protecting the rights and interests of utility customers (DCA 2017).

Geography and weather are additional features relevant to Hawaiian energy policy. As one of the world's most remote population centres, Hawaii's cost to import anything, including oil, is expensive (Lingle 2014). The islands, separated by deep ocean channels, must each operate independent electricity grids with emergency back-up systems. This lack of efficiency combined with the cost of importing oil results in the high per watt cost of electricity noted earlier. Offsetting this expense is the benign Hawaiian weather. With moderate temperatures throughout the year and cooling tradewinds in summer months, Hawaii's per capita usage of electricity is lower than

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<sup>9</sup> HECO operates on the island of Oahu. Its subsidiaries Hawaiian Electric Light Company and Maui Electric Company operate, respectively, on the island of Hawaii and the county of Maui, including the islands of Maui, Molokai and Lanai.

<sup>10</sup> KIUC was originally the Kauai Electric Division of Citizens Communications, a Connecticut based company (previously named Citizens Utilities). In 2002, this was purchased by Kauai Island Utility Cooperative, which remains the owner today (KIUC 2015).

most US states (HDBEDT-ED 1995, p. 4-7). In terms of policy drivers, this reduced usage offsets to some extent the high per watt electricity cost.

A final broader consideration relates to Hawaii's political structure. Hawaii is known for being a "one-party state" with the Democratic Party dominating politics since World War II (Peng 2017). Currently, 80% of elected officials in Hawaii are Democrats (Peng 2017). This feature, captured by the ACF as a *long-term coalition opportunity structure*, can be expected to compensate in part the otherwise high degree of consensus needed in the US political institutional system. Its implications, however, are not as straightforward in the policies considered.

#### *Status-Quo Advocacy Coalition*

The dominant coalition identified in the Hawaii energy policy subsystem is best described as the "status-quo" coalition. This group formed around the belief that the way things had been done over the past decades was the best way and should continue. Economic, self-interest factors played a role: utilities would not want changes that would adversely affect the financial bottom line. Utility regulation, however, ensured that electricity companies achieved a reasonable return on investment, thereby assuring their continued operation. With financial benefit not at risk, the dominant theme of this coalition was an avoidance of change.

The prime member of the status-quo coalition was HECO and its executives who staunchly supported maintaining the system as it was. As described by Hawaii State

Governor Lingle, “It goes against their [utility] natural grain to want to change. They’re a company that has done things a certain way for... a century. And they don’t want to do it any differently” (Lingle 2014, min. 52). HECO was broadly seen “as slow to embrace change and wedded to oil and coal as generation fuels” (Pintz and Morita 2017, p. 52). The company consistently argued against renewables (Alber 2000; Alber, Tatlinger and Kaya 1998; HDBEDT–ED 1995), promoting instead the need for “conventional generation that can be counted on” (Hirata 2000a, para. 9). Ultimately, HECO, along with KIUC, was identified as one of the “primary impediments to the successful development of renewable resources in Hawaii” (Alber 2000, p. 8-15).

Joining HECO for the majority of the research period were the PUC and the DCA. Counter to their legal mandates of independent oversight and consumer protection, respectively, the two organizations were perceived as being in the “infield” with HECO, sharing a view that the “outfield”, including policymakers, was “lacking in technical regulatory expertise and often ‘loose’ with assertion of facts” (Freedman Lazar 2003, p. 9). Understaffed and underfunded, the PUC and DCA did not “actively or directly” pursue policy matters (Freedman and Lazar 2003). Instead, supporting the efforts of the *status-quo* coalition, they impeded requests for investigations, petitions or applications, referred to as “dockets”, (Alber 2000, p. 8-16) and actively opposed legislation seeking to promote renewables (Hirata 2000b, Menor 2001).

It had been anticipated that the oil and refinery companies would also have been visible members of the *status-quo* coalition. Other than some activity by BHP Hawaii, however, their advocacy was not evident in policy workshop participation (HDBEDT-ED



1995; Alber 2000) or in legislative committee submissions (English 2004; Hiraki 2004; Menor 2004; Inouye 2001; Menor 2001; Morita 2001). It is suggested that these companies, primarily large multinationals such as BHP and Chevron, either did not consider the small market of Hawaii worthy of time-consuming advocacy efforts or remained confident in the coalition's dominant position.

Important in terms of coalition resources, broader features of Hawaii's electricity sector played a role. The energy industry in general involves significant technical issues and, in this area, HECO had far greater resources than their legislative and public service adversaries, putting the latter at a disadvantage when pursuing policy change (Freedman and Lazar 2003). The dispute funding process also favoured HECO and the *status-quo* coalition. If an opponent challenged a docket outcome, the objector bore their own costs whereas HECO could effectively pass on its costs to its customers (Lingle 2014).

Finally, the importance of connections within the small Hawaiian business community proved a valuable resource for the *status-quo* coalition. As one of the longest established companies in the Islands, HECO was extremely well networked. The Chairman of HECO provides a good example. Connie Lau is currently chairman of HECO and the American Savings Bank<sup>11</sup>, Director of Matson Inc and a board member / trustee of the Hawaiian Business Roundtable, Punahou School and the Kamehameha

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<sup>11</sup> American Savings Banks and HECO are both owned by the holding company, Hawaiian Electric Industries, of which Connie Lau is the Chairman and Chief Executive Officer.

Schools Bishop Estate. Each of these is a powerful player in the Hawaiian landscape<sup>12</sup>. Beyond business leaders, HECO was also closely aligned with the dominant Democratic Party, supporting the party and providing executive positions for Party representatives (Pintz and Morita 2017). In a state where “you have to know someone to get something done” (Lingle, cited by Borreca 1998, para. 3), these connections proved extremely valuable.

### *Energy-Security Advocacy Coalition*

Opposing the *status-quo* coalition was what is termed here the “energy-security” coalition. Long before the United Nations tabled the issue of global warming, Hawaii’s economy was directly impacted by the OPEC oil embargoes that saw oil prices jump from US\$20 per barrel in 1973 to as high as US\$119 in 1980 (Macrotrends 2017). This crisis marked the beginnings of a coalition advocating for diversification away from reliance on imported fossil fuels with the primary aim of energy security. The priority was to address Hawaii’s position as “the most vulnerable state in the nation to the disruption of its economy and way of life in the event of a disruption of world oil market or rapid oil price increases” (HDBEDT 1992). Though prioritizing security, the coalition recognized and promoted additional benefits of indigenous renewable

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<sup>12</sup> American Savings Bank is one of three major banks in Hawaii. Matson Inc is the largest shipping company for the Islands. The Hawaiian Business Roundtable is a not-for-profit organization of “top business leaders and senior executives of companies headquartered or maintaining significant business in Hawaii” (CoC Hawaii 2017). Punahou School is considered the top school in Hawaii, holding a “privileged position...in Hawaii society” and recognized “for generations” as the primary educator of “the children of plantation owners, businessmen and politicians” (Kaste 2012, paras. 2 and 4). Kamehameha Schools Bishop Estate is a Hawaiian “charitable trust of unprecedented power, with lines tracing back to Hawaii’s monarchy” (Shapiro 2006, p. 1).

sources, including as a means to “help keep funds spent for energy in the state, provide local jobs and reduce environmental damage” (Alber 2000, p.8-1).

The primary player within the *energy-security* coalition was the Energy Resource Coordinators Office within the Hawaii Department of Business, Economic Development and Tourism (HDBEDT). Established in 1974 in response to the oil price increases, the office was to “orchestrate statewide efforts which maximize energy conservation and alternative energy development” (HDBEDT 1997, p. 1). Per their own description in 2004, “we [HDBEDT] strongly believe weaning the state of its overdependence on imported oil is crucial to our state, its residents and our economy.” (Liu 2004, para 2). This office, through annual reports and energy strategy papers, monitored the energy situation and continued to raise warnings about the risk of energy dependence. Limited by financial resources and technical knowledge, however, its voice was not very loud.

### *The Advocacy Coalition Contest*

Following the OPEC crisis, through the 1980s, Hawaii made little significant progress on energy diversification. Energy use and import oil dependence continued to increase<sup>13</sup> (HDBEDT 1992) while renewable energy production actually declined with the commensurate fall in sugar production<sup>14</sup>. The situation started to change in the early 1990s when several external subsystem events strengthened the *energy-security*

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<sup>13</sup> Reliance on imported oil hit a peak of 92% in 1989 (Alber 2000).

<sup>14</sup> Sugar was historically a primary industry in Hawaii and its use of bagasse, a by-product of the refining process, contributed a peak of 18% of total energy generated in 1962 (HDBEDT 1998).

coalition. First were projections indicating declines in oil availability from Hawaii's existing import locations, Alaska and the Asia-Pacific, raising concerns of greater reliance on "politically volatile Middle Eastern nations" (HDBEDT 1992, p. 6). This concern was exacerbated by projections of higher energy demand due to growing resident and tourist numbers. Finally, devastating impacts of Hurricane Iniki in 1992 caused major power outages and highlighted the risk of an energy disruption to Hawaii's communities and economy.

These combined events put energy independence on the political agenda. Hawaii's Governor declared reducing Hawaii's oil dependence as "essential" (HDBEDT 1999, p. 5), and Hawaiian Federal Senators Akaka and Inouye raised their energy-security concerns with the US Department of Energy (USDoE). Their efforts resulted in a long-lasting partnership between the USDoE and HDBEDT that proved highly valuable to the evolving *energy-security* coalition, both in terms of funding and technical expertise.

As a first step, the HDBEDT/USDoE partnership undertook the Hawaii Energy Strategy (HES), a collaborative project established in 1992 to gain a better understanding of Hawaii's current and future energy situation and to identify potential policy options (HDBEDT-ED 1995). The final report, released in 1995, recommended as a priority additional use of "demand side management" (DSM), a term encompassing energy efficiency and conservation, and increased use of renewable energy, including identification of "a significant number of potential renewable energy projects" on each island (HDBEDT-ED 1995, p. 3-20).

Concurrent with the HES projects, the PUC had implemented “Integrated Resource Planning” (IRP) in response to the 1992 Federal Energy Policy Act that encouraged long-term energy planning. Per the agreed IRP framework, regulated utilities were required to submit plans to the PUC every three years that outlined the utility’s 20-year forecast of how it would meet projected energy demand. In selecting an energy source, the utilities were to consider “benefits of all appropriate, available, and feasible supply-side and demand-side options” (HDBEDT-ED 1995, p. 2-4) and take into account “externalities” such as environmental and social impacts (HDEBDET-ED 1995, p. 2-11).

The HES report and establishment of the IRP process were important to the *energy-security* coalition for several reasons. First, as a result of HES, the goals of “greater energy security” and “an increased proportion of indigenous energy use to improve self-sufficiency” were formalized within the State Energy Policy (HDBEDT-EP 1995, p. 2-11). Second, the scale of the HES process and its development of an energy forecasting model increased HDBEDT’s technical knowledge and, over time, facilitated a more equal-level debate with the utilities. Finally, the HES combined with IRP gave visibility to the utilities’ investment decision process and provided the *energy-security* coalition with tools to hold the utilities accountable to the newly established goals of energy diversification.

The next several years, some would argue decade, demonstrated an ongoing struggle between the *status-quo* coalition holding firm in their resistance to change and an *energy-security* coalition steadily gaining power. Leveraging early federal and state

energy initiatives, solar hot water credits in particular, installation of renewable energy systems was rapidly expanding<sup>15</sup>. This brought new industry players to the islands, augmenting industry associations such as the Hawaii Solar Industry Association and the Hawaii Renewable Energy Alliance. Although their motives may have been more profit than energy security, the “material” renewable companies and industry agencies nevertheless provided added support to the “purposive” advocacy efforts of the *energy-security* coalition.

Joining the renewable industry was a small but increasing environmental community supportive of oil independence. Although the number of Hawaii’s environmental organisations was limited and differing in their priorities<sup>16</sup>, two played a particularly visible role. Life of the Land, a small but vocal organization, and the Sierra Club Hawaii, under the new leadership of Jeff Mikulina, actively promoted action on renewables in the media and testified in state energy planning sessions and legislative committee meetings (examples include TenBruggencate 2003; Mikulina 2002, 2001; Curtis 2001; Inouye 2001; Menor 2001; Alber 2000, HDBEDT-ED 1995).

Additional support for the *energy-security* coalition was gained from agreement on the Kyoto Protocol in 1997. The commitment by the US to a 7% reduction in emissions

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<sup>15</sup> As of 2000, Hawaii led the United States in solar hot water and photovoltaic installations and various industrial-scale wind and geothermal projects were underway (HDBEDT 2000, 2001).

<sup>16</sup> See Curtis 2010 for history of environmental groups. Two of the oldest environmental groups, the Hawaii Audubon Society and the Conservation Council for Hawaii, are focused on protecting Hawaii’s native flora, fauna and ecosystems (Hawaii Audubon 2017; CCH 2012) while a number of others prioritise maintenance of Native Hawaiian culture and heritage, including groups such as Ahahui Malama i ka Lokahi and Malama Hawaii. Even among those focused on reducing oil dependence, there was division on how best to achieve that goal depending on a preferred energy alternative (Pintz and Morita 2017, p. 13).

from 1990 levels by 2012 provided further incentive to pursue renewable energy. The 2000 Hawaii Energy Strategy (HES 2000), a follow-up to the 1995 exercise, applied the Kyoto commitment as a benchmark to consider Hawaii's emissions reduction strategies, including increased renewable use (Alber 2000). This argument was further supported by the actions of other states, ten of which had adopted RPS mandates as of 2001 (Lyon and Yin 2010).

Behind the scenes, operations indicated the *status-quo* coalition remained dominant. Electricity usage per capita was steadily increasing (Alber, Tantlinger and Kaya 1998), and fossil fuels, including an increase in coal imports, still comprised 91% of electricity production (HDBEDT 1998). The IRP process was also identified as failing. From the second round, plans were submitted late and, lacking technical expertise to critique key assumptions, the PUC never formally approved an IRP, leaving a question mark around their relevance (Pintz and Morita 2017). Specific to the goal of energy diversification, it was found that within the IRP process, "renewable options were considered but not adopted" with the utilities citing costs and operational factors as the deterrent (Alber, Tantlinger and Kaya 1998).

Against this resistance but with an increasing power base, the *energy-coalition* was able to achieve a minor victory in 2001 with the passage of Act 272, the *Renewable Portfolio Standard and Net Energy Metering Act*. With the stated purpose being "to lessen Hawaii's dependence on imported oil by encouraging the greater use of renewable energy" (Hawaii Legislature 2001, Section 1), the Act established goals of

7% renewable energy by 2003, 8% by 2005 and 9% by 2010. While the Act was a step in the right direction, the targets were “goals” only with no imposed penalties.

Post 2001, unfolding events continued to strengthen the power base of the *energy-security* coalition. The terrorist attack of 9/11 refreshed Hawaii’s concerns around reliance on oil imports from foreign sources (HDBEDT 2001). The state elections in 2002 also brought a surprise with the election of Linda Lingle, the first Republican governor in 40 years<sup>17</sup>. Counter to climate policy studies that find Democratic Party ideology aligns with support of renewables, Lingle’s Republican platform included promotion of renewable energy. Her support, however, was based not on a desire to reduce GHG emissions but as a means to “reduce our dependence on fossil fuels” (Lingle 2004, para. 178). She took advantage of her gubernatorial powers and appointed new leadership at the PUC (PBN 2003) and DCA (HSW 2003), thus taking initial steps to move these players from the *status-quo* coalition to the *energy-security* coalition.

Finally, the Hawaii Energy Policy Forum (HEPF) was formed under the leadership of the University of Hawaii with the aim of progressing the policy debate on energy security. Playing the role of policy broker in ACF terms, the HEPF, with “... a university secretariat to serve as honest brokers in the discussions” (Pintz and Morita 2017, p. 3), contributed valuable technological and policy background papers to the policy debate.

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<sup>17</sup> Lingle won on the platform of creating “a new beginning for Hawaii” (Star-Bulletin 2002, para 3) against the backdrop of voter dissatisfaction with a weak economy and recent Democratic Party scandals (Broder 2002).



The new balance between coalitions allowed for the 2004 passage of Act 95, *The Renewable Energy and Renewable Portfolio Standards Act*. Designed along the lines of other US state RPS legislation, the Act expanded the goals of 2001, adding targets of 15% renewable energy by 2015 and 20% by 2020, and converted the goals to mandates with penalties. The stated purpose of the Act was to “... decrease Hawaii’s need to import large amounts of oil..” and, in doing so, achieve economic benefits of a reduced trade imbalance and new job creation in the renewable industry (Hawaii Legislature 2004, Section 1).

#### *Post Act 95 – The Hawaii Clean Energy Initiative (HCEI)*

Although the comparative study period of this research concludes in 2007, what became of Act 95 is important in understanding the broader context of renewable energy policy in Hawaii and the prospects for GHG emissions reduction policy. In 2008, with oil prices reaching a high of \$150 per barrel (Macrotrends 2017), causing what Governor Lingle deemed a “choke point” for Hawaii’s citizens (Lingle 2014, min. 7), a major breakthrough was achieved with the signing of the Hawaii Energy Agreement (HDBEDT 2008a). Brokered with the assistance of the head of the state’s Energy Program, Maurice Kaya, and the USDoE (Lingle 2014, Pintz and Morita 2017)<sup>18</sup>, the agreement established a platform for reduced oil dependence and faster development of renewable energy. Among a number of commitments, the agreement specified an enhanced RPS of 25% by 2020 (increased from Act 95’s 20%) and an additional

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<sup>18</sup> See Pintz and Morita (2017) for a thorough discussion of developments leading to HCEI, including the threat by Lingle to remove the Energy Cost Adjustment Clause that allowed HECO to pass on to customers any increase in oil prices.

mandate of 40% renewable by 2030 (HDBEDT 2008b). This agreement laid the groundwork for the Hawaii Clean Energy Initiative (HCEI) and Act 155, that legislated in 2009 the agreed increased renewable energy mandates. HCEI remains active today and facilitated Hawaii's impressive commitment in 2015 to a 100% renewable energy target by 2045.

The HCEI outcome highlights two considerations particularly relevant to this study. First, it places in context the force of Act 95 in 2004. Compared to what Hawaii achieved in 2009, Act 95 was only a small step on a longer journey and could be defined, in ACF terms, as “minor” rather than “major” policy change (Sabatier 1998). Second, developments leading to HCEI set the stage for acceptance of GHG reduction targets, as discussed in the next section.

### **Global Warming Policy – Act 234**

The passage of Act 234, the *Hawaii Global Warming Solutions Act*, succeeded as a result of an opportunity taken as opposed to a change in the dominant advocacy coalition. As outlined below, a series of events laid the groundwork for the evolution of a nascent advocacy coalition contest around climate change nested within the energy policy subsystem. An opportunistic policy entrepreneur leveraged the changing dynamics to establish a climate policy that benefited from rather than altered developments in energy policy.

### *Evolution of a Nascent Climate Policy Subsystem*

Despite global recognition of the climate change issue by 1992, in Hawaii, there was limited response. No major advocacy initiatives were undertaken and, even with renewable energy being promoted for energy-security reasons, the side benefits initially promoted were “pollution reduction” with no specific mention of GHG emissions (HDBEDT–ED 1995). 1997 and the Kyoto Protocol marked a turning point. Hawaii took notice of both international leadership on the issue and the US commitment to a 7% emission reduction. With the help of federal funding, Hawaii, along with other US states, began steps to address emissions within its control.

Within the government, supported by funding from the Federal EPA, work began on a GHG Reduction Strategy that established Hawaii’s GHG inventory and culminated in the 1998 Hawaii Climate Change Action Plan (Alber, Tantlinger and Kaya 1998), an extensive text that set the stage for what appeared to be a developing *pro-environment* change advocacy group. The Action Plan outlined why Hawaii should take action, noting the supportive position of other states and arguing that, despite the state’s relatively insignificant level of emissions, action was need to avoid the risks to Hawaii, including rising sea levels. The Action Plan also set the parameters for managing GHG emissions, arguing only emissions under state control should be considered, thus ignoring air travel, overseas marine transport and military operations<sup>19</sup>. This focus on “domestic” emissions aligned with the energy-security

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<sup>19</sup> The resulting level of “domestic” emissions represented less than 70% of total emissions (Alber, Tantlinger and Kaya 1998 p. 1-4).

focus, facilitating the continued “nesting” of climate policy within the energy policy subsystem. The Action Plan concluded that, “Hawaii should take action to deal with global climate change” (Alber, Tantlinger and Kaya 1998, p. 2.15) and made specific recommendations to establish renewable energy and DSM initiatives (Alber, Tantlinger and Kaya 1998). While the Action Plan had a clear *pro-environment* bias, it placed a caveat that policy options should “not impede or negate other state policy objectives or priorities” (Alber, Tantlinger and Kaya 1998, p. 5-6). Such a disclaimer left room for prioritization of economic over environmental goals.

At the same time, HECO, recognizing the potential for GHG emissions regulation, undertook its own analysis. In 1997, along with other US utilities, HECO signed a climate change partnership with the USDoE and agreed to voluntary efforts to reduce emissions. HECO’s plan focused on improving the efficiency of its existing oil-burning plants, followed by DSM and use of renewables (Alber, Tantlinger and Kaya 1998). HECO also worked with consultants in 1997 to produce the *Hawaii Externalities Workbook* as part of the IRP process. While this report examined electricity’s external costs such as pollution, it “expressed uncertainty about the effects of climate change and did not attempt to quantify external costs of greenhouse gas emissions.” (Alber, Tantlinger and Kaya 1998, p. 7-13). The Workbook concluded that, given the global nature of climate change and the insignificant impact of a single state “it makes little sense for states to develop their own policies” (Alber, Tantlinger and Kaya 1998, p. 7-14), citing HECO’s *Hawaii Externalities Workbook* 1997). This argument against state-level action in deference to national authority is noteworthy and will reappear in discussions of Victoria’s experience.

Despite HECO's resistance, advances on mandates to consider GHG emissions progressed, all nested within the energy realm and largely resulting from HES 2000 recommendations (Alber 2000). A fourth goal of "reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use" was added to the State's energy goals (HDBEDT 2001, p1). To address the identified inadequacies of the IRP process, the requirement to compare "the total costs and benefits of all energy resource options – including efficiency" was highlighted to "... ensure that economic, environmental and social impacts are all considered." (HDBEDT 2001, p. 1). Finally, based on HES 2000 modeling of various GHG emissions reduction policy scenarios, the adoption of renewable energy and DSM initiatives was recommended (Alber 2000).

While these developments indicate the evolution of a *pro-environment* coalition battling HECO as an "anti-climate change" advocate within a climate policy subsystem, evidence indicates no such distinct subsystem emerged. As described earlier, per the ACF, a mature subsystem demonstrates "organisational residue" (Sabatier and Jenkins-Smith 1999). Considering the parties that participated in development of the Climate Change Action Plan and those that testified in the ultimate GHG emissions legislation, Act 234 in 2007, none of the major players, including the government and HECO, had separate departments focused on climate change<sup>20</sup>. The environmental advocacy sector, with the exception of the Sierra Club, was also relatively quiet in regards to climate change, focusing instead on energy independence. Finally, as indicated by the

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<sup>20</sup> The primary author of the Climate Change Action Plan was an "Energy Analyst" within HDBEDT while those participating from HECO were from its Environmental and Renewable Energy Departments (Alber, Tantlinger and Kaya 1998).

media, both in its role as advocate and as news reporter, climate change was not a prominent issue. An index search of the two main Hawaii papers for the period 1992-2006 identified less than 50 articles referencing climate change, greenhouse gas or global warming, with a majority pertaining to climate science<sup>21</sup>.

It is beyond the scope of this thesis to analyse why the issue of climate change did not garner more specific support in Hawaii. Two possible reasons, however, seem evident. First is the possibility that climate change advocates were primarily focused on the issue of energy and believed that, by achieving energy efficiencies and increased use of renewables, the matter of GHG emissions would be dealt with. This expectation largely proved to be the case, as discussed further below. Second, advocacy in Hawaii may generally focus on state-specific rather than global issues. Such a trend has been evidenced in other states such as Louisiana and Florida that prioritized local concerns around toxin contamination and water issues (Rabe 2004, p. 48). Should Hawaii start to experience greater impacts of climate change, the issue may rise on the advocacy agenda.

#### *Act 234 – Hawaii Global Warming Solutions Act*

In the absence of an advocacy contest, Act 234 came into being as the result of a policy broker's initiative in the context of various countervailing events. In 2006, Al Gore released the movie, *An Inconvenient Truth*, a popular explanation of climate change

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<sup>21</sup> The indexed archives of Hawaii's two main papers, the *Honolulu Star-Bulletin* and the *Honolulu Advertiser*, were searched for the terms "climate change", "global warming" and "greenhouse gas".

that raised considerable awareness of global warming (Aldred and Goodchild 2007). In conjunction with the movie, Gore ran the Climate Change Leadership Program, a seminar series to up-skill community leaders (TCRP 2017). Jeff Mikulina of Sierra Club Hawaii attended one of these seminars in 2006 where he learned of California's recently passed *Global Warming Solutions Act*, AB32, that required "California to reduce its GHG emissions to 1990 levels by 2020" (CARB 2014). Mikulina thought such a bill was appropriate for Hawaii and drafted a near copy of AB32 for Hawaii (Pintz and Morita 2017). The bill, HB226, was submitted to the House of Representatives in January 2007.

The bill was debated in the context of factors posing both additional support for and opposition to its objective. Providing support was the release of two influential reports. The Stern Review (Stern 2006), published by UK economist Sir Nicholas Stern, countered the common objection around the cost of tackling climate change by demonstrating the much greater cost of inaction, an economic rationalization that helped the case for emission control mandates. The 4<sup>th</sup> IPCC report (IPCC 2007) definitively linked human activities with global warming and confirmed the sizeable risk posed by climate change. The report increased concerns of both the public and politicians (Oshiro 2007, Thielen 2007) and was specifically referenced in Section 1 of the final Act 234 (Hawaii Legislature 2007). At this same time, both 2008 presidential candidates indicated support for action on climate change, providing the sense in Hawaii that policy in some form was inevitable (Pintz and Morita 2017).

Blocking the potential success of the bill were two primary forces: the continued strength of the *status-quo* coalition and the position of Governor Lingle. Although Lingle promoted renewable energy on one hand, she was staunchly against regulation, a theme of her election campaign that promoted removing “excessive regulation of business by a bloated state government” (Star-Bulletin 2002, para 6). Lingle’s view that GHG controls equated to regulation was reflected by the Hawaii Department of Health (HDoH). HDoH argued in its submission against the bill that the Department was inadequately resourced to manage such expansive and complicated regulation and that it was inappropriate for state governments to take action on what should be a federal matter (HDoH 2007).

The deciding factors for the fate of HB226 was its drafting and the concurrent events in the overarching energy policy subsystem. The final Act 234 allowed substantial room for delay and debate on how it would be implemented (Hawaii Legislature 2007). Two prerequisite steps, determination of Hawaii’s actual emissions inventory and design of an implementation work plan, had to be completed prior to the Act being affected. Separately, negotiations were underway within the energy policy subsystem that would lead to the significant targets agreed under the HCEI. Knowing that higher renewable targets would likely meet the proposed GHG reduction targets and assuming Act 234 would take some time to eventuate, the *status-quo* coalition did not actively fight the bill. There is no media mention of disagreement and, in testimony, HECO provided “comment” but did not oppose the bill (Baker 2007; Menor 2007). With an understanding of the situation similarly to HECO and facing overwhelming



legislative support of the bill<sup>22</sup>, the Governor approved the law. She was also given the incentive of positioning Hawaii as a “first mover”, second only to California, by signing the bill before New Jersey which was considering a similar bill, signed one month later in July 2007 (Cleanenergy 2007).

The final outcome of Act 234 confirms the assumptions of the *status-quo* coalition. By the time the GHG Emissions Reduction Task Force<sup>23</sup> submitted its report in 2009, the HCEI had been established and the Task Force concluded those initiatives were sufficient to meet the proposed GHG targets. It still remained for the HDoH to finalise how the targets would be implemented. Their report was not submitted until 2012, five years after the law was passed and two years past the mandated reporting date<sup>24</sup>.

### **Insights from Hawaii**

#### *Policy Drivers*

Analysis of the development of Hawaii’s renewable energy and GHG abatement laws provides a number of insights relative to climate policy development. First, Hawaii’s experience indicates energy resources do not, at least in the initial policy development

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<sup>22</sup> The House voted 48-2 (with 1 excused) in favour, and the Senate voted 23-2 in favour.

<sup>23</sup> The GHG Emissions Reduction Task Force was the committee established by Act 234 to determine emission levels and design a work plan for achieving reductions.

<sup>24</sup> The HDoH report caused much confusion by proposing an alternative target of 16% reduction on 2010 levels (not Act 234’s baseline year of 1990) that would be imposed only on the major stationary energy platforms (Coffman, Bernstein and Wee 2014). These rules were adopted in 2014. Though the new rules have created conflict between HCEI and GHG emission regulation, it continues to be accepted that the GHG targets will broadly be met as a result of the HCEI program (Pintz and Morita 2017).

period, play a definitive role in climate policy evolution. Although the potential for renewable energy as an alternative to imported oil was promoted as early as 1973, it took until 2008 for true action to eventuate. This runs counter to Christoff's (2012) findings that "energy-import dependent" states were more likely to adopt policies that encouraged use of local, low-emission alternative energy sources. Consideration of other, countering factors may explain the different outcome.

The Hawaii case study indicates that the power of established practice served as a counter-balancing factor that inhibited progress on climate policy. Policy theory categorises such an element as "path dependency", the limitation on current choices by past commitments and traditions (Rose 2005; Streeck and Thelen 2005). The role of path dependency was noted earlier in reference to Knox-Hayes (2012) who found California's EPA's established role as pollution regulator facilitated, rather than blocked, GHG emissions regulation. Path dependency as a "block" to policy development, however, is not typically identified. Rather, policy analysts generally accept path dependency as an assumed constraint to policy change. Rose highlights it as one of the primary risks to successful policy transfer, arguing it is impossible to "ignore an inheritance of programmes dating back centuries" when introducing new initiatives (Rose 2005, p. 104). In the case of Hawaii, however, it is argued path dependency was strengthened and mobilized to the extent that it elevated the *status-quo* position from an assumed deterrent to a legitimate policy driver. This "enhanced" path dependency was a result of a number of factors, in particular HECO's influential network, including its connections with the dominant Democratic Party.

The enhanced path dependency may also relate to the policy development context at the state versus national level. Rabe (2008) observes epistemic communities can more readily form in the state environment. Hawaii demonstrates a different angle to this same argument. In the more limited confines of a state, particularly those that are isolated, established dominant powers that control key assets may be better placed to retain that power. “Hawaii is all about relationships, partly because our culture and the fact that.... we are still a small town” (Sexton 2011, para. 10). Texas’ development of renewable energy legislation, as described by Rabe (2004), demonstrates a similar story to that of Hawaii. Despite differing energy resources, Texas also had a dominant public utility and “captured” regulator that conceded to RPS legislation only as part of an energy-restructuring package to address energy security (Rabe 2004, p. 55). Like Hawaii, the utility dominance may have been enhanced by Texas’ isolation, purposely devised rather than geographic, from other mainland states. This interplay evident at the more contained state level may explain why path dependency can be “enhanced” and play a more active role at the subnational versus national level.

In terms of promoting rather than blocking climate policies, the Hawaii case study gives support to the valuable role of framing cited in other climate policy literature.

Hawaii’s primary legislation addressing climate change is the RPS. This was achieved via the successful framing of the issue as a matter of energy security, prioritizing energy independence and price stability over other economic and environmental benefits. Without this very real security impetus, highlighted by the 2008 oil price spike in particular, it is possible Act 95, the subsequent HCEI and resulting GHG abatement benefits may not have come to fruition.

### *Application of the ACF*

Application of the ACF proved helpful in identifying some of the key drivers of policy change, including the role of external events such as oil price increases and Governor Lingle's election and the importance of policy brokers such as the HEPF and Jeff Mikulina. The ACF's concept of *policy oriented learning* also featured, though the definition may not directly fit. Hawaii's climate change laws were both modeled on those of other states and, in this regard, Hawaii "learned" from others what could be implemented. This behaviour exemplifies the public policy concept of "policy transfer" (Dolowitz and Marsh 2000) and concurs with the assumption in several empirical climate policy studies that states will be influenced by whether or not neighbouring states have existing RPS policies (Jenner et al. 2012; Chandler 2009). The concept of policy transfer fits a broad rather than strict definition of policy oriented learning that focuses on "internal feedback loops" and "increased knowledge of problem parameters" (Sabatier 1993), with a particular emphasis on quantitative data (Sabatier and Jenkins Smith 1999).

The ACF proved less helpful in regards Act 234. By focusing on the "policy subsystem" and events that altered the power base within the subsystem, the framework did not explain the opportunistic nature of Act 234. Here, Kingdon's (2003) "multiple-streams" model of policy development may have been more helpful, pointing to the momentary alignment of a problem (climate change) with a policy entrepreneur (Jeff Mikulina) and

a policy solution (California's AB32). Two considerations may explain the ACF's shortcomings. First is the stage of policy subsystem development. As noted, during the study period, the climate policy subsystem in Hawaii was not mature. Rather, it can be described as a "nascent" subsystem, evolving from a nested position within the energy policy subsystem. Perhaps the ACF proves most useful in analyzing mature subsystems. Second is the relative importance of Act 234. Although the Act was valuable in terms of highlighting the need to consider GHG emissions, Hawaii's more meaningful climate legislation was developed in the energy policy subsystem. Thus the moral debates over distribution of costs and benefits were fought in the energy subsystem, not over Act 234.

### 3. Victoria

In contrast to Hawaii, climate policy in Victoria evolved within a clear climate policy subsystem and with a very different set of stable parameters. Inexpensive electricity, sourced from extensive reserves of readily available coal, was critical to Victoria's economy. As acknowledged by the Victorian Government in pursuit of a response to climate change, "Victoria's economy has historically been founded on a strong manufacturing base, underpinned by low cost, but greenhouse-intensive, electricity generated from the extensive reserves of Latrobe Valley brown coal" (VDNRE 2002a, p. 20). In Victoria, coal was king of power production and also GHG emissions. In 1993 Victoria's electricity sector was responsible for 51% of the state's CO<sub>2</sub> emissions and "almost all of these emissions result from electricity generated from brown coal" (VAGO 1993, section 4.41). Unlike Hawaii, supply was considered very secure with coal reserves estimated to be in excess of 400 years (VDNRE 2002a). Also different to Hawaii, an established grid linked Victoria's supply to energy users throughout the state and, later, around Australia. Within this very different context, the development of Victoria's climate policy subsystem and the debate between opposing coalitions is examined below with conclusions drawn in the last section.

#### **The Advocacy Coalitions**

##### *Pro-environment Coalition*

The issue of the ‘greenhouse effect’ was raised on the political agenda in Victoria as early as 1989. Spurred on by the 1988 Toronto Agreement<sup>25</sup>, the then Labor government outlined the *Greenhouse Action Plan* for addressing the “very real risk of future disruption to economic, social and environmental costs for future generations” (TGU 1990, p. 4). Here commenced the start of a “pro-environment” coalition that aligned its beliefs with the concept of sustainable development<sup>26</sup> and called for immediate action to minimize the mounting risk of climate change.

The blossoming *pro-environment* coalition membership included a range of state-based players from academia and environmental organisations that were supported by colleagues at the national and international level. In terms of academia, the IPCC at the international level and the Commonwealth Science and Industrial Research Organisation (CSIRO) in Australia provided clear voices on the pending risks of climate change, a message that was reiterated by scientists at Victorian based institutions such as Monash University, the CSIRO’s Climate Impacts and Risk Group and the National Climate Centre at the Bureau of Meteorology. Global and national environmental organisations concerned about climate change were also well represented in Victoria with the Melbourne-based Australian Conservation Foundation and Environment Victoria particularly active in calling for action (Burgmann and Baer 2012; EV 2002).

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<sup>25</sup> The World Conference on the Changing Atmosphere; Implications for Climate Change was held in Toronto in June 1988. The resulting “Toronto Agreement” aimed to reduce CO<sub>2</sub> emissions by 20% from 1988 levels by 2005 (Kay 1997). This goal was adopted by Victoria in its 1989 Greenhouse strategy.

<sup>26</sup> Much of the debate around environment versus development in the 1980s was couched in the terms of sustainable development that implied “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Bulkeley 2001, p. 156, citing World Commission on Environment and Development).

Important in terms of resources, the *pro-environment* coalition benefited from the policy position advocated by the Victorian Labor Party<sup>27</sup>, one of the primary Australian political parties, which promoted action on climate change, as evidence by their *Greenhouse Action Plan* of 1990.

### *Economy-first Coalition*

Confronting the *pro-environment* coalition and in dominant control of the policy subsystem was what is termed here the “economy-first” coalition. This coalition prioritized the strength of the Australian economy over environmental concerns. They questioned the validity of climate science, warned of the economic consequences of taking action and advocated a “do nothing” position until other nations also acted, including developing countries such as China. The *economy-first* coalition was led by Australia’s major emissions-intensive industries, including the coal and mining sectors and their industry associations such as the Australian Coal Association, the Australian Aluminium Council and the Minerals Council of Australia. This “carbon lobby”, as it came to be called, had a strong base in Victoria with many of its members, including large mining companies such as Rio Tinto and Western Mining and the influential Electricity Supply Association of Australia headquartered in Victoria’s capital, Melbourne. The carbon-lobby was bounded by a belief that “the [mining] quarry was

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<sup>27</sup> It is noted that, although the Victorian Labor Party promoted policies to address climate change, not all its members would have been *pro-environment* coalition members. The Labor Party was founded and strongly supported by labor unions (McKinlay 1981), including those active in the coal industry. At least some of these individual members may have supported protection of the coal industry over environmental concerns.



sacrosanct, coal non-negotiable. It had to be protected at all costs” (Pearse 2009, p. 31).

Two other important members of the *pro-environment* coalition were the Liberal and National political parties. At the Commonwealth level, the Liberal-National Coalition was in power from 1996 under the leadership of Prime Minister John Howard. They adopted a firm stance of promoting Australia’s economic interest above carbon abatement, particularly if other major trading partners were not also encumbered (Glover 2012; Crowley 2010; Bulkeley 2001). As stated by Prime Minister Howard in regards to the Kyoto Protocol, “For us to ratify the protocol would cost us jobs and damage our industry. That is why the Australian Government will continue to oppose ratification” (cited in Crowley 2010, p 201). At the state level, in accordance with Westminster Party discipline, the Victorian branches of the Liberal and National parties adopted a similar position, disputing the science, arguing against action that would “sacrifice ... thousands of jobs” and promoting instead investment in clean-coal technologies (Parliament of Victoria 2006b, p. 3376, Pearse 2007).

In terms of ACF analysis of coalition resources, the *economy-first* coalition was extremely well placed. The corporate members of the carbon lobby were well funded and able to mount campaigns questioning the science and promoting the potential economic costs of taking action (Burgmann and Baer 2012; Pearse 2007). Having support of two of Australia’s political parties gave political power that was further enhanced by the underlying stable parameter of Victoria’s natural resources. Threatening resource jobs and economic contributions with policies to address climate

change was to risk re-election, an unacceptable outcome in the reality of politics (Compston 2010). The Liberal-National Party coalition stood on safe political ground supporting the carbon-lobby.

With an outline of the two advocacy coalitions, developments are now considered to understand the climate policy outcomes of 2006.

### **The Advocacy Coalition Contest**

#### *The Early 1990s*

The political and popular profile of the greenhouse effect evident in 1989 was short-lived with Victoria experiencing a transformational period during the 1990s that focused on the economy rather than environmental concerns. Historically an industrial economy, Victoria was particularly hard hit by Australia's recession in the late 1980s and suffered from sizeable public debt and soaring interest rates (SMH 2012). Elected in 1992, Jeff Kennett's Liberal-National coalition government undertook a dramatic program, described as being "at the more extreme end of market-based economics", to revitalize the economy (Adams and Wiseman 2003 p. 12). Initiatives included significant cuts to social services and privatization of many public sectors including electricity.

In the midst of this Victorian restructure, the issue of climate change fell from the agenda and was managed in terms of a national response. Endorsed by the states,

including Victoria in 1992, the Commonwealth's *National Greenhouse Response Strategy* promoted voluntary initiatives to achieve the accepted Toronto Agreement emissions reduction goal and adopted a "no regrets" strategy whereby measures taken to address the greenhouse effect were to incur no associated costs (Kay 1997). The no-regrets, voluntary approach suited Kennett's coalition government that focused on privatisation and profits.

Victoria's privatization of the electricity industry during this time is a step that, per ACF analysis, is considered a change in the policy subsystem's stable parameters. As of 1992, Victoria's electricity was produced and supplied by the State Electricity Commission of Victoria (SECV), a government-owned, integrated monopoly. Promoting the benefits of state debt reduction and competition that would provide greater efficiency and lower electricity prices, the Coalition pursued privatization of the industry, selling its Latrobe Valley power plants, the transmission grid and distribution network to various private-sector companies, primarily from the United States (Green 2013; Cahill and Beber 2005; Roarty 1998). At the same time, Victoria and other states established an electricity market that linked Victoria's network with New South Wales in 1997 and later with Queensland, South Australia and Tasmania (AEMO 2016b), allowing wholesale electricity trading across the states. The Office of the Regulator General oversaw transmission and distribution rates while retail pricing, initially regulated, became fully competitive by 2000 (Roarty 1998).

#### *The Kyoto Protocol and Early 2000s*

1997 proved a seminal year in climate policy with the signing of the Kyoto Protocol. Through skilled negotiations around land use and relative cost of abatement (Crowley 2010; Tate 1997), Australia managed to achieve an emissions target of 108% of 1990 levels by 2008-2012. Despite this lenient limit, Australia, like the US, signed but did not ratify the agreement citing its unfair economic burden. In efforts to appease growing public support of action on climate change<sup>28</sup>, however, the Commonwealth Government adopted the lenient target as its framework for climate policies (Glover 2012; Crowley 2010). Policy response included continuation of voluntary initiatives and technology investments plus a new Mandatory Renewable Energy Target (MRET) that required an additional 2% of the nation's electricity to be generated from renewable resources by 2010 (St John 2014).

The Kyoto Protocol served to heighten national and Victorian conflict between the two climate policy advocacy coalitions. The *pro-environment* coalition was empowered by the Protocol that clearly indicated global recognition of the issue and provided international support for advocacy. Environmental groups and think tanks such as the Australian Conservation Foundation, GreenPeace and The Australia Institute were "scathing about Australia's role" and called for government action beyond the agreed target that wasn't "going far enough" (Skelton 1997; Tate 1997, para 4; Skelton and Miller 1997, para 9). In the face of a global treaty, the *economy-first* coalition stood firm, increasing efforts to discredit the science and promote the economic risks of climate policy (Pearse 2007).

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<sup>28</sup> Polls in 1997 and 2001 indicated 80% of Australians believed Australia should ratify the Kyoto Protocol (Crowley 2010, p. 206).

Within Victoria, the profile of the ‘greenhouse issue’ and the strength of the *pro-environment* coalition steadily increased post Kyoto. In 1999, the Labor Party, led by Steve Bracks, won a surprising Victorian election victory (Bracks 2012, SMH 2012). Promising to address adverse impacts of Kennett’s initiatives, Bracks committed to bring back a focus on the environment and to “incorporate environmental and conservation considerations into all aspects of planning” (VALP 1999a, p. 3). On energy specifically, he promised to address the “high”<sup>29</sup> energy prices and blackouts experienced since the industry’s privatization by ensuring “secure supply at affordable prices” but with the added constraint of considering the environment (VALP 1999b, p. 8). This environmental position was supported by the release of the IPCC’s Third Assessment Report in 2001 (IPCC 2001). The report’s dire warnings of rising temperatures, sea level increases and risks of droughts were widely reported in the media and cited by government as a call to action, stating, “The question is not whether climate will change but rather when, where and by how much?” (VDNRE 2002a, p. 6).

Fresh from the election and supported by the IPCC warnings, the Bracks Government took initial steps to address climate change. In 2000, a specific unit, the Greenhouse Policy Unit, was established within the Victoria Department of Natural Resources and Environment (VDNRE) and, in 2002, the Victoria Greenhouse Strategy (VGS) was

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<sup>29</sup> Household electricity prices in 1999 in Victoria were the “second highest in Australia” (VALP 1999b, p. 3), but this was still considerably lower than Hawaii. In 2000, the average Victorian household price is estimated to have been \$0.11/kWh compared to \$0.21/kWh in Hawaii (USEIA 2008). Hawaii’s statistics are sourced from the US Energy Information Administrator. Victoria’s information is difficult to source and an estimate only was calculated from figures recently published (Thwaites, Faulkner and Mulder 2017).

released (VDNRE 2002a). Developed through a year long, consultative process, the VGS nominated fifty-nine action steps to reduce the state's emissions, primarily involving research, educational and funding initiatives. The energy sector was identified as a major source of emissions, and renewable energy, along with efficient coal technologies, were promoted. "GreenPower" programs whereby customers voluntarily paid a surcharge to purchase energy from accredited renewable resources were also referenced as an existing and potentially greater source of electricity emissions reductions.

While advocating a clear *pro-environment* message, the VGS also acknowledged Victoria's reliance on coal and recommended "adjustment paths that take account of the State's circumstances and competitive strengths" (VDNRE 2002a, p. 20). The report also conceded that brown coal would continue to play "an important role in meeting Vitoria's energy needs" (VDNRE 2002a, p. 40). These references, the lack of any firm "greenhouse target" for Victoria and the ongoing consideration by the government of new coal-fired power plants (EV 2002) indicate the continued influence of an *economy-first* coalition.

### *The Climate Change Period*

From 2002, in what could be called "the climate change period" in Victoria, the *pro-environment* coalition consistently strengthened as the result of a combination of factors the ACF identifies as leading to policy change. First was the November 2002 Victorian election. With a campaign platform promising to tackle climate change, the

Bracks Government overwhelmingly won the election in what *The Age* newspaper dubbed a “Brackslide” (Bracks 2012, p. 197), giving Labor control of both houses of State Parliament. The strong victory indicated growing popular support of action on climate change and provided the *pro-environment* coalition with political resources particularly valuable given Victoria’s Westminster system of strong political party discipline.

Kyoto Protocol developments provided further impacts on Victoria’s climate policy subsystem. Russia’s ratification of the Protocol in 2004 brought the treaty into force in early 2005, countering the longstanding *economy-first* argument that, without the US, the Protocol was “all but dead” (Pearse 2007, p 21). The reality of the Kyoto Protocol confirmed a sense of changing times and an acceptance that, “Victoria faces a future in which greenhouse gas emissions constraints and carbon pricing are inevitable” (VDSE 2004, p. i). Despite these international developments, the Commonwealth Government’s policy approach continued to focus on funding new technologies, low-carbon coal in particular, and moved away from emissions trading and renewable targets (Pearse 2007), refusing to extend the MRET<sup>30</sup>. This inaction further motivated the states to consider their own collective response (VDSE 2004).

At the same time, Australia and Victoria, in particular, were experiencing one of the country’s worst droughts, later named the “Millenium Drought”. From 2000 to 2009,

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<sup>30</sup> The *Tambling Review*, commissioned by the Commonwealth Government found that, without an expansion, the existing MRET would become ineffective as of 2007 as a result of the sizeable investment in renewable energy already undertaken. The Review recommended an increase of the target to 20,000 megawatts by 2020. According to media reports, Prime Minister Howard, with the support of “fossil-fuel-based” industry representatives, preferred a low-emissions energy fund (Miller 2004).

low rainfalls resulted in major dam levels dropping to below 25% capacity, significant crop failures, loss of livestock and extreme bushfires (Van Dijk 2012; Heberger 2011). In Victoria, a major bush fire that burnt more than 1.2 million hectares and “precariously low” dam levels were blamed on the drought and, though scientifically not directly linked, the events provided “a preview of conditions that are expected to become more common with climate change” (VDSE 2003, p. i).

During this time, the *pro-environment* coalition employed a framing of the greenhouse issue as not only an environmental concern but also an economic priority. The purpose of the VGS was described as both addressing the “serious threat posed by climate change” (VDNRE 2002a, p. 13), but also to “position Victoria to prosper in a future carbon-constrained economy” (VDNRE 2002b, p. 3). In terms of economic risks, “deferral of action” was portrayed as resulting in “a more difficult and costly task to reduce [the state’s] greenhouse gas emissions” (VDSE 2004, p. i). This framing of the greenhouse issue as an economic opportunity rather than just an environmental risk, a tactic noted in several other climate policy scenarios (refer Chapter 1), served to counter the economic objections of the *economy-first* coalition.

This framing combined with very-real business opportunities facilitated new members joining the *pro-environment* coalition. Major corporates from service industries such as finance, legal and accounting, tempted by the potential profits from carbon accounting and trading, joined the call for action on climate change (Burgmann and Baer 2012). Large industrials such as Origin Energy, Visy Industries and BP Australia, all headquartered in Melbourne, also saw the opportunity and risks posed by climate



change and advocated for rapid action (ABCG 2007; ABRCC 2006). Directly benefiting from moves to de-carbonise, the renewable industry had expanded in Victoria and its industry groups, including the Melbourne-based Business Council for Sustainable Energy, Clean Energy Council and the Australian Wind Energy Association, strongly supported further renewable energy initiatives.

With this increased support and the political authority of the Bracks Government, the *pro-environment* coalition was able to progress its policy agenda. In 2003 an independent advisory committee, the Kyoto Protocol Ratification Advisory Group, convened by the Premiers of Victoria, New South Wales and South Australia, provided a report recommending ratification of the Kyoto Protocol and concluding a domestic emissions trading scheme would be an effective initial abatement tool (KPRAG 2003). Following on this, in early 2004, leaders of all State and Territory governments established a working group to consider the design of a national emissions trading scheme. The resulting committee, the National Emissions Trading Taskforce (NETT), worked over the coming years through a broadly consultative process to design a possible national scheme (NETT 2006).

Also in 2004, the Victorian Government released a position paper, the *Greenhouse Challenge for Energy* (VDSE 2004), which laid the groundwork for the 2006 legislation. The proposed policy platform called for the establishment of a national emissions trading scheme, with or without the involvement of the Commonwealth, the introduction of a Victorian renewable energy target, mandatory emissions reporting to

facilitate emissions trading, energy efficiency mandates and support of low emissions technologies.

Despite these advancements of the *pro-environment* coalition, evidence indicates the *economy-first* coalition remained relevant. In 2005, to the disgust of *pro-environment* supporters, the Bracks Government approved expansion of the Hazelwood power plant (Fyfe and Tomazin 2005). Considered one of Australia's "dirtiest" power plants, the generator had been scheduled under previous SECV plans to be closed in 2005 due to its age and inefficiency (TAI 2005). Instead, the government was now approving an expansion that would completely negate benefits achieved through other climate initiatives (EV 2005; TAI 2005)<sup>31</sup>. The government also waived approval of expansion to Alcoa's Portland Aluminium Smelter, an extremely important asset to the state, providing the single largest source of state export revenue (Birnbauer and Dowling 2006). The expansion debate centred on the fuel source versus economic benefits of increased jobs and export revenue. Additional coal-fired power was cheap compared to gas and renewable energy options but would result in greater emissions. The issue led to a "terrific policy debate" within the Labor leadership (Bracks 2012, p. 239) and was considered the "No. 1 environmental test for the government" by environmental groups (Birnbauer and Dowling 2006, para 5). Ultimately, no decision was required as Alcoa opted not to proceed. Nevertheless, the debate showed the continuing influence of the *economy-first* coalition.

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<sup>31</sup> The Government defended the expansion agreement, which imposed a pollution cap on the power plant, arguing it "struck the right balance between...environmental priorities and the need for a secure and affordable energy supply" (Bracks, cited by Fyfe and Tomazin 2005, para 8).

### **Pro-environment Success**

In 2006, further measures impacting the climate policy subsystem resulted in the *pro-environment* coalition successfully establishing its preferred climate policies. The release of the Stern Review, referenced previously, supported the Victorian argument that it was economically beneficial to take action sooner rather than later (Button 2007). As in Hawaii, Al Gore's *Inconvenient Truth* raised the profile of the climate change issue in Victoria where Premier Bracks met with Gore and his public presentation proved extremely popular (Gettler 2006). Additional media profile of the issue was gained from the government's "Black Balloon" advertising campaign that visualized carbon emissions in the form of rising black balloons. The campaign was considered extremely effective, winning international awards and considered for adoption by other countries (Weekes 2006). Finally, the continued drought and further bushfires were being linked to global warming and gave Victorians a direct feel for its costly impacts (McFadzean 2006; Switzer 2006).

During this time, the popularity of the Greens, a small but growing political party, began to play a role in coalition dynamics. The Greens advocated a tough response to climate change and this position, along with their broad support of environmental and social issues, contributed to a rise of the party's popularity nationally and in Victoria (Burgmann and Baer 2012). Emerging as a player in the 2002 state election, by the

November 2006 election, the Greens, which already held four seats in the Federal Senate, contested seats in every district of Victoria (Bracks 2012)<sup>32</sup>.

With this heightened support for action on climate change and pressure of a looming election, the Labor Government moved forward with a *pro-environment* policy position. On 18 July 2006, the *Victoria Renewable Energy Bill* was introduced that, following on promises of the *Greenhouse Challenge for Energy*, required an additional 10% of electricity generation to be from renewable sources by 2016. In his introduction of the bill, Environment Minister John Thwaites argued the scheme was a “responsible and balanced” step that would address climate change risks and place Victoria as a leader in the renewable energy industry without imposing unacceptable increases in electricity prices (Parliament of Victoria 2006a, p. 2497). The bill *did* reflect a “balancing” act in two clear aspects. First the original proposed bill had 2010 as the target date for achieving 10% renewable energy and this was moved to 2016 in response to existing generators’ concerns (Myer 2006c). Second, the bill exempted Alcoa from its obligations, a fact the government deemed necessary in light of Alcoa’s dominant energy use<sup>33</sup> and contribution to state exports. These amendments and ongoing criticism of the unacceptable imposed costs demonstrate the continued relevance of the *economy-first* coalition.

Countering the *economy-first* resistance was the powerful combination of strong voter support and Victoria’s Westminster protocol of party discipline. With Labor controlling

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<sup>32</sup> The Greens ultimately won three seats in the state’s Upper House in the November 2006 Victoria election, giving them influential deciding votes on policy.

<sup>33</sup> Alcoa’s total smelting operations consumed as much as 25% of the State’s electricity (Birnbauer and Dowling 2006).

both houses of government as a result of the 2002 “Brackslide” and all Labor Party members following party policy, the *Victoria Renewable Energy Target* (VRET) became law in September 2006.

Separately, the government also continued its efforts on emissions trading. The NETT, having delivered a background paper in 2005 followed by stakeholder forums throughout 2005/2006, released its final report in August 2006. The report recommended a trading scheme based on the EU model that, potentially operational by 2010, would reduce emissions by 60% from 2000 levels by 2050 (NETT 2006). The report outlined a preference for the Commonwealth to lead the national initiative but stated it was a “viable alternative” for the states to orchestrate the scheme themselves (Hodgkinson and Johnston 2015, para 17). The Bracks Government went to the 2006 election with a stated commitment to “a national emissions trading scheme in Australia as soon as possible – as early as 2010”, with Melbourne as home to the “carbon exchange” (VALP 2006, p. 6).

The NETT report was met with a mixture of responses. Most *pro-environment* members applauded the plan, but some argued market-based mechanisms were unsuitable environmental policies (Beder 2006)<sup>34</sup>. *Economy-first* proponents criticized the plan both for its unnecessary increased costs on the economy (Myer, Davies and Frew 2006) and the inefficiencies of potentially conflicting state initiatives versus more appropriate Commonwealth legislation (Minchin and Colebatch 2006). Excluding

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<sup>34</sup> This division became more important at the national level, ultimately weakening the force of the national *pro-environment* movement (see The Greens 2010, McCann 2012).

specific negotiations with affected industries, such as Alcoa, this latter argument, that the Commonwealth, not the states, should lead on responding to this global issue, appears to have been the primary argument confronting Victoria from industry (Minchin and Colebatch 2006).

### **Insights from Victoria**

The Victorian case study highlights several insights into climate policy development but also raises several questions.

#### *Policy Driver Insights*

The Victoria case shows that, like Hawaii, the stable parameter of energy resources is not a determining factor in climate policy. Though the benefits of cheap coal certainly were acknowledged, *pro-environment* advocates were able to overcome the *economy-first* coalition's call to protect Victoria's "strong energy base that supplies cheap energy to [its] manufacturing base" (the Hon Richard Dalla-Riva cited in Parliament of Victoria 2006b, p. 3377). This outcome runs counter to the findings of Harrison and Sundstrom (2010) and Christoff that found energy independent nations are "condemned to defend the carbon status quo" (Christoff 2012, p. 225).

In this regard, Victoria demonstrates the importance of advocacy and public opinion in establishment of climate initiatives, a factor identified in other climate policy analysis referenced earlier. It was the public demand for action that led to the rise of the

Greens Party and supported the Labor Party's climate change promises in the 1999 and 2002 elections. The public also demonstrated their desire for action by support of the GreenPower program. Described as "leading the nation in dumping conventional 'dirty' coal-generated electricity", Victorians represented nearly half of all GreenPower purchases in 2006 with GreenPower sales increasing more than 50% (Weekes 2006). It was this type of support that gave politicians room to move against the very clear economic incentive to protect Victoria's cheap coal-supplied energy. Supporting findings of other climate policy analysis, the Victorian case also demonstrates the impact of the Westminster system with its limited veto-points and tight party control. Combined with public support, the two factors allowed the Bracks Government to put through the VRET with no question of defeat.

#### *Coalition Coordination and Privatisation*

The Victoria case study also raises some questions. First is consideration of the role of coordinated advocacy at the state level. The Victorian climate policy subsystem was clearly well developed with two distinct advocacy coalitions. While the membership of the *economy-first* coalition is evident in terms of beliefs expressed by members, the actual level of coordinated activity at the state level is unclear. The Liberal and National Parties along with Alcoa certainly advocated for lenient to no state action. The Liberal Party refuted the need for the VRET, calling it "a form of taxation on the people of Victoria" (Parliament of Victoria 2006b, p. 3376). The Nationals Party concurred, claiming investment in new technologies was the better policy path

(Parliament of Victoria 2006b, p. 3372). Alcoa, having won exemption from the Act, was a successful, but perhaps independent, *economy-first* coalition member.

What is unclear is how strong other members, such as Western Mining, Orica and the Institute of Public Affairs, all headquartered in Melbourne and all members of what Hamilton termed “the Dirty Dozen”(Hamilton 2006), advocated against action to the state government. They were very active at the Commonwealth level (Hamilton 2007; Pearse 2007), but it is unclear how much time and energy they focused on state initiatives. Criticism of the VRET and NETT in the media focused on the need for federal rather than state-based responses to climate change (Minchin and Colebatch 2006; Murphy 2006; Myer 2006a, 2006b; Hopkins 2004). As concluded by the Chief Executive of the Energy Supply Association, “what we really need is a single national policy” (Page, cited in Minchin and Colebatch 2006, para 9). Submissions to the *Greenhouse Challenge for Energy*, the document that originally recommended both a renewable target and an emissions trading scheme, confirm the media picture. The primary criticism of the majority of submissions opposing the strategy was the need for a national versus state based approach to climate policy (GPU 2004). As summarized by the Latrobe Valley Generators, “The Victorian Government should not seek to impose targets and timetables outside the national policy framework” (LVG 2003, p. 2). It is possible that the *pro-environment* coalition had a louder voice in Victoria because the *economy-first* coalition was busy fighting the “bigger fight” at the national level. Certainly the *economy-first* coalition at the national level was very



coordinated and fought a successful battle that ultimately blocked substantive progress on climate change<sup>35</sup>.

The argument that *economy-first* members focused priority at the national level aligns with findings elsewhere. Rabe (2004) concluded that states provide a fertile ground for climate policy implementation because the lack of attention focused at the subnational level. “Many national interest groups ... have essentially ignored what states were doing and instead assumed the real action was occurring in Washington D.C.” (Rabe 2004, p. 23). Byrne et al. concur with this finding, highlighting the “differential power of the energy lobbies at the federal level” (Byrne et al. 2007, p. 4566). They argue this national focus is a result, at least in part, of the national and even international scale of these business groups. The Victorian case provides an example of exactly this situation.

A second question raised by the Victoria case study is to what degree did privatization of the electricity sector facilitate climate policies, renewable targets in particular. While political forces typically aligned with neo-liberal privatization ideologies would not be expected to promote climate policy agendas, several arguments support such an alignment in respect of renewable energy targets. Reviews of restructuring in the electricity industry note the link between deregulation that creates a competitive, innovative environment and the encouraged acceptance of new generation sources,

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<sup>35</sup> See Talberg, Hui and Loynes (2016) for a timeline of tumultuous events leading to the passage and subsequent repeal of the Clean Energy Act and the implementation of the ongoing, voluntary Emissions Reduction Fund, the centerpiece of Australia’s emissions reduction policies (ADEE 2017).

including renewables (Kleit 2016; Nepal and Foster 2015; Rabe 2004; Warwick 2002). The loss of state ownership also can make state regulators more open to instituting additional controls such as renewable energy mandates and emission caps as a means of managing the energy supply. Lyon and Yin (2010) suggest both these arguments to explain the positive correlation they identified between US states with deregulated energy sectors and the adoption of renewable energy mandates.

Counter arguments suggest privatization was not a primary factor in Victoria's climate policy establishment. The national electricity market established in conjunction with privatization meant Victoria's generators were now competing with electricity from other states. This fact should have increased advocacy, particularly on the part of now-privately-owned generators, for prioritization of Victoria's cheap coal-fired electricity. In addition, as acknowledged by Lyon and Yin (2010), the imposition of renewable and emission mandates is more easily done by government on a state-owned entity. To reach a final conclusion on this point, it is worth considering the situation in Hawaii. A comparison of lessons from the two states is the focus of the next and final chapter.

## 4. Comparative Analysis: It's All About the State

The case studies of Hawaii and Victoria provide a range of comparative insights to the key drivers and constraints of climate policy development and, more broadly, to state level policy development and ACF application. A discussion of findings and suggestions of areas for further research is provided below.

### **Energy Resources and Counter Balancing Factors**

The case studies of Hawaii and Victoria give a clear indication that the stable parameter of energy resources is not a determining factor in development of climate policies. Victoria, having access to low-cost energy from its abundant brown coal resource was not deterred by the risk to its economy of altering that energy supply in the name of carbon abatement. Hawaii, on the other hand, was not historically incentivized to move from near-complete dependence on expensive, imported oil to low emissions, native renewable resources. As noted, this conclusion runs counter to the findings of various national-level comparisons.

### ***Counter-Balancing Stable Parameters and Drivers***

This counter position demonstrated by Hawaii and Victoria gives rise to a number of considerations. First is the role of other balancing drivers at play in the respective

policy subsystems. In the case of Hawaii, several other stable parameters offset the risks of oil-dependency. Hawaii's "enhanced" path dependency is identified as a factor that blocked the state's progress on carbon abatement initiatives. Defined as "legacies of the past" that "weigh on choices and changes in the present" (Streeck and Thelen 2005, p. 6), this enhanced path dependency itself can be classified as a stable parameter which the ACF defines as constraints that "limit the range of feasible alternatives" (Sabatier 1988, p135).

Hawaii's geography also played a role as a counter-balancing stable parameter. The fact the islands' electricity grids could not be connected provides a legitimate technical argument, particularly in the early years, against renewable deployment. Even today, the inability to link the major renewable sources, such as wind on Lanai, with the population centre on Oahu remains a concern for meeting aggressive renewable targets (Pintz and Morita 2017). Hawaii's comfortable weather and resulting low electricity usage also insulated residents from the perceived risk of oil reliance. Incorporating these other fundamentals, including enhanced path dependency, into the concept of stable parameters counter balances the incentives offered by Hawaii's energy resources.

Victoria presents a different situation in terms of offsetting factors. In its case, the combination of increasing popular support for action on climate change combined with the Westminster political system that is more conducive to policy change counter-balanced the disincentive of inexpensive coal. In ACF terms, the impact of the Westminster system is captured within *long-term coalition opportunity structures*

while the change of public opinion is considered an *external subsystem event* capable of catalyzing policy change.

Combined, the Hawaii and Victoria case studies indicate that stable parameters must be taken as a whole and other policy drivers and constraints considered when observing the influence of energy resources on policy development. The case studies reinforce the need for researchers to refrain from the temptation to focus on the more visible and presumed relevant parameters in policy change.

#### *Timing as a Factor*

A second aspect of the findings relates to timing. As noted in the research description, the selected time period studies the early phase of climate policy development with the intended purpose of understanding key drivers in this initial period. It is proposed that in early development of a policy subsystem, energy resources may not play as critical a role in motivating policy change, but, over time, their relevance becomes more apparent. While both states had relatively similar policies as of 2007, the position changed subsequent to the study period.

In Hawaii, once the initial block to progress was removed, the state embraced the transition to native, low-emissions energy sources. Today, 23% of Hawaii's energy is produced by renewables (HDBEDT 2016) and, in 2016 the state adopted a 100% renewable target. In Victoria, abatement policy steps progressed, including pending legislation for a 45% renewable target (Vorrath 2017), but the importance of coal, a

factor always acknowledged, remains visible. The government has taken no direct steps to close the major coal-fired power plants<sup>36</sup>, Victoria has achieved only 14% renewable energy production (Andrews 2016) and brown coal continues to provide approximately 85% of generation (D'Ambrosio, cited in Parkinson 2016). Further research across a larger case number and spanning a longer study period would be necessary to confirm the role of timing relative to the import of energy resources on climate policy development.

A further consideration as to why the stable parameter of energy resources was not so critical relates to the jurisdictional level, a topic discussed below in relation to state versus national level policy making.

### *Electricity Restructuring and Framing*

One final consideration of counter-balancing policy drivers is the role of electricity restructuring. Comparative analysis suggests that, further to the discussion of pros and cons in the previous chapter, deregulation may have aided policy development, particularly in relation to renewable energy targets. The Hawaii case study highlighted the role of enhanced path dependency in blocking climate policy progress. It is likely that Victoria, prior to privatization of the industry, also exhibited a high level of path dependency. The SECV had been operating since 1920 and the sizeable revenue from

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<sup>36</sup> The Victorian Government approved the extension of the Hazelwood Power Plant in 2005 (as discussed in Chapter 4) until 2030. The plant closed in 2017 as a result of its owner, the French company Engie, deciding the plant was uneconomic to continue operation (Anderson 2017).

its operations, contributing more than \$1 billion to the state's budget in its last year of operation (Green 2013), would have been highly valued by the Victorian Treasury.

Here the role of framing comes into play. In the United States, electricity sector restructuring initiatives were consistently framed as economically beneficial, improving efficiencies, driving innovation and reducing costs to the consumer (Warwick 2002). In Victoria, the Kennett Government pursued a similar framing against the backdrop of a state in financial crisis (Green 2013; Cahill and Beder 2005). Though highly contested, it was this powerful economic framing that facilitated implementation of privatization. This restructuring arguably achieved two steps that aided acceptance of renewable energy targets. First, as discussed earlier, deregulation established a more fragmented industry structure that encouraged innovation and promoted the entry of new energy producers, including renewables. Second, relative to the issue of path dependency, privatization broke the hold of the *status-quo*. Had restructuring not occurred, the battle for low-emissions energy would have been waged in a more difficult context, confronting *status-quo* interests in addition to the *economy-first* coalition.

### **Institutional Political Structures**

#### *Westminster vs Presidential and Importance of Leadership*

Operating in two very different institutional political structures, Hawaii and Victoria provide several unexpected insights into the impact of these structures on climate

policy development. The first relates to the influence of the Westminster versus presidential political system. As described earlier, a sizeable body of policy work at the national level supports the conclusion that the Westminster system, with its limited veto points and party control, is more conducive to policy change. While the Victorian case study is generally supportive of this finding, combined, the two case studies suggest the greater influence of political leadership at the state level. In the Victoria case, Premier Bracks and Deputy Premier Thwaites were environmental proponents who convincingly led the public and their party in the belief that addressing climate change was not only the right thing to do but could also provide the state with economic benefits (Jones 2014). It could be argued that the Bracks Government, given the level of public support, could still have passed the VRET legislation even in an equivalent “Presidential” system, although perhaps with less confidence. The Hawaii case study also evidences the importance of political leadership. Lingle, a Republican Governor, faced a dominant Democratic state legislature but still managed to achieve passage of the renewable energy mandate with a sizeable majority in favour. Admittedly, other factors were involved, particularly the declining influence of the primary *status-quo* proponents. Nevertheless, the role of leadership is evident.

Other studies undertaken at the subnational level also indicate the importance of leadership relative to political institutional structure. In a comparison of two Canadian provinces to two US States, Burke and Ferguson (2010) found similar policy outcomes despite the differing political institutional structures and identified a driving factor, particularly in the comprehensive climate policies of British Columbia and Washington, to be the leadership of the respective Premier and Governor. Rabe



(2004) also highlighted the role of governor leadership in several of his “prime-time” US case studies. While these are limited examples, the evidence hints that, at the state level, the implications of political structure are less important than leadership.

### *Federalism*

A second consideration from the case studies relevant to institutional political structures is the impact of the federal-state interplay. Here the two case studies demonstrate responses counter to expectations, but provide support of the benefits of federalism. Federalism in Australia, as discussed earlier, is recognized for its high level of centralization, vertical fiscal imbalance and relatively good coordination among the states. In comparison, the United States’ federalism, while also demonstrating centralization, provides more financial independence to the states and exhibits less coordination (Parker 2015). Based on these parameters, one would assume Victoria would be more dependent on the federal government and Hawaii less reliant. Yet the opposite is reflected. Although it welcomed and encouraged Commonwealth involvement, Victoria acted in complete independence from – almost rebellion against – the Commonwealth Government. Victoria pursued policies, including the VRET and other energy efficiency mandates, that could cost the state more despite its heavy reliance on the Commonwealth for state funding. Hawaii, on the other hand, was supported by and relied on the Federal Government for much of its work on renewables and climate change including the IRP process, both the 1995 and 2000 HES, the Climate Change Action Plan and, ultimately, the HCEI.

Separately, the case studies of Hawaii and Victoria both support the benefits of “competitive federalism”. Twomey and Withers (2007) describe federalism as providing a competitive environment among states that drives policy innovation, a feature they argue results in overall better national policy<sup>37</sup>. Although Victoria certainly coordinated with other states, particularly in relation to the NETT, the state demonstrated competitiveness with its consistent push to position itself as being the leader on climate policy. Hawaii also demonstrated the impact of state competitiveness. Governor Lingle’s quick signing of Act 234 was driven in part to beat New Jersey while the state’s adoption of both Act 234 and Act 95 shows the benefits of learning from other states that have already successfully implemented a program.

The two case studies also support the benefits of federalism as a structure to locally manage broader issues such as climate change. Federalism is credited with facilitating “tailored” policy responses “to meet the needs of people and communities they directly impact” (Twomey and Withers 2007, p. 4). Brown (2012) argues this feature is particularly relevant to climate change in which “...GHG emissions as a phenomenon is global”, however “...the sources of GHGs could not be more locally and regionally specific” (Brown 2012, p. 324). Brown’s argument is supported by work of others who cite examples of subnational entities implementing a diverse range of climate policy responses suited to their own specific situation (Burke and Ferguson 2010; Rabe 2008, 2004; Byrne et al. 2007). Rabe concludes that, “collectively, these [state] policies indicate alternative ways to address global climate change that may be particularly

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<sup>37</sup> Competitive federalism also has its critics who argue its implementation can result in overlap, delays and inefficiencies (PC 2006).

relevant for a nation as physically large and economically diverse as the United States” (Rabe 2004, p. 4). The Hawaii and Victoria case studies provide additional examples of states playing a role in climate policy development. While not all states may prove to be policy leaders, such as Louisiana cited in the introduction, the bottom-up action by some could ultimately drive federal policy that seeks to harmonise disparate state legislation. In line with this thinking, Selin and VanDeveer (2007) predict US federal climate policy will eventually progress because the initiatives already in place at the subnational level.

### *State Policy-making*

Perhaps most important, a final consideration of institutional structures relates to how policy is made at the state versus national level. Both case studies demonstrate a different policy development environment with three particular features. First is the potential for the “small town” environment of states, particularly those that are isolated, whether geographically or figuratively, to experience “enhanced” path dependency. Such was evidenced in Hawaii and in Rabe’s (2004) description of Texas. Second is the ability for states to more readily facilitate consensus building under leadership of a key political figure supporting efforts of a policy broker. Burke and Ferguson describe exactly this in regards to British Columbia and Washington, referenced earlier, where the respective political leaders facilitated “networks of engaged supporters and legislators who share in ownership of the climate change agenda” (Burke and Ferguson 2010, p. 452). Rabe also cites various examples of this, including Wisconsin and New Jersey, and summarises that, at the state level, policy

brokers “built coalitions that seem almost unthinkable when weighed against the past decade of federal-level experience” (Rabe 2004, p. 151). Developments in Hawaii support this model with the HEPF, and later Maurice Kaya and the USDoE, facilitating collaborative discussions that led to Act 95 and subsequently the HCEI. While the direct role of “consensus building” is not as evident in Victoria, the “balancing act” of the government is indicative of negotiations to tailor a policy that could be accepted. Here, the Westminster system may come into play and the importance of cabinet politics in Australia may supersede the role of the policy entrepreneur in the United States. Finally, as argued in the Victoria case study, the state level may present less resistance from lobbying efforts of *economy-first*, “material”-type coalitions that focus energies on national rather than state policy development. The result, per Rabe, is that state climate policy debates do not display “the kind of anguished, often moralistic, rhetoric that has polarized national debate and made any semblance of consensus at that level so elusive” (Rabe 2004, p. 23).

While these state specific features have a counter balancing impact, combined they may provide an explanation of why national climate policy literature identifies a link between a jurisdiction’s energy resource and climate policy development but state analysis does not. Two of the noted state features – the enhanced ability to build consensus and the reduced force of material lobby groups - should facilitate policy change at the state level. The potential for enhanced path dependency, however, would serve as a block. Nevertheless, each of these features at the subnational level play a role in offsetting the incentives provided by the energy resource. At the national level, however, these features do not come into play. In the broader realms

of a larger nation, path dependency is less likely to be “enhanced” by a dominant player. Similarly, at the national level, the full force of material advocacy groups is applied, inhibiting the ability to foster genuine consensus building. As this research only considers two case studies, a more expansive study of the role of energy resources in subnational state policy would be needed to confirm this state level interplay.

### **Application of the ACF**

#### *ACF as a Comparative Policy Tool*

First and foremost, the ACF provided a practical and useful tool for comparative policy. By establishing a clear framework including stable parameters, coalition opportunity structures and a focus on the policy subsystem, the theory provided a sound base for comparison of the situation and developments that led to policy change in two very different jurisdictions, including identification of countervailing forces to the impact of energy resources.

Applying the ACF across separate policy jurisdictions, however, requires attention to original investigative assumptions. It was assumed a mature *climate* policy subsystem existed in each of Hawaii and Victoria given new “climate polices”, as defined in this research, were identified in each. Such was not the case. What evolved was a comparison of a mature climate policy subsystem in Victoria versus an energy policy subsystem and nascent climate subsystem in Hawaii. As a result, for Hawaii, rather

than looking for the standard *pro-economy* versus *pro-environment* coalitions identified in other ACF studies (refer Chapter 1), the energy policy subsystem revealed a different set of coalitions competing over different beliefs. While ACF analysis across both jurisdictions provided the relevant information, the lesson remains: a researcher cannot assume that similar policies from two different jurisdictions evolved in an equivalent genre of policy subsystem.

### *Stable Parameters*

This research found that the stable parameter of energy resource did not serve as a definitive policy driver. Nevertheless, the research indicates that stable parameters, taken as a whole and considered over a longer time frame, have a determining influence. The level of influence and the impact on behavior of subsystem members, as questioned by Henry et al. (2014), remains open for investigation.

### *Value of Resources*

The two case studies support existing ACF literature identifying coalition resources (Sabatier and Weible 2007) and hint towards some relative values. The value of skillful leadership and formal legal authority are demonstrated by the contributions of both Governor Lingle in Hawaii and Premier Bracks in Victoria. Weible et al. (2011) question whether some resources are more important than others depending on the governing system. Per the earlier discussion around leadership, the case studies indicate this

resource is particularly valuable in the Presidential versus Westminster system. Public support also served as a particularly valuable resource to Victoria's *pro-environment* coalition and, arguably, in the face of extremely high oil prices, provided the final push needed by the *energy-security* coalition in Hawaii. Countering this in Hawaii, a key resource of the *status-quo* coalition was their well-established connections across business and political leaders, a strength the ACF neatly captures as "mobilizable supporters" (Sabatier and Weible 2007, p. 203). These influential supporters combined with superior technical knowledge, another valuable resource identified by the ACF, gave the *status-quo* the upper hand for decades.

#### *Shared Beliefs vs Self-interest*

The ACF posits that, as described in Chapter 1, shared beliefs are the glue that binds advocacy coalitions and that, other than as a display of an underlying core belief, self-interest does not play a role. The divisive and politically charged nature of climate change, however, raises the profile of self-interest. Consideration of Australian climate policy, for example, indicates the apparent betrayal of then Prime Minister Kevin Rudd of his *pro-environment* beliefs in an effort to retain his leadership position (Hudson 2016; Whittaker 2010). Such self-interest was expected to be evidenced in one or both of the state case studies.

The opposite proved to be the case. The key politicians involved in climate policy development in Hawaii and Victoria demonstrated, not self-interest, but strong leadership. Both Lingle and Bracks ran on political platforms that promoted their

beliefs: in the case of Lingle, the need to diversify energy sources to achieve energy security and, in the case of Bracks, the desire to “make Victoria a world leader in greenhouse-friendly initiatives” (VALP 2002, p. 4). While Bracks’ beliefs also served his inter-related self-interest of being elected, both leaders moved forward with policies reflecting these beliefs. This is a refreshing finding and renews faith in politicians and their ability to champion the beliefs of a relevant advocacy coalition.

### *Application at the State Level*

A final learning from the application of the ACF to the Hawaiian and Victorian case studies raises a concern around applicability of the ACF to policy development analysis at the state level. Discussed earlier is the concept that policy-making unfolds differently at the state versus national level with advocacy against climate change initiatives being less coordinated and therefore less forceful at the state level. If this proves correct more generally, it indicates that the appearance of “economy-first” type coalitions in a state-level policy subsystem may, at a minimum, have their level of coordination and resulting strength overestimated by straightforward ACF analysis. Admittedly, the ACF acknowledges the difference between “purposive” and “material” coalitions and argues that material coalitions, such as the *economy-first* group, are less stable than their purposive counterparts. Operating at the state level may exacerbate this instability given the potentially differing perceptions among coalition members of state policy importance. However, at the extreme, such a state-based material group may not technically meet the definition of an advocacy coalition that not only shares



beliefs but also demonstrates “a non-trivial degree of coordinated activity over time” (Sabatier 1988, p. 138).

It is also noteworthy that the ACF was not well suited to understanding the policy development process leading to Act 234 in Hawaii. This may also relate to the different dynamics at the state-level. The extent of overlap between the energy and nascent climate policy subsystems, as evidenced in Hawaii, could be expected at both national and state jurisdictional levels. The potential for a policy entrepreneur, however, to leverage such an opportunity as in the case of Hawaii can be considered more likely in the smaller, contained jurisdiction of a state compared to the national level “known for its penchant for institutional gridlock” (Rabe 2004, p. xi).

Having raised the concern of applicability at the state level, it should be noted that the ACF has been applied at the state level in numerous instances. These applications, however, indicate some caveats. First, state application is limited. Of the 87 ACF applications cited by Sabatier & Jenkins-Smith (1999) and Sabatier & Wieble (2007), less than 15 are at the subnational level. Second, the bulk of these state studies relate to policies very specific to a region with limited impact on national policy, for example, San Francisco Delta water policy in California (Zafonte & Sabatier 1998) and water pollution in Puget Sound (Leschine, Kent and Sharma 2003). Third, in at least one case where there was crossover with federal policy, the ACF was applied in conjunction with Kingdon’s Multiple Streams theory (Grant 1995). In conclusion, it is suggested that the ACF remains a relevant policy tool at the subnational level but the researcher

should be alert to implications of state level policy-making, including the potential for reduced material advocacy coordination.

## **Conclusion**

This research set out to understand the relative importance of a region's underlying energy resource on climate policy. It was hoped this analysis would help explain why some states successfully adopted climate policies while others remained reticent. The states of Hawaii and Victoria were chosen given their opposing energy resources, providing a natural incentive for one and disincentive for the other to take action. The state level was chosen to give a more precise understanding of the role of energy resources, less obscured by other factors that may conflict in a geographically larger and diverse national context.

While each case study provided various insights supporting or questioning the observations of previous climate policy studies, what developed as the key findings related not so much to the specific case studies selected but to the jurisdictional level chosen. The MDSD comparative study method seeks to maximize differences to identify the similarity that results in the observed similar outcome. In the case of Hawaii and Victoria, the one similarity appears to be the level of analysis: the state. For Hawaii, the incentive of abundant renewables as an alternative to oil-dependence was outweighed by the strength of path-dependence, fortified by the "small-town" confines of an isolated state. For Victoria, the lure of inexpensive coal-fired power was

countered thanks to a subnational policy environment that limited the force of the *economy-first* advocacy.

Rabe (2004) and others have lauded the role of subnational entities in dealing with climate change. Nevertheless, most climate policy focus remains at the national and international level. Quite unexpectedly, the findings of this research supports the importance of the states and Rabe's observation that, although "these state programs...lack the political sex appeal of an international trading regime", combined, the state policies "indicate alternative ways to address global climate change that may be particularly relevant for a nation as physically large and economically diverse as the United States" (Rabe 2004, p. 4). To that comment, this research would add Australia.

Having identified the role of states as a significant factor in climate policy evolution, the import of the other key drivers identified should not be ignored. The impeding role of "enhanced" path dependency was unexpected with limited coverage in existing climate policy research, as was the potential influence of electricity restructuring. In the event subnational entities, and even isolated, island nation-states, need to play a greater role in climate policy response, path dependency may become more evident and will need to be actively addressed. The case studies, Victoria in particular, supported the well-documented role of public opinion and the Westminster system in climate policy development. The research, however, also highlighted the importance of leadership and consensus building at the state level.

Combined, the case studies demonstrate that, regardless of underlying energy resource, at the state level, climate policy can progress. While further research would be needed to determine whether these findings could be generalized, the outcome is encouraging for the broader objective of addressing global warming.

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