Analysis

Australia's sustainable energy transition: The disjointed politics of decarbonisation

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A B S T R A C T

This paper considers Australia's climate and energy policies over the period 1988–2013 and assesses the degree to which these two policy domains have co-evolved to define Australia's low carbon energy trajectory. It finds that climate policy and energy policy have largely been dissociated from one another. This failure of policy coordination and integration has been caused in part by attempts to reconcile clashing and competing neoliberal and weak ecological modernization discourses, and is reflected in the diverging goals and paths of each policy domain. The inability of Australian governments to define and articulate a coherent narrative around a low-carbon energy future has consequently constrained Australia's sustainable energy transition and led to contradictory and disjointed outcomes.

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1. Introduction

The existing national energy regimes of most developed countries are unviable if dangerous climate change is to be avoided. For a 66% chance of keeping global warming below 2 °C, countries must reduce their aggregate carbon dioxide emissions by at least 12 gigatonnes (Gt) beyond their current 'Intended Nationally Determined Contribution' (INDC) commitments by 2030 (UNEP, 2015). In response, many countries are beginning, or claim to be undergoing, a transition toward low-carbon energy systems, here termed a sustainable energy transition (SET). To contribute to such a transition, national energy policies will have to shift their focus from a reliance on fossil fuels to renewable energy sources. An 'integrated' approach to both the design and implementation of climate and energy policies, such that they positively reinforce one another, is an essential element in achieving SET success.

Here we consider the evolution of climate and energy policy in Australia, at both the national and sub-national level, over a 25-year period—from 1988 to 2013. We examine the interaction between these two policy domains and how the relationship between them shapes Australia's SET trajectory, specifically in relation to the electricity regime. Australia's fossil fuel-dominated electricity regime has been characterized by increasing policy uncertainty and conflict since the late 1980s, when climate change emerged on its political agenda. Nevertheless it has demonstrated a remarkable resilience in the face of environmental pressures. Correspondingly, between 1990 and 2013, greenhouse gas emissions from the Australian

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stationary energy sector grew by 42.7% (Department of the Environment, 2014). This resilience presents an intriguing puzzle for those seeking to determine the influence of climate policies on electricity regime transformation. By focussing on the policy process and the responses of government, this paper aims to improve our understanding of the political challenges of transforming energy systems towards sustainability.

The paper proceeds as follows. Section two introduces the SET narrative. Focusing on the concept of coevolution, we draw on insights from the environmental policy integration (EPI) literature and from political science to help inform our analysis. After establishing the relevant analytical features, we then outline our methodological approach in section three. Section four provides a brief review of Australian climate and energy policy history over the last 25 years and the context for our analysis. In section five, we assess the degree to which these two policy domains – climate and energy – have converged on the political agenda, before considering the different factors that have shaped Australia's SET in section six. The paper concludes by considering the implications of these findings and its potential for future research.

2. Theoretical background: climate and energy policy integration and sustainability transitions

A common starting point for sustainability transition researchers is that crises such as climate change are considered as symptomatic of deeper-lying crises, 'rooted in the disbalance between unsustainable consumption and production patterns' (Grin et al., 2010: 1). Consequently, it is not possible to solve the climate crisis solely through technological innovation; it is as much a social problem as a technological one. While the micro-dynamics of technological change are still considered important, the 'causal emphasis (for transitions) is more on the broader societal selection environment than on the internal drivers of niche innovations' (Geels and Schot, 2010: 27).

The Multi Level Perspective (MLP) emerged as a way to strike a balance between micro- and macro-dynamics and remains highly influential in socio–technical transitions research. The MLP describes the dynamics of transitions through interactions between three analytical 'levels': macro, meso, and micro. These respectively refer to *landscape* (the context provided by larger and longer term exogenous trends), *regime* (the more immediate structure framing policy and action), and *niche* (the interstices within regimes that provide room for innovative practices). According to the MLP, transitions occur only when developments on all three 'levels' link up and positively reinforce one another.

Implicit in the MLP approach is the concept of co-evolution. The MLP rejects linear causality and instead frames socio–technical transitions as a process whereby different elements involving policy, institutions, culture, knowledge, markets and technology repeatedly influence each other reciprocally (Rotmans, 2015). This is important because it draws attention to different aspects of transitions and their inter-linkages. As Geels and Schot (2010: 96) summarize:

> The global, overall explanation provided by the MLP is about alignments and linkages between different processes. Within levels this explanation follows a socio–technical logic, investigating interactions between heterogeneous elements and actors (weaving a seamless web). The focus is on co-evolutionary interactions between ongoing trajectories: developments in one trajectory (e.g., regulations) may hinder or stimulate developments in another trajectory (e.g., technology or markets).

Co-evolution, in its broadest sense, refers to the interplay between technology and society, which involves multiple dimensions and complex interrelationships. We do not pretend in this paper to be able to capture all of the co-evolutionary processes that shape SETs. Rather, we focus on one specific inter-linkage in relation to SETs: the integration and co-evolution between climate policy and energy policy.

For Lafferty and Hovden (2003: 9), EPI involves 'the incorporation of environmental objectives into all stages of policy making . . . and a commitment to minimize contradictions between environmental and sectoral policies by giving priority to the former over the latter'. Analytically, much of the EPI literature centres around three 'dimensions' of policy: process, outputs, and outcomes (see for example, Hertin and Berkhout, 2003; Nilsson et al., 2012; Nilsson and Persson, 2003). From a policy process perspective, analysis typically focuses on the procedural components of policy making such as the coordination and communication between different actors and agencies as well as the decision making rules in place. These may include for example formalized consultation processes or issue-specific working groups, which can take place on horizontal (i.e., inter-departmental) or vertical levels (i.e., national/sub-national forums). A focus on policy outputs involves the examination of mission statements, agendas and objectives and the degree to which they adhere to the principals of EPI. Outputs also include the policy instruments and implementation methods used in pursuing particular policy goals. The last dimension, policy outcomes, assesses EPI in terms of whether or not better environmental outcomes are actually achieved. Putting aside what constitutes a 'good' environmental outcome (i.e., for whom/what?), this dimension is particularly difficult to measure since there are many factors, not just EPI, that influence policy outcomes (Jordan and Lenschow, 2010). Given Australia's poor performance in terms of aggregate emissions reductions, we are more concerned with the process and output dimensions of EPI in relation to its SET progress.

While on one level EPI appears a logical step in realizing transition goals, in practice, the integration of environmental concerns into non-environmental policy areas has been and remains an ongoing challenge. Müller (2002), for example, found that while Germany has been a 'front runner' in terms of environmental policy making, its actual performance in EPI has been relatively poor. Jordan (2002) noted similar outcomes in the UK despite it having 'one of the strongest and most effective systems for coordinating departmental policies of any Member State in the EU' (p.35). And in Sweden, which has

well-established EPI procedures in place, environmental integration with energy policy has been 'slow, indirect, and partial' (Nilsson, 2005: 207).

Similar outcomes have been observed through experimentation with the transition management model—a policy tool designed to guide sustainability transitions. By creating transition 'arenas' that bring together groups of actors with diverse knowledge, backgrounds and interests, transition management seeks to create an open and dynamic network that allows different opinions, values and agendas to be, 'confronted, discussed and aligned where possible' (Kemp and Loorbach, 2006: 111). In practice though this has been challenging. In her studies on transition management in the Netherlands, Hendriks (2008) found Energy Transition Programs (ETP) were heavily dominated by industry and government elites, and environmental and consumer groups and the broader public were less prevalent. Smith and Kern (2009) found a similar pattern in their analysis of the Dutch energy transition networks; these consisted mainly of industrialists, public officials and in particular employees of large energy companies – similar to the idea of what Baumgartner and Jones (1993) term a closed 'iron triangle', involving corporate, political and technocratic elites. The result was that transition funding tended to follow prior institutional conventions – toward supply-side infrastructure or market regulation. As such, transition policy tended to perpetuate technocratic routines in energy policy at the expense of social innovation (Smith and Kern, 2009).

One of the challenges with such approaches is that society is crowded with special interest groups and stakeholders, each with different ideas and visions about the future direction of change (Smith et al., 2005). This makes conflict and incoherence an unavoidable aspect of the policy making process. But as difficult as EPI or transition management might seem, the idea of bringing together competing visions in an effort to establish a shared vision is vital (Meadowcroft, 2007). According to Grin (2010: 229) 'co-evolution is possible because the actors involved share a particular orientation'. This is where shared or guiding visions become important since they act, in theory at least, as a means of coordination, which can frame and guide transitions in terms of pace and direction. Transition researchers take particular interest in the dynamics of how this vision takes concrete form–or does not. From a policy perspective, the examination of climate and energy policy integration is fruitful in this regard.

A number of analytical frameworks have been used to explain policy processes and outputs. For many political scientists this often involves the interplay between three domains: interests, institutions, and ideas (see for example, Crowley, 2007; Harrison and Sundstrom, 2010; Kern, 2011; Meadowcroft, 2011). *Interests* involve issues of agency and the day-to-day interactions between competing actors. Lundqvist (1980: viii), for example, bluntly wrote, 'background factors do not make policy. Policy makers do.' This focus on actors is what Wilson (2000: 248) categorizes as political process and decision making approaches, meaning that the focus is on, 'the role of interest groups, political leaders, policy makers, agendas, and decisions in producing public policy.' This actor-oriented approach though does not provide a complete picture of policy influence. That is, actors are enabled and constrained by institutional and structural conditions. As Simeon (1976: 549) points out, 'bureaucrats and politicians operate within a broader political framework, defined by such factors as prevailing ideologies, assumptions and values, structures of power and influence, patterns of conflict and division, and so on'.

The domain of *institutions* includes the political, bureaucratic and legal arrangements that govern and shape the policy process. Federal political systems for example share power between national and sub-national levels of government. In Australia, responsibility for the management of natural resources – including the provision of electricity services and decisions over power generation needs – rests with the States. However the creation of a national energy market has complicated this arrangement, and led to a mixed-model energy governance structure. This policy environment has created a complex and often confusing guide for SET governance.

Lastly, the domain of *ideas* encompasses the role of structures and discourse. From this perspective, certain discourses lend 'legitimacy to particular organizations, practices, and distributions of resources' (Levy and Egan, 2003: 810). For Hajer (1995), a discourse coalition refers to group of actors that share particular sets of storylines. These storylines draw on different discursive categories but combine to provide actors with a common understanding of a given problem (Hajer, 1995). Discourse coalitions are not necessarily based on shared interests or goals (although they can be), but on shared 'ideas, concepts, and categories through which meaning is given to social and physical phenomena' (Hajer, 2006: 67).

Much of the literature on transitions has tended to view the construction of consensus as a conflict-free process (Smith et al., 2005). Our starting point is that the policy process involves 'a struggle for discursive hegemony in which actors try to secure support for their definitions of reality' (Hajer, 1995: 59). This 'argumentive game', as Hajer puts it, is determined by three factors: credibility, acceptability, and trust. Yet these cannot be understood in isolation since these qualities are themselves a product of power. To acquire or posses these qualities, someone or some group will need some degree of significant material capability and institutional support. In other words, the struggle for discursive hegemony does not take place in a social vacuum but in the context of existing institutional practices (Hajer, 1995: 60). Given the interrelationship between interests, institutions and ideas, all of which are experienced in 'everyday life', we have chosen to embed these domains within the narrative, rather than present them as discrete objects of analysis. In the discussion section we revisit these domains explicitly and use them to help explain patterns of policy integration and to interpret the politics of Australia's SET pathway.

3. Methodology

The analysis of the case study is based on a combination of documentary research, interviews and secondary sources. This was deemed the most appropriate method for reconstructing the policy process and understanding and explaining

patterns of integration. While policy documents such as government position papers, ministerial statements, parliamentary inquiries, and non-government reports and submissions provide insight into the policy outputs (i.e., objectives, agendas and preferred policy instruments) of different actors and interest groups, they say little about why and how decisions were made, making it difficult to discern processes of conflict or determine which voices are marginalized. As such, forty semi-structured interviews were conducted with politicians, ministry and agency officials, industry representatives, researchers and environmental groups between 2012 and 2014 so as to compliment the documentary analysis. The interview questions were generally open-ended and sought to gain insight into participants' experience in the policy process. This method provided an effective way to capture participants' perceptions, attitudes, and motivations (Kidder and Judd, 1986).

Triangulation was approached on a number of levels. First, all interviews were transcribed and coded according to the concepts identified in the literature review. These secondary sources helped frame and guide the narrative. Second, the interviews were cross-referenced (transcripts were compared with one another where relevant). Third, the interview material was cross-referenced with the documentary analysis. Taken together, these different processes helped establish a more reliable and accurate policy history.

The choice of case study should be made based on those from which we can learn the most (Stake, 2000). Although there have been significant developments in sustainability transitions theory in the past decade, virtually all of this work has emanated from and focused on states within the European Union. As Markard et al. (2012) have identified, there exists a European bias in academic work on sustainability transitions. This leaves considerable scope for learning from places outside Europe. Given this paper's interest in the political challenges of SETs, an Australian case study has much to offer. Australia is one of the highest per capita emitters of carbon dioxide, around 86% of its electricity is sourced from fossil fuels, and it is the world's largest coking coal exporter and second-largest thermal coal exporter (RBA, 2011). Furthermore, Australia is on track to become the largest exporter of liquid natural gas by 2017 (DRET, 2012). Given that these structural conditions exist simultaneous to the threat of climate change, climate and energy policy formation in Australia is highly conflictual and for the most part overtly political. Thus, it is well placed to expose the social contests and relations of power that shape SETs. In addition, as a federated state, consideration of the sub-national State of Victoria and its role in national climate and energy policy formation is also incorporated into our analysis. Victoria is chosen because 90% of its electricity generation comes from brown coal, almost all of which is sourced from the Latrobe Valley region, and it has also been the site of energy policy innovations of global interest. Inclusion of this sub-national element therefore offers insights into the governance of Australia's SET response.

4. Australian climate and energy policy

Australia's climate policy has been the subject of considerable debate over the past two decades. Studies have emphasised Australia's structural economic dependency on fossil fuels (Curran, 2009), the influence of specific fossil fuel related industries (Hamilton, 2007; Pearse, 2007) and discourse coalitions (Bulkeley, 2000), as well as the role of discursive continuities and contests on the shaping of climate policy (Christoff, 2013). Much of this work tends to align shifts in climate policy with changes in federal governments (see for example, Christoff, 2013; Crowley, 2013; Diesendorf, 2012; McDonald, 2005). While this serves as a useful starting point, less attention has been given to the relationship between climate policy and energy policy within Australia's federal system and how this in turn shapes Australia's SET trajectory. We build on these studies by incorporating energy policy developments at the national and sub-national level more explicitly into the narrative. Below we provide a brief history of the evolution of climate and energy policy in Australia over the last 25 years.

4.1. Early agenda setting

Climate change emerged as a public policy issue in Australia in 1988 following the Toronto Conference on Climate Change. In 1990 the Federal Labor government, led by Bob Hawke, adopted an Interim (emissions) Planning Target based on the Toronto Target for a reduction of national carbon dioxide emissions by 20% below 1988 levels by 2005. This move was accompanied by, and to an extent provoked, a range of sub-national energy-related developments. Significantly, in Victoria the State Electricity Commission of Victoria (SECV), which at the time managed Australia's single largest site of carbon dioxide emissions, went about designing an energy pathway that could allow the target to be met.[1] This pathway entailed a combination of aggressive demand-side management, fuel substitution (primarily towards gas), injection of some renewable energy technologies, and the early retirement of existing brown coal-fired generation plants (SECV, 1989). These initiatives were reinforced by the Victorian government's Greenhouse Strategy, *Greenhouse: Meeting the Challenge* (DCE, 1990). This strategy led to a number of important institutional developments, including the establishment of the Greenhouse Unit within the Department of Conservation and Environment, and the newly created Renewable Energy Authority, which was given expanded responsibilities for energy conservation and renewable energy.

Parallel with these developments, the Federal government undertook to develop a National Strategy for Ecologically Sustainable Development. This process involved nine working groups, including two on energy use and production respectively (ESDSC, 1992). The energy working groups were guided by the Australian government's emissions target and their key

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[1] In 1989, the SECV owned and operated electricity generation assets totalling around 6000 MW, 5000 MW of this located in the Latrobe Valley.

recommendations included that a market-based approach to make polluters pay was necessary (ESDWG, 1991)—a measure also supported by the SECV at this time. In all, this initial phase was not a period of structural reform, nor was it immune to conflict and resistance. Nevertheless, it triggered a period of policy innovation, which was reciprocated at the Victorian State level.

4.2. The advent of neoliberalism

Toward the end of 1991, when Paul Keating successfully challenged Hawke for the leadership of the Labor Party, this picture changed dramatically. The Keating government adopted a 'no regrets' (Bulkeley, 2000) climate policy approach dominated by short-term economic considerations, set aside the National Strategy for Ecologically Sustainable Development, established the federalist Inter-Governmental Agreement on the Environment (IGAE), and dismantled key institutional avenues for integrating economic and environment policy development, such as the Resource Assessment Commission (Economou, 1999).[2] These shifts returned considerable power over environmental and resources policies to the States, and placed greater emphasis on voluntarism in the climate policy domain.

This period witnessed the aggressive implementation of neoliberal policies designed to promote greater competition and efficiency in the electricity sector. Victoria, under the conservative Kennett Liberal government, became a testing ground for a bitterly contested program of privatisation of state-owned electricity sector assets, which was more radical than anything attempted elsewhere globally (Chandra-Shekeran, 2014). The government disaggregated and corporatized the SECV during SECV during 1994–1995, then entirely privatized Victoria's electricity sector between 1996 and 1997. Plans for energy efficiency and demand management, developed by the SECV in the late 1980s and early 1990s, were ditched and the SECV's research capacity into emissions reduction was lost.

During the same period, plans were formulated for an integrated National Electricity Market (NEM). This process central-ized energy policy to a degree – although it remained a State domain – and through the discourse of economic rationalism, prioritized the economic dimensions of energy policy: namely, those dimensions that would enable an efficient and com-petitive NEM. This reduced the scope of energy policy to arguments about issues of energy market reform and deregulation and marginalized its environmental dimensions. These neoliberal energy policies opened the door for fossil fuel industries to reassert their legitimacy.

When the conservative Howard Coalition government took office in 1996, these industries and the fossil fuel electricity regime became further entrenched. The Howard government's climate policies amplified many elements evident in the pre-vious Labor government's approach, supporting but not legislating weak targets and preferring voluntarism over mandated action. Economic rationalism (the promotion of neoliberal market reforms) remained the guiding policy paradigm in the energy market reform, and a key priority of both Commonwealth and State governments. The programmatic move towards national coordination of energy policy continued to gain pace and in 2001 was formalized through the establishment of a federal Ministerial Council of Energy. By 2005 a new overarching governance and regulatory structure was in place for the NEM.

Under the Howard government (1996–2007) the climate and energy policy domain was captured and guided by the so-called 'greenhouse mafia', a powerful discourse coalition representing various energy intensive and fossil fuel producing industries (Pearse, 2007). As a consequence, early attempts to establish a price on carbon were blocked, and the Federal government's Mandatory Renewable Energy Target (MRET) derailed for being "too successful" (see Walsh, 2004: 4). In its 2004 Energy White Paper, the Howard government reinforced the dominance of the fossil fuel regime for electricity generation, carbon exports, energy-intensive manufacturing (e.g., aluminium smelting) and for projects such as carbon capture and storage. By emphasising Australia's carboniferous 'competitive advantage', the Howard government further empowered the fossil fuel discourse coalition by confining climate and energy discourse to debates over the immediate economic impacts of mitigation. It thereby altogether thwarted public consideration of long-term SET goals.

4.3. Emerging climate discourse coalitions

While the Howard Coalition government governed nationally, most States and Territories were ruled by Labor. These Labor sub-national governments helped facilitate and develop a counter-hegemonic narrative around climate policy (though not energy policy) which in the latter part of the 2000s proved important in breaking the hold of the Howard government's climate policy regime. Led by Victorian Premier Bracks and NSW Premier Carr, the States began to develop a range of climate and energy-related initiatives, including renewable energy targets, feed-in-tariffs, energy efficiency schemes, and an investigation of the potential for carbon emissions trading, all of which were designed to undermine and isolate the Howard government's position on climate change. Although some of these specific initiatives did not materialise until 2006, they nevertheless were sufficient to destabilize Howard's climate policy regime and the national hegemony of the fossil fuel bloc.

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[2] While the 'no regrets' policy approach was broadly defined to encompass measure that would have a net benefit, the government adopted a more restrictive interpretation such that no single industry should be adversely affected.

Arguably the most important development during this phase was the re-opening of the carbon price debate. In 2004, the First Ministers of all Australian State and Territory governments formed the National Emissions Trading Taskforce (NETT) to research and develop a national emissions trading scheme. This initiative had the support of all the other State and Territory governments. Around the same time, through a separate process, the Australian Conservation Foundation (ACF) initiated the Business Leaders Roundtable, an influential discourse coalition involving six major corporations – BP Australia, Insurance Australia Group, Origin Energy, Swiss Re, Visy Industries and Westpac – which called for early action on climate change and the introduction of a national market-based carbon pricing mechanism (Australian Business Roundtable on Climate Change, 2006). Significant pressure for policy action on climate change grew in parts of business and civil society. It was further amplified by three international events—the release of Al Gore's film 'An Inconvenient Truth' (2006), the Stern Report (2007) and the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (2007) – and, domestically, by the persistence of the Millennium drought – the worst drought on historical record in Australia.

In the face of these developments the Howard government appeared increasingly out of touch with the electorate. Finally, after 10 years of rejecting carbon pricing and citing adverse economic effects, it shifted its strategy, established its own inquiry into emissions trading scheme, which it supported in the 2007 election campaign – but too late to give it credibility in the field of climate policy.

4.4. A new direction?

The election of the Rudd Labor government in 2007 marked the strengthening of ecological modernization in Australia's climate policy discourse. Immediately following the election, a new Department of Climate Change and Energy Efficiency was established and the Kyoto Protocol was ratified. Building on the work of the NETT and, following delivery of the Garnaut Report (Garnaut, 2008), it proposed a national emissions trading scheme—the Carbon Pollution Reduction Scheme or CPRS (Department of Climate Change, 2008) and committed Australia to meeting an unconditional emissions reduction target of 5 cent below 2000 levels for 2020 (with higher targets conditional on the actions of other major emitting countries) and 60% below 2000 levels by 2050.

These developments were articulated through two core storylines (Christoff, 2013). The first reasserted the normative and ethical dimensions of climate change. The second emphasised the positive economic dimensions, meaning that rather than portraying climate action as a cost, as had the Howard government, the Rudd government used evidence from both the Stern and Garnaut reports to highlight the economic dangers of climate *inaction*. While these were important developments on the climate policy front, the proposed targets (which reflected Garnaut's recommendations) bore little relationship to the calls of climate science (Christoff, 2010).

The ensuing carbon pricing debate consumed the government and overwhelmed consideration of climate policy's non-market values. Indeed the second half of the Rudd government's term in office revolved around the fate of legislation to establish the CPRS. As the Rudd government did not have control of the Senate, it sought to facilitate the passage of the CPRS Bill by diluting the scheme to gain Opposition support. However this tactic opened the CPRS to attacks both from those in industry who opposed carbon pricing as costly and with little effect on reducing emissions, and those - the majority of the environment movement and, in Parliament, the Greens - who supported carbon pricing but claimed the CPRS's many concessions to industry made it too weak. In an attempt to play to both sides, the government simultaneously promoted the use of renewable technologies through its expanded RET (up from 9500 GWh to 45,000 GWh), while also championing CCS as an essential component of Australia's clean energy future.

Following the failure of the UNFCCC negotiations in Copenhagen to establish a legally binding agreement and the Rudd government's continuing inability to negotiate support for its legislation, the CPRS lost momentum. Malcolm Turnbull, the Opposition's climate-policy sympathetic leader was deposed by Tony Abbott, a climate sceptic; the CPRS Bill failed repeatedly in Parliament and not long after, Labor replaced Rudd with Julia Gillard, who became Australia's first female Prime Minister (Chubb, 2014).

As climate policy faltered at the federal level, at the Victorian State level it gathered momentum. In the lead up to the 2010 State election environment groups, notably Environment Victoria, campaigned aggressively to ensure climate change and clean energy were prominent on the political agenda. Several months before the election the Brumby government released its Climate Change White Paper, *Taking Action for Victoria's Future* (DPC, 2010), which included: an emissions reduction target of 20% by 2020 compared to 2000 levels; an emissions intensity standard for new power stations of 0.8t carbon dioxide-e/MWh; a five per cent large-scale solar target by 2020; a peak in emissions by 2014; the closure of two units at the Hazelwood Power Station; and a commitment to embed climate change considerations into government decision making. In September 2010 the Victorian Parliament passed its *Climate Change Act*, officially adopting the 20% reduction target.

Following the 2010 federal election, Labor formed a minority government with three Independents and a member of the Australian Greens. The Greens made progressive climate policy a condition of their support. The Gillard government immediately introduced a transitional carbon price and shortly thereafter established a Multi Party Climate Change Committee (MPCCC) that included the Independents and Greens. The MPCCC agreed on a new Clean Energy Future legislative package which included a price on carbon; emissions reduction targets for 2020 and 2050; the establishment of two new bodies, the Climate Change Authority (CCA) to advise on future targets and the Clean Energy Finance Corporation (CEFC); and the proposed closure of 2000 MW of coal-fired power generation, known as the Contracts for Closure program. These

initiatives – and the associated bills, which the Government was now able to get through both Houses – formed an important overarching institutional and regulatory framework in which a SET could progress.

Separately, the government developed its own energy strategy, culminating in the 2012 Energy White paper (EWP), which reemphasized Australia's competitive advantage, as Howard had so successfully done, and once again coupled Australia's economic prosperity and security with the use of fossil fuels. Indeed, despite its title *Australia's Energy Transformation*, the EWP had little to say on domestic electricity generation matters, instead focussing on the need to further develop its fossil fuel exporting capacities.

The Opposition, now led by Abbott, mounted a public assault on the carbon tax in a campaign that questioned both the integrity of Prime Minister Gillard and the legitimacy of her minority government. These assaults were reinforced at the sub-national level by a new crop of Conservative governments, which undermined climate policy more generally. In Victoria, the Baillieu government abandoned the State's 20% below 2000 by 2020 emissions reduction target as well as the proposed emissions intensity standard set out under the Victorian Climate Change Act. In addition, plans were initiated to open up the Latrobe Valley's brown coal reserves to competitive tender (Arup and Gordon, 2012). Facing diminishing public support for their 'carbon tax' policy, the Gillard government focussed almost exclusively on compensation payments to households and industry, which undermined the support and therefore potential for structural change.

5. Assessing climate and energy policy integration

Renewable energy technologies have shown limited growth in Australia: in 1989/90, renewable fuels made up 10% of Australia's electricity generation mix; by 2012/13 this contribution rose to only 13% (BREE, 2013). We argue that the inability of Australian governments to institutionalize policy change in favor of a SET is caused, in part, by a failure to integrate and coordinate climate and energy policy goals. We illustrate this policy failure below using the process and output dimensions of EPI.

5.1. Communication and coordination failures

Over the last 25 years, climate and energy policy formation has been conducted largely through separate processes. At times this separation has been quite overt. For instance, in 1991, when the Treasurer Paul Keating asked the Industry Commission to review the electricity generation and distribution sector, he subsequently removed Clause 3 (i) from the review's terms of reference. Clause 3 (i) required the Commission to consider 'the relative efficiency and cost effectiveness of options to reduce the environmental impact of burning fossil fuels" (Industry Commission, 1991). This, the Treasurer argued, was unnecessary since it was being covered through the Ecologically Sustainable Development strategy process. The review of the Hazelwood Power Station in Victoria in 2005 suffered a similar fate when "greenhouse matters" were excluded from its terms of reference (see VCAT, 2004). And in 2007, greenhouse matters were considered "beyond the scope" of a review of energy markets initiated by the Council of Australian Governments (COAG), (Energy Reform Implementation Group, 2007: 18).

Stakeholder roundtables, often undertaken during the design phase of major policy initiatives and White Papers, have also been separated on climate/energy lines. In 2010 the Gillard government created a Business Roundtable on Climate Change and a separate Environment and Non-Government Organization Roundtable on Climate Change. It was thought by some that such an approach would be more effective since the 'environment people and the energy people used to fight like cats and dogs' (interview 18). But not only did this inhibit communication between what were two influential discourse coalitions, some involved in the process questioned its overall purpose: 'the feeling among many of the stakeholders in the roundtables was that they weren't really negotiating, they were being told the outcome' (interview 40).

These instances represent lost opportunities for a truly integrated approach to policy design and, in particular, the sustainability of Australia's electricity regime.

5.2. Different agendas, different instruments

These different patterns in the policy process have resulted in competing and at times contradictory policy agendas and goals. On climate policy, Greg Combet, the Climate Change Minister charged with 'selling' the Gillard government's Clean Energy Future Plan, outlined that,

> The foundation for the clean energy future package is the climate science . . . the decisions we make now to 2020 will determine the severity of climate change our children and grandchildren experience . . . the advice to the Government from the [Climate] Commission, as well as other scientific agencies and individual scientists, demands the tackling of climate change by cutting carbon pollution in our own economy, and by playing a responsible role internationally (Combet, 2011: 2, 8).

Energy policy on the other hand, has remained focussed on maintaining Australia's fossil fuel advantage. When responding to questions on the challenges of climate change, Martin Ferguson, the Minister for Resources, Energy and Tourism, argued that,

Table 1
Examples of competing energy visions in the policy domain.

	Government	Business and industry groups	Non-government organizations
Dominant technology in 2050	Mix—primarily renewables (around 55 per cent) and CCS and gas (around 45 per cent)	CCS and gas	100% renewables
Preferred policy approach	Market mechanism (ETS) (Labor Party only)	Some support a market mechanism (ETS). Some are against all forms of policy action	Combination of market mechanism (ETS) and government regulation
Dominant storylines	Security and affordability Least-cost abatement	Renewables are intermittent Renewables would increase the cost of electricity	Climate science CO_2 targets
	Global responsibility/'fair share'	Threaten national economic interests and result in massive job losses	Ethical/justice
	Energy liberalisation	Domestic action would have little effect globally International action should only be made with the participation of all countries	Green jobs
Key actors	Climate and energy departments and agencies at national and sub-national levels,	Electricity generation companies (i.e., AGL, Energy Australia, Origin)	Environment groups (i.e., ACF, Greenpeace, Beyond Zero Emissions, WWF)
	Treasury departments	Industry bodies (i.e., Energy Supply Association of Australia, National Generators Forum)	Unions (i.e., Australian Manufacturing Workers Union)
	Bureau of Resources and Energy Economics NEM bodies (i.e., AER, AEMO)	Business Council of Australia Resource companies (i.e., BHP, Rio Tinto)	
	Standing Council on Energy and Resources	Unions (CFMEU)	

. . . coal is such an important part of Australia's economy both for domestic energy generation and export revenues . . . coal will continue to provide most of Australia's electricity for decades to come . . . CCS is essential for the long-term sustainability of coal-fired power generation and as the world's largest coal exporting nation it is in our economic interest to accelerate the development of technologies which extend the viability of coal-fired electricity generation (Ferguson, 2008: 1).

These policy positions highlight the tensions between climate and energy policy in Australia and reflects a power struggle between the visions of Combet and Ferguson and their corresponding departments. Both visions look to the future. But whereas the former tentatively aligns itself with a new economic paradigm, the latter enshrines itself in the old. This creates potential problems for a SET. As the ACF noted in its submission to the EWP, there are

. . . inconsistencies in the treatment of renewable energies in the EWP when compared to the importance the paper puts on fossil fuels. With this sort of bias against clean energy technologies, the EWP threatens to undermine the government's objectives in achieving a clean energy future in line with an 80% emissions reduction by 2050 (ACF, 2012: 4).

Moreover, there tend to be clear ideological differences over the role of government and therefore the most appropriate policies needed to transition the electricity regime towards sustainability (interviews 4; 21). Multiple policy instruments have been suggested, such as emissions trading schemes and/or a fixed price on carbon, closure schemes, and emissions performance standards, however, internal conflicts over the 'right' course of action has inhibited the government's overall policy approach (Table 1).

5.3. Implementation breakdowns

These different approaches and tensions that exist between climate and energy policy can cause breakdowns in policy, such as the Contracts for Closure program. Despite being developed by the Multi Party Climate Change Committee, this initiative was carried out by the Department of Resources, Energy and Tourism, led by the Energy Minister Martin Ferguson. Following a year of negotiations between the government and potential power stations the program was abandoned, with Ferguson citing 'a material gap between the level of compensation generators have sought and what the government is prepared to pay' (Packham, 2012). Christine Milne, the leader of the Australian Greens, who helped develop the policy, was

particularly scathing of the political process: 'Putting Martin Ferguson in charge of this process was always giving the fox control of the hen house and he is now responsible for the first serious breach of faith in the implementation of the Clean Energy Act' (Packham, 2012).

Taken together, these different patterns of integration failure weakens government claims of transitioning toward a low carbon future and it clouds Australia's SET vision, fuelling a policy culture of scepticism, with actors unclear as to the 'real' direction of policy. The result is that sustainable energy policies are particularly susceptible to changing government ideologies, making long-term goals, such as a SET, difficult to implement and maintain. As such, Australia's SET remains stalled at the take-off phase.

6. Toward explanation

What explains this failure of integration and coordination? Here, we reflect on the role of ideas, interests and institutions in shaping policy formation and implementation processes. Of particular significance is the discourse of neoliberalism. Climate and energy policy integration has been impeded by Australia's neoliberal policy culture that has facilitated the marketization of energy governance and largely excluded interventionist policy measures to reduce emissions and promote a SET. The contests between neoliberal and sustainable development discourses, which 'struggle for the future of the 21st century' (Geels, 2010: 499), has seen the dissociation of climate goals from energy goals in Australia. This dynamic, sustained since the emergence of climate change on Australia's public policy agenda, has protected the twin 'pillars' of energy policy – security of supply and affordability – both of which have been critical to twentieth century capital accumulation strategies. The result is that environmental considerations have been excluded from energy policy and linked only with climate policy, allowing energy policy to act virtually independent of sustainability considerations.

These dual objectives have been reinforced and legitimized through a neoliberal ideology, which established itself in Australia in the late 1980s, and sustained through multiple key energy policy documents, including the Industry Commission's (1991) Energy Generation and Distribution report and the Parer Report, *Towards a Truly National and Efficient Energy Market*, (COAG-EMR, 2002), and more generally through the Hilmer Report on economic competition policy (Independent Committee of Inquiry into Competition Policy in Australia and Hilmer, 1993). In Victoria this neoliberal agenda resulted in the sale of all State-owned electricity generation assets, along with the SECV's demand management and emissions reduction programs. In the four years following the privatization of the SECV, Victoria's emissions from electricity generation rose by 31%. Critically, it is because of this separation that Australia is able to simultaneously operate as a weak environmental welfare state (Christoff, 2005), through its climate policy (i.e., carbon tax, RET), and as an economistic competition state, through its energy policy.

The power of this neoliberal discourse is, in part, caused and exacerbated by Australia's structural economic reliance on fossil fuels. Australia's climate and energy response has been built, to a large degree, around the protection and exploitation of these resources, which, as argued by multiple government and business/industry leaders, is in Australia's 'national interest'. In particular, the fossil fuel discourse coalition has been remarkably successful at reducing the debates around emissions reductions (and therefore SETs) to a focus on short-term economic interests. This dominant definition of the national interest is then exploited to lend authority and legitimacy both to the regime and those associated with it by emphasising immediate threats to the economy, certain key industries, communities, and jobs (interviews 8; 36). These storylines have been effective in gaining the support of many politicians, particularly those representing fossil fuel dependent electorates. As such, energy policies that support the incumbent regime are overwhelmingly given priority over climate interests.

This parallel track approach to climate and energy policy has created confusion about where responsibility lies for their interrelationship. Australia's political institutional arrangements have encouraged additional failures of policy coordination. In particular, Australia's adversarial political culture and federal system have proved obstacles to the definition of a consistent SET vision between national and sub-national governments. Since the late 2000s, Australia's toxic partisan politics of carbon pricing has further eroded the potential for such a development. While sub-national governments can be a positive force for initiating SET change (i.e., the period between 2002 and 2006), their commitment and capacity to implement SET policies are uncertain. For instance, there appears to be a widespread belief among State politicians that policies such as carbon pricing and RETs are best administered by the Commonwealth government (interview 22). Meanwhile, States tend to react parochially to national policy initiatives, moving to protect their resource-based industries-as the Victorian Premier John Brumby did in 2009 when he called on the Rudd government to increase its CPRS compensation to the Latrobe Valley electricity generators (Lewis and Ferguson, 2009; Taylor and Hewett, 2009). This inherent tension between national and sub-national governments undermines the potential for constructive and coherent forms of SET governance.

Moreover, energy policy governance has trended toward the national level, which has further complicated Federal-State relations and made local level integration more challenging. This leads to further problems for SET governance, particularly given the increasing number of small-scale (niche) sustainable energy projects at the community level, which, according to Hargreaves et al. (2013), play an important role in challenging, and possibly replacing, existing unsustainable socio–technical systems. When the local level is increasingly excluded from the political decision making process, energy dependent regions can form powerful veto coalitions involving industry, unions and community members. These coalitions can then link up with institutional veto players, i.e., politicians, with the power to block, or at the very least undermine the change process. Such has been the case in the Latrobe Valley in Victoria, where the local council established the Coal Councils of Australia

group (an alliance of seven local councils from around Australia) designed to facilitate a clear and constant message to federal policy makers regarding the adverse effects of carbon pricing policy on their communities (interviews 15; 26; 31).

Altogether, these political elements, involving the interplay of ideas, interests and institutions, have eroded the potential for a coherent and strong SET vision to emerge in Australia, with different actors and institutions often pushing and pulling in opposite directions.

7. Conclusion

In this paper we have focused on the relationship between climate policy and energy policy, with the objective of contributing to the literature on the politics of sustainability transitions. We find that domestic climate policy and energy policy in Australia have largely been dissociated from one another. This failure of policy coordination and integration is reflected in the separate policy processes and diverging goals of each policy domain, and is caused in part by attempts to reconcile competing neoliberal and weak ecological modernization discourses. This clash is played out within the policy domain through key institutions, actors, and special interests and has led to a range of ad hoc and often contradictory policy pathways. We have argued that the inability of Australian governments to define and articulate a coherent narrative around sustainable low-carbon energy futures has constrained Australia's SET progress.

One of the major challenges facing sustainability transitions, according to Meadowcroft (2005: 492), is that 'environmental innovation has been divorced from more general policies for economic and social development'. This appears the case in Australia. Even when a new climate and energy policy pathway was promised from 2007 onward (which led to a price on carbon), neoliberal discourses co-opted those measures to the extent that the government's overall approach avoided questions on social realities and the framing of environmental problems. As such, any discussions on socio-cultural change and industrial ecological restructuring were peripheral at best. Neither the Labor Party nor the Coalition, which together account for close to 80% of the vote, offers a strong, reflexive, ecologically modern vision for Australia. As such, any policy 'shifts' have been contingent and unstable. This lack of political leadership and commitment towards a SET, combined with Australia's adversarial political culture and established organizational power relations, which favor sectoral interests over environmental interests, has inhibited the effective integration of climate and energy policy goals.

These findings are important for several reasons. First, it highlights that although governments often have a suite of 'clean energy' policies in place, the degree to which these policies are in harmony with one another, such that they enable a SET, is not necessarily given. Indeed, as was found in this case study, many of the climate and energy policies claiming to be working toward a SET presented contradictory paths, which have constrained development. Second, these findings remind us that processes of policy formation and implementation are rarely achieved via consensual means; change occurs through dynamic processes of 'contradictions, competing ideologies, and active agents' (Levy and Newell, 2002: 94). Endogenous processes like as EPI are important, but it is the combination of endogenous and exogenous dynamics that are most likely to lead to regime change (Wilson, 2000). Nevertheless, we suggest that a focus on the integration between climate policy and energy policy using insights from political science offers a fruitful starting point with regards to exposing the politics of sustainability transitions.

While the analysis presented here highlights the importance of specific political interests, ideas and institutional factors in shaping policy outputs in Australia, different case studies are likely to yield different results. Further work is required in finding continuities across states and political systems. For example, in the UK, which has made inroads towards designing and implementing a low-carbon energy future pathway, climate and energy policy are formally integrated through the Department of Energy and Climate Change. But it is not clear how such an arrangement would benefit Australia, which could see Australian climate policy stalled by carboniferous energy bureaucrats. Nevertheless, the prospect of departmental shifts and mergers opens up some interesting questions around the relationship between certain political institutional arrangements and the success of SET narratives. In the cases outside of Australia where these policies/departments have been merged, it is interesting to consider how this was achieved, and whether or not it signifies a harmonious policy culture. Complicating this issue is the German case, where formal integration between environment and energy departments has not occurred, but which have nevertheless managed to establish a strong SET narrative. Further empirical testing would be useful in explaining the benefits of EPI in relation to sustainability transitions and the politics of how such dynamics do – or do not – work.

Acknowledgments

Appendix A.

See Table 2.

Table 2
Interview schedule.

Coded interview number	Date of interview	Background
1	06/02/13	Energy White Paper Reference Group
2	27/08/12	Ex-AGO
3	18/07/12	Gippsland Trades and Labour Council
4	16/08/12	Ex-greenhouse policy bureaucrat
5	23/08/12	Ex-Origin Energy
6	03/08/12	CFMEU
7	16/07/12	Regional Development Australia
8	23/08/12	Energy policy advisor
9	31/10/12	Ex-energy policy bureaucrat
10	10/10/12	Department of Regional Australia, Local Government, Arts and Sport
11	09/08/12	Climate change advisor
12	19/03/13	Department of Climate Change and Energy Efficiency
13	11/07/12	ClimateWorks Australia
14	13/08/12	Melbourne Energy Institute
15	10/08/12	Latrobe City Council
16	20/07/12	Department of Primary Industries Victoria
17	08/08/12	Ex-politician (energy policy)
18	18/09/12	Climate Change Authority
19	24/08/12	Regional Development Victoria
20	31/08/12	Environment Victoria
21	07/09/12	Ex-climate change advisor
22	18/09/12	Ex-politician (climate change policy)
23	09/08/12	Climate change advisor
24	10/07/12	Gippsland Climate Change Network
25	31/07/12	Academic (environmental engineering)
26	18/07/12	Latrobe City Council
27	20/07/12	Utility advocate
28	02/10/12	Energy efficiency advisor
29	04/10/12	Climate change roundtable participant (Gillard roundtables)
30	18/07/12	Gippsland Trades and Labour Council
31	16/07/12	Latrobe City Council
32	25/10/12	Ex-SECV
33	27/08/12	TRU Energy
34	07/08/12	Department of Resources, Energy and Tourism
35	10/07/12	BZE
36	26/07/12	Politician (Gippsland region)
37	06/09/12	Department of Resources, Energy and Tourism
38	03/08/12	Clean Energy Council
39	03/04/13	Politician (climate change policy)
40	10/10/12	Department of Climate Change and Energy Efficiency

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