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This paper draws heavily throughout on two sources-

- Hudson, M. 2018. Enacted inertia- Australian fossil fuel incumbents' strategies to undermine challengers. (To appear in *The Long Goodbye, Managing the Decline of Fossil Fuels* Palgrave Macmillan.)
- The author's PhD thesis

Title: Enacted inertia- Australian fossil fuel incumbent strategies to resist radical policies and challenger technologies

Abstract: Incumbent resistance to transitions is beginning to gain attention (Geels, 2014, Smink et al. 2015), within a more general interest in power and agency within transitions (Avelino, 2017). Alongside this, there are calls to take the role of the state more seriously (Johnstone and Newell, 2017). This paper contributes to both these debates through an investigation of a puzzle: why is it that Australia - with plentiful sun and wind, and a sophisticated research and development sector - has been so slow to move from burning fossil fuels (primarily coal) to generate electricity and develop its renewable energy resources, despite policymaker awareness of anthropogenic global warming dating back more than 30 years. It argues that inertia in socio-technical systems must be *enacted*, and sets out to answer two questions –

“What strategies do incumbents use to resist, or shape, radical policy innovations?”

And *“Within and across specific periods of attempted radical policy innovation, how do specific tactics of incumbents and types of defensive action change over time?”*

This paper uses two theories to answer these questions. Temporally, it uses multiple streams approach (Kingdon, 1984), specifically the concept of ‘policy windows’ to identify four periods when carbon pricing reached the macro-political agenda. Having identified four periods (1989-1992, 1994-5, 2006-2009 and 2011) it then uses the concept of “institutional work” (Lawrence and Suddaby, 2006) to examine incumbent strategies with these periods.

Industry incumbents have acted in the political, economic and cultural spheres.

Politically, they have used various mixes of lobbying (forming exceptionally close relationships with the state's policy-making apparatus (so-called ‘reverse engineering’)) and repeatedly used carefully-timed economic modelling to defeat or seriously weaken carbon pricing legislation. Exploiting differences of opinion between levels of government, industry used its relationships with state governments to have them lobby Federal government for changes to legislation. Their state allies have repeatedly adjusted and reviewed renewable energy schemes, causing investor droughts.

Economically political incumbents have directed research and development funding towards fossil fuels (for instance Carbon Capture and Storage), and sustained electricity market rules which favour large centralised generators.

Culturally incumbents have engaged in issue minimisation, outright denial and issue shifting. To do this they have created think tanks and front groups which could act as ‘independent’ voices, and support climate denial while appearing responsible. When access to policy-makers briefly decreased in 2011, industry resorted to massive public advertising campaigns and the formation of umbrella coalitions. Most recently incumbents have blamed renewable energy generation for price rises and blackouts, while reifying the concepts of ‘baseload’ and ‘energy security’.

However, these strategies are beginning to lose their efficacy, partly because the price of renewable generation and energy storage is dropping sharply. Some aggressive incumbent actions against disruptors are leading to reputational risk; a split within incumbent ranks may be emerging. The paper closes with suggestions of what strategies incumbents may develop and deploy as the energy transition gains momentum, to shape - as far as possible - state responses.

Introduction

Each passing day brings new reports, articles and announcements explaining the need for a transition to sustainability (Jenkins et al. 2018). Over the past five decades, since the rise of environmental awareness in the late 1960s – and especially since 2006 - pleas and exhortations for new sets of political, economic and cultural institutions to make that transition a reality have become routine (Gough, 2017, Raworth, 2017). Progress so far has been limited.

Given that a large proportion of anthropogenic greenhouse gas emissions come from the use of fossil fuels to provide either propulsive energy or for electricity generation, the energy sector is often studied as one sector in need of rapid transformation. A recent Nature article shows that for all the media and political attention paid to them, renewable energy sources have made little headway against the “traditional” (fossil fuel) energy sources.

This should not be surprising: incumbents almost by definition benefit from the status quo, and – again almost by definition - have means, motive and opportunity to take vigorous action to sustain that status quo.

Since shortly after the beginning of the climate policy era in 1988, there has been a ‘pushback’, within the international system and also at the level of individual nation-states. The effectiveness of this so-called ‘carbon club’ (Leggett, 1999) is outlined in journalistic exposes (Gelbspan, 1988, 2004; Goodell, 2007), and more scholarly works (Oreskes and Conway, 2010, McCright and Dunlap, 2010).

This carbon club, and its *modus operandi*, needs to be understood for both academic and practical reasons. If “we” are to incentivise, accelerate (or at the very least manage) the decline of incumbents, we would do well to understand the, past, current and *potential* defensive strategies of these incumbents.

Extreme cases can help us see phenomena more clearly. Certainly when it comes to climate change and climate policy Australia is an extreme and intriguing case.

- A vast but largely arid continent, it is particularly vulnerable to predicted climate impacts around changes in rainfall, and extreme weather events (especially heatwaves, coral bleaching).
- Australian policymakers were among the earliest to be informed about the possible impacts of climate change (there were various conferences and (secret) reports in the late 1970s through to the late 1980s).
- Australia has vast tracts of land where the sun reliably shines and the wind reliably blows.
- Australia has a relatively advanced scientific and technological base.
- Australia was an ‘early adopter’ of targets for emissions reductions (in 1990 it announced a 20% reduction target by 2005).

All this might lead to the expectation of sustained and effective action to reduce emissions through a range of mitigation actions (support for the research, development and deployment of new technologies, retirement of old high polluting technologies, energy efficiency measures). This was not what happened.

- In 2014 it became the first nation in the world to *repeal* a carbon pricing scheme. (An emissions trading scheme had been on the macro-political agenda since late 2006, and was finally legislated in late 2011, after fierce political and cultural battles).
- Three decades on, its per capita emissions of greenhouse gases is the highest in the OECD.

The reason for this is that, alongside its wind and solar resources, Australia has superabundant quantities of black and brown coal, and natural gas. It is these that provide the vast majority of Australia’s electricity generation (this picture is slowly changing). In addition, the Australian export coal industry has been a significant factor in Australia’s economic prosperity over the last 5 decades (though this has been disputed – Ryan, 2016)

The potential political power of those who own the coal mining and electricity- generation infrastructure has been noted by many researchers (Hamilton, 2001 and 2007; Pearse, 2005; 2007, Taylor 2014, Sharova, 2015, Pearse, 2018). This article outlines some (but by no means all) of the

ways in which this power, or rather, this inertia, is enacted. The paper proceeds as follows: Firstly it briefly explains the two conceptual lenses through which the case study is viewed. These are the Multiple Streams Approach of John Kingdon, which provides a temporal heuristic and institutional Work (Suddaby and Lawrence). Secondly, it gives a brief overview of four “policy windows” in which proposals to put a price on carbon emissions were considered, in public, over prolonged periods. Next, the types of institutional work that incumbents engaged in each of those windows is outlined.

Then the emergent concept of ‘processual incumbency’ is advanced – the claim that the actions of incumbents cannot be understood without understanding that incumbents in different areas – business, government and civil society, create and maintain mutually supportive relationships, amplifying each others’ messages and creating new opportunities for resistance to policy change. Some speculations about the future actions of incumbents in Australia follow, before limitations of the study and future work conclude the paper.

The data is drawn from the author’s PhD research, which uses interviews, archival sources (newspapers) and other secondary sources (memoirs, documents) to construct detailed accounts of four key periods of contestation.

Conceptual lenses

Two conceptual lenses are deployed in this research, the first the Multiple Streams Approach (MSA), a public policy theory is “temporal” and the second to focus more closely on the behaviour of actors and to move beyond a pure “policy” focus.

The MSA was introduced by Kingdon (1984) as a response to the previous ‘incrementalist’ approach, to explain both incremental change and periods of rapid upheaval. The approach posits three independent streams; the problem stream, politics stream and policy stream. The streams have their own internal logics and sub-components (see figure x below).

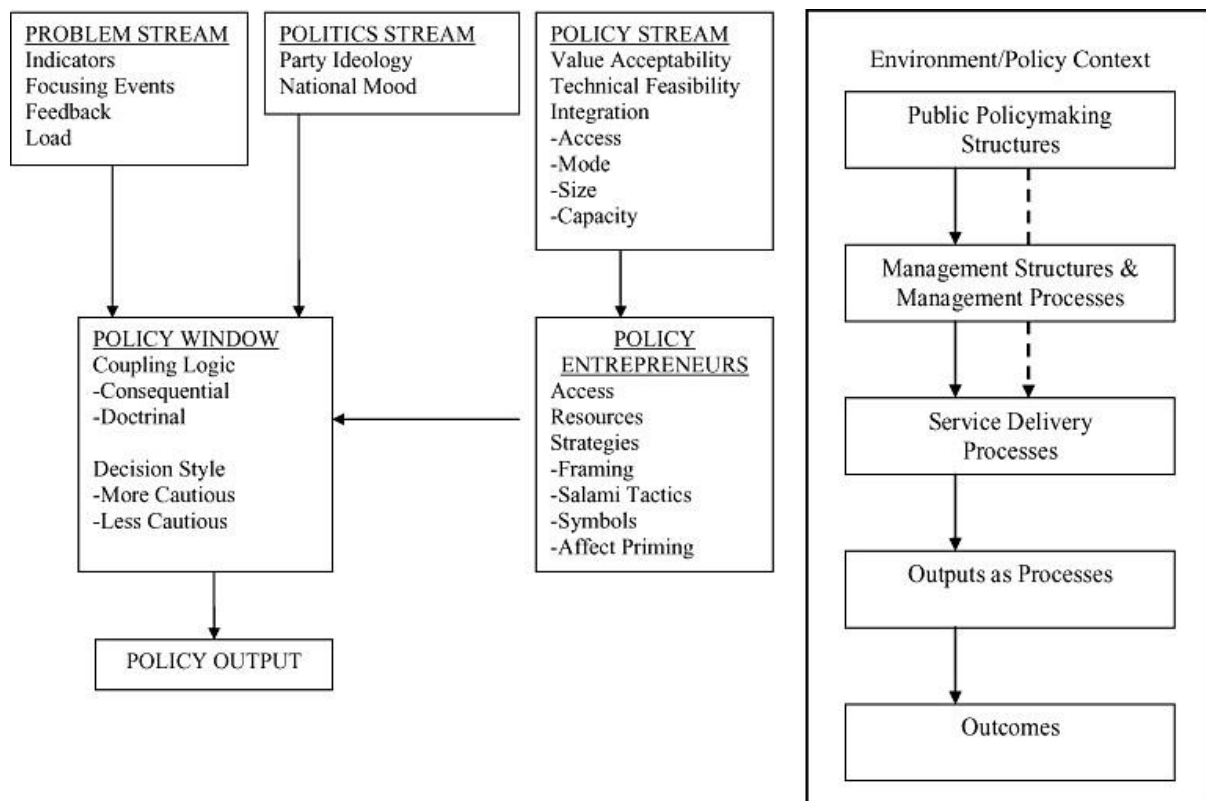


Figure 1. Multiple Streams Analysis (Robichau and Lynn, 2009)

However, this diagram does not capture the *temporal* nature of MSA. Three streams, running in parallel, must be coupled by a policy entrepreneur (or set of entrepreneurs acting in concert), forming a policy window.

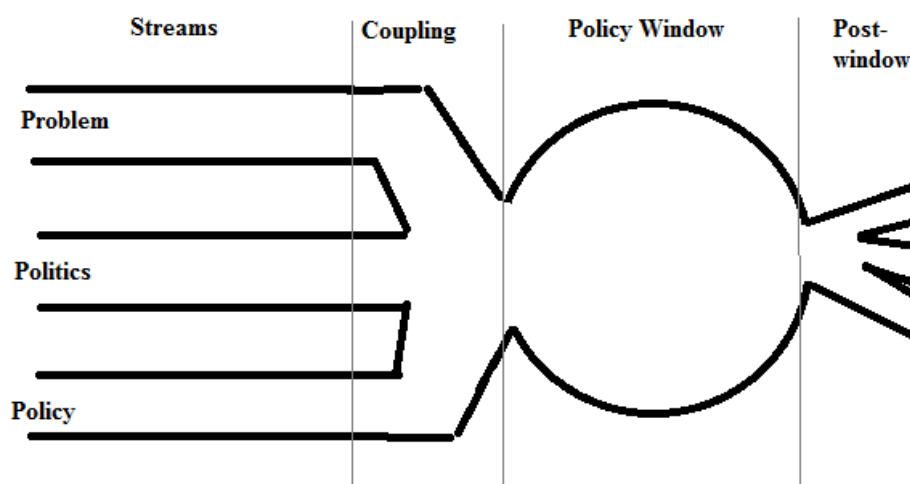


Figure 2 MSA temporal perspective

Within that window, battles take place over the correct state and societal responses to the issue under question, especially over the correct legislative and/or regulatory response by policy-makers.

There are various possibilities for the ending of a window. A window may close with either a policy settlement may be reached or the abandonment of attempts to find a legislative/regulatory resolution to the issue. This latter may be because the legislative window closes, or the opportunity structures shift with the arrival of a new government or leader who is hostile to an issue. Sheer ‘issue fatigue’ can also reduce momentum for a resolution. Alternatively, a window may seem to close with a weak settlement which then proves to be inadequate to resolve the tensions around the underlying issue. In that case, the streams may re-couple/be recoupled again quickly.

The repeated return of an issue, with either no resolution or one that is quickly revealed as inadequate to contain pressures, can be conceived as a set of linked windows (Figure 3). The figure is a conceptual outline only – there is no necessity for even-ness of periods between the return to “window” status. Policy windows might cluster with long periods where the streams are not coupled, for any number of reasons, including the lack of co-ordination among policy entrepreneurs, the lack of opportunities to propose policies, the successful resistance by incumbents and sheer ‘bad luck’ (other issues dominating the macro-political agenda and minimising policymakers’ discretionary attention).

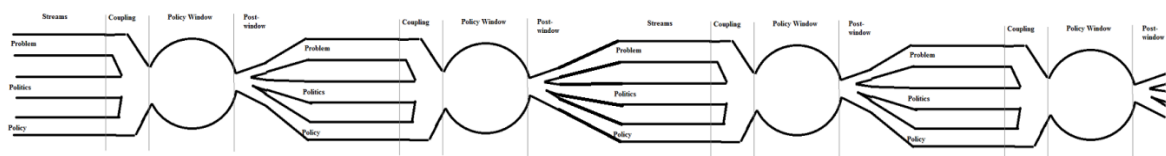


Figure 3

Institutional Work

On its own MSA provides a temporal framework into which data can be collected and organised. Although agency is allowed in the existence of ‘policy entrepreneurs’, the approach is- on its own – less helpful for thinking about the interactions between proponents and opponents of (policy) action. How do proposals get responded to by incumbents? How are they blocked, side-lined, co-opted, soften? What do policy entrepreneurs do in response to these de-railing attempts? Without The danger is that it becomes an exercise in ‘stamp-collecting’, merely ‘one damn thing after another. If we are to make sense of *who* is doing what, why and with what impact, we need a further lens. Therefore, a concept introduced by Lawrence and Suddaby (2006) is useful. In their 2006 paper

(p.217) they point out that *‘[institutions] require the active involvement of individuals and organizations in order to maintain them over time.’* These activities are called ‘institutional work’, which they define as *‘the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions.’*”

In a later paper (Lawrence, et al. 2011) they argue that research around institutional work help researchers re-examine the relationship between agency-institution relationship, which they see as a *“permanent recursive and dialectical interaction between agency and institutions”* (Lawrence, et al. 2011: 55)

There are four basic types of institutional work. Three are introduced by Lawrence and Suddaby (2006) as creative institutional work, maintenance institutional work and disruptive institutional work. The fourth kind – defensive institutional work – is of special interest to answer the research questions. It was introduced by Maguire and Hardy (2009) in a study of how DDT went from ‘wonder-product’ to pariah in the space of a decade. They define this as *“the purposive action of individuals and organizations aimed at countering disruptive institutional work.”*

Bringing MSA and IW together.

So, for a single policy window, we have the three preceding streams, the moment of coupling (conducted by policy entrepreneurs), and then the window itself. Within each of these, different (constellations) actors are battling for position, performing different kinds of institutional work. In figure 4 this is illustrated with incumbents performing creative, maintenance and defensive work as represented by red arrows pointing), while challengers, by definition, perform disruptive work – represented by green arrows.

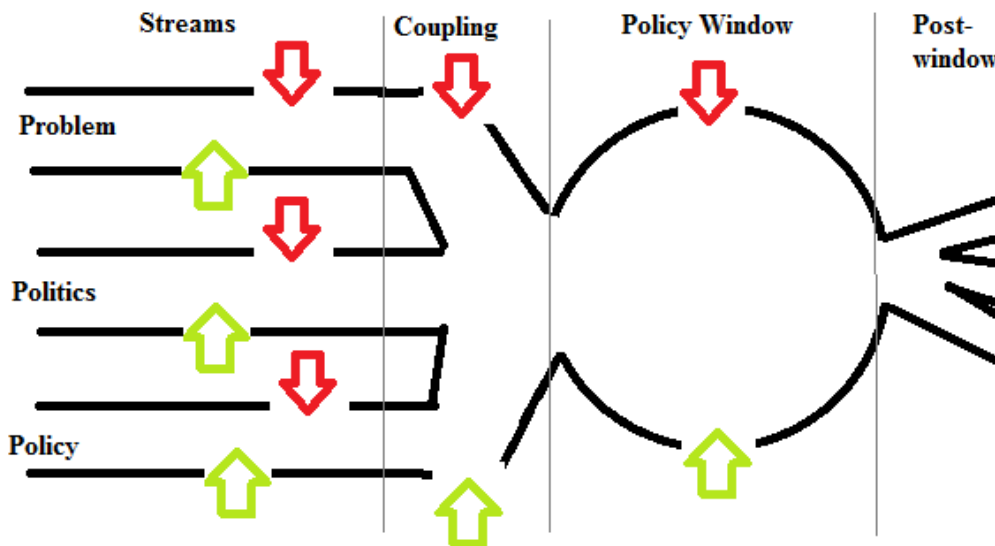


Figure 4: Types of institutional work within a single policy window.

However, taking the temporal aspect of policy battles seriously, leads to a realisation of sequential windows, with learning occurring between windows, on the part of both policy entrepreneurs and their opponents (figure 5) and, crucially, accretion of relationships over time, as both incumbents and disruptors strive to consolidate gains (in either policy or successful resistance to attempts at creating policy, and creating infrastructures to maintain and expand capacity for anticipated future battles.

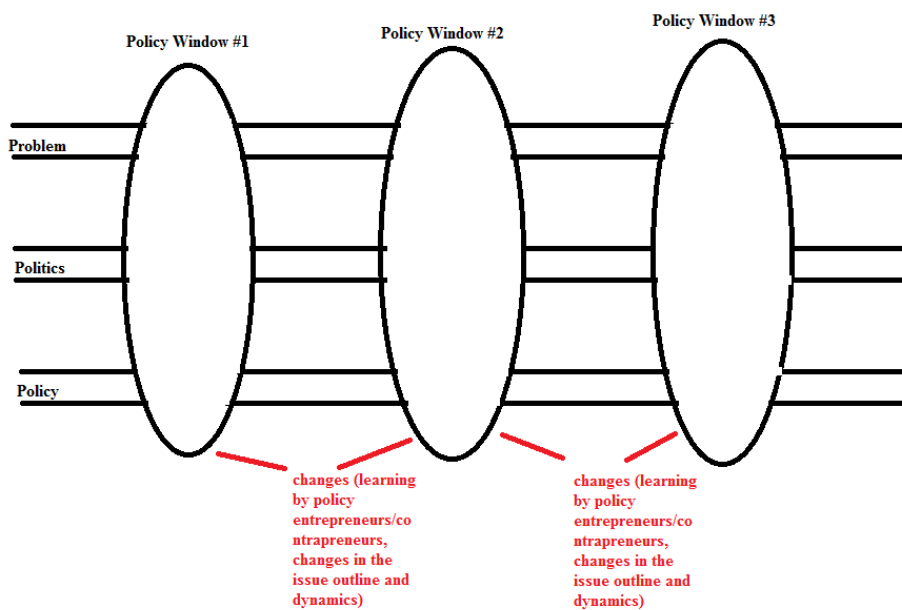


Figure 5

Four windows in Australian climate policy

Having explained the basics of the MSA and of Institutional Work, I now turn to the case study. For the sake of discussing incumbent resistance to policy innovation, there are four particular windows of note¹ – the context of each is briefly described, before describing the specific types of institutional work performed by incumbents.

Window 1 (1988-1992)

The first window took place against the backdrop of the first wave of public awareness of climate change (following on from the Ozone issue of the mid 1980s) and, in Australia, a distinct wave of environmental concern around a variety of local issues around habitat preservation, water and air pollution and biodiversity crisis. Climate change was one issue among many.

The initial incumbent response, from business at least, was to expect that concern would soon pass. However, politicians paid more attention, especially after environmental candidates achieved 15% of vote in the Tasmanian elections in May 1989. The high water mark for climate policy was the October 1990 declaration by the Federal government of an ‘Interim Planning Target’. By this time though, the incumbent response moved into high gear (discussed below). The advocacy for a price on carbon (at this stage merely a carbon tax, the funds from which would be used to encourage the research and development of renewable energy technologies) came from a major environmental NGO, the Australian Conservation Foundation. The proposal gained little traction, was side-lined and finally extinguished as the space for more-than-voluntary policy mechanisms diminished through 1992, while ‘big ticket’ policies (including the Rio Earth Summit and the National Greenhouse Response Strategy) were ratified.

Window 2 (1994-1995)

The attempt to close off climate policy was successful only in the short-term. Policy entrepreneurs used domestic and international factors (in the latter case, the impending first Conference of the Parties, to be held in Berlin in March/April 1995) to push the question of a carbon tax back onto the macro-political agenda. In this they found a major ally in a new and credible Environment Minister. Although the issue returned quicker than expected, this time incumbents were ready and able. A short sharp political debate culminated with the Environment Minister withdrawing his proposal, aware that it would not gain enough support in Cabinet.

¹ Two other attempts to get carbon pricing onto the agenda merit further study – in the period 1998-2000 and again in 2003, but fall outside the scope of this study, since incumbent resistance was limited. The availability of sources are also constrained for these episodes, which were largely conducted within the cabinet (especially the 2003 case).

A change in government in Australia (from centrist to right-wing) in March 1996 shrank the opportunities for meaningful climate policy dramatically. The two parties in the coalition government were largely hostile to environmental measures (the National Party very much so). However, some sectors of business saw opportunities (or inevitability) in global emissions trading schemes. The Australian Federal Treasury was convinced of the need for Australia to have an ETS, but was unable to parlay this into success within the Cabinet. In the period 2000-2003 two attempts at introducing an ETS were blocked by powerful political actors who opposed climate action for ideological reasons (i.e. they simply did not believe climate change was a threat that needed dealing with).

Window 3 (2006- 2009)

Domestic and international factors made possible for policy entrepreneurs to ‘couple the streams’ and so open a new window. Internationally, with the ratification of the Kyoto Protocol by Russia in early 2005, the commencement of the European Union Emissions Trading Scheme the same year and G8 meeting all contributed to a sense that carbon pricing was inevitable. Al Gore’s documentary *An Inconvenient Truth* and the Stern Review by World Bank economist Nick Stern contributed to this too. Domestically, Australia was suffering a prolonged and intense drought, and a new Opposition leader used the issue to distinguish his party (and himself) from the government. The streams were coupled in November-December 2006 by the Prime Minister (under duress). For three years battles were fought over the exact details of the proposed policy. Industry lobbied – successfully – for ever more concessions, enraging environmentalists. In late 2009 the window abruptly closed when the Opposition replaced its pro-climate policy leader with a fierce opponent. The window was closed, but the issue would continue to cause havoc for politicians....

Window 4 (2010-11)

After an election that brought about a hung parliament (rare in Australian history) the centrist ALP government had to pursue carbon pricing to maintain power, which relied on several pro-carbon pricing independent MPs. A cabinet subcommittee was established, and this was relatively impervious to the kinds of lobbying and pressure which had doomed the previous attempt. A ferocious public battle, lasting six months, erupted over the policy and the legitimacy of the process and the purpose of the policy,. In November 2011 legislation was passed: Australia would have a carbon price, to start on 1st July 2012.

Having given the barest-bone outline of the four windows under discussion, it is now time to discuss the dominant incumbent strategies in each of these windows. For sake of clarity, in each case these are divided (with some violence to the (messy) reality of the matter) into three categories – political, economic and cultural.

Incumbent work

Window 1

Political- In the period leading up to the March 1990 Federal election both major political parties were making specific and ambitious promises about emissions reductions (with the opposition Liberal Party actually having a more stringent target). The dominant business lobby group, the Business Council of Australia (BCA), created an Environmental Taskforce, which began to release policy documents and to respond to governmental proposals. The BCA's taskforce tended to praise policy proposals from the 'economic' ministries (Primary Industry and Energy, Treasury, Trade), which argued for 'wait-and-see' and minimalist action, and vigorously attacked the efforts of the Department for Environment, which argued for aggressive action on energy efficiency and support for renewable energy. It tended to be relatively emollient in its rhetoric, with the Australian Mining Industry Council (AMIC) more prominent as an 'attack dog', arguing in public that the Environment Minister was captured by environmentalist groups. The BCA and individual fossil fuel companies participated in various policy forums (such as the Ecologically Sustainable Development process), trying – usually successfully – to water down proposals and shunt them into appendices of reports. The BCA co-ordinated with six other business lobby groups to produce a report attacking support for energy efficiency measures and renewable energy. In the crucial period in which Australia's negotiating position for the Earth Summit and a possible domestic carbon tax were considered (September 1991-March 1992), the BCA and other business lobbies commissioned and published a large number of economic modelling studies to argue against any economic measures in response to climate change. Crucially, late in this window, a new network that would prove very important in the coming decades formed: the Australian Industry Greenhouse Network (AIGN) was initially a joint project of the BCA and AMIC, simply a discussion forum and information clearing house. It would prove its worth in the next window.

Economic- Incumbent industries expressed some interest in climate mitigation technologies (see for example the 1991 conference on 'clean coal' in Sydney), but investment actually flowed to improving the economic efficiency of the extraction of coal and other raw materials.

Culturally- Incumbents worked to defend against the inroads made by environmentalists seeking to use climate science as a rationale for policy innovation. They were keen to cast doubt on the underlying science of climate change, since this would lower the urgency in policymakers minds for taking action. An existing think tank, funded by manufacturing and fossil fuel interests, the Institute of Public Affairs, was involved in bringing American climate sceptics to Australia for speaking tours. A new think tank, the Tasman Institute, was created, and it engaged closely with the policy process around climate change, specialising in 'rapid rebuttal' reports of the efforts of policy entrepreneurs who were attempting to keep pressure on policymakers for strong climate responses in 1991-2.

There were other ‘freelance’ actors casting doubt on climate change at this time, (e.g. Daly, 1989), but these do not appear to have been co-ordinated and supported in the ways they would be in window 4. Meanwhile, the mining industry sought to maintain the existing social norms around coal and mining more generally, with an extensive advertising campaign with the tag-line “*Mining- It’s Absolutely Essential.*”

Window 2

Political- Incumbents faced a serious political problem in early mid-1994. A well-respected politician had become Environment Minister, and the existing Australian policy response to climate change was clearly not going to reach the goal agreed at Rio of stabilisation of anthropogenic emissions at 1990 levels by 2000. This was especially important as the first “Conference of the Parties” would be held in March 1995, and Australia wanted credibility with which it could slow momentum to a strong international climate regime. The Environment Minister flagged that he was actively considering the introduction of a relatively low carbon tax; the money raised would fund research and development of renewable energy.

Incumbents chose to defend by organising a co-ordinated and tightly controlled campaign with two objectives. Firstly they sought to convince policymakers (especially in the economic ministries) that the tax proposal would cause untold economic dislocation and hardship. They did this, as per window 1, with a well-timed and co-ordinated flurry of economic modelling reports. They took pains to have these reports well publicised in the mass media. They radically increased their lobbying presence at the same time. Further, they lobbied state governments – many of which feared their revenue base would shrink- to join them in opposing the federal tax. Finally, they allied with the major trade union body in Australia (whose climate and energy policy was controlled by the mining unions) at a crucial juncture in early 1995.

The second aim was to offer a voluntary agreement as an alternative. This again involved getting a large number of different trade associations to co-ordinate their lobbying and to agree to participate in such a voluntary scheme. The AIGN was crucial as a co-ordinating body throughout this campaign.

Cultural- What is striking in this window is the relative lack of incumbent willingness to cast doubt on climate change. According to Wordern (1998), there was a conscious decision to eschew such strategies, for fear that they would give proponents of a carbon tax additional ammunition and morale, while potentially reducing the access of fossil fuel executives to ministers and public servants. Climate change denial in this window was limited to a few opinion pieces in newspapers and ‘the IPA Review’.

Between the second and third window a fierce battle was fought between business interests who thought that an Australian emissions trading scheme would be beneficial to both reduce emissions and

prepare for a seemingly inevitable global market, and those opposed for ideological and/or financial reasons. The battle lines did not divide neatly between fossil fuel and renewable energy companies (there were very few of the latter, in any case) – major firms such as the Australian wing of BP, the Australian Gas Association and also mining giant all favoured an ETS. However, other business interests blocked their lobbying. In the end, the BCA announced that it had no position on the ratification of the Kyoto Protocol, and policy stasis prevailed.

Meanwhile, the Australian Coal Association expressed its rhetorical support for carbon mitigation technologies – especially carbon capture and storage. However, it did little more than produce reports – a levy on coal exports to fund research and development only following as public pressure grew in the mid-2000s.

Window 3

Political- Fossil-fuel business incumbents faced an unusual situation from late 2006 – a bipartisan consensus for an emissions trading scheme. The old methods of blocking, diverting and promising voluntary schemes – were no longer effective in the face of this political consensus and broad public concern about climate. Rather than attempting to defeat an ETS, they chose to shape it. They did this primarily through an extensive lobbying campaign aimed at winning concessions about when the scheme would start, what sectors it would cover, the number of freely allocated permits and other technical issues. A senior business and policy figure, Ross Garnaut described this as *“the most pervasive vested-interest pressure on the policy process since the Scullin Government and ... the most expensive, elaborate and sophisticated lobbying pressure on the policy process ever. Never in the history of Australian public finance has so much been given without public policy purpose, by so many, to so few”* (Garnaut, 2008).

Outright denial of climate change was again largely eschewed in this window, but the latter part of the window did see the rise of a small, tightly-connected network of groups (with links to the Institute of Public Affairs) which lobbied MPs to oppose the proposed ETS on a variety of grounds. Some of the arguments used cast doubt on climate science, while others argued that Australia should not act until its trading partners and competitors had done more.

Economic- The new ALP federal government expressed enthusiasm for carbon capture and storage and provided generous funding for the Global CCS Institute. State governments (especially Queensland – a major coal exporter) also funded pilot projects. Industry interest was cautious, and ceased abruptly with the coming of the global financial crisis in mid-2008. Mining companies were benefitting from a huge boom in demand for mineral resources (the so-called ‘commodity super-cycle’) at this time.

Meanwhile, renewable energy policy languished throughout most of the window, with the pre-existing (inadequate) target that had been produced in 2001 and already rapidly exceeded not

revisited. Proponents of renewable energy argued that this was largely due to the efforts of the Energy Minister, a vocal supporter of the fossil fuel export industry and a climate skeptic.

Cultural- Throughout the boom in concern about climate change incumbents burnished their environmental credentials with voluntary schemes, CSR efforts and advertising campaigns, either at a company level or through their trade associations. At the climax of the public policy battle, in the last months of 2009, an extensive publicity campaign – ‘*Let’s Cut Emissions, Not Jobs*’ was run the Australian Coal Association, with television, radio and newspaper adverts supplemented by a website. From mid-2009 climate denial, which had been an extant but relatively fringe phenomenon, started to gain serious traction, thanks in part to the efforts of the Institute of Public Affairs, which brought climate skeptic speakers to Australia on speaking tours and helped publicise books that cast doubt on climate science.

Window 4

The fourth window is the shortest and by far the most volatile of the four windows. It is at this point that the tried and trusted methods of incumbents finally failed. They had moved from opposing policy (window 1) to proposing voluntary policies to block mandatory ones (window 2) to agreeing to a mandatory policy while seeking to weaken it and shape it to their liking (window 3). They now were faced with a government – for reasons of political survival – that was determined to legislate a scheme, and which was undertaking policy development in ways that were isolated from the usual methods of lobbying that had worked so well previously, especially in the long window 3. Incumbents therefore innovated with new and intense other methods

Political- Although the Multi-Party Committee on Climate Change established by the Gillard government to produce an ETS proposal was a Cabinet-subcommittee (and therefore its meetings were closed, and the papers produced for it not available), lobbying of individual members was nonetheless intense. Perhaps too intense: the Climate Minister Greg Combet recalled “*the meetings with the coal industry were particularly difficult and they were very aggressive. Let's say I was shocked at how rude some of the executives were*” (Priest, 2013).

Meanwhile, the Opposition Leader, Tony Abbott, called upon business to become ‘activist’ in defeating the ETS. This wish was fulfilled when the Australian Trade and Industry Alliance formed. (see below). Meanwhile opponents of carbon pricing ‘raised the heat’ of the policy debate. *The Australian* newspaper misrepresented the position of a large Australian bank (Westpac) over its carbon policy stance. Westpac, which in 2008 had urged Rudd to keep the CPRS compensation to a minimum (Irvine, 2008), and other previously loud groups, such as Ai Group, were largely silent during the heightened period. Ai Group had tried to ‘subcontract’

its support for ETS to an international consultancy. The consultancy showed the Opposition drafts of its work. The response was extremely vehement, and the consultancy, fearful of its future relationships with the Coalition, watered down its findings to meaninglessness (Mildenberger, 2015).

Economic – enthusiasm for CCS had disappeared from state and federal government circles by 2011, and retained a vestigial life in the press releases of the Australian Coal Association and the work of the well-funded GCCSi. Meanwhile, new infrastructure and new mines were being proposed and constructed throughout the fierce debate over climate policy.

Cultural- In 2010 the mining industry had reacted to a proposed Mining Tax with an enormous public relations campaign called ‘Keep Mining Strong’, which flooded the airwaves with television and radio adverts. Newspaper adverts accompanied this. Viewers were urged to contact their MPs to express their support for the mining industry. After the tax proposal was withdrawn, Rio Tinto’s CEO commented that *“policymakers around the world can learn a lesson when considering a new tax to plug a revenue gap, or play to local politics”* (Albanese, 2010).

This strategy was repeated in 2011, with the Australian Trade and Industry Alliance, created by the Minerals Council of Australia (the successor organisation to the Australian Mining Industry Council). Meanwhile the Institute of Public Affairs intensified its efforts, producing newspaper adverts, books and massive amounts of publicity material which asked individuals to contact their MPs. According to the former head of the AIGN John Daley, the IPA “conducted very poor analysis” but was: “very influential in the public debate.... IPA picked up a lot of what was going on in the United States regarding climate change and brought it to Australia. They were especially effective in persuading a chunk of the Liberal Party that climate change was something they should ignore” (Sharova, 2015:76).

Alongside this, media figures (especially radio ‘shock jocks’) organised and spoke at rallies in Canberra and Sydney opposing the introduction of the ETS, which had been reframed as a *‘toxic tax based on a lie’*.

When the legislation finally passed, in November 2011, protestors had to be escorted from Parliament House. Opposition Leader swore a ‘blood oath’ that the legislation would be repealed. He was as good as his word. In 2014 the ETS was repealed. Australia still, four years later, has no coherent carbon emissions reduction policy.

	Political	Economic/technological	Cultural
Window 1	Lobbying to deflect/defer the issue, then bury it in committees Economic modelling to quash a) targets and b) support for renewables (within wider rubric of disdain for 'picking winners') Creation of new co-ordinating bodies (BCA Environmental Taskforce, AIGN, Tasman)	Initial enthusiasm for/expectation of technological responses (quickly abandoned once policy pressure eased).	Speaking tours by skeptics Letters in newspapers 'Mining It's Absolutely Essential' campaign
Window 2	Lobbying, now co-ordinated by AIGN Selective leaking by sympathetic bureaucrats Economic modelling Enlisting 'unexpected' allies	Prevention of the creation of institutional support for renewable energy.	Highlighted potential costs (job losses etc) of policy - Deployed ACTU as actor/ally Consciously eschewed climate denial
Window 3	Enormous quantities of lobbying (successful) Limited use of economic modelling	Limited enthusiasm for CCS, dwindling as policy window progressed Stasis on support for renewable energy	Emollient actions, Corporate Social Responsibility and publicity campaigns - "LCENJ"- short-term, (emollient)
Window 4	Lobbying, but heavy-handed and ineffectual Limited economic modelling Creation of new umbrella bodies.	Ongoing attempts to delegitimise renewable energy.	Much more aggressive, ATIA (aggressive) Rallies, protests, physical actions. "Raising the heat" to dissuade business allies of pricing from speaking out. Overlap with climate denial movement (while not endorsing some claims/actions, still found them useful as a 'radical flank'.

Table : key creative maintenance and defensive work within the four windows

Having identified what types of work were present in each of the four window is interesting, but insufficiently so for transitions scholars. More important is the question of how the types of work shift over time, and, crucially, whether these can help us to suggest reformulations of the nature of incumbency and regimes. Before doing that, a brief discussion of the current and future actions of incumbents in preventing meaningful climate policy is indicated.

Although the Australian Federal Government announced a reduction of 26-28% in Australian emissions by 2030 (on a 2005) baseline, it is not taking strong action to ensure this will happen. There is no carbon price at present, and uncertainty as to the lifespan of the renewable energy target. While incumbents in the political sphere are acting to continue this policy paralysis (see the recent ‘Monash Forum’ – in which ex-Prime Minister Tony Abbott and other figures called on the Turnbull government to provide \$4bn in public funds for a new coal-fired power station). Given the political volatility at present, industry may well be preparing for a change in government by identifying lobbyists with personal relationships to senior Labor figures who can secure meetings so policies can be modified to suit the needs of (especially) the gas industry, which has more allies than it did 20 years ago.

Tensions between state and federal government will continue, and defenders of fossil fuels can be expected to attempt to exacerbate them where they perceive a tactical advantage.

One material development of note - the proposed Snowy Hydro 2.0, by which water could be used as an energy storage mechanism - could be an incumbent-stabilising technological development within the grid, extending the life of fossil fuel generation, while providing a patina of ‘green-ness’.

New laws giving police more powers to stop, search and detain protestors have been passed in New South Wales (de Kretser, 2016) and Environmentalism is already being framed as ‘radicalism’ and ‘extremism’ in Federal government ‘Radicalisation Awareness Kit’ supplied to schools (Jabour, 2015).

Economically, some major mining companies (specifically BHP and Rio Tinto) are limiting their coal exposure, selling assets or spinning off new companies. As assets decrease in value we may see intensification of use – trying to extract value while any still exists – even if this accelerates decline. In any case, as mines close or face closure, incumbents will probably attempt to socialise the cost of mine-site remediation, while continuing to fight health-based claims for compensation.

There are various cultural strategies that incumbents have adopted, with mixed success. There will be continuing attempts to blame all problems with the existing electricity grid (around price, reliability etc) on renewable energy. Teething problems will be painted as existential threats, with the inevitable distortions, corruption and hype within renewables and storage amplified to tarnish the ‘brand’. Proponents of renewables, and opponents of cheap international credits, will continue to be attacked as effete elitists, extremists and purists and ‘un-Australian’ⁱ uninterested in the problems of ‘normal people’.

Discussion

Having given an historical overview of the four policy windows in which carbon pricing was actively and publicly considered, it is time to picking out a few potentially interesting trends worthy of further discussion, to contribute to the question of incumbent resistance to sustainability sociotechnical transitions. Limitations of the work and scope for future work are also discussed.

Climate change arrived as a public policy issue abruptly in 1988. Although it had been a minor theme in the earlier wave of environmental concern (from the late 1960s to the early 1970s) there was no reference to this by any actors. Business actors were taken aback at the vehemence and seeming breadth of environmental concern, and their institutional (in the sense of formal organisations) was a slightly slow one. However, by the end of the window their first response (the BCA's environmental taskforce) had been replaced by what would be a more influential co-ordinating body – the Australian Industry Greenhouse Network, and other groups, with a more aggressive and public-facing remit had been created. The second window is particularly interesting in that those groups proved their worth, and that climate denial was consciously eschewed. Meanwhile, the incumbents had identified and made common cause with a significant civil society actor – the mining union – which had a two-fold benefit. Firstly it offered them a defence from the accusation that they were merely defending the interests of the super-rich. Secondly, it prevented a 'red-green' coalition from forming.

The third and fourth windows are also tightly temporally entwined. In these windows a number of different incumbent trade associations all lobbying for concessions in a relatively unco-ordinated manner (distinct from window 2), but with success. However, this lobbying and lack of co-ordination was predicated on easy access to government figures who were willing to make concessions. These conditions did not persist, and the fourth window shows much tighter co-ordination of actors, and a serious effort to dissuade pro-carbon price business groups from supporting the Gillard government's proposals. An unprecedented and vigorous campaign to mobilise sections of the public was therefore pursued.

As the cultural and political salience of the issue grew, incumbents seem to have engaged in more determined and high-voltage strategies to preserve the status quo. One consequence of this in the Australian case has been to 'shift the goalposts' and make the use of economic measures (taxes, emissions trading, emissions intensity schemes) politically toxic.

The work has limitations. There is an inherent danger in the 'gaudy,' in focussing on things that have noise and light, but can give a false sense of control (Stark, 2000) . Such a focus can lead to researchers missing the longer-term, subtler and institutional changes. For example, supporters of fossil fuels had to undertake major defensive work (blocking intra-business disruptors) between 2000 and 2006, after Treasury had 'switched' from opponent to supporter of carbon pricing. This paper, because the focus is on carbon pricing, has not told an equally important story – the ways in which incumbents acted to slow the development and deployment of renewable energy technologies in

Australia. Since 2013 this has been a major effort of incumbents – calling for constant reviews of renewables targets, which helps to create investment droughts.

There are promising strands in investigating the changes in incumbent response to policy innovation over an unusually extended period. How do incumbents mobilise and organise themselves? How do they deal with the problems of ‘free-riders’ and defectors from a closed industry front?

Under what circumstances will they abandon the traditional methods of influencing politicians and bureaucrats directly? What new methods will they use instead? How do they respond to the rise (slow or rapid) of economic competitors? Under what circumstances do they eschew issue minimisation/denial? How do they respond to escalating damage to the perception of their core business?

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