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Climate Policy Paralysis in Australia: Energy Security, Energy Poverty and Jobs

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Abstract: According to the 2020 Climate Change Performance Index, Australia was ranked as the worst-performing country on climate change policy. The country has an ambivalent record of climate policy development as well as implementation, and has been criticized for its inaction. This paper considers why the country has been locked in climate policy "paralysis" through analyzing defining attributes of such a paralysis, and the tentative connections between domestic energy policies and international trade and development. We conducted a media content analysis of 222 articles and identified media narratives in three cases of energy projects in the country involving thermal coal exports, domestic renewable energy storage, and closure of a domestic coal power station. The analysis reveals that policy paralysis in Australian climate change policy can be traced back to the countervailing arguments that have been pervasive around domestic energy security, rural employment and international energy poverty. The political establishment has struggled to develop a sustainable consensus on climate change and the citizenry remains polarized. We also discuss how a "focusing event," such as a major natural disaster can break the impasse but this is only possible if energy security at home, energy poverty abroad and employment imperatives across the board are clearly delineated, measured and prioritized.

Keywords: Australia; energy policy; energy transition; media discourse; policy failure

1. Introduction

In international terms, Australia's emissions reduction commitments are clearly at the lower level of ambition. While the Australian government is not proposing any further targets for renewable energy beyond 2020, it continues to promote the expansion of fossil fuels. Experts note that the government is an increasingly regressive force in negotiations and has been criticized for its inaction [1,2]. The recurring question being asked is how did a country that only a decade earlier was being heralded as a beacon of climate action with a robust carbon tax, a functioning National electricity market and a mandatory renewable energy target, revoke its progress and reach a policy impasse? The devastating effects of the last bushfire season in 2019–2020 brought Australian climate action into sharp focus. The bushfires laid bare the governance dysfunction most acutely as the country grappled with ways to reconcile its revenue earnings from fossil fuels with the global impact of climate change, as well as endangered communities and wildlife at home. Such a major disaster is what Simshauser calls a "focusing event" which has the potential for spurring countries out of policy paralysis [3]. In the wake of the bushfire season, the Australian Climate Roundtable, a broad alliance of major Australian businesses, environmentalists, farmers, investors, unions and social welfare groups, released a statement saying that: "Australia is currently woefully unprepared for the scale of climate change threats that will

emerge over the coming decades … There is no systemic government response (federal, state and local) to build resilience to climate risks … Action is piecemeal; uncoordinated; does not engage business, private sector investment, unions, workers in affected industries and communities; and does not match the scale of the threat climate change represents to the Australian economy, environment and society" [4]. Combined with the falling cost of renewables technology and the fact that more coal power generation closed than opened around the world this year [5], the government's inaction to tackle the threat of climate change is becoming increasingly unjustifiable.

Australia's case is particularly informative because it sees itself as a "middle power" in global international politics in terms of its influence and is also an active member of the G20 [6]. Yet the aspiration of exerting greater influence in world affairs has not extended to environmental politics. Even when Australia hosted the G20 summit in 2014, climate change was largely kept off the agenda [5]. While this may be regarded as simply a mark of the ruling conservative Coalition's politics, even the Labour party, which is the dominant opposition party in federal parliament, has been cautious about opposing fossil fuel exports and has been ambivalent on the scale of domestic carbon pricing to meet the requisite mitigation targets [7]. Consequently, there have been a series of policy changes in Australia over the past 15 years with respect to its energy policy [3,8,9], but there are still major gaps in climate change policy at a Federal level.

At the same time, there has been recognition of the country's vast solar and wind energy harnessing potential and parallel developments have been underway in increasing the renewable energy profile of domestic energy (see Figure 1). New analysis from The Australian National University along with recently published figures from the Clean Energy Regulator demonstrate that Australia remains the world leader in wind and solar deployment per capita, particularly rooftop photovoltaic. However, federal policy is failing to invest in desperately needed infrastructural upgrades [10]. The Australian National University's Energy Institute further estimated that the country would be able to transition to 50% renewable energy by 2025 and has the capacity to reach 100% renewables by 2030 [11]. Major investments in battery storage have also been taking place in Australia at one of the fastest paces in the world [12]. Nevertheless, Australia as a major hydrocarbon exporter, is an empirical example of a country whose policies are still "captured" by carbon interests [5]. The fossil fuel sector still dominates much of Australia's current electricity generation, accounting for 81% (renewables are 15%) and 94% of all Australia's primary energy, as exports and imports of fossil fuels continue to rise as shown in Figures 2 and 3.

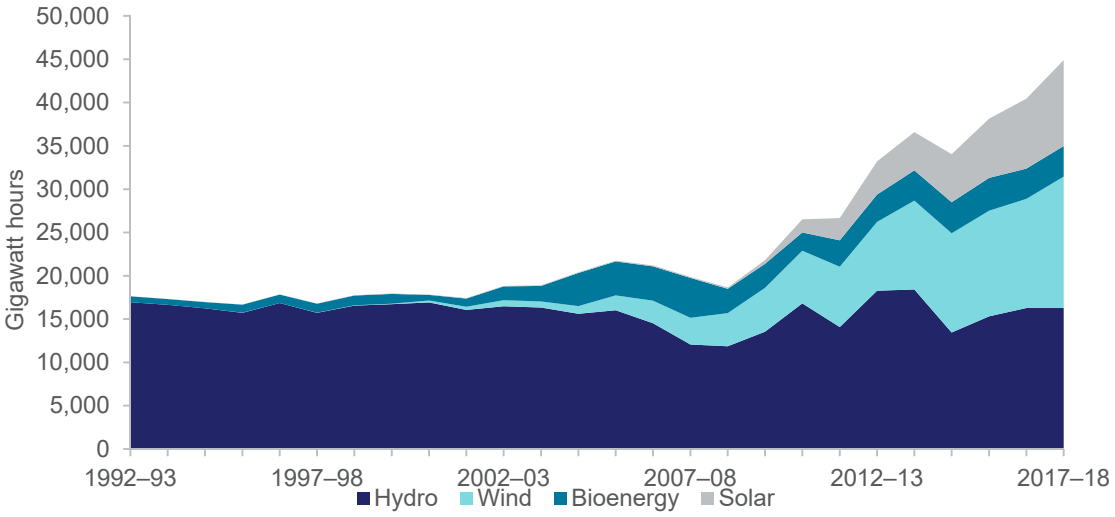

Figure 1. Australian electricity generation from renewable sources, as shown in Australian Energy Statistics (Australian Government Statistics, 2019).

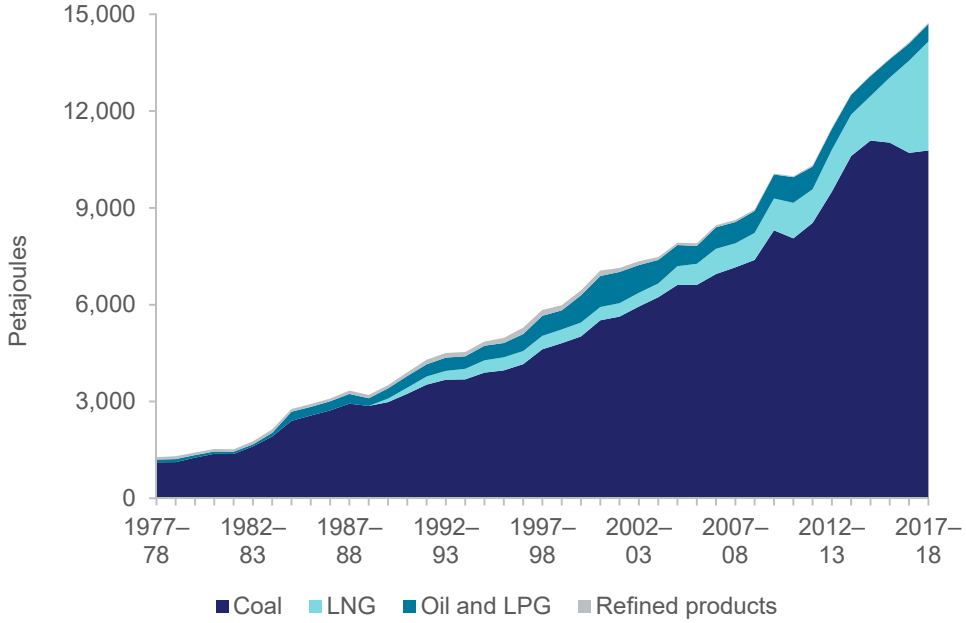

Figure 2. Australia's energy exports by fuel type (Australian Government Statistics, 2019).

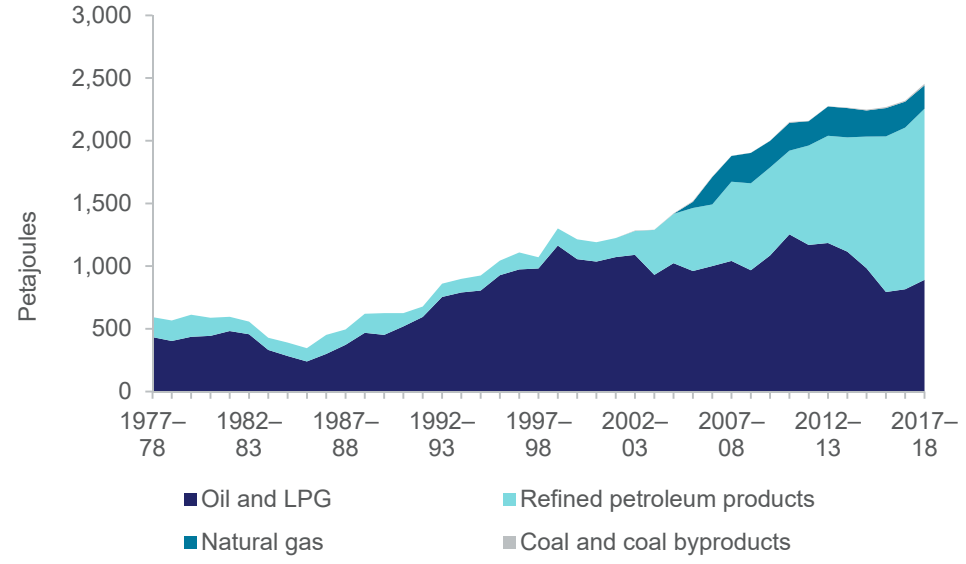

Figure 3. Australian energy imports by fuel type (Australian Government Statistics, 2019).

This paper is anchored in the discourse on "policy failure", though we consider the situation in Australia as an example of what we call "policy paralysis" instead. Though the term has been used colloquially in various contexts, we define policy paralysis analytically as an inability to get meaningful policy formulation that will meet specified targets—or even to agree on problem definition and policy objectives. Others have variously labelled this phenomenon as "policy autism", and "policy schizophrenia" [13], a "policy vacuum" [3] and "seesawing policies" [14].

Newman and Head [15] studied policy failure in the context of Australian climate policy and suggested that failure refers to one or more of four phenomena: (a) failure to attain objectives; (b) negative distributional outcomes; (c) negative political/electoral outcomes; and (d) failure to implement effectively. While all of these phenomena are evident in the Australian case, their analysis ignores the precursor failure to formulate effective policies and objectives and is segmented by each electoral cycle. For example, they evaluate the Rudd–Gillard government's carbon pricing plan within its own context and deem it a partial success. Similarly, on more recent terms, one could also evaluate

the Coalition government's National Energy Guarantee program as a policy that failed to attain its objectives [16]. Our understanding of policy paralysis in the context of this article is more panoramic in temporal scope and aims to consider the uncertainty of back and forth of climate policy changes with political shifts and electoral cycles. When defining policy paralysis, we consider emphasizing the crippling effect of uncertainty, ambivalence, contingency and instability on formulation of effective policy. Such paralysis is often justified on the terms that there is uncertainty about impacts or about consequences of particular actions. As the latest new regulatory body, the Energy Security Board, diplomatically states: "Fifteen years of climate policy instability … (have) left our energy system vulnerable to escalating prices while being both less reliable and secure" (A. Moran, "Deregulate and go back to coal" *The Australian*, 22 February 2018). This leaves the country's citizens in a kind of political purgatory as the policy trajectory remains uncertain [17,18].

In this paper, we characterize and analyze attributes that define such a paralysis in Australian climate policy. By investigating the attributes and presenting case examples, we provide insights to the narratives in Australian climate policy. Our core argument is that fossil fuel energy exports tie domestic jobs and international energy poverty narratives together to make a compelling case for the status quo [19]. This is supplemented with the established energy security and affordability narratives for domestic energy supply and then filtered through popular-media metadiscourse [20] to lead to public controversy that can be used as a pretext for policy paralysis.

We suggest three defining attributes (DA) of climate policy paralysis in Australia:

- DA1: Energy poverty. Export of resources for development overseas and energy accessibility and affordability domestically.
- DA2: Energy security. Self-reliance on energy without imported infrastructure and reliable "baseload". Enough supply to meet demand and stay on line despite disruptions such as faults in power lines.
- DA3: Jobs. A technological innovation to aid energy storage in Australia, providing baseload reserve and promoting regional development with new jobs in a re-positioned regional economy.

These attributes represent three concerns for the Australian climate policy, which, to an extent, follow the World Energy Council's "world energy trilemma" [21] in focusing on energy equity and energy security, though they differed in that jobs and regional development, rather than environmental sustainability emerged as the third defining attribute. "Jobs" was chosen as a defining term in this analysis specifically to highlight the key controversies with what might otherwise be thought of as a "win-win" case of renewable power. These three concerns and the public discourse around them may hold the key to the formulation of decisive energy policy in Australia.

2. Materials and Methods

To investigate defining attributes of policy paralysis, we conducted a media content analysis. As key policy narratives are situated and circulate in various arenas, the mass media is perhaps the most public of these in a democracy. In Australia, media releases, reports and commentary pieces are important sources of policy information [22]. Media analysis is particularly useful in examining the influences on public policy formulation since the media provides the public arena for hearing the arguments of policy-makers and those who seek to influence policy. It also allows some hidden and inferred policy objectives to be deduced since these are not always clearly or comprehensively stated even in official policy documents [23]. The analysis shows the key narratives being deployed and talking points being used by policy actors.

We sampled Australian mainstream media coverage for the years 2004–2018 (inclusive) using the LexisNexis Academic database and applying a keyword 'climate change' search. We collected and analyzed 222 media articles that provided insight to the positions of political, nongovernmental organization, and academic organizations active in the coal mining and energy policy space in Australia. Keywords are noted in Table 1.

Table 1. Defining attributes, dataset, case description and analytical criteria of the media analysis.

Defining Attributes	Reasoning	Number of Articles Analyzed	Case Examples	Keywords Used for Word Trees
DA1: Export of resources for development overseas and energy accessibility and affordability domestically.	Energy poverty: including using coal as a means of supplying electricity to India's poor	165	Proposed Adani Coal Mine in Queensland	"climate change", "energy poverty", "export", "foreign", "India", "jobs", "security"
DA2: Self-reliance on energy without imported infrastructure and reliable 'baseload'. Enough supply to meet demand and stay on line despite disruptions such as faults in power lines.	Energy security: domestic supply assurance with less reliance on imports	45	Liddell Power Station in New South Wales	"climate change", "energy security", "jobs", "unsustainable"
DA3: A technological innovation to aid energy storage in Australia, providing baseload reserve and promoting regional development with new jobs in a re-positioned regional economy.	Jobs: small job dividend compared to coal mining in short-term but longer-term green jobs potential	12	Tesla big battery in South Australia	"climate change", "jobs", "foreign", "sustainable"

In the media analysis, we applied a mixed method approach combining quantitative and qualitative analyses [15,16] in NVIVO software. Quantitative analyses involved the collection of media 'mentions' (media monitoring), and the descriptive statistics on these mentions, including word trees [24]. Qualitative analyses involved scanning, reading, understanding and interpreting the text.

Using a combination of keywords "climate change" and "energy poverty" (DA1), "climate change" and "energy security" (DA2), and "climate change" and "jobs" (DA3), we divided analyzed articles into three groups based on the mentions of the combination of particular DA's keywords. Each group of articles was further analyzed for case examples of each DA. Based on a qualitative scan of the articles, we identified case examples which received most mentions in the analyzed sample of media articles. For DA1, the case example is the proposed Adani Coal Mine in Queensland, the Liddell Power Station in New South Wales for DA2, and the Tesla big battery in South Australia as a case example of DA3.

To analyze the context of the articles and the case examples, we used a twofold approach. First we applied a word tree technique for each of the group of the articles. The word tree is an interactive form of the keyword-in-context technique. Its tree structure of the context allowed us to explore the context in more details and to capture any repetitions [24]. Based on the word trees, we identified multiple parallel sequences of words and analyzed which words most often follow or precede a keyword to explore a hierarchy of terms. After building a word tree for each DA, we continued by qualitative reading and interpreting the text from articles to understand the context of the word trees.

Table 1 shows defining attributes and their reasoning, together with criteria for the media content analysis described above.

3. Case Examples

Using media content analysis, we identified three recent projects that received the largest coverage in Australian media. Each project represents a case example of one of the defining attributes of what we call paralysis in Australian climate policy. The cases provide an explanatory context to our argument that fossil fuel energy exports tie domestic jobs and international energy poverty narratives together to make a compelling case for the status quo that lead to policy paralysis. The following paragraphs characterize each case example. The information provided was sourced from the analyzed media articles and additional descriptive sources.

3.1. DA1: Proposed Adani Coal Mine in Queensland

The Carmichael mine is a proposed thermal coal mine in the north of the Galilee Basin in Central Queensland in Australia, approved by the Queensland and federal Australian governments. The proponent is Adani Mining, a wholly owned subsidiary of India's Adani Group. As originally proposed, the mine would have been the largest coal mine in Australia and one of the largest in the world, with the sixty years of life of the project. At peak capacity the mine would produce 60 million tons of coal per year and around 2.3 billion tons over its lifespan [25]. In 2018, the proposal was scaled

back to 10–15 million tons per year. Exported coal is planned to be shipped to Asia, especially India. The project is predicted to create an extra 1500 jobs in Australia (1206 in Queensland) on the mine and railway projects during construction and generate $16.8 billion in taxes and royalties over the project's life [26].

The development was initially intended to represent an AU 16.5 billion investment, however, after being refused financing by over thirty financial institutions worldwide, Adani announced in 2018 that the mining operation would be downsized and self-funded to AU 2 billion [27]. The emissions from burning the amount of coal produced from the mine, would, in a "worst-case" scenario correspond to the emission of 127 million tons of CO_2. It covers the total emissions of Belgium and approximately 0.53–0.56% of the carbon budget that remains after 2015 as shown in the Joint Report to the Land Court of Queensland on "Climate Change-Emissions" [28]. So far, the project has faced multiple legal challenges. On 12 June 2019, the Australian Conservation Foundation won a Federal Court appeal, which found the Commonwealth had not properly assessed about 2000 public submissions on Adani's plans to use river water. On 11 January 2020, Greta Thunberg called on the German company Siemens to stop the delivery of railway equipment for the mine, but Siemens said that it would continue to honor its contract with Adani [29]. Adani still needs the Queensland Government to extinguish the native title claims of the Wangan and Jagalingou (W&J) people to the mine site. The Queensland Government has indicated it will not be rushing to make that happen. It will wait at least until Adani opponents within the W&J exhaust their legal avenue of appeal in the Federal Court [30].

3.2. DA2: Liddell Power Station in New South Wales

Liddell Power Station is a thermal coal-powered electricity generator located at Lake Liddell in the Hunter Region in New South Wales. The station was commissioned between 1971 and 1973. The power station has four 500 MW (670,000 HP) GEC (UK) steam driven turbine alternators for a combined electrical capacity of 2000 megawatts (2,700,000 HP). Liddell power station emits 14.70 million tons of greenhouse gases each year as a result of burning coal [31]. The power station is permitted to emit 1400 micrograms of NOx per cubic meter, while less than 500 mg/m^3 is considered an accepted international standard. NSW Environment Protection Authority's (EPA's) Review of Coal Fired Power Stations Air Emissions and Monitoring shows that the station exceeded its emissions limit on 19 occasions between 2011 and 2016. Seventeen of the exceedances occurred prior to 2014 when the generator was sold and a new licensee appointed.

The owner, Australian Gas Light Company (AGL), scheduled closure of the station by 2022 and replacement of the bulk of its capacity with renewable energy and battery storage. However, the company has come under intense pressure from the Federal Government to keep Liddell open, citing lower electricity prices and greater energy stability as potential benefits [32]. The Liddell plant and other older coal-burning power stations in Australia that are scheduled to close over coming decades led the Prime Minister of Australia, at the time, Malcolm Turnbull, to discuss with the Australian Energy Market Operator extending the life of a number of them to head off anticipated future electricity shortages. Turnbull said the government was advised that if the Liddell plant were to close in 2022, there would be a 1000 MW gap in base load, dispatchable power generation [33,34]. As a result, the Turnbull Government asked AGL to keep Liddell open beyond 2022, or to sell the Liddell Power Plant to Alinta Energy [35]. In August 2019, AGL announced that it could keep three of four turbines running until April 2023, to ensure reliable power supply to New South Wales during summer in 2022–2023.

3.3. DA3: Tesla Big Battery in South Australia

The Hornsdale Power Reserve is a grid-connected energy storage system co-located with the Hornsdale Wind Farm in the Mid North region of South Australia. At 100 MW/129 MWh, the Hornsdale Power Reserve is the largest lithium-ion battery in the world. The reserve was built by Tesla batteries during 2017, for a capital cost of AU 90 million, leading to the "Tesla big battery" name. This was

part of the policy of the South Australian Government, under former state Premier, Jay Weatherill. He championed a transition to renewables and greater energy efficiency but, as our later media analysis shows, was publicly vilified for creating high power prices, unemployment and other problems for consumers and regional economies. The reserve provides network security services to South Australian electricity consumers in concert with the South Australian Government and the Australian Energy Market Operator [36]. It is owned and operated by a French company Neoen, with the state government having the right to call on the stored power under certain circumstances.

According to Harmsen [37], in return for $50 million subsiding the 100-megawatt battery paid by taxpayers, the South Australia government will have access to some of the battery's output to provide stability services to the grid. The government also has the right to tap the battery's full output to prevent load shedding blackouts if supply runs low this summer. The contract signed with the Jay Weatherill's South Australia Labor government of the time shows the provision of network services amounts to AU 4 million a year for a total of ten years. Yet, Tesla will earn significantly more than that. Seventy megawatts of capacity has been contracted to the South Australia government from the 100 MW/129 MWh battery. Another 30 MW/90 MWh will be sold on to the wholesale market [38]. Based on the first six months of operation, the reserve is estimated to earn about AU 18 million per year [39]. The plant's planned expansion would cost AU 71 million, funded by AU 15 million from the state government, AU 8 million from Australian Renewable Energy Agency and up to AU 50 million in cheap loans through the Clean Energy Finance Corporation [40]. There are also prospects that Hornsdale will help open up additional revenue streams for energy storage and encourage further development of wind and solar generation [41]. However, opinions are divided. Although Tesla's battery has been widely admired as a success for the performance of the grid and finance-wise, this success is also the focus of strongest criticism. Hornsdale's arrival cut ancillary services prices by 90% across South Australia's eight FCAS markets [42]. As well as threatening the viability of frequency response businesses, there are questions about all the battery implies for economic impacts of increased renewable energy generating capacity and energy storage on regional businesses and jobs [41].

4. Results

The dataset of 222 media articles was selected from the full range of news sources indexed by Lexus-Nexis and was analyzed using targeted keyword filtering. The analysis identified some recurring patterns of discourse that emerged in the media dataset from using the selected keywords for each case example. The article harvesting covered a wide range of newspapers across the full range of the political publishing spectrum such as *The Australian, The Age, Crikey, Central Western Daily, Australian Financial Review, Courier Mail, Australian Broadcasting Corporation* and *The Border Mail*. The tone of the articles was predominantly supportive of coal mining and cautious of energy policy innovations unrelated to fossil fuels. The keywords assisted classification of the information and exploring of three defining attributes of Australian policy paralysis.

Boxes 1–3 show some of the word tree outputs for keywords described in Table 1. These word trees are examples of a form of metadiscourse that shows on policy paralysis. The text of the word trees reflects climate policy debates. They illustrate the contentious nature of all arguments against climate action. First, they highlight the strong value placed on affordability and access to electricity, both domestically and overseas. Second, the 'balancing of values' demanded of policy makers at all levels of government from federal to local. Third, they illustrate the rationale for continued export of fossil fuels (which, the discussion below shows, is further justified in terms of Australia as a source of 'clean carbon'). In fact, as the quotes and discussion make clear, these three arguments are closely entwined. The word trees are illustrative rather than exhaustive. However, coupled with some illustrative quotes and supporting narratives of key stakeholders on the public record, they support our suggested defining attributes of Australian policy paralysis.

Box 1. "Energy poverty" and the case of Adani Coal Mine Word Tree data key examples (sentence fragments were analyzed with energy poverty as the bridging phrase).

- On the one hand he argues that exporting more coal will help reduce energy poverty, and on the other he argues that our coal exports can do nothing to help or harm global emissions.
- Nathan Fabian, from the Investor Group on Climate Change says the industry's claims about energy poverty appear disingenuous. "If the industry was serious about eradicating poverty it would understand that runaway climate change would wipe out . . . ".
- Offer the country's highest feed-in tariffs and lowest green power price while negotiating with social welfare groups to tackle energy poverty in the region.
- "The cheapest electricity is coal", Pearson says, "If people are in energy poverty they are absolutely likely to be in poverty because the correlation between energy access and economic growth is incontrovertible".
- However, Debi Goenka, from the Mumbai-based Conservation Action Trust, is critical of the industry's claims about reducing energy poverty even assuming they had physical access to an electricity connection, people living below the poverty line would not be able to afford.

Box 2. "Energy security" and the case of Liddell power station Word Tree data key examples (sentence fragments with energy security as the bridging phrase).

- However, it's not just about affordability, it's also about energy security–the centerpiece of Labor's policy is to double the funding base of the CEFC (Clean Energy Finance Corporation) to unlock capital for generation.
- Gas infrastructure, including new pipelines and encourage new technologies to smooth integration of renewable energy into energy systems and promote energy security, energy efficiency was essential to help the UK and France meet their energy security targets.
- A shorten government would provide $5 billion to an energy security and modernization fund to encourage development of renewable energy zones.
- Energy efficiency was essential to help the UK and France meet their energy security, targets and over here smart energy use could deliver much more capacity than Hazelwood and Liddell power stations put together.
- If we adopt the basic policies common in almost all other developed countries, we can cut energy bills, boost energy security, and keep businesses thriving, these policies include support to help manufacturers save energy, minimum standards for homes to protect renters.
- NSW Energy Minister Don Harwin said the supply issue has been looked at closely by the energy security, taskforce a group set up in the wake of last February heatwave.
- Turnbull has restricted his response to asserting that the NEG is already working and quoting a purported claim by the energy security board that NEG will "reduce wholesale generation costs by 23 per cent and it will reduce household bills".
- When COAG (Council of Australian Governments) met in Adelaide, Harwin—without notifying federal and state colleagues in advance—moved that the energy security board provide policy options as to how to achieve NSW's (alleged) "net-zero by 2050"-vision.
- "Fuel supply is improving in the lead-up to summer", Mr Harwin said. "The NSW"
- energy security taskforce is aware of the issue and we are carefully monitoring fuel supplies.

Box 3. "Jobs" and the case of Tesla power station Word Tree data key examples (sentence fragments with jobs as the bridging phrase).

- The number of jobs would be 1464, so, you know, 80 per cent less than the 10,000 jobs, they claimed.
- Along the way it will create about 15,200 jobs, as well as $10 billion of investment in large-scale renewable energy alone.
- Port Augusta power stations and Leigh Creek coal mine expected to close by 2018, costing about 440 jobs the State Government will provide at least $1 million in support for communities hit by the closure of Port Augusta's two power stations and the Leigh Creek coal mine.
- Four days ago, it was announced that two dirty coal-fired power stations are to be shut down as early as next year, with the loss of more than 400 jobs then we need transition plans on how to transition this community. South Australia is looking to exploit more renewable power.
- But while Australians have been told these "reckless" policies will destroy jobs and discourage investment, some of the world's most-successful entrepreneurs have recently chosen to invest big in South Australia.
- As a mechanical undergraduate, myself and a lot of my friends are having a lot of difficulty finding meaningful jobs in Australia that aren't in a bank. How can we possibly have a renewable energy economy if our best and brightest are going overseas?

5. Discussion

The media analysis showed that articles quoted politicians, campaigners, businesses and authorities at all levels form international to local government, explaining the negative impact of uncertainty about climate and energy policies in Australia. For example, former South Australian (SA) premier, Jay Weatherill, bemoaned that, "This has been policy paralysis. So, SA has said 'all right, we've tried our hardest to get a national solution, we're going to take charge of our own energy future" (D. Wills. "X (Xenophon) reveals power play, puts Liberals, Labor on notice." The Advertiser. 28 February 2018). While our analysis was not meant to be a definitive quantitative exposition, we were are able to present a case of clustering causal linkages that are plausible. The narrative analysis presents us with the countervailing arguments which have led to a stalling and impasse of progress on climate policy despite initial success. In many ways this analysis also echoes A large part of South Australia's initiative was a commitment to renewable energy. Other states too, prompted by national inaction, have intervened. For instance, Victoria, and NSW set Renewable Energy Targets (RET) while Queensland's Clean Energy Target, although largely supporting gas-generated electricity, also included a renewable component [3]. However, renewable energy commitments are a key policy area that illustrates how market forces, innovation and investment are stymied by policy uncertainty. The RET has been reviewed multiple times and significantly modified on occasion, slowing down investment during these periods of uncertainty [43]. Other elements of energy policy like Carbon pricing and the National Energy Market have similarly given erratic signals to the market and energy industries. For example, "when the Coalition government walked away from the NEG (National Energy Guarantee) in August, during a 14-day period where the government had four different energy policies, electricity prices skyrocketed; wholesale electricity prices increased by over 122 per cent". (P. Conroy, "Labor's energy plan is region's best option", *The Newcastle Herald*, 4 December 2018).

Such policy uncertainty illustrates that Australia is beleaguered by a fragmented and unstable policy environment. This flies in the face of public opinion where 83% of 18–34 year-olds are concerned about climate change and even 73% of Queenslanders support the phasing out of coal-fired power stations as soon as possible [44]. However, the 2019 federal election was portrayed as a 'referendum' on climate policy and pundits claim that Queensland saved the Coalition government from the southern revolt. This reveals that electoral numbers (and hence perhaps policy strategists are not focused on overall averages, but on polarization and opening up fault-lines in the electorate—such as between cities and regions, young and old, tradition and innovation. Between them, Queensland and Western Australia account for one-third of the seats in the federal parliament and these are major mining states. This policy area, and media coverage of it in conservative media outlets with strong ties to the fossil fuel industry, has been held responsible, in part at least, for the demise of five prime ministers—most recently Malcolm Turnbull in August 2018. According to media reports "Amid rising internal chatter about a (leadership) challenge ... Prime Minister Turnbull and his senior ministers agreed to dump plans to legislate the emissions reduction target associated with the NEG" (J. Coorey, "Malcolm Turnbull scrambles NEG in bid to fend off leadership challenge", *Australian Financial Review*, 17 August 2018) with similar accounts of "ditching the Paris targets under pressure." (A. Bolt, "Turnbull panics. It's over" *Herald Sun*, 16 August 2018). Not all of the changes of political party leaders have been at the hands of the electorate, often they occurred when their own party became nervous about potential consequences.

The following sections discuss each case example towards our argument and definition of climate policy paralysis in Australia. Our goal in these sections is to highlight some of the key thematic linkages between each case and the concomitant explanatory variable.

5.1. Adani, Fossil Fuel Exports and Energy Poverty

The rationale for the Adani mine and other fossil fuel exporting industries rests on the potential for Australia to be a major global supplier of 'clean' coal, natural gas and other purportedly 'low emissions' fossil fuels to help meet the increasing demand for cleaner, affordable energy over what is

argued to be a multi-decade transition to a zero emissions future. The continued production and export of fossil fuels in Queensland and elsewhere is justified as contributing to accessibility and affordability of electricity overseas and domestically and hence improving equity.

For example, "If you're against Adani's mine you're against fighting poverty . . . (because) Adani's coal will provide power for lights, clean water and jobs in India." (D. Price, "Against Adani? You're against lifting the World's poorest out of poverty", *Australian Financial Review*, 27 February 2018). India's former Environment Minister, Jairam Ramesh said, "India will need to at least double its coal consumption in the next 15 years . . . Not just India but the whole world faces a cruel coal conundrum. How to meet the aspirations of billions of the global poor without cooking the planet. So is there a way out of this dilemma? Can we imagine a future beyond coal?" (*ABC Science Show*, 24 August 2016). Regional areas of Australia, too, see their 'poverty alleviation' threatened by any move away from coal-fired power. The Townsville Bulletin noted: "just as exporting Queensland coal would be a life-changer for the thousands of Indian villages which still don't have ready access to electricity, so too would a baseload clean coal power station unlock the North's economic potential and make it an attractive region for investment. The region's politicians must make a stand and . . . advocate for sustainable energy policy to protect regional jobs and economies" (*Townsville Bulletin*, 8 June 2017, p. 14).

The energy poverty argument has also been noted by the United Nations Climate Change Convention secretariat: "There is probably, an easier transformation in decarbonizing electricity in Australia than there is in decarbonizing the export portfolio. But both of those need careful, considerate, nuanced, planned, transition so that you are able to do this in a manner that is protective of the, ah, of the economic stability of Australia" (Christiana Figueres, Chief climate negotiator, United Nations speaking to reporter Geoff Thompson "The end of coal?" *ABC Four Corners*, 15 June 2015). Former Prime Minister Tony Abbott, infamously advocated Australia keep producing coal for domestic and international use, in October 2014, saying, "Coal is essential for the prosperity of Australia. Coal is essential for the prosperity of the world. Energy is what sustains prosperity and coal is the world's principal energy source and it will be for many decades to come" (Quoted in Four Corners, "The end of coal?" *The Australian Broadcasting Corporation*, 15 June 2015). Those views have persisted in successive Liberal-National Coalition governments as witnessed by the views of Josh Frydenberg, when environment and energy minister, "Australia has a big role to play because we're the second largest exporter of coal in the world. . . . there is an increased demand for coal in a country like India because they have 300 million people who don't have access to electricity or little access to electricity. Now they're quadrupling their investment in renewables, but they're also taking out other forms of improvement to their energy supply with an increase in use of some fossil fuels like coal" (E. Alberici, "Lateline", *The Australian Broadcasting Corporation*, 27 July 27 2016). Consequently, the current policy priorities are not divorced from a concern about export earnings since coal "brings in more than $40 billion a year from exports" (Four Corners "The end of coal?" *The Australian Broadcasting Corporation*, 15 June 2015).

5.2. Liddell Power Station, National Energy Self-Reliance and Reliability or Energy Security

The association of export revenues and low energy prices with coal is not the only policy objective. As the Minister for Environment and Energy at the time put it, "'The question is this', Mr. Frydenberg said, 'How do we establish a policy framework that manages the transition; achieves the objectives of lower prices, higher reliability and lower emissions; and provides constancy and consistency through political cycles?'" (B. Deacon, "Coal industry grapples with change and the challenges of transition", *ABC News*, 14 April 2018). The third objective seems to receive least policy attention, "A week before Scott Morrison appointed him as new energy minister, Angus Taylor told a commercial radio station that 'the obsession with emissions at the expense of reliability and affordability has been a massive mistake'" (E. Alberici, *Australian Broadcasting Corporation*, 28 August 2018). Reliability of supply is understood as related to energy security and ensuring base load that can handle fluctuations in demand

as is evident in a more National Party minister's statement about these intersecting goals: "Resources Minister Matt Canavan put it best last week when he said: 'I do not care if it comes from coal or gas, or solar or wind, or chook poo. The important thing is that it's the cheapest, most reliable and affordable option.'" (R. Boswell, "Need of the hour: cheap, reliable baseload energy", *The Australian*, 23 July 2018). The reaction of powerful policy actors (and many in the media) to the foreshadowed closure of coal mines or coal-fired generators, indicates a narrow understanding of energy security and of advanced technological possibilities, though perhaps an astute measure of potential for public doubts and disquiet in electorally critical seats.

In this vein, it is obvious in reports that the closure of Liddell power station concerned other policy-makers and that the Turnbull government sought to avert the impact of the proposed closure of the AGL-owned Liddell Power Station in 2022 (J. Frydenburg, "Liddell is a loss, but energy guarantee would light the way forward", *Australian,* 22 March 2018). The government of the day considered a range of potential responses that were tested with politicians, industry and, through the media, and public opinion. Some of these proposals in the government's maneuvering with AGL belied traditional values of the Liberal partners in the Coalition government, "Malcolm Turnbull (then Prime Minister) is trying desperately to keep the Liberal Party's free marketeers, the Nationals' agrarian socialists and peak bodies like the Business Council all inside the tattered old tent that John Howard built back in the 1990s." (R. Denniss, "Abbott's gut v Musk's brain and billions", *Canberra Times,* 22 September 2017). Commentators concluded this demonstrated further policy vacillations, " ... policy on the run is the last thing Australia needs. Yet this is exactly what we saw with the unedifying spat involving energy major AGL and the Government over the planned closure of the Liddell power station in 2022." ("Policy certainty would take power of beating", *The Courier Mail*, 7 September 2017).

5.3. Tesla Battery, Power Storage and Renewables Liability or a 'New' Economy in the Regions?

One result of tensions in balancing priorities is the ambivalence about an increased role for renewables in Australia's energy mix. The Newcastle Herald noted: "In the past, the jobs and economic benefits arguments have generally been enough to have new mines and life extensions approved despite specific objections from residents and green groups, and despite the growing unease at the role that coal is now widely accepted to be playing in global warming." (I. Kirkwood, "A justice denying a new coal mine due to climate change will not have the last word", Newcastle *Herald* 17 February 2019). In response, " ... the federal government is attempting to shift the priority in the proposed clean energy target towards reliability and allow for the development of new high-efficiency, low-emissions coal-fired plants for a national electricity market that is increasingly relying on renewable generation capacity" (A. White, "Generators scramble for supply as coal exports bite", *The Australian*, 14 September 2017, p. 7). A number of policy actors have also sounded notes of caution about reliance on renewables including researchers, "'We know that an overreach in the deployment of renewables leads to grid instability and price and energy security problems that have been well evidenced over the past few months,' Page (CEO of Melbourne-based-Global CCS Institute) says, 'Pinning all of the low carbon electricity task to just a few renewable technologies is not a rational approach to energy security ... CCS cannot be excluded from policy settings because of ideological prejudices towards fossil fuels', (G. Lloyd, "Carbon capture's cleaner future", *The Australian,* 22 February 2017, p. 11).

Despite sometimes strong incentives from state governments for an increase in renewable energy generation, there is a counter-narrative casting doubts about the potential of renewable energies and technological innovation to sustainably provide the equity, security, jobs and business that Australians value. Hence, the SA government's embrace of wind power and investment in the Tesla battery power storage facility was strongly criticized, "Australia is literally awash with coal and natural gas reserves, most of which we export. South Australia, in its obsessional pursuit of renewable energy and its anti-fossil fuel policy, has now found to its cost that businesses faced with soaring power costs and the unreliability of wind and solar power are leaving the state." (Democratic Labor Party Member, Tasmania, Letters to the Editor, *The Hobart Mercury*, 20 April 2017).

On the Darling Downs in Queensland, "When the coal seam gas industry scaled back, hundreds of jobs were lost, rental vacancies soared, and businesses failed. But Mayor McVeigh (Western Downs Regional Council) says the signs of economic recovery are becoming increasingly visible . . . 'One job in our small towns is really valuable, eight jobs is fantastic. This solar power industry is bringing hundreds of jobs.' . . . (similarly) . . . 'This region is about growth and development and we can sit here and go poor slowly or we can progress our region and the more development we can get in our region the more jobs' Ms. Dobie (Mayor of Southern Downs Regional Council) said." (P. Courtney, "Solar boom 'bringing hundreds of jobs' to Queensland's Darling Downs", *ABC Landline*, 19 Aug 2018).

Indeed, the renewable-power industry is subject to conflicting claims about job creation. On the one hand, "both the Federal Government and the Opposition support our Renewable Energy Target, which will double the amount of renewable energy across the country over the next five years. Along the way it will create about 15,200 jobs, as well as $10 billion of investment in large-scale renewable energy alone" (K. Thornton, "Harnessing the power of change", *The Courier Mail*, 6 August 2015 p. 47). On the other hand, "Mr Abbott (Former Prime Minister) set out to blame groups like the Bulga Progress Association and the Mackay Conservation Society (anti-coal mining campaigners) for Australia's rising unemployment" (R. Denniss, "Abbott's policy muddle was clear", *The Australian Financial Review*, 22 September 2015, p. 46). Such critics also point to rooftop solar flooding the market, resulting in downward pressure on electricity prices, which can ironically deter investment in solar and renewables because profitability has fallen. This is starkly conveyed in a recent report, the *Generator Statistical Digest 2019* released on 28 January 2020 (Generator Statistical Digest accessible at https://bit.ly/3amMZcw). Similarly, battery storage functionality in South Australia has cut demand and returns for frequency response services [3,41].

5.4. Policy Influencers and Inertia

While our analysis is not aimed at ascribing blame for particular strength of lobbying efforts, it is clear that the countervailing narratives have particular special interest groups behind them. The modus operandi of such interest groups in the context of energy has been discussed by Leah Stokes as "short-circuiting policy" in the context of American federalism around climate change [45]. Former Prime Minister Malcolm Turnbull's son Alex Turnbull, while true to conservative roots, offers a critique of the Liberal Party's energy policy: "I've been quietly very frustrated at how unproductive policymaking has been in this area and how partisan, because generating tonnes of volatility is great for hedge funds but it's not particularly good for consumers" he said. . . . Mr Turnbull said people who "own a lot of coal in the Galilee Basin (Queensland)" were exercising "undue influence on Liberal Party policy'" (E. Alberici, *Australian Broadcasting Corporation* 28, August 2018).

Some critics emphasize the financial power of these protagonists: "The mining lobby poured nearly $5 million into political campaigning last financial year, dwarfing comparable spending by environmental groups. The little-known ACA Low Emissions Technologies—lobbyists for the coal industry-spent $3.6 million on advertising campaigns in the 12 months after the last federal election, as the political debate about energy policy raged" (A. Gartrell, *The Age*, 2 February 2018). In this way, big money talks. As well a privileged voice is provided when industry spokespersons and politicians frequently publish commentary columns in the media despite claims that it is civil society organizations who are 'powerful and well-funded'.

Additionally, though not recognized as formally policy-makers, the media is influential and specifically strongly opinionated commentators like radio broadcaster Alan Jones, "He's been No.1 in the Sydney radio ratings for almost 30 years. His show is broadcast in full in Sydney and parts of southern Queensland and a one-hour highlights package goes to a further 64 stations across the country. He's been one of the most powerful, well-paid and controversial media people this country has ever produced, bending prime ministers and premiers to his whims . . . " (former Qld premier, Newman) says, "what gives this guy, sitting in his ivory tower in Sydney . . . 'Mr Cash for Comment' the right to dictate national energy policy?" (A. Bearup, *The Australian Magazine*, 9 December 2017,

p. 14). These causal linkages between these aforementioned factors is speculative and not directly linked to our evidence. However, the patterns that emerge from the narrative analysis suggest further study considering media and special interest-group linkages should be further explored through rigorous social science.

6. Conclusions

Climate change policy has suffered globally through the politics of uncertainty but a carbon export economy such as Australia posits a particularly interesting case of such paralysis. The United States has seen a similar advent of policy paralysis since it also became a carbon exporting nation in recent years. The intuitive self-interest of such a stance against aggressive climate action from established fossil fuel exporters such as the OPEC member states is well established. However, the Australian case suggests that such export-driven carbon policy paralysis is particularly potent in even more diversified economies. Australian policy in the areas we have examined in this paper is more responsive to the public discourse and prevailing 'narratives' than to supposed models of 'evidence-based policy' and 'deliberative debate of options' let alone international commitments. Narratives have changed over time—either with election cycles or in (opportunistic) response to particular crises or events—natural disasters, power failures, black-lung disease among coal miners or market dictated decisions. The market is moving faster than Australian policy-makers as evidenced in the scheduled closure of Liddell (2022) and Yallourn (2032) coal-fired power stations, and the exit of more than twenty coal-fired generation plants in the years 2005–2017 as well as of some gas-fired ones.

There is an evidence of a number of intended (and unintended) consequences of the policy indecision, such as a two/three speed/'patchwork' economy (Dutch disease: mining/energy export sector prospering at the expense of reduced competitiveness of domestic sectors), Piecemeal protectionism—e.g., supporting appetite for fossil fuels by radical restructuring of the electricity sectors (adequacy of capacity, availability of supply, affordability, sustainability [45], or maintenance of patterns in international geopolitical relations (around economic and security disparities) and associated resource nationalism. However, the federal government is still carefully avoiding making a climate change policy plans to change current policy directions. In lieu of decisive policy action on these fronts, a Royal Commission was established to investigate issues including factors contributing to the fires in early 2020. This will add to a string of inquiries and reports that have made recommendations related to both issues of climate change and bushfire prevention and management. Many of the conclusions and recommendations of these previous reports have gone unheeded. Yet, we are at a critical juncture in the international conversations on climate change targets. At the COP25 summit on Climate Change in Madrid in December 2019, Australia was blamed by many environmental activists for hindering faster progress in climate change implementation. The wildfires have accentuated and sharpened the criticism leading to greater introspection. However, in order for the wildfires to be realized as a focusing event for change, a deeper appreciation for the political history of the core arguments presented in this paper will need to be internalized by all stakeholders.

As we have suggested, there has been a lack of coherent exchange between parts of the government concerned about energy security at home, energy poverty abroad and jobs in the hinterland. A key policy recommendation from our research suggests a coordinated energy and climate strategy that acknowledges these linkages deliberately. Diversification of the economy in rural Australia will be key in realizing policy options for both energy security and jobs. Direct engagement on energy poverty at the international level should involve Australia's further involvement in organizations such as the International Renewable Energy Agency and the Global Green Growth Institute—both are international organizations which are addressing the energy poverty agenda at a multilateral level.

Our study reveals that policy paralysis in Australian climate change policy can be traced back to the countervailing arguments that have been pervasive around domestic energy security; rural employment and international energy poverty. We have provided a structured qualitative analysis of narratives to support our argument. The media analysis is a *reflection* of citizen perceptions, but also

of how discourse can *shape* perceptions. This dialectic between reflecting and shaping perceptions explains why the political establishment has struggled to develop a sustainable consensus on climate change and the citizenry remains polarized.

The 2019–2020 wildfires provide an example of what may be called a "focusing event" that may break the impasse but this will only be possible if energy security at home, energy poverty abroad and employment imperatives across the board are clearly delineated, measured and prioritized. The advent of the COVID pandemic in 2020 and its economic impact as well as the decline in fossil fuel demand and fall in prices may also be another focusing event to consider changes. However, the ultimate policy impact of such events will only be realized if concerted effort is made to integrate and coordinate national and international energy and climate change policy.

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