



Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

Chandrashekeran, S;Morgan, B;Coetzee, K;Christoff, P

Title:

Rethinking the green state beyond the Global North: a South African climate change case study

Date:

2017-11-01

Citation:

Chandrashekeran, S., Morgan, B., Coetzee, K. & Christoff, P. (2017). Rethinking the green state beyond the Global North: a South African climate change case study. *Wiley Interdisciplinary Reviews Climate Change*, 8 (6), <https://doi.org/10.1002/wcc.473>.

Persistent Link:

<https://hdl.handle.net/11343/292968>

Article type: Focus Article

Article title: Re-thinking the Green State beyond the Global North: A South African climate change case study

Scope/Keywords

- South Africa
- climate change policy
- environmental governance
- role of state

Authors:

First author*

Dr Sangeetha Chandrashekeran
School of Geography, University of Melbourne
sangeetha.chandra@unimelb.edu.au

Second author

Prof. Bronwen Morgan
Faculty of Law, University of New South Wales

Third author

Dr Kim Coetzee
Energy Research Centre, University of Capetown

Fourth author

Assoc. Prof. Peter Christoff
School of Geography, University of Melbourne

Acknowledgments

This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada. The grant also supported detailed empirical work on

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: [10.1002/wcc.473](https://doi.org/10.1002/wcc.473)

India, led by Dr. Navroz Dubash (Centre for Policy Research, India), and we are grateful to both him and Professor Harald Winkler for valuable input on earlier versions of this work. Thank you also to the anonymous reviewers of this manuscript and the editor Professor Karin Bäckstrand for thoughtful feedback that helped reshape the paper. We also acknowledge the early work and comments on drafts by Dr. Lucy Baker (SPRU, University of Sussex). We remain responsible for any errors of interpretation or fact.

Re-thinking the Green State beyond the Global North: A South African climate change case study

Sangeetha Chandrashekeran, Bronwen Morgan, Kim Coetzee, Peter Christoff

ABSTRACT

This paper focuses on the role of the South African state in environmental governance, with particular reference to transformations in political authority and processes of capital accumulation. Our approach underscores the importance of analysing state environmental efforts both empirically and normatively, in order to understand the underlying drivers of state policies that perpetuate or ameliorate environmental degradation. The tension between economic and ecological values lies at the heart of South Africa's approach to mitigation. We evaluate South Africa's performance on climate change mitigation policies and programs and show that while, empirically, South Africa may appear to be a partial or emerging green state, its performance is weak when assessed against normative frameworks.

I. INTRODUCTION

For some time now, theories of the 'Green', 'Environmental' or 'Ecological' state have been eclipsed by 'bottom up' or decentralised approaches to environmental governance. Only recently have we seen a renewed focus on the role of the state at the national scale. Inspired by the analytical trend to bring the state back into environmental governance, this paper returns to key theories of the so-called 'green state' to discuss the challenge of decarbonising emissions-intensive political-economies. In order to do so, we analyse the nature of green statehood in South Africa with reference to transformations in political authority and processes of capital accumulation. In particular, the paper aims to understand the factors that both enable and inhibit movement towards a 'green state' in the South African context. The motivation for this study derives in part from the paucity of research on the 'green state' outside of a developed country context, which is instead dominated by case studies from the Global North. Thus, we see this paper as advancing a larger research agenda to build a broader empirical basis for green state theories beyond the traditional focus on Europe and North America.

We begin in the next section by outlining existing analyses of green states. This is followed in section III with a discussion of the need to bring developing countries of the Global South into these analyses. Section IV provides background to the political economy of South Africa and its emissions reduction challenge. Section V explores key developments in national-scale climate change response in South Africa and, on this basis, section VI discusses the degree to which South Africa has moved towards a 'green state' based on the theories outlined in section II.

II. BRINGING THE STATE BACK INTO ENVIRONMENTAL GOVERNANCE

Since the failure of the Copenhagen Conference of the Parties (COP 15) to generate consensus on a legally-binding way forward in the post-Kyoto period, a lively debate regarding the appropriate balance between 'top-down' and 'bottom-up' approaches has been rekindled within climate change policy circles (see for example Biermann et al., 2009;

Diringer, 2011; Hare et al., 2010; Rayner, 2010). This follows academic interest in new modes of decentralised governance, including 'polycentric governance systems' (Ostrom, 2005) and 'multi-level governance', which encompass horizontal networks of actors and interdependent scales of engagement from international to national and subnational (Hooghe & Marks, 2003; Bulkeley & Betsill, 2005; Bulkeley & Castan Broto, 2012). As a result, this focus on distributed agency has led to the displacement of the state as a central analytical category in environmental governance and climate politics (Duit, Feindt & Meadowcroft, 2016).

The case for bringing the state back into environmental governance scholarship has been made more recently. Bäckstrand and Kronsell (2015) argue that the potential of the state to address environmental crises is too easily neglected, calling for a re-engagement with green state and sustainable transitions theories. Similarly, Duit (2014) shows the privileged role of the state in shaping the landscape through access to resources, institutional capacity and political legitimacy, to a degree that dwarfs actions of market and international actors.

Beginning our analysis, we describe in the following sub-sections different analytical approaches to what has been termed a green, environmental or ecological state. This includes the normative approach that derives from work done in the early 2000s; ecological modernisation and its critiques; state-society relations; and more functionalist, empirically-oriented accounts. There is no standard usage of the term 'green state' and we emphasise the specific monikers used by different authors where relevant.

A normative approach

Robyn Eckersley and John Barry have focused on the features of an ideal *ecological* state that draws on its political authority and its regulatory and redistributive functions to prioritise ecological over economic values (Barry & Eckersley, 2005). This emerges out of a deep ecological critique that is distinct from liberal democratic ideals, the welfare or neoliberal states (Eckersley, 2005). The state, rather than civil society, is the key site of this

new green democratic politics and Eckersley is optimistic about state modes of agency, rejecting a neo-Marxist account of a functionalist state in the service of capital accumulation (Eckersley, 2004; Barry & Eckersley, 2005).

Another normative perspective focuses less on questions of political authority and more on the (in)compatibility between sustainability goals and regimes of capital accumulation and economic growth. Christoff argues that the state is internally conflicted between the imperatives of economic growth and legitimation and therefore cannot simply graft on a sustainability function without intensifying this conflict (Christoff, 1996). This is because the modern state is integral to the capitalist social form and capital fails to respect the biophysical limits of the exploitation of land and nature (Poulantzas, 1978; Jessop, 1990; O'Connor, 1998). Consequently, the state is morally and materially divided against itself, producing a series of historical compromises. One such manifestation is the creation of Departments of Environment within the bureaucracy, which operate against the imperatives of capital accumulation with varying degrees of success (Christoff, 2005). This political economy approach has a more sustained focus on the capitalist imperatives that could lead to transformation of the state in accordance with environmental values, as well as their attendant limitations.

Ecological Modernisation

Ecological modernisation (EM) theory gives a privileged role to a state regulated market which can promote environmental principles through policy instruments, environmental technologies, and stable long-term investments and planning (Weale, 1992; Neale, 1997; M. Janicke, 1997; Frijns et al 2000; Lundqvist, 2000; Mol & Spaargaren, 2000; Weidner, 2002). The state works to minimise the worst excesses of free market capitalism by recalibrating and redirecting capitalist dynamics and processes to suit the objectives of environmental protection and ecological resilience (Mol & Spaargaren, 2000).

Critics of EM have differentiated weak from strong versions, arguing that weak EM is too technologically-focused and fails to address the underlying logics of accumulation driving environmental degradation (Christoff, 1996). Strong versions of EM involve 'ecological restructuring' to phase out highly polluting industries and enable radical resource conservation (Janicke, 1997, 2004); require strict limits to economic growth; replace GDP with measurements of wellbeing; and decouple growth from resource use (Ferguson, 2015). For Christoff, weak EM can only produce an *environmental* state where environmental values are subsumed by economic goals. The *green* state emerges out of strong EM, namely a commitment to and institutionalisation of biocentric values that is manifest through high levels of administrative and budgetary capacity (Christoff, 2005).

Paterson (2011) argues against a uni-dimensional account where all forms of state and non-state action are subsumed within the overdetermining logics of accumulation to stymie environmental reform. Instead, he suggests that the state's twin imperatives of legitimacy and economic growth are now increasingly brought together, as environmental conflict centres on the legitimacy of new ways to generate capital accumulation (Paterson, 2011). This means a greater variety of actors operating at multiple scales, taking increasingly differentiated rather than predetermined positions to produce more far-reaching political changes than many neo-Marxist political-economy critiques allow for.

State-society relations

John Dryzek's work is similarly focused on the democratic foundations of a *green* state but with a much greater emphasis on the role of civil society and deliberative processes (Dryzek et al., 2003). State and society come to shape each other in a recursive fashion with continuous pressure from civil society necessary to transform into a green state.

Distinguishing between the economic and legitimation imperatives of the state, Dryzek et al. (2003) argue that environmental claims are likely to be more radical in nature and promote civil society participation when they raise issues of state legitimacy. When linked to

economic imperatives, environmental claims tend to be justified mainly on economic grounds, mainstreamed into policy and dominated by state actors. Overall, the authors regard social movements and their deliberations in the public sphere outside formalised channels as a critical driver of a strong environmental state. Passive inclusion where the state does not seek to intervene and shape civil society movements, but allows access to political decision-makers, is considered most amenable to the emergence of a green state. Comprehensive inclusion of environmental actors within the state leads to less sustainable and democratic outcomes.

Functionalist approaches

As sustainability increasingly becomes a core function of modern states (Meadowcroft, 2005) the focus has shifted towards the different ways of 'doing' environmental statecraft, rather than foundational questions about the state's imperatives for environmental action and state-society relations. More recent literature focuses on the material manifestations of *environmental* statehood in the form of "a significant set of institutions and practices dedicated to the management of the environment and socio-environmental interactions" (Duit et al., 2016 p.5). The environmental state "possesses specialised administrative, regulatory, financial and knowledge structures that mark out a distinctive sphere of activity" (Duit et al., 2016 p.71). Underpinning these is delineation and prioritization of environmental issues, which becomes a continuous focus of argument and contestation (Duit et al., 2016).

An *environmental* state exhibits specialist governance arrangements to manage environmental problems, but remains under pressure from multi-scalar and multi-actor engagement with the issues. An assessment of state capabilities leads to a classification of environmental states into the following categories: established, emerging, partial and weak (Duit et al., 2016). In their studies, 'established' environmental states are characterised by the early creation of a sound administrative structure, average R&D spending, high use of

taxation to enable environmental outcomes and comprehensive end-of-pipe pollution and industrial processes policies, as well as policies addressing diffuse-source and product-related policies. 'Emerging' environmental states differ from established states because of a much weaker administrative capacity, but they have well-developed capacities for producing environmental knowledge and taxation. The 'partial' environmental state has the least developed administrative capacity and below average levels of regulation, taxation and R&D spending. Finally, the weak environmental state demonstrates poor performance across all four categories. In contrast to the earlier work of Eckersley (2005), the normative dimensions of the green state are latent and the focus is very much on the practices of 'real-world' environmental statecraft (Duit et al., 2016). Compared with Dryzek et al. (2003) the focus is on the integration of sustainability goals within the state, rather than the state-social movement dynamics that drive the integration process.

III. THE GLOBAL SOUTH AND THE GREEN STATE

The above section presents different focal points and divergent criteria with which to analyse a shift towards a 'green', 'ecological' or 'environmental' state. Given the non-standard usage of these terms, we will use 'green state' as a shorthand which respects the different descriptors and their implications as seen in the literature. In the following sections of this paper, we apply a green state analysis to South Africa by reviewing the literature on the development of climate change mitigation policies and processes. Climate change presents a specific type of environmental problem which is less about the exercise of human agency over non-human nature, as is the case of deforestation or water scarcity; instead, climate change is a phenomenon that blurs the boundaries between human and non-human agency. As such, we accept that the portability of insights from a study of mitigation to other environmental concerns may be limited or require significant qualification. However, as climate change is the preeminent cross-cutting phenomenon with implications for a multitude of other environmental problems (biodiversity, deforestation,

water availability and quality etc.), we argue that mitigation responses to climate change have much to tell us about the nature of environmental statehood in the 21st century. We therefore apply and test green state theories and approaches using a South African climate change mitigation case study.

The overwhelming focus of green state literature has been Western liberal democracies and welfare states (Meadowcroft, 2005; Gough, 2016). This speaks to a long-held view that developing or Global South states lack the requisite strong state capacity and/or have not achieved the state of 'post-materialism' that is seen to be a precursor for environmentalism (Mol & Sonnenfeld, 2000). It is argued that green states are unlikely to emerge because of the following structural features: pressing developmental priorities, limited budgets and high unemployment, poorly resourced social movements (compared to political liberation movements) and political contexts in which state repression of movements is common (Sonnenfeld & Mol, 2002; Mol, 2011). This argument has been strongly critiqued in the African context. Death (2016) argues that there is no shortage of evidence of 'environmental' state and non-state action occurring far outside a post-material context. The relative lack of attention to states in the global South is now a well-recognised limitation in the scholarship requiring redress and this paper makes a small step in this direction (Bäckstrand & Kronsell, 2015).

IV. SOUTH AFRICA'S EMISSION REDUCTION CHALLENGE

South Africa's political history is marked by the influence of colonisation and of Apartheid, the resistance to Apartheid and the formation of a constitutional democracy with a three-tier system of government (national, provincial and local) in 1994. The African National Congress that spearheaded the liberation movement has dominated post-Apartheid democratic politics, which has led to a concentration of executive power (Misra-Dexter & February, 2010). Section 24 of the South African Constitution specifies the right to a healthy environment and the right to have the environment protected; the Department of

Environmental Affairs has the main mandate to lead this, with assistance from other departments (South Africa, 1996).

South Africa has a highly emissions-intensive economy built on exploitation of cheap, local coal, an enduring legacy of the Apartheid state's economic development model that was based on a resource endowment of abundant coal and available technology. South Africa has the second highest emissions intensity for electricity generation of any country in the world, primarily because low grade coal is burned and higher grade coal exported (IEA, 2014). The electricity sector accounts for 47% of total national emissions and 42% of the African continent's carbon emissions (IEA, 2014).

Approximately 14% of the South African population, or 8 million people, lacked access to electricity in 2014 in a country where 40% of the electricity is consumed by the country's energy-intensive industrial users (IEA 2016). Industry consumes more than 51% of the country's total energy supply, approximately double that of residential demand. Transport, service sector and agriculture consume 27%, 8% and 2.6% respectively (DEA, 2011).

Accelerating demand for electricity has not been adequately met on the supply side. South Africa has experienced declining reserve capacity, resulting in serious blackouts in 2008 which cost the economy USD 7.1 billion (1.4 % of GNP) (Swilling & Annecke, 2012 p. 227). Thus, South Africa faces the challenge of decarbonisation in the context of energy insecurity and urgent investment required in generation.

South Africa's 'Minerals-Energy Complex' (MEC) has historically shaped investment in energy generation (Fine & Rustonjee, 1996). The MEC can be understood as the intertwining of the mining and energy sectors as well as associated manufacturing sub-sectors which together "constitute the core site of accumulation in the South African economy" (Fine & Rustonjee, 1996 p. 71). In resource rich South Africa the mining sector includes coal, gold, diamonds and non-ferrous metals and the manufacturing sub-sectors span petrochemicals, petroleum (from coal) bricks, and steel. Electricity, produced by

burning coal (i.e. mining) or nuclear (since 1984) is used to power the mines, transport, refine or smelt the raw materials extracted. Against this background a small number of large international mining conglomerates, including BHP Billiton, Glencore (incorporating Xstrata), Anglo-American and Exxaro, have exercised disproportionate influence over policy and gained privileged access to cheap energy, tax breaks and infrastructure (Chabane et al., 2006; Baker, 2016).

The co-dependent relationship between the state and corporate capital has underpinned the MEC, of which key government institutions are the Department of Energy and Eskom (South Africa's monopoly state-owned electricity provider). Five private corporations supply 80% of Eskom's coal: Anglo American Corporation, BHP Billiton, Glencore (incorporating Xstrata), Exxaro and Sasol (Eberhard, 2011).

South Africa also has a range of pressing developmental priorities, limited budgets and high unemployment. Inequality in South Africa is persistently high, unemployment in the 4th Quarter of 2016 was 26.5% (Stats SA, 2017), and 23% of the population live below the poverty line (World Bank, 2014). As such a quandary of growth and job creation lies at the centre of the policy and governance challenge in South Africa. Climate change policy sits in a subordinate and contiguous relationship to this quandary and its success is largely dependent on the ability to speak to these social and economic development priorities.

South Africa's main form of welfare provision is social grants. These have grown from 8 million in 2003/04 to approximately 15.8 million in 2013/14 and accounted for 3.3% of GDP in 2010/11 indicating that economic growth has failed to substantially impact unemployment and poverty levels (World Bank, 2014). Social grant provision has been tied to economic growth rates of at least 3% a year which provides a further impetus for economic growth over environmental protection. Whilst generous by developing country standards, the payments are dwarfed by Western European levels of welfare. Adequate

provision of infrastructural services has been a source of major conflict, with service delivery protests focused on the lack of electricity, water and sanitation intensifying since 2004.

Post-Apartheid South Africa has been a leader in the development of environmental policy as evinced by the highly inclusive Consultative National Environmental Process that culminated in the National Environmental Management Act (South Africa, 1998), the incorporation of environmental rights into the Constitution (Cock and Fig, 2000) and the internationally regarded National Water Act (Schreiner, 2013). Despite this, studies have found that there is no clearly identifiable, relatively unified or broadly popular environmental movement in the country (Cock and Fig, 2000; Cock, 2004). Forms of collective action that identify as purely 'environmentalist' in nature are limited, whilst movements focused on addressing social justice issues of land, housing and service delivery have thrived in comparison (Death, 2014a). The urban environmental justice movement has campaigned with vigour on issues of pollution, "fracking", nuclear power, corporate accountability and genetic modification, with key actors such as NGOs Earthlife and GroundWork, as well as locally-rooted and transnational networks (see for example Aylett, 2010; Barnett, 2007; Scott and Barnett, 2009). The demands are often for structural changes and Groundwork in particular has tried to straddle the social justice and environmental agendas. By and large, these agendas have been prosecuted quite separately reflecting an apartheid legacy of differing interests between different races and classes (see Desai 2002). Strategies for resistance involve protest, demonstrations, sit-ins as well as court battles and media campaigns and for the most part demonstrations have been tolerated by the state (Ballard et al., 2006 (Intro); Death, 2014b).

In the following section we will show how climate change fits into South Africa's complex political landscape.

V. SOUTH AFRICAN MITIGATION POLICIES AND ACTIVISM

In 1992, as climate change emerged as a transnational problem requiring its own international governance architecture, the South African nation state began to develop specific administrative and knowledge-generation capabilities. The Department of Environment and Tourism (DEAT) was tasked with dispensing South Africa's international reporting requirements under the newly-established international climate change regime. DEAT lacked the capacity to do this alone and a stakeholder body called the National Committee on Climate Change (NCCC), comprised of non-state actors including representatives from business and industry, mining, labour, community-based organisations and non-governmental organisations was established in 1996 to provide advice to government (Cock and Fig 2001). This was consistent with other post-Apartheid participatory and 'actively-inclusive' processes that served environmental issues such as the Consultative National Environmental Process that featured until the early 2000s (Death, 2014). The NCCC was a forum for participation, legitimacy building and technical knowledge generation by non-state actors (both grassroots and policy-focused NGOs), but was contested by certain business interests (Raubenheimer, 2011).

In 2002, South Africa took the opportunity to host the World Summit on Sustainable Development (WSSD) to maximise environmental diplomacy efforts and publically associate itself with environmental stewardship and the international regime for environmental governance (Death, 2011). The Kyoto Protocol was ratified just weeks before the Johannesburg Summit in order to generate maximum publicity and diplomatic leverage. The WSSD raised the profile of climate change *as a sustainable development issue* and initiated a more sustained and focused phase of climate change-relevant policy development. The Summit also became a lodestone for galvanising new waves of environmental NGOs and community based organisations (Death, 2011; Cock and Fig, 2000). As hosts of the Global NGO Forum, South African groups promoted an alternative environmentalism around issues of social injustice, poverty, environmental degradation and a broader narrative of uneven geopolitical power (Cock, 2000). Important links were made to transnational climate activist

networks (Bond, 2012). Environmental justice provided a significant counter-discourse to that of sustainable development, signalling the fragmentation of a broad social movement on climate change.

Following the WSSD, the DEAT led development of a Climate Change Response Strategy which established eleven objectives for addressing climate change (including sustainable development, energy and capacity development), but stopped short of establishing targets or timeframes for achieving these. The Strategy had no implementation plan or monitoring and evaluation process (Masters, 2014). This reflected a broader problem of slow implementation of state level commitments and poor nation state capacity for environmental issues (Cock and Fig, 2000). Nevertheless, the Strategy framed action on climate change strongly in terms of sustainable development and contributed to poverty alleviation, job creation and made the case for greater coordination across government - in particular across the Department of Minerals and Energy that operated in a jurisdictional silo (Death, 2011).

Environmental NGOs used the rising awareness of climate change as a sustainable development issue to push for more targeted efforts in national policy. State actors also recognised that future commitments could not be made without better national-level research (Raubenheimer, 2007). In October 2006 the national 'Climate Action Now!' conference drew over 600 representatives from government, business, academia, the scientific community and broader civil society (Death, 2011; Bond, 2012; Marais, 2011). Through a rigorous iterative process of scientific and policy debates consistent with an ecological modernisation approach, participants agreed on the scientific validity of climate change and developed a mandate for a state-funded research program that came to be known as the Long Term Mitigation Scenarios (LTMS). A Scenario Building Team was created by government based on technical expertise and involvement in national-scale policy debates (Raubenheimer, 2011). Energy-intensive users argued against serious action whilst environmental NGOs strongly rejected a minimalist approach. A research-based set of

scenarios was developed that policy makers could pick and choose from including the 'growth without constraints' and the 'required by science' scenarios (Raubenheimer, 2011). These were critiqued strongly by environmental justice advocates for flawed and unrealistic assumptions including reliance on carbon capture and storage, nuclear energy and technology transfers from the global North (Bond, 2012). Nevertheless, based on these scenarios, Cabinet endorsed a 'peak, plateau and decline' emissions trajectory range for the country in 2008 (Winkler, 2008). The peak was set to occur between 2020 and 2025. Emissions would then plateau until 2035 and decline after this date until 2050. At that stage, no other major developing country had put forward mitigation plans or scenarios of this kind.

Between the WSSD and the LTMS endorsement, there was a marked shift towards a neoliberal macroeconomic framework. The GEAR (Growth Employment and Redistribution) strategy adopted in 1996 was consistent with IMF stabilisation policies emphasising fiscal austerity and deficit reduction: reducing inflation; deregulating financial markets; trade liberalisation; and lowering government expenditure (Ashman et al., 2010). Meanwhile, municipal authorities were expected to deliver pro-poor economic strategies (Barnett and Scott, 2007). The Accelerated and Shared Growth Initiative (ASGISA) introduced in 2006 targeted Black Economic Empowerment (BEE) and included a generous social grants program which altered the configuration of MEC actors, but did little to fundamentally shift the country's macroeconomic context or adherence to a neoliberal framework (Habib, 2013).

The ANC's 2007 national conference in Polokwane witnessed the downfall of then President Thabo Mbeki but also included important and extensive statements about climate change and the environment (Marais, 2011). The rhetoric of strong action sat uneasily with macroeconomic settings: large capital interests within the MEC remained largely unaffected and isolated from mitigation plans (Ashman et al., 2010; Marais, 2011). National-scale action on climate change became increasingly technocratic, favouring expert advice and the

bureaucratic capacity of DEAT advanced. Active inclusion of environmental NGOs drove professionalisation as key personnel from environmental NGOs moved into the bureaucracy and played an important role in advancing the mitigation agenda within government (Ashman et al., 2013; Marais, 2011).

International Profile

Once again developments in the international sphere lifted the profile of climate change and accelerated the formulation of an institutional architecture and policy framework. Shortly after assuming office, President Zuma issued a surprise statement at the Copenhagen climate change conference in 2009 making the ambitious pledge that South Africa would cut emissions by 34% by 2020 and by around 42% by 2025 from a 1990 'business as usual' trajectory. This ambitious pledge was contingent upon financial and technological support and the achievement of a fair, ambitious and effective climate deal. The performance was another example of environmental diplomacy via large scale summits through which the national government sought to establish its global citizen credentials (Death, 2011). However this was poorly-received regionally as South Africa undermined the strong regional and developing country position of the G77 and the African bloc (aligning instead with emerging economies of the BASIC group) and abandoned the African Union negotiating position of a 1.5 not 2 degree temperature rise limit (Death, 2011; Hochstetler, 2012; Hochstetler, 2014). There was cynicism from within the environmental justice movement about the sincerity of the commitment and the ability to deliver (Bond, 2012). However, mainstream NGOs such as World Wildlife Fund and Greenpeace endorsed the government's position and approved of its growing status in international climate change circles (Death, 2011). This reflected increasing fragmentation within the environment movement, for example, between the sustainable development and environmental justice perspectives (Death, 2014a).

Implementation Lacking

Between 2009 and 2011, the cabinet endorsed the international mitigation commitment and created climate change specific government agencies and a consultative process to develop a framework document to guide climate change policies called the National Climate Change Response Green Paper 2010 and White Paper 2011. Climate change was 'mainstreamed' by creating committee structures, outcomes monitoring and carbon budgeting (defining a national carbon budget and allocating it between economic sectors). However, the realisation of these commitments at the national scale has been poor, largely due to weak coordination across government both horizontally and vertically and the destabilising effect on process and institutional strategy of ministerial portfolio and senior bureaucratic reshuffles. The absence of Treasury representation on the Inter-Ministerial Committee for Climate Change (IMCCC), the ministerial body established to coordinate implementation of climate change policy, could be interpreted as a lack of commitment (Cloete et al., 2011).

Despite its mandated responsibility for the country's climate change response, the Department of Environmental Affairs cannot enforce or hold other line departments accountable for poor performance and has minimal resources for implementation. A carbon budgeting approach underpinned the negotiations to establish Desired Emission Reduction Objectives (DEROs) for each sector based on in-depth cost-benefit analyses (including environmental benefits, impacts on jobs, energy security and international competitiveness) and was introduced through the White Paper, but the process has yet to produce any outcomes and gives every indication of having stalled in 2016. It lacks strong enforcement and compliance dimensions, essentially relying on the reputational discomfort potentially generated by presidential disapproval. A more promising development has been an acknowledgement of a 'climate constraint' into the Integrated Resource Plan for Electricity Generation (IRP) South Africa's the energy planning process. This is, however, a Department of Energy (DoE) planning process that runs parallel to and unintegrated into the climate-specific governance processes described above.

Green Growth

Whilst a strong coordinated state-led industrial restructuring process has not occurred, the state has promoted 'green growth' and the benefits of decarbonisation for international competitiveness (Paterson, 2008; Death, 2014b). This state-led project focuses on growth via the creation of new markets, services and modes of consumption. In the wake of the global financial crisis, the government allocated 11% of a \$7.5 billion stimulus package to environment-related projects; hosted a Green Economy Summit in May 2010; set up a R1.2 billion Green Fund to facilitate green investment; and established a Green Economy Accord to create 300,000 jobs over 10 years (Barbier, 2011; Death, 2014b). Since then there have been two particularly significant 'green growth' style mitigation initiatives that have emerged in an uncoordinated fashion: the carbon tax and the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP).

In 2006, independent of the DEA, Treasury began developing a carbon pricing proposal. The 2010 Carbon Tax Discussion paper drew a sharp response from an anti-reform constituency including the Energy Intensive Users Group and Business Unity South Africa (Resnick et al., 2012). The intense lobbying that ensued translated into a relatively low tax, special exclusion allowances for trade intensive sectors and other additional tax relief and exemptions for sectors such as agriculture, vehicles and waste (Death, 2014b).

Implementation of the tax has been delayed several times and is now not anticipated to begin before early 2018. Commentators are sceptical of the capacity of the tax to significantly decarbonise electricity production given the range of tax-free thresholds applicable in the first four-year phase of the tax (Fine, 2012; Resnick et al., 2012; Death, 2014b).

In 2011, Treasury and DoE replaced a Renewable Energy Feed-in-Tariff with the REIPPPP, which is a tender system based on competitive bidding. As a result, an estimated \$14 billion of investment has been drawn from international energy service providers, foreign

technology suppliers and construction companies and development finance institutions (Baker and Wlokas, 2015). As a consequence, 42 projects totalling 2142 MW of renewable energy were connected to the grid by October 2015 and 5400 MW in total have been procured (Baker and Wlokas, 2015). The price per kilowatt hour decreased dramatically between the first to the fourth round of investment. The procurement program has been driven by institutional struggles to achieve greater competition in generation, decentralise power away from Eskom and the pressing need for new generation resources in the context of the aforementioned electricity supply crisis (Baker, Newell and Phillips, 2014).

These two examples show that the state struggles to manage a green economy initiative in a coherent, coordinated and sustained manner (Death, 2014b) and that contingent outcomes along a green growth path have emerged that have more to do with institutional struggles than environmental objectives. Such a transition may destabilise some existing MEC actors, in particular that of Eskom, but is unlikely to promote a form of sustainable development that challenges the structure of corporate capitalism and uneven service delivery that is a feature of the MEC (Death, 2014b). Moreover the growth in renewable energy will not displace coal generation due largely to state decisions made soon after the Copenhagen conference to build two of the largest coal-fired power stations in the world (Bohlmann et al., 2016). A strong environmental justice campaign was unsuccessful in halting these plans, but highlighted the uneven distribution of benefits that favoured large multinational corporations; corruption including payments to the ANC; dependence on World Bank loans and the escalating repayment costs; and issues of land degradation, pollution and water scarcity. Activists have argued that the state cannot meet its mitigation targets as a result (GroundWork, 2015). South Africa's Nationally Determined Contribution, which was confirmed when it ratified the Paris Agreement in November 2016, represents a 20–82% increase in emissions by 2025 relative to 1990 levels. This is consistent with the reductions in its Copenhagen pledge but will require the implementation of additional policies to reach

its proposed targets. Current policies have an increasing trend with emissions in 2025 expected to increase by 141% on 1990 levels (excl. LULULCF) (Climate Action Tracker, 2016).

Neither the labour nor the environmental movements are internally unified in their response to the state's green economy agenda. The labour movement is divided between a minimalist reformist position focused on the creation of decent jobs, social protection and skills development, and a more radical transformative concept of green economy focused on an alternative growth path with new ways of producing and consuming (Cock 2014).

Within the environment movement NGOs such as World Wildlife Fund have a reform agenda that accepts market-based solutions, carbon capture and storage and endorse the UNFCCC process and the government's negotiating position. NGOs with a transformative agenda like Groundwork and Earthlife are more confrontational in their approach and are increasingly forming alliances with the more radical parts of the labour movement to challenge the neo-liberal version of the green economy (Cock 2014).

VI. DISCUSSION

We now assess South Africa's performance as a green state using the theories and criteria put forward in section II. This includes a strong institutionalisation of ecological values including biocentric values (Barry and Eckersley, 2005); high levels of state capacity to deliver environmentally beneficial outcomes including budgetary commitments (Duit et al., 2016; Meadowcraft 2005); weak or strong ecological modernisation (Christoff 2005); and inclusive state-society relations that enable strong democratic participation (Dryzek et al., 2003). On all these counts and using climate change mitigation as a case study, we argue that there have been tentative steps towards a so-called green state, but overall the South African state falls substantially short of the criteria.

The South African climate change response demonstrates innovation in terms of a sophisticated and highly inclusive state-society deliberative process for knowledge

generation (the LTMS process); strong executive-led mitigation commitments; and the formation of a number of formal institutions to identify and negotiate national strategies and measures for decarbonisation (enhanced role of DEAT/DEA). A strong discourse of sustainable development has been mobilised through international summits and leveraged in the domestic sphere to justify climate change action. The South African state has used international fora to promote itself as a leader on climate change, although there are many internal critics of its negotiating position. Overall, climate change is becoming an intermittent, but not continuous (Duit et al., 2016), focus of argument and contestation elevated by both NGO and state actors through high profile international events. These developments are indicative of ecological modernisation, that is weak rather than strong in nature because it does not lead ineluctably to significant economic restructuring in accordance with environmental priorities.

However, in terms of strategic planning, the state has done little to integrate its medium term mitigation goals into long term and intergenerational social and economic planning processes. The Integrated Resource Planning process undertaken through Department of Energy is a step in the right direction; however these successes are overshadowed by deeply contradictory policy decisions like the decision to build the Medupi and Kusile coal fired power stations. There has been almost no adequate explanation of how current energy investments will affect the Cabinet-endorsed Peak Plateau and Decline trajectory and international mitigation pledges. The establishment of sectoral emissions reduction goals has involved analysis of medium to long term impacts, but suffers from a lack of implementation and enforcement. As such, key mitigation documents such as the White Paper stand out as largely unintegrated policy documents that do not meaningfully constrain or enable actors in affected industries or social sectors; the State has been unable or unwilling to co-opt, much less confront, the core industrial/corporate actors of the MEC.

Strategic planning issues are compounded by poor policy coordination and integration across government departments. Many scholars have reflected on a pervasive

“implementation deficit” in environmental policy in South Africa (Cock and Fig, 2000; Oelofse et al., 2006 p.62) and we see climate change mitigation to be consistent with this. This failure, however, is less attributable to passive characteristics of weak state capacity as suggested by Mol and Sonnenfeld (2000) and more to an apparently conscious unwillingness to develop a coordinated and purposive decarbonisation transition because it challenges the entrenched interests of still powerful actors of the MEC and potentially undermines associated state interests. In this context the DEAT/DEA has lacked the institutional power to fully integrate climate goals into policymaking processes thus perpetuating siloed approaches to climate change and energy policies. The Department of Energy has integrated limited carbon constraints into its energy planning processes in a manner that is orthogonal to any climate-specific governance processes. The Treasury has thus far failed to diffuse resistance from key actors (like the Energy Intensive User Group for example) or build widespread support for the carbon tax from government and business. It has, however, gained cooperation from some civil society organisations. This contestation has effectively hobbled the carbon tax policy as outlined in section V above.

In the absence of a proactive and coherent top-down steering process for national climate policy, more contingent outcomes have emerged that have less to do with environmental objectives, such as the renewable energy procurement process. In this context of poor planning and integration, the state has not effectively established regulatory, monitoring and allocative tasks necessary to deliver on its international mitigation commitments. Using Duit et al.’s (2016) criteria, we would grade South Africa as lying between a ‘partial’ and ‘emerging’ environmental state because it has sound administrative structures and well developed capacities for producing social and scientific knowledge on climate change, but limited coordination and implementation of policies and programs and poor use of taxation to achieve mitigation efforts.

We argue that such an empirical or functionalist assessment of South Africa’s performance is insufficient to explain the underlying factors that limit progress towards a green state. The

South African state remains far removed from the normative green state that Barry and Eckersley (2005) describe. State activity is not primarily organised towards producing ecologically sustainable and socially just outcomes; rather environmental claims tend to be justified by the state mainly on economic grounds, initially through a sustainable development discourse, but increasingly via a green growth discourse. There have been no effective attempts at major economic restructuring in accordance with sustainable principles: the carbon tax has come closest, but is mired in conflict between social, political and economic interests and alone cannot set a path for the gradual phase out of coal fired power stations. Green growth strategies have failed to erode well-entrenched patterns of accumulation based on the MEC. The REIPPPP shows that not all forms of state and market action are overdetermined by the pattern of MEC accumulation, and that multi-scalar dynamics in combination with institutionalised opportunity structures can enable the emergence of low-carbon energy sources (Paterson, 2011). This is an example of weak ecological modernisation because it has potential to dilute South Africa's carbon-intensive generation mix, but does little to transform the dominant modes of political authority and capital accumulation, namely the MEC.

The MEC remains the dominant feature of the political economic landscape and its path dependent nature is relatively unconstrained as a result of growth and market-oriented economic policies. The MEC actors, via the representative Energy Intensive Users Group, exercised influence to water down the LTMS and carbon tax processes and double the demand forecast in the IRP process (Baker, 2016). International renewable energy finance has become a new feature of South Africa's evolving MEC with the renewable energy procurement program, but industry ownership is becoming more consolidated and there are fears that financialisation and on-selling could contribute to capital flight orchestrated by overseas headquarters (Ashman et al 2011; Baker, 2015).

There is a curious mix of strong state intervention in the energy sector to enable investment in large-scale power plants as well as state-created market-based programs that enable

foreign investment in smaller scale renewable projects. The South African state at the national scale is not a classic neoliberal state because its use of market-oriented solutions is selective in different policy domains and energy is still a state-dominated sector. It is best described as a state with weak ecological modernisation that ensures the reproduction and legitimisation of forms of capital accumulation to meet short-term human welfare and economic requirements with major environmental problems acknowledged as an externality but largely unregulated. Non-material ecological considerations and the long term environment-related human welfare concerns remain incidental and subordinate to the state's legitimisation and accumulation roles (Christoff, 2005).

In terms of state-society relations, the highly inclusive and participatory environmental processes of the 1990s and early 2000s have waned and the environmental movement has fragmented. Under Zuma's rule the ANC government has been at different times selectively actively inclusive, passively exclusive and actively exclusive (Dryzek et al., 2003), with so-called experts or adopters of the technocratic mitigation discourse provided with political opportunities whilst oppositional community-based groups challenging basic economic logics are at best marginalised from policy debates and at worst harassed (Death, 2014a). Importantly some environmental groups, such as GroundWork, pursue dualistic strategies working across the spectrum of active/passive, inclusion/exclusion and deliberative formal engagement versus oppositional activism depending on the issue, organisation and scale of action (Barnett, 2007).

Overall though, there is a clear division in civil society responses to climate change. On the one hand there are environmental NGOs, such as WWF, who have been integrated into the policy deliberation process and adopted the discourses of sustainable development and the international climate mitigation regime. They support 'weak' ecological modernisation (Christoff, 1996) by adhering to basic state economic imperatives and engaging predominantly in state-sanctioned consensual modes of deliberation and dialogue. On the other hand, a strong community based movement focused on 'brown' urban socio-

environmental issues eschews ecological modernisation and is only loosely connected to the state preferring to operate through networks across local and transnational scales and forging an emergent alliance with parts of the radical labour movement. This is a vital oppositional movement amenable to the building of a successful environmental state but repressive state action against oppositional voices (active exclusion) is a limiting factor (Dryzek et al., 2002; Death, 2014b). It demonstrates the ability of the government to engage in conflicting strategies of confrontation, co-operation or co-optation of groups across both the labour and environment movements through its weak green state discourses, using the promise of 'green' jobs and growth to unite the reformist red and green strands of civil society, whilst actively excluding those groups with a more oppositional and foundational critique of neoliberal growth models.

VII. CONCLUSION

Our analysis of South Africa in terms of a range of green state criteria finds that the national state may appear empirically as a partial or emerging green state, but its underlying political economy and authority is weak in terms of green statehood. Importantly, the features of other Global South states that are said to limit green statehood are present in South Africa but are not the limiting factors. The state bears the hallmarks of some sound administrative architecture and novel financing efforts for renewables, but suffers from a failure of implementation and limited budgetary commitments that are overshadowed by resourcing of fossil fuel power generation. There has been strong sustainable development discourse, but the weak ecological modernisation discourse of green growth is increasingly deployed and is largely rhetorical in nature. Whilst proactive in international fora with mitigation efforts, the state is defensive in the domestic sphere and unable to provide a long term strategy that enacts international commitments domestically. Overall, this reflects the underlying contradictions between the pattern of energy-intensive capital accumulation and environmental limits.

This case study emphasises the importance of analysing state environmental efforts both empirically and normatively in order to understand the underlying drivers of state policies that perpetuate or ameliorate environmental degradation. The basic tension between economic and ecological values lies at the heart of South Africa's approach to mitigation and explains its status as a weak green state, despite some indicators to the contrary. This research shows that green state theory, which has largely been forged in Europe mainly around the early-mid 2000s, has misunderstood and prematurely foreclosed the possibilities of green state formations in the Global South. Pressing developmental priorities and stark structural inequalities are not, *a priori*, barriers to the emergence of a green state. Rather, as illustrated by this research, environmental discourses are increasingly globalised and materialised in Global South contexts, notably in ways that reflect place-specific structural features, in this case the South African political economy of energy. Moreover, Global South political actors play an important role in shaping transnational environmental discourses, as evidenced by South Africa's high international diplomatic profile in climate change.

The challenge now could be seen as two-fold: one direction is to broaden and enrich green state theory to accommodate the evidence from the Global South; another would identify commonalities amongst Global South green states in ways that move towards a framework for exploring green states outside of the Northern context. We support trying the former approach first, using the weak/strong spectrum, and identifying the socio-spatial and political-economic factors that characterise green statehood amongst states in the Global South. In particular, green state theory needs greater sensitivity to the effects of transnational alliances and networks that may unduly shape domestic politics. Also, the intersection of environmental claims with struggles against poverty in a non-welfare state context need further theorisation. Global South exceptionalism in the field of green state theory should only be considered once there is much greater empirical data from the Global South and clear evidence of the inapplicability of existing green state theories in non-Northern contexts. In the meantime, the task at hand is to build a green state framework

that is at once responsive to Global South experiences and to provide more non-Northern context-specific meaning to strong-weak green state distinctions.

Author Manuscript

References

- Ashman S, Fine B, Newman S. 2010. Chapter 2: The developmental state and post-liberation South Africa in: Misra-Dexter N, February J. Testing democracy which way is South Africa going? Cape Town, IDASA.
- Ashman, S., Fine, B. and Newman, S., 2011. Amnesty International? The nature, scale and impact of capital flight from South Africa. *Journal of Southern African Studies*, 37(01), pp.7-25.
- Ashman S, Fine B, Newman S. 2013. Chapter 10 Systems of Accumulation and the Evolving South African MEC in: Fine B, Saraswati J, Tayasci D (eds) Beyond the Developmental State: Industrial Policy into the 21st Century. London, Pluto Press.
- Aylett, Alex. 2010. "Participatory planning, justice, and climate change in Durban, South Africa." *Environment and Planning A* 42. p.199-115.
- Bäckstrand K, Kronsell A. 2015. (Eds.). Rethinking the Green State: Environmental Governance Towards Climate and Sustainability Transitions. Routledge.
- Baker, L., 2015. The evolving role of finance in South Africa's renewable energy sector. *Geoforum*, 64, pp.146-156.
- Baker, L. 2016. Sustainability transitions and the politics of electricity planning. In: Handbook on Sustainability Transition and Sustainable Peace, Hexagon Series on Human and Environmental Security. London, Springer.
- Baker, L, and Wlokas, H., (2015). 'Renewable energy procurement in South Africa: A new frontier?'. Research report, Energy Research Centre. Cape Town: ERC, University of Cape Town.
- Baker, L., Newell, P. and Phillips, J. (2014) The Political Economy of Energy Transitions: The Case of South Africa. *New Political Economy* 19.6, p.1-28.
- Ballard R, Habib A, Valodia I. 2006. "Voices of protest." Social Movements in Post-Apartheid South Africa. University of KwaZulu-Natal Press, Scottsville.
- Barbier, E. B. 2011. "The Policy Challenges for Green Economy and Sustainable Economic Development." *Natural Resources Forum* 35:3, p.233–245.

Barnett, C. and Scott, D., 2007. Spaces of opposition: activism and deliberation in post-apartheid environmental politics. *Environment and Planning A*, 39(11), pp.2612-2631.

Barry J, Eckersley R. 2005. W(h)ither the Green State? *The State and the Global Ecological Crisis*. MIT Press, p. 255-72.

Biermann, F., Pattberg, P., van Asselt, H. & Zelli, F. 2009. The Fragmentation of Global Governance Architectures: A Framework for Analysis. *Global Environmental Politics*. 9(4):14–40.

Bohlmann, J.A., Bohlmann, H.R. and Inglesi-Lotz, R., 2015. *An Economy-Wide Evaluation of New Power Generation in South Africa: The Case of Kusile and Medupi* (No. 201540).

Bond P. 2012. "Politics of climate justice." Paralysis above, movement below. University of Kwa Zulu Natal Press, Cape Town.

Boyd, A. and Coetzee, K. 2013. *Mitigation action implementation. Towards an understanding of the variables that affect implementation of mitigation actions*. MAPS Working Paper 13/ TERI-NFA Working Paper No. 10. Cape Town/New Delhi: Mitigation Action Plans and Scenarios Programme and the Energy and Resources Institute.

Bulkeley H and Betsil M. 2005. *Cities and climate change: urban sustainability and global environmental governance*. Psychology Press

Bulkeley H and Castan Broto V. 2012. Government by experiment? Global cities and the governing of climate change. *Transactions of the Institute of British Geographers*, 38(3), p.361–375.

Chabane N, Roberts S, Goldstein, A. 2006. The changing face and strategies of big business in South Africa: more than a decade of political democracy. *Industrial and Corporate Change* 15(3), p.549-577.

Christoff P. 1996. Ecological modernisation, ecological modernities. *Environmental Politics* 5(3), p.476-500.

Christoff P. 2005. "Out of chaos, a shining star? Toward a typology of green states." in: *The state and the global ecological crisis*. 25. Cambridge: MIT press.

Climate Action Tracker. 2016 Available:

<http://climateactiontracker.org/countries/southafrica.html> Accessed: 11/12/2016

Cloete, B., Ramgowlan Y. and Tyler, E. (2011) *Synthesis of Climate Finance Literature Report to the DBSA*. Pretoria: Department of Environmental Affairs.

Cock, J., 2004. *Connecting the red, brown and green: The environmental justice movement in South Africa*. University of KwaZulu-Natal.

Cock, J., 2014. The 'Green Economy': A Just and Sustainable Development Path or a 'Wolf in Sheep's Clothing'?. *Global Labour Journal*, 5(1) 23-44.

Cock, J. and Fig, D., 2001. The impact of globalisation on environmental politics in South Africa, 1990-2002. *African Sociological Review/Revue Africaine de Sociologie*, 5(2), pp.15-35.

DEA Department of Environmental Affairs (2011). *South Africa's Second National Communication under the United Nations Framework Convention on Climate Change*. Pretoria: Republic of South Africa.

Death C. 2011. Leading by example: South African foreign policy and global environmental politics. *International Relations* 25(4), p.455-478.

Death C. 2014a. The green economy in South Africa: Global discourses and local politics. *Politikon*, 41(1), p.1-22.

Death C. 2014b. Environmental Movements, Climate Change, and Consumption in South Africa. *Journal of Southern African Studies*, 40(6), p.1215-1234.

Death C. 2016. *The Green State in Africa*. Yale University Press.

Desai, A., 2002. *We are the poors: Community struggles in post-apartheid South Africa*. NYU Press.

Diringer, E. 2011. Letting go of Kyoto. *Nature*. 479(17 November 2011): 291–292.

Dryzek, JS, Hunold C, Schlosberg D, Downes D, Hernes HK. 2002. The Environmental Transformation of the State: The USA, Norway, Germany and the UK. *Political Studies* 50(4), p. 659–682.

Dryzek JS, Downes D, Hunold C, Schlosberg D, Hernes HK. 2003. *Green states and social movements: environmentalism in the United States, United Kingdom, Germany, and Norway*. OUP Oxford.

Duit A. 2014. *State and environment: the comparative study of environmental governance*. MIT Press.

Duit A, Feindt PH, Meadowcroft J. 2016. Greening Leviathan: the rise of the environmental state? *Environmental Politics* 25(1), p. 1-23.

Eberhard, A., 2011. The future of South African coal: Market, investment and policy challenges. *Program on energy and sustainable development*, pp.1-44.

Eckersley R. 2004. *The green state: rethinking democracy and sovereignty*. MIT Press.

Eckersley R. 2005. Greening the nation-state: from exclusive to inclusive sovereignty. *The State and the Global Ecological Crisis*, MIT Press, p.159-180.

Ferguson P. 2015. The green economy agenda: business as usual or transformational discourse? *Environmental Politics*, 24(1), p.17-37.

Fine B. 2012. Assessing South Africa's New Growth Path: Framework for Change? *Review of African Political Economy* 39(134), p. 551–568.

Fine B, Rustomjee Z. 1996. *The political economy of South Africa: From minerals-energy complex to industrialisation*. London, Hurst.

Frijns J, Phuong PT, Mol AP. 2000. Developing countries: Ecological modernisation theory and industrialising economies: The case of Vietnam. *Environmental Politics* 9(1), p. 257-92.

Gough, I., 2016. Welfare states and environmental states: a comparative analysis. *Environmental Politics*, 25(1), pp.24-47.

GroundWork, 2015. *Climate and Energy: The Elite Trips Out Part Three*. GroundWork, Pietermaritzburg.

Habib, A., 2013. *South Africa's suspended revolution: Hopes and prospects*. Ohio University Press.

Hare, W., Stockwell, C., Flachsland, C. & Oberthür, S. 2010. The architecture of the global climate regime: a top-down perspective. *Climate Policy*. 10(6), pp. 600–614.

Hochstetler, K., 2012. Climate rights and obligations for emerging states: The cases of Brazil and South Africa. *Social Research*, 79(4), pp.957-982.

Hochstetler, K. and Milkoreit, M., 2014. Emerging powers in the climate negotiations: shifting identity conceptions. *Political research quarterly*, 67(1), pp.224-235.

Hooghe, L. and Marks, G. Unraveling the Central State, but How? Types of Multi-Level Governance. *The American Political Science Review*, 97(2), pp. 233-243

IEA International Energy Agency, 2014 *World Energy Outlook*, Geneve, IEA Publications.

IEA International Energy Agency, 2016 *World Energy Outlook*, Geneve, IEA Publications.

Janicke M. 1997. The political system's capacity for environmental policy in: Janicke M, Weidner H. eds. *National Environmental Policies: A Comparative Study of Capacity Building*. Berlin and New York, Springer.

Janicke M. 2004. Industrial transformation between ecological modernisation and structural change in: Jacob K, Binder M, Wiczorek A (eds) *Governance for industrial transformation*.

Proceedings of the 2003 Berlin Conference on the Human Dimensions of Global Environmental Change. Berlin, Environmental Policy Research Centre.

Jessop B. 1990. *State theory: putting the Capitalist state in its place*. Cambridge: Polity Press.

Lundqvist LJ. 2000. Capacity-building or social construction? Explaining Sweden's shift towards ecological modernisation. *Geoforum* 31(1), p.21-32.

Marais, H., 2011. South Africa pushed to the limit. *The Political Economy of Change*. UCT Press, Claremont.

Masters, L., 2014. 'Reaching the Crossroads: The Development of Climate Governance in South Africa' in Held, D., Roger, C., Nag, E. (eds) *Climate governance in the Developing World*. John Wiley & Sons, pp. 258-76.

Meadowcroft J. 2005. Environmental political economy, technological transitions and the state. *New Political Economy*, 10(4), p.479-498.

Misra-Dexter N, February J. 2010. *Testing democracy: which way is South Africa going?*. African Books Collective.

Mol AP. 2011. China's ascent and Africa's environment. *Global Environmental Change*, 21(3), p. 785-94.

Mol AP, Sonnenfeld DA. 2000. Ecological modernisation around the world: an introduction. *Environmental Politics*, 9(1), p. 1-14.

Mol AP, Spaargaren G. 2000. Ecological modernisation theory in debate: a review. *Environmental Politics*, 9(1), p. 17-49.

Neale A. 1997. Organising environmental self-regulation: Liberal governmentality and the pursuit of ecological modernisation in Europe. *Environmental Politics* 6(4), p. 1-24.

O'Connor JR. ed. 1998. *Natural causes: Essays in ecological Marxism*. New York, Guilford Press.

Oelofse, C, Scott, D, Oelofse, G, Houghton J., 2006. "Shifts Within Ecological Modernization Within South Africa: Deliberation, Innovation and Institutional Opportunities." *Local Environment* 11 (1): 61–78.

Ostrom E. 2005. *Understanding Institutional Diversity*. Princeton, Princeton University Press.

Paterson, M. 2008. "Global governance for sustainable capitalism? The political economy of global environmental governance." In Adger, N. and Jordan, A. (eds) *Governing Sustainability*, p. 99-122. Cambridge: Cambridge University Press.

Paterson M. 2011. Selling Carbon: from International Climate Regime to Global Carbon Market in: Dryzek JS, Schlosberg D (eds) *Oxford Handbook of Climate Change and Society*, p. 611-624.

Poulantzas, N. 1978. *State, Power, Socialism*. London: NLB

Raubenheimer S.R. 2007. Long Term Mitigation Scenarios: Process Report. Prepared on behalf of the Energy Research Centre for the Department of Environment Affairs and Tourism, Pretoria, October 2007 Accessed online at http://www.erc.uct.ac.za/Research/publications/07Raubenheimer-LTMSProcess_Report.pdf, Accessed on 15 November 2014.

Raubenheimer S. 2011. *Facing Climate Change: Building South Africa's Strategy*. Unity Press, Cape Town

Rayner, S. 2010. How to eat an elephant: a bottom-up approach to climate policy. *Climate Policy*. 10(6):615–621

Resnick, D, Tarp, F, Thurlow, J., (2012) The political economy of green growth: Cases from Southern Africa. *Public Administration and Development* 32(3), p. 215-228.

Schreiner, B. 2013. Viewpoint - Why has the South African national water act been so difficult to implement? *Water Alternatives* 6(2): 239-245 Available: <http://www.water-alternatives.org/index.php/volume6/v6issue2/211-a6-2-8/file> Accessed 21 March 2017.

Scott, D, Barnett, C., 2009. 'Something in the Air: Civic Science and Contentious Environmental Politics in Post-Apartheid South Africa', *Geoforum*, pp. 373–82.

Sonnenfeld DA, Mol AP. 2002. Globalization and the Transformation of Environmental Governance: An Introduction. *American Behavioral Scientist*, 45(9), p. 1318-39.

South Africa. 1996. Constitution of the Republic of South Africa.

South Africa. 1998. *National Environmental Management Act (NEMA) (Act No. 107)*

StatsSA, 2017. Media release: Quarterly Labour Force Survey – QLFS Q4:2016. Published on 14 February 2017. Available: <http://www.statssa.gov.za/?p=9561> Accessed 21 March 2017

Swilling, M, Anneck, E. 2012. *Just Transitions: Explorations of sustainability in an unfair world*. South Africa: UCT Press.

Weale A. 1992. *The new politics of pollution*. Manchester, Manchester University Press.

Weidner H. 2002. Capacity building for ecological modernization lessons from cross-national research. *American behavioral scientist*, 45(9), p. 1340-68.

Winkler, H. (2008) Measurable, reportable and verifiable: the keys to mitigation in the Copenhagen deal. *Climate Policy* 8: 534–547.

World Bank. 2014. *South Africa economic update: fiscal policy and redistribution in an unequal society*. South Africa economic update; issue no. 6. Washington, DC: World Bank Group. <http://documents.worldbank.org/curated/en/933231468101334970/South-Africa-economic-update-fiscal-policy-and-redistribution-in-an-unequal-society> accessed on 13 November 2016.

Author Manuscript