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Integrating energy and climate governance in South Africa:

drivers, barriers and the shadow of hierarchy

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Integrating energy and climate governance in South Africa: drivers, barriers and the shadow of hierarchy

Babette Never

Abstract

This paper analyses the integration of climate and energy governance in South Africa. It identifies the current drivers and barriers in both sectors, focusing on clean development beyond the Clean Development Mechanism. The conceptual lens of the shadow of hierarchy is applied to analyse the role of both government and business. The paper finds that more coherence and collaboration between actors and their activities presents the key to the transition to a low-carbon economy in South Africa. The shadow of hierarchy only seems to trigger effective governance if the enforcement, content and time-frame for (potential) governmental action is sufficiently clear to all governance actors.

Keywords: clean development; climate governance; energy governance; shadow of hierarchy; South Africa

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Introduction

Clean technology is central for the mitigation of greenhouse gas emissions in the energy sector. In coal-based emerging economies such as South Africa, the switch to cleaner and more efficient technologies is crucial – both in terms of managing climate change and to assure long-term energy supply for economic growth. In the Copenhagen Accord, South Africa has committed to a 34 percent reduction of its greenhouse gas emissions compared to a business as usual-scenario. Also, the South African government is seeking to strengthen its position as a member of the BASIC-group and has been very active at the international climate negotiations in recent years (Never and Eucker 2009).

Domestically, a continuous economic growth is necessary to counter unemployment and inequality. Steady economic growth requires reliable electricity supply, which, in turn, means rising emissions, as 92 per cent of electricity generation in South Africa derives from coal (Winkler and Marquand 2009). Despite the high amount of coal available in the country, power cuts continue to occur. In 2008, widespread power cuts and load-shedding cost the economy 250 Million US dollars (Pegels 2009). Since the parastatal electricity provider Eskom claimed to be at the limit of its production and financial capacity, the World Bank granted a loan of 3, 75 billion US dollars to build the coal-fired power station "Medupi" in April 2010[1]. Another coal-fired power station called "Kusile" is already planned as well. This jeopardizes mitigation goals and shows the quandary both government and companies are in. The integration of energy governance, economic growth and climate governance presents a challenge with high political and practical relevance, not only for South Africa, but for other emerging economies as well. This paper addresses this challenge, with particular emphasis on the role of government and business from a governance perspective.

There are different strands of research on governance, but only some are directly relevant for climate and energy governance. These relate to the practical question of who governs, and who should govern – the actors, their connections and networks, and the appropriate level of activity (Guston 2001; Olsson et al. 2006; Brunnengräber et al. 2007; Armitage 2008; Newell et al. 2009). The framework for the analysis of clean development (Newell et al. 2009) sums this point up well and helps orient the paper here. Finally, the question of the transferability of the Northern concept of governance to areas of limited statehood is relevant (Risse 2007; Draude and Neuweiler 2010). To some extent, this question of transferability relates to the critiques from post-colonial studies Post-colonial studies concentrate on the critique of global power relations and argue for the relevance of local or indigenous knowledge as well as local discourses and experiences (see Briggs and Sharp 2004). South Africa has been identified as an area of limited statehood with deficits in the enforcement or implementation of governmental decisions and the fulfilment of the state's core functions (Risse and Lehmkuhl 2006). The implementation of decisions in the energy and climate change sectors presents a major challenge.

This paper seeks to contribute to answering the question of an effective governance mix at the climate/energy nexus by providing empirical insights from South Africa. By governance mix, I primarily mean the combination of types of governance mechanisms across sectors. This contribution focuses on the drivers and obstacles of climate governance beyond the Clean Development Mechanism (CDM), and contrasts them to

[1] Some analysts say that the electricity crisis was constructed to induce change, because the electricity prices in South Africa have been too low for a long time and there have been mistakes in Eskom's management (Interview with Government/Administration no. 2, January 2010). Hard evidence to prove or disprove these arguments is not available.

recent developments in the energy sector. I follow a somewhat broader understanding of clean development, implying that the CDM constitutes one possible path towards clean development among others. The role of government and business as well as their interaction will be addressed, focusing on the relevance of the shadow of hierarchy. The shadow of hierarchy describes the indirect influence governments and states have on non-state actors' behaviour through the threat of executive or legislative decisions (Scharpf 1993). Using the shadow of hierarchy as a conceptual lens helps address the question of who governs in clean development (Newell et al. 2009), because it sheds light on the indirect influences on the power of actors and their decision-making. The shadow of hierarchy connects a part of the governance debate - which takes "governance" almost as a given and concentrates on the forms or outcomes of governance - to the broader conceptual questions of the overall role of the state. In the 1990s, a lot of social science research outside the climate field engaged in the study of networks (Sabatier and Jenkins-Smith 1993; Keck and Sikkink 1998). In the past decade, a counter-trend emphasized the role of the state again, or focused on government or state actors networks (Slaughter 2004; Hurrelman et al 2007; Risse and Lehmkuhl 2007). The current question of who governs and how in clean development is therefore related to a broader debate about the state and its relationship to non-state actors.

My main argument is that coordination and collaboration between actors present the key to effective governance. Government is important in this respect, but the shadow of hierarchy seems to only propel governance efforts if the implementation of potential executive decisions and/or legislation is (a) deemed to be truly enforced (statehood), (b) the prospective content of the potential decision or legislation is sufficiently clear, and (c) a rough time frame for potential governmental action exists. Poor collaboration and coordination between government departments and institutions challenges the credibility, or threat, of the shadow of hierarchy.

The first section of the article briefly discusses different concepts of governance and gives the relevant definitions. In the second part, I summarize the state of South Africa's climate governance, including the CDM. The drivers and obstacles defining it will be identified and discussed – this step is imperative in order to find out in what ways climate and energy governance can be integrated. In the third section, the structure of the energy sector, its relevance for mitigation and recent developments in terms of the governance mix will be presented and discussed, relating them to climate governance aspects. The paper concludes with a summarizing assessment of South Africa's current governance mix, the role of the shadow of hierarchy and an outlook concerning the integration of climate and energy governance.

2. Governance concepts

Governance is a buzzword for both social science researchers and practitioners. The number of definitions and conceptualizations of governance is extremely high[2], giving the impression of a catch-all term. This section defines governance and highlights the relevant concepts of the governance debate for this contribution. Together, they form the basis of the analysis of climate and energy governance in South Africa.

Since governance consists of both structure and process (Börzel 2010), research on governance can be differentiated along those lines as well: either actors and institutions (structure), or the mechanisms and modes of governance (process) receive more attention. To map and further understand social science research on governance, the

[2] For an overview and different interpretations of governance see Risse and Lehmkuhl (2007), Benz et al. (2007); Jordan et al. (2005); and Peters and Pierre (1998).

more differentiated typology of Leach and co-authors is helpful. They differentiate between the block of (1) state-society-corporate governance, (2) networked governance and (3) adaptive/ deliberative/reflexive governance (Leach et al. 2007). With respect to the governance of clean development, Newell et al introduced a valuable framework that guides analysis along the questions who, how, what is governed or not, and on whose behalf (Newell et al. 2009).

In this paper, governance is generally defined as including public, public-private and private activities and processes that produce social order with a minimum of intentionality (Risse 2007). This definition combines the understanding of governance as activity and a process, which has been identified as a dividing line particularly in the understanding of practitioners (Hyden et al. 2003). The condition of intentionality excludes contingent governance products, when governance develops by accident. But the definition includes all forms of the often-used distinction between governance by, with and without government brought forward by Rosenau and Czempiel (1992).

The following ideal types of governance exist according to Rosenau and Czempiel: Governance by government refers to (traditional) modes of steering by state actors. Here, government can use coercion and its statehood to implement decisions. Governance with government refers to a setting in which state actors, whether they belong to government directly or (inter-) national state organizations, are on the same horizontal level with all other actors – no direct coercion or hierarchy exists. Finally, governance without government primarily means governance between private actors who negotiate, coordinate themselves and agree on the provision of common goods. Thus, action is based on non-hierarchical coordination and relies mostly on voluntary compliance, even though mechanisms of shaming or bargaining may change actors' interests and strategies. I use this rough differentiation of governance modes as a guideline for the identification of the prevalent governance mix in South Africa.

The general definition of governance given above can be specified for climate governance. Climate governance is, first of all, the governance of climate change, not the governance of the climate. Following the definition of Jagers and Stripple (2003: 388), climate governance includes "all purposeful mechanisms and measures aimed at steering social systems toward preventing, mitigating, or adapting to the risks posed by climate change". As for the general definition above, a certain intention to provide or influence the provision of a common good is implied. Effectiveness itself is not a defining condition of governance, but - as for policies - a goal of its outcomes.

Beyond the definition of governance, two conceptual questions are relevant for this article. The first one concerns the role of the state and the 'shadow of hierarchy' (Scharpf 1993; Börzel 2008). As indicated above, it describes the indirect influence governments and states have on non-state actors' behaviour through the threat of executive or legislative decisions (Scharpf 1993). With respect to the transition to a low carbon economy, this relates to the role of state intervention for the integration of climate and energy governance: who should exert which function, and how much state is necessary and effective here? Börzel argues that "the shadow of hierarchy cast by governments that can draw on consolidated statehood is a major condition for the emergence and effectiveness of governance with and without government" (Börzel 2010: 5). Her argument simultaneously underlines the role of the state and questions the existence and efficacy of purely private governance – but it still needs thorough empirical testing.

The second issue concerns the designation of a suitable level of governance, or who governs and how (Newell et al. 2009), for inducing the change to a low-carbon economy

while securing development. Climate governance has been identified and conceptualized as multi-level governance (Brunnengräber et al. 2007; Armitage 2008). Actors, activities and responses are interconnected and mutually dependent across levels. The international climate negotiations of the UNFCCC face increasing difficulties, with the Copenhagen conference in 2009 leaving a rather bleak outlook for an effective post-2012 regime. Transnational, national and local initiatives that take place beyond the UNFCCC are thus gaining in importance. On the one hand, the market approach of the CDM has, thus far, not led to the widespread results initially hoped for because the bulk of projects concentrate on just a handful of countries. In South Africa, only 17 CDM projects have been registered thus far. On the other hand, the growth of renewable energy technology markets and its revenues have the potential to economically drive the spread of low-carbon energy supply.

The question of a suitable level of governance crosscuts with the literature on networked governance since transnational networks can provide smaller, more regionally or locally focused approaches. Also, transnational networks may exert a certain norm-building function (Jakobeit et al. 2010) and/or fulfil governance functions (Andonova et al. 2009), thus providing an alternative to the international/global governance level. The implementation of (global) climate governance primarily happens at the national and local levels. Given the difficulties of the international negotiations, it may prove useful to turn towards alternative modes of governance at these levels which are not as dependent on international outcomes.

Growth considerations present the final issue that defines the relationship between climate governance and energy governance. For developing countries, whether large or small, the integration of climate governance into development paths is central. Here, mitigation and adaptation strategies may overlap, and economic, political and social motivations interact as well. Regardless of the appropriate level of action and the most suitable actor constellation, the reliable provision of electricity at affordable prices at the national and local levels is often a condition sine qua non for continued economic growth. Economic growth, in turn, is necessary to alleviate poverty and unemployment. Therefore, both the conceptual-analytical and the practical debate about climate and governance in South Africa must consider the growth imperative.

3. South Africa's climate governance

3.1 The state of climate governance

In this part, I give a brief overview about major actors and developments in South Africa's climate governance. Analysis draws on 35 interviews conducted with representatives of government, business and business associations, NGOs and experts on climate governance issues, from January to March 2010 in Pretoria, Johannesburg and Cape Town. Additionally, data and reports of the Carbon Disclosure Project (CDP) of various years as well as primary and secondary documents are used. These serve to paint a broader picture of the private sector and its actions in climate governance – this is imperative for the identification of the current governance mix, and for understanding the relation between clean development and the CDM in South Africa.

South Africa's first National Climate Change Strategy was published in 2004 (Government of South Africa 2004), but it did not translate into concrete measures that were implemented. Actual momentum only occurred from roughly 2007 onwards. It is safe to assume that the publication of the IPCC 4th Assessment Report in early 2007 triggered a lot of global attention, from which South Africa was not exempt. In December 2007, the ruling party African National Congress (ANC) adopted a declaration on climate change for the first time (ANC 2007). While not a concrete policy step, this lifted climate

change onto the ANC agenda and certainly raised awareness among ANC policy makers. In July 2008, the Long-Term Mitigation Scenario was published (DEA 2008). The LTMS is a scientific document that lays out different options for mitigating South Africa's emissions. In November 2010, a National Climate Change Response Green Paper was published, which is supposed to lead to a White Paper by mid-2011, and specific climate change-related laws and policies by 2012. The process promises to lead towards an emission reduction goal of 34 per cent compared to the "business as usual- scenario", signed in the Copenhagen Accord, as well as promote adaptation measures. Moreover, a small carbon tax on new vehicles has been introduced in October 2010. The biofuels strategy, published in 2007, and the National Cleaner Production Strategy of 2005 can also be counted as at least co-beneficial measures to climate protection, even if their implementation can hardly be deemed sufficient yet. Also, nearly all government departments at the national level now have a climate change appointee or a climate change team.

The major government departments concerned with climate change matters are the Department of Environment (DEA), which coordinates the prospective national climate policy, and the Department of Science and Technology (DST). The Department of Energy (DoE) does play a role for mitigation, but the relationship between DEA and DoE is characterized by a certain tension and a lack of collaboration (see Section 3.3). Due to its budget allocation function, National Treasury has an impact on climate policy as well. Moreover, Trevor Manual, former Minister of Finance and now head of the National Planning Commission, counts as the driving force behind the debate about environmental fiscal reform, and the adoption of a small carbon tax on electricity (see Section 4.1). The Department of Agriculture and the Department of Water Affairs are minor players that feed into the overall climate policy primarily developed by DEA. The Government Committee on Climate Change coordinates the ministries so that government takes a common position within the National Committee on Climate Change (NCCC).

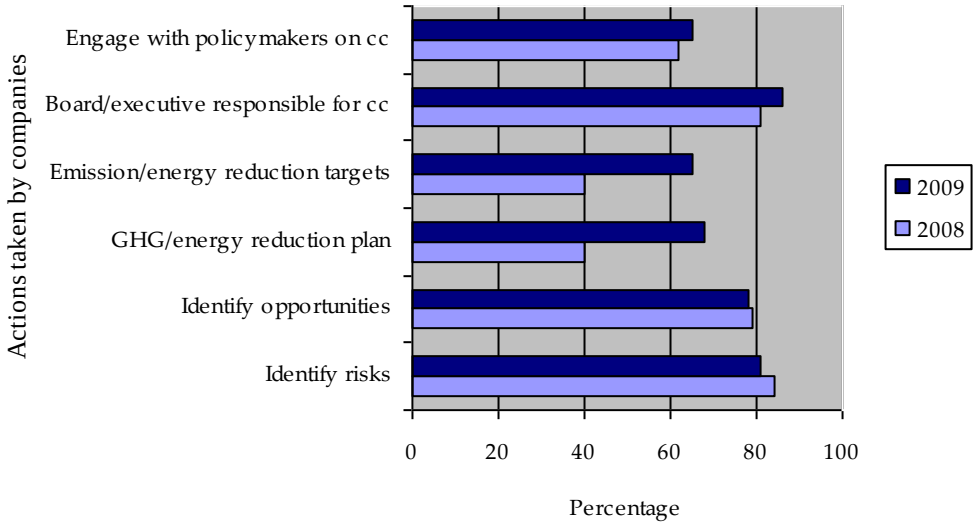
The NCCC includes representatives from government, business, NGOs as well as some experts. It is a stakeholder forum which is supposed to advise the DEA in the development of a national climate change policy. Several interviewees, however, criticized the forum for being too big to function properly, and the process for being very government-driven rather than a two-way consultation.

With respect to business, awareness and activities are picking up, but more in terms of mitigation than adaptation (see Vogel 2009). The CDM has not caught on very well in South Africa (see Section 3.2). It is therefore useful to understand and look at clean development governance in a somewhat broader perspective. I argue that clean development is the sum of measures leading to sustainable, low-carbon development. Understood this way, the CDM is one element or possibility towards clean development among others.

Indeed, there are other forms of clean development governance evolving in South Africa: The National Business Initiative (NBI) not only drove the introduction of the Energy Efficiency Accord (see Section 4.1), but continues to advocate for climate protection among businesses. NBI also connects different companies wishing to contribute to climate protection by organising workshops and discussion platforms in working groups. NBI seeks to set up a water chapter in the CDP, starting in 2010. Business Unity South Africa (BUSA), another major business association, plans to set up a water efficiency accord to promote adaptation to the impacts of climate change.

Since 2007, large and transnational companies fill out the questionnaire of the CDP on greenhouse gas emissions and their company's climate protection activities. In the first year, only the top 100 companies listed at the stock exchange were contacted, with the sample increasing to the top 100 from 2008 onwards. Response rates were comparably high from the start. The most current survey was completed by 68 percent of companies; this being the fifth highest CDP response rate internationally (CDP 2009). Key trends in responses of 2008 and 2009 are depicted in Table 1.

Table 1. South African companies' response to climate change: CDP Key trends 2008-2009



Source: CDP (2008, 2009). Note: cc denotes climate change

The key trends show that more companies now have a GHG or energy use reduction plan and/or even a target. The percentage of companies engaging with policymakers and the number of companies giving the responsibility for climate change issue to the board or executive level have risen very slightly. These ratings indicate that climate change is an issue that is increasingly taken serious by many companies, or that at least cannot be completely ignored any longer. The identification of risks and opportunities for the company with respect to climate change remains nearly at the same high level (with a slight decrease), pointing towards a good awareness among big and transnational companies. Moreover, the identification of risks includes regulatory risks – the majority companies expect future regulation either on the international level and/or by the South African government, and associate costs with these future regulations. But there is also a great uncertainty as to when and in what form new policy instruments will be implemented (CDP 2009: 31). Thus, while these responses indicate the existence of a shadow of hierarchy, uncertainty may counter its effect (see Section 3.2).

Within the big business sector, Eskom and Sasol occupy a special position. They are the two companies that together account for the bulk of South Africa's GHG emissions. Eskom is a parastatal enterprise, and Sasol used to be a parastatal entity during apartheid. Therefore, relations between government and Eskom and Sasol are of a special nature, even though the specific regulations affecting them differ somewhat (see Section 4.1).

The business sector can be divided into three groups: a handful of big companies take the lead and have started acting, a second group have only recently become aware of the climate change challenge and potentially started working on risk assessments. A third, large group of all other companies exists, which are either not aware yet, do not have enough knowledge and understanding, or see the sole responsibility for acting to be a matter of the big GHG emitting companies only (especially Eskom and Sasol):

> "[..] after the big five there is a big gap to other big and small and medium enterprises, they don't feel responsible for emissions. They have other things on their mind, a lot of competing things to worry about".[3]

Overall, the governance mix – here referring to the combination of specific governance mechanisms or the "how" of governing - in South Africa's climate governance is currently still evolving. Regardless of the difficulties with policy and strategy implementation, government plays a central role, and thus governance by government. Private governance initiatives such as the CDP and the initiative of NBI exist as well and may expand. With respect to public-private governance, only very few examples exist. The CDM does not work as well in South Africa as in other emerging economies such as India or Brazil. Whether the increase of awareness and activities within the private sector will eventually lead to and correlate with an increase in CDM projects, as may be assumed, is somewhat unclear at this stage. The next part assesses the functioning of the CDM in South Africa.

3.2 The Clean Development Mechanism in South Africa

Compared to other emerging economies such as India or Brazil, the number of CDM projects in South Africa is rather small. Despite the initial hopes and potential invested in the CDM when the mechanism was first initiated in 2007 (Winkler and van Es 2007), only 17 CDM projects have been registered this far. At the beginning of 2010, only five of these were actually up and running according to a South African expert[4]. The types of projects include the energy-related forms biomass, energy efficiency, renewable energy, fuel switch and landfill gas capture. Among the project developers are some of the big emitters within business, such as Eskom, Sasol or Sappi (Department of Energy 2010a).

Why has the CDM not delivered on the anticipated potential and what could its future look like in South Africa? There are several possible explanations.

First, the CDM had been somewhat devalued politically, when the Designated National Authority was shifted from the Department of Environment to the Department of Energy in 2004[5]. Companies gave the amount of bureaucracy involved in the CDM process as another reason: "we and a lot of other companies decided it wasn't worth the hassle. Also, there's the Eskom Demand Side Management system, which is a bit easier to handle. The CDM is this faceless UN thing."[6]

The statement not only indicates procedural difficulties within the CDM, but also uncertainty and maybe even distrust regarding the overall mechanism as part of the Kyoto Protocol. Given the uncertainty in the international climate change negotiations concerning the future of the Kyoto Protocol post-2012, this is hardly surprising. These findings confirm existing analyses: Fay et al (2010) identify uncertainty about the risks of the CDM and the complexity of it as a disincentive for both the public and private

[3] Interview with Business representative no. 1, January 2010.
[4] Interview with Academic/Expert no. 2, January 2010.
[5] Interview with Academic/Expert no. 2, January 2010.
[6] Interview with Business representation no. 3, February 2010.

sector. Moreover, they see funding problems and the high cost of project validation as well as the lack of South African Designated Operational Entities (DOE) as major bottlenecks for CDM projects. According to these authors, the lack of a meaningful regulatory and governance framework on renewable energy presents a further obstacle to CDM projects targeting renewable energy (Fay et al 2010: 13). This finding is in line with the general lack of clear governance frameworks identified in other parts of climate and energy governance (see Section 3.3 and 4.).

Finally, some interviewee linked the development of CDM to the perceptions around climate change prevailing in South Africa. On the one hand, climate change has only recently taken a more prominent place on the government's agenda, and awareness of climate change and its risks and opportunities for business has only come about in the past two to three years. On the other hand, the vocal presence of climate sceptics has an impact on public debate and nurtures uncertainty (see Section 3.3). Thus, a lack of interest in CDM in the past and its slow increase can be linked to these general developments.

The future of the CDM in South Africa depends as much on the outcomes of the international climate negotiations as anywhere else. While the progress of the CDM has been rather slow in the past, the fact that the DNA received a further 16 Project Design Documents apart from the already registered projects and 123 Project Idea Notes by August 2010 gives reason to believe in the potential of the instrument. Whether this is directly linked to an increase in the existence of energy reduction plans, awareness or participation in the CDP would require a detailed company-level analysis. This could be a starting point for further research. The pressure to reduce GHG emissions and the particular potentials of the renewable energy sector in South Africa (see Section 4) may increase the number and scope of the CDM in the future. Whether this potential will results in an actual increase in running projects in the very near future remains somewhat unclear at this point. The degree of existing uncertainty and the concerns about financing and bureaucratic procedure are unlikely to disappear overnight. Here, the shadow of hierarchy seems to have no effect.

The current debate around energy and climate change concerns other governance mechanisms as well such as the introduction of a carbon tax which is listed as one of several alternatives in the Green Paper on climate change (DEA 2010). There is, therefore, enough reason to believe that the CDM will constitute only one contributor towards clean development in South Africa. Other mechanisms and governance initiatives in an integrated climate and energy governance seem necessary. As we have already seen in the previous sections, the CDM is not the only approach South Africa is currently following in this regard. The An analysis of the underlying forces in South Africa's overall climate governance contributes to both understanding the role of the shadow of hierarchy and the prospects for an integration of climate and energy governance. It will be provided in the next section.

3.3 Drivers and barriers in climate governance beyond the CDM

This section discusses the major drivers and obstacles in South Africa's climate governance beyond the CDM. It draws on the information gained during the interviews described above.

In general, there are three groups of driving forces for climate governance in South Africa. First, there are a number of events that helped in raising awareness and support the progress of governance. Second, there are several key individuals and groups

pushing for climate governance – here, the relations and exchanges between actors come into play as well. Third, there is a set of strategic and knowledge-related drivers, meaning both companies' activities for competitiveness or market reasons and actors' increased awareness and understanding of climate change.

In terms of driving events, a further differentiation is necessary. On the one hand, interviewees referred to the triggering effects of developments at the international level such as the publication of the 4th Assessment report of the IPCC, and especially the increase in international attention attached to it. Also, the run-up to the UNFCCC conference in Copenhagen in December 2009 and the conference itself had a push effect. On the other hand, interviewees stressed developments and events on the national level. Here, the declaration of the ANC in Polokwane in December 2007 and the publication of the LTMS in July 2008 have been pointed out as major events. The rise of electricity prices and the energy crisis of 2008 helped in increasing individuals' awareness of climate change-related issues, for instance, for saving electricity. Overall, events on the domestic level have greater significance than those at the international level, including the (post-) Kyoto processes.

In the private sector, companies started looking at energy efficiency and investing into measures which co-benefit a reduced energy use and climate change, thus integrating climate change into their agenda. This frequent citation of both the price hike and the power supply crisis shows that triggering events for climate governance do not necessarily have to be directly related to climate change. The driving force of co-benefits matters in South Africa. Economic incentives are relevant for the initiation of both individuals' consumer behavior and companies' strategies. As one journalist put it:

> "The price of power has gone to the roof, so people have started saving more energy because of that, increased energy efficiency, it has nothing to with awareness about climate change, it's about when it gets to people's pockets" [7].

The second set of drivers concerns key individuals and groups that actively engage in and push for climate governance measures. These are the environmental NGOs: primarily WWF, Earthlife Africa, and to some extent Groundwork and the Climate Action Partnership. Greenpeace has only recently established an office in South Africa and therefore does not count as a particularly influential NGO in South Africa yet. Most interview partners emphasized the role of Marthinus van Schalkwyk, Minister of Environment under Thabo Mbeki, in both putting South Africa on the political map in the international climate negotiations and in domestically pushing for the development of a climate strategy. In addition, a small number of scientists drive climate governance activities. The exchange with peers in international associations influences the behaviour of some companies. This concerns the exchange of ideas and practices as well as an emerging general momentum or even peer pressure.

The third set of drivers, strategic and knowledge-related factors, refers to more awareness and increased knowledge – here, primarily a minimal scientific understanding - about climate change. For most actors, this correlates with a positive attitude towards climate protection measures. In terms of raising awareness, the media has an important function. While the media helps to raise awareness and to stimulate debate in society, its influence is restricted because only a part of South Africa's population has exposure to it, especially to newspapers. Content analysis of all 35 interviews showed: those actors who are aware of climate change and have understood

[7] Interview with Journalist no. 2, February 2010.

what it means, while also being generally positive about combating climate change, try to do something about it.

For companies, strategic market assessments and competitiveness considerations fuel activity. The mining companies interviewed, for instance, fear that climate change is going to affect their competitiveness when international and European clients abstain from buying their "dirty" coal. The same reasoning – or fear - drives the fruit and wine industry towards more sustainable production[8]. Also, insurance companies have a vital strategic interest in increasing resilience to climate change impacts, in order to avoid having to pay for excessive damages in the future. Several of the companies interviewed indicated the relevance of transnational ties to peers through associations and other, direct contacts. Those international peers stimulate the particular company's response to climate change, increase awareness or enable best practice exchanges and learning[9].

Some companies want to develop a green image for public relations reasons, potentially increasing their attractiveness for customers, while some environmental NGOs accuse companies of merely greenwashing or re-labeling Corporate Social Responsibility activities as climate change measures. Those companies interviewed here primarily start acting out of perceived economic risks or benefits, but a normative belief that it is necessary and right for them to do something about climate change matters for them as well.

The main problems in South Africa's climate governance can be grouped into three rough sets as well. First, there are a number of cross-cutting problems which affect almost all governance actors and processes in some way. Second, there are specific obstacles concerning the government, with differences concerning the scope of these problems for the national government and provincial governments. Third, there is a set of problems that slows down progress in business.

Concerning the cross-cutting problems, interviewees stressed different points. There was high agreement, however, that the implementation of measures presents a widespread difficulty in South Africa. It affects not only climate governance, but other governance fields as well. In terms of policy, the implementation at lower levels of administration is difficult, even if the political will is there at the top level. The implementation of climate governance measures often touches on individuals' or consumer's behaviour which is very difficult to change. In addition, some interviewees pointed out that South Africans feel they have a certain right to catch up on lifestyles detrimental to the environment which were denied to them under the Apartheid regime[10].

Various experts, companies and some NGOs underlined that there still is a lack of understanding and knowledge concerning climate change both in government and business. While some actors are very well informed and knowledgeable, others lag behind. Several scientists and members of the National Business Initiative argued that the communication of science and the education of actors – in other words, the learning – is crucial and still needs improvement.

The (remaining) scientific uncertainty, in particular the lack of down-scaled data about specific local impacts, presents a difficulty for actors in South Africa. Despite the fact that many countries across the globe have to deal with this problem, and even though

[8] Interview with Business representative no. 1, January 2010.
[9] Interview with Business representatives, no. 5 & no. 6, March 2010
[10] E.g. interview with Government/Administration no. 2, January 2010.

most key actors in South Africa do not question climate science fundamentally, overall uncertainty is exacerbated by the vocal presence of groups of climate change sceptics and denialists. In the run-up to the Copenhagen conference, there was a wave of scepticism in the South African media, further fueled by the email-hack in the Climatic Research Unit at the University of East Anglia in December 2009. Interview partners disagreed about the actual influence of these sceptics and denialists, but they do have a voice and get attention in the media.

With respect to government, several challenges exist: First, a lack of collaboration and coordination between departments parallels a lack of coherent policy. Insufficient collaboration primarily concerns the DEA and DoE, whose relationship is characterized by a certain tension. The third advocate of climate governance measures, National Treasury, has an ambiguous role. Treasury introduced the carbon tax in 2009 without consulting other departments, according to my interviewees. Also, Treasury decides whether DEA or DoE have access to funding, creating a certain competition. A term that kept coming up in the interview was "silo thinking"[11], implying that each government department follows its own approach. Moreover, DEA and DoE ministers both count as rather weak departments in terms of power. The same appears to be true for the two ministers of these departments, Buyelwa Sonjica and Dipuo Peters. In November 2010, Sonjica was replaced by Edna Molewa, who previously served as minister of social development. Whether this replacement changes anything in the power status of the DEA remains to be seen.

In addition to a lack of knowledge and understanding in some government departments (on all levels of administration), insufficient skills and institutional capacity are a problem. To some extent, these are due to the electoral turnover of staff every five years, and to a lower payment rate compared to similar positions in the private sector. A lack of financial resources was identified as a further obstacle. It was not possible to obtain figures of how much public expenditure goes into climate change-related activities (either concrete measures or research).

The overarching challenge for government is the integration of different policy and political goals, or, how to balance different needs. Even some of the environmental NGOs and experts who are in favor of more encompassing climate governance acknowledge that government has to deal with problems that may be more pressing in the short-term, e.g. housing and job creation or crime prevention and HIV/AIDS[12].

The final set of problems relates to businesses. In general, companies currently wait for a policy frame and for government to take the lead. On the one hand, this is a problem concerning government (since it blocks progress), on the other hand it does not justify the inertia of companies. A first mover advantage appears possible. This leads to the second issue, the discrepancy between groups within the private sector described above. The level of awareness is lower for small and medium enterprises than for the big and transnational companies. Whether the increase in awareness and activity by large and transnational companies diffuses through their value chains or supply chains to small and medium enterprises remains to be seen. Thus far, only single big companies such as Woolworths try to raise awareness in their supply chain by designing a code of conduct, and/or providing information.

[11] Interviews with Academic/Expert no. 5 & no. 6, February 2010; Political Opposition member no. 1, March 2010.
[12] Interview with NGO representative no.1, January 2010.

The drivers and barriers identified in this section lead to the following interim conclusions: Both the international and the national level matter, and at least for businesses, transnational influences and initiatives advance climate governance. Since some big businesses are waiting for government to give them a frame within which to develop their climate governance actions, it becomes clear that comprehensive climate governance in South Africa does not work without the state.

This – cautiously - confirms Börzel's argument that the presence of government is necessary for the development of governance with and without government. South African businesses only very carefully opt for the first mover advantage. The uncertainty and confusion created by a lack of policy coordination and policy coherence undermine the threat inherent in the shadow of hierarchy. Whether the shadow of hierarchy cast by government is sufficient does not seem to only depend on statehood in an abstract way, but more concretely on the ability of government to make clear what kind of executive decision or legislation may be taken, and in which time frame. The actual enforcement of legislation matters as well:

> "One of the big problems in South Africa is that we can have the best, most progressive laws, but there is no enforcement, and people know that."[13]

Since climate governance, and particularly the mitigation of GHG emissions, is closely connected to energy governance, these results need to be put into perspective with the structure and developments in the South African energy sector. This is the goal of the next section.

4. South Africa's energy sector

4.1 Structure and significance for mitigation

South Africa's energy and electricity sector is quite simply structured because the prime energy source coal accounts for over 80 percent of electricity supply (Imbewu Sustainability Legal Specialists 2009). The reliance on coal as an energy source explains the country's comparably high amount of GHG emissions per capita[14]. In addition, South Africa's economy counts as one of the most energy intensive ones in the world, with manufacturing and transport accounting for most of the energy demand. For 2007, it is estimated that 78% of GHG emissions result from fuel combustion, 15% from industrial process and 7% from other processes (Winkler and Marquand 2009: 50f.). The parastatal company Eskom is the sole electricity provider in South Africa.

There is one nuclear power station, Koeberg station, in the Cape region, which is owned and run by Eskom. While more stations are planned and nuclear has recently been confirmed as an option for South Africa's future energy mix by Dipuo Peters, Minister of Energy(Reuters 2009), concrete planning and building has stalled this far due to financial problems.

The potential for wind and solar energy is very high in South Africa, with some regions in the Northern Cape counting among the most suitable in the world for solar thermal energy. Some studies suggest that renewable energy technology could provide up to 50% of electricity by 2050 (Edkins et al. 2010; Grant 2009). Yet only negligible amounts of electricity from renewable energy are currently produced. There is only one wind

[13] Interview with Government/Administration representative no. 2, January 2010.
[14] In 2000, per capita emissions with land-use, land-use change and forestry (LULUCF) were 10.1 $tCO2_{eq}$, compared to 10.5 for the EU or 22.9 for the US (Winkler and Marquand 2009: 50).

farm in Darling, operational since 2008. Eskom has a solar water heater programme, which has the goal of selling one million solar water heaters to private households. Initially, the programme had not been very successful. In spite of the subsidised price, the purchase and installation costs for a solar water heater are still significantly higher than those of a conventional water heating system. Only after Eskom increased the rebate in January 2010 did the number of installations and expressions of interest by companies increase(Van der Merwe 2010). South Africa currently imports small amounts of hydroelectricity from Mozambique, but, given the vast solar resources, hydropower is not the first choice for the expansion of renewables.

On the governmental side, the major players are the Department of Energy and the Department of Public Enterprises; the latter holding the shares of Eskom. The National Energy Regulator of South Africa (NERSA), set up in 2004, regulates the liquid fuels, gas and electricity sectors. Its tasks include the conduct of the stakeholder consultation process and decision-making about electricity pricing. In December 2009, an Inter-Ministerial Committee on Energy was set up to coordinate and consult all crucial issues in the electricity sector, including the development of the second Integrated Resource Plan (IRP 2). The IRP2 is a central document for the development of South Africa's energy policy and the energy mix in the next 20 years. While the set-up of such a committee that includes the DEA could be seen as a positive step towards the integration of climate and energy governance, analysts describe the process as "out of sequence, and fraught with conflicts of interests" (Pienaar and Nakhooda 2010: 4).

Apart from Eskom, the Coal-To-Liquid (CTL) Company Sasol is important in the energy sector. As already mentioned, Sasol used to be a parastatal enterprise. During the apartheid legacy, in which South Africa faced an oil embargo, Sasol provided synthetic fuel on a large scale by using the CTL process. The CTL technology was initially strongly subsidized by government. Today, the large amount of coal available in the country at low prices as well as low electricity prices makes CTL still highly profitable for Sasol, which currently supplies a third of South Africa's liquid fuels (Tyler 2009). The regulations affecting Sasol differ to some extent to those of Eskom: Eskom is generating electricity from different power sources, transmitting and distributing it through the national grid. Governance here is first of all tied to the activities of DoE, NERSA and the Department of Public Enterprises. Sasol's operations in liquid fuels underlie specific, stringent rules of the South African National Standards, controlled by the Department of Energy[15].

Sasol is also a member of the Energy Intensive Users Group which represents the interests of 36 large companies that together consume about 44% of South Africa's electricity. The EIUG is a strong force on the business side of the energy sector. For instance, members of the EIUG form part of the technical advisory group to the Department of Energy concerning the development of IRP2 (Pienaar and Nakhooda 2010). BUSA plays an important role in the energy sector and in climate governance. It proactively engaged with the DoE at the beginning of 2010 for consultation processes on the IRP2 (Pienaar and Nakhooda 2010: 4).

A number of other institutions are relevant, contributing to a fragmentation of the energy sector beyond the major actors. Among them is the Central Energy Fund (CEF), a partially DoE-funded body which manages governmental oil and gas assets. CEF and the South African Energy Research Institute (SANERI) are both conducting research on energy issues including energy efficiency and renewables. The National Energy

[15] While the specific technicalities of these sub-sectors have an impact on energy governance through specific regulations, the details will be neglected here.

Efficiency Agency (NEEA) and the Centre for Carbon Capture and Storage (CCS) also belong to this cluster of institutes. The South African Energy Development Institute (SANEDI), set up by the 2008 Energy Act, is supposed to integrate some of these institutes and push for more renewable energy in the country.

On the one hand, the high number of institutions has been criticized as a central problem within the energy sector, especially with respect to the promotion and implementation of renewable energy projects (see Edkins et al 2010). On the other hand, power is concentrated in the hands of a few actors (namely, DoE, Eskom and Sasol) and moves towards privatization or the opening of the energy market for independent investors keep stalling.

The South African energy sector has always been structured in a way to provide bulk supply in a centralized way. Following massive electrification programmes after the end of apartheid, the spatial legacy of supply patterns concentrated on areas with white inhabitants was somewhat overcome (Tyler 2009). The White Paper on Energy of 1998, one of the central documents on energy, promotes that 30% of power should be supplied by independent power producers (IPP) to diversify South Africa's energy mix and break up the monopolistic position of Eskom. Up to now, this has not happened (see Section 4.2).

The White Paper on Renewable Energy of 2003 is a second important policy document. It introduced a target of 10 000 GWh of energy to be produced from renewables by the end of 2010. This goal will most probably not be met (Edkins et al. 2010). The renewable energy feed-in tariff (REFIT) guidelines published in March 2009 came as a reaction to the widespread power blackouts in 2008 which made clear that alternative energy sources are necessary for both energy security and climate protection reasons (Edkins et al. 2010). REFIT guarantees power producers a fixed price rate (per kWh produced), thus overcoming the financial barrier that had long impeded any renewable energy production (Edkins et al 2010: 15). The electricity tariff of 2ct/kwh introduced in June 2009, on power generated other than by renewable, is in fact the first carbon tax in South Africa. While not making a real financial impact for Eskom, it may be the gateway to further mitigation measures in this area. Public consultations for IRP2, are ongoing. The IRP2 is expected to outline different scenarios on how to integrate energy, climate and development objectives in energy governance. Analysis of the current developments here will be provided in the next section.

In 2005, a public-private Energy Efficiency Accord was concluded. This example of governance with government has been signed by 44 companies(NBI 2011). While the accord was originally set up to counter the energy supply and demand problems, it is co-beneficial in terms of climate change mitigation as well. In May 2010, the DoE published a policy to support energy efficiency and demand side management (Department of Energy 2010b).

In sum, the South African energy sector is structured around a handful of major actors and the prime energy source coal. Some analysts describe the situation as oligopolistic (Tyler 2009). Ties between the major actors are unclear, and the institutional landscape beyond them is rather fragmented. The competitive advantage of South Africa's economy is largely based on cheap coal and cheap electricity, produced in an energy- and carbon intensive way. Competitiveness, economic growth and job creation/security are interdependent. Therefore, the diversification of energy production and the shift towards a low-carbon economy may have to be understood and analyzed from a development perspective, as other authors have emphasised (Winkler et al. 2007). Moreover, South Africa is just coming out of recession and has to shoulder the financial

burden of the soccer World Cup, making investments into mitigation and clean energy technology somewhat less likely. The current economic growth rate is at roughly 3% - far from the 6% envisioned by policymakers, and far from a growth path that could secure employment and help to counter inequality (Kappel 2010).

The following section identifies recent developments and barriers, compares these to the developments in climate governance and discusses their implications for the governance mix and the shadow of hierarchy.

4.2. Recent developments, barriers and implications for the governance mix

Three sets of events have certainly had an effect on South Africa's energy governance: First, the load-shedding in 2008; second, the subsequent electricity price hikes of 25% in 2008 and of 24% for each of three consecutive years starting in 2010; and, third, the granting of the World Bank loan for the new coal-fired power station "Medupi". All these events spurred debate about the future of South Africa's energy mix in the light of climate change, and increased the pressure to act.

There are calls for more renewable energy and power provision by independent power producers – hence, for a liberalisation of a part of the market - by policymakers, NGOs and analysts. In his state of nation address in February 2010, President Jacob Zuma, envisioned the participation of IPPs and the establishment of an independent systems operator, separate from Eskom(Zuma 2010). At the time of writing, it remained to be seen whether this statement moves beyond lip service. Since the first attempt to liberalize the electricity market at the end of the 1990s failed, uncertainty about the conditions under which IPPs can operate continues for the moment. Tyler assesses a failure of energy planning, co-ordination and liberalisation following the publication of the White Paper on Energy in 1998 until the present: "The failure of planning, coordination and liberalisation has meant that the status quo of a centralised supply side oriented oligopolistic energy sector based on coal has been maintained" (Tyler 2009: 10).

Some interviewees further indicated that Eskom keeps blocking the signature of power purchase agreements for IPPs, thus actually hindering a change in the governance structure[16].

In the literature, several other constraints and barriers for effective energy governance are identified. Most of them are relevant with respect to the integration of climate and energy governance, and some are even the same kind of barrier as identified in the section on climate governance:

There is a consensus in the literature that a lack of policy coordination and slow or non-existing implementation present major difficulties in South African energy governance (Tyler 2009, Edkins et al. 2010, Winkler and Marquand 2010; Idasa 2010). With respect to the integration of energy and climate governance, it has been reported that DoE's preferred scenario in the IRP2 contradicts South Africa's GHG emission reduction pledge. The alternative scenario proposed by DEA would have only cost 3% more while substantially reducing the environmental footprint (Pienaar and Nakhooda 2010: 8). Civil society seems to have been largely excluded from real input into the IRP2 process this far, with DoE not attending meetings with civil society organisations as promised (Pienaar and Nakhooda 2010: 5).

[16] Interview with Business representative no. 4, February 2010; Political Opposition Member no. 1, March 2010.

In addition, the non-transparent, somewhat fragmented institutional landscape in the energy sector, in which the connections between governmental and non-governmental institutions are not clear-cut, increases uncertainty among governance actors (Idasa 2010). This has implications for the energy market as well: private investors do not know what to expect, or whether their produced electricity will be purchased. In terms of the market, the cheap price of electricity (due to the cheap price of coal) also increases the risks and costs for investors, and impedes the development of an alternative market (Winkler and Marquand 2009; Edkins et al 2010).

Moreover, the innovation system in South Africa is characterized by path dependency – the reliance on coal, lack of experience with renewables, and the reliance on Eskom and Sasol as the only providers of electricity and energy transformed from liquid fuels. Their dominance still pertains in research and development as well, influencing developments in the renewable energy sector (Pegels 2009: 11). Tyler suggests that a single powerful institution is necessary that can coordinate and deal with vested interests of existing institutions (Tyler 2009: 13). According to her, the resistance of dominant energy institutions presents a decisive barrier to a change in the energy system, and the alignment of energy and climate mitigation governance. While the set-up of such an institution may help, the dissolution of existing institutions could be an obstacle.

Again, as for climate governance, the lack of policy coordination and coherence are major barriers. This confirms other results concerning clean development governance, which had identified these problems as well (Newell et al 2009). Moreover, the structure of the energy sector itself and the distribution of power between actors make the transition to a low-carbon economy appear very difficult. While for climate governance more governance by and with government seems necessary, the energy sector would benefit from a partial liberalization, or at least the set-up of a second parastatal electricity provider, and an increase in transparency, including the consultation of civil society beyond mere lip service. A partial liberalization would give other governance actors the chance to step in and end the monopolistic position of Eskom. While not the universal solution for the various challenges within the energy sector, this would be a first step that gives new momentum to the procedural dynamics. Given the relevance of stable electricity supply for development and the necessity of affordable electricity prices for the poor, bulk supply has to derive largely from coal, and from one or more parastatal entities, in the near to mid-term. Integrating climate and energy governance without challenging development paths too much means some trade-offs are unavoidable. The strengthening of green job opportunities, eg in renewable energy, presents one governance opportunity that is (co-) beneficial to all three goals (climate protection, energy security, economic growth). A study estimates the potential for green job creation to up to 800,000 new jobs in South Africa (Global Climate Network 2009). Integrating climate change considerations into industrial policy - and in particular putting a price on carbon - may also help achieve the goal of broad-based industrialization through job creation in energy efficiency and renewable energy installation in marginalized regions (Cloete and Robb 2010).

Finally, on the conceptual scale, the comparison between energy and climate governance in South Africa indicates that governance without government is the exception, and may rather work on the transnational level. In climate governance, more state intervention with a credible shadow of hierarchy is required, while in energy governance, more governance through market forces that break-up oligopolistic structures might be a viable first step, even though not the only one required. In the energy sector, it is not entirely clear whether the shadow of hierarchy is cast by government only, or together with Eskom. In any case, more policy coordination, and a

minimum of security about what to expect, and when, is decisive for both effective governance and the credibility of the shadow of hierarchy.

5. Conclusion

In this paper, a governance approach to the integration of climate protection and energy issues was taken. Empirical insights from the case South Africa were provided to help identify the appropriate governance mix for a transition to a low-carbon economy. At this stage, government and business are not entirely on a common road to a low carbon economy. In climate governance, more governmental action that provides a frame for other modes of governance is required. To ensure energy supply and to diversify the energy mix - both to prevent future power cuts and to enable mitigation in this area - a partial liberalization of the energy market is required. Results here confirm existing research. Major barriers in both climate and energy governance, and thus for their integration, include the lack of policy coordination and collaboration between actors, leading to uncertainty.

This situation undermines the relevance of the shadow of hierarchy in South Africa. It seems possible and likely that more governance without government will come about in the near future, if this uncertainty is reduced and a first mover advantage may more credibly pay off for companies. Therefore, the shadow of hierarchy may indeed present a condition for effective governance with/ without government, if actors expect potential state intervention to be truly enforced, if its possible content can be assessed sufficiently, and if it can be estimated when a governmental decision or legislation may come about. It is not clear what implications result if the shadow of hierarchy is not cast by government or not by government only, but by business and/or other actors as well. The traditional concept of the shadow of hierarchy may have to be adjusted.

Alternative approaches to research in this area include a focus on networks to identify the connections between business and government and all other relevant governance actors. Also, analysing the integration of climate and energy governance in terms of adaptive governance, or the ability of the governance system to dynamically react to external shocks and changes, may prove useful.

For South Africa, the road towards a low-carbon economy has to be a common one in terms of all three goals of climate protection, energy supply and development. Coal is very likely to continue being the power supply for the major parts of electricity production in the near and mid-term, because the diversification of an energy mix takes time, and the social-political goals of countering unemployment and inequality cannot be ignored. The shift of the energy mix towards a higher portion of renewable energies and more energy efficiency may be co-beneficial, especially concerning job creation in the industry of renewable energy. However, as the results of this article show, this shift needs to be triggered and accompanied by a shift in the governance structure. A stronger collaboration of actors and their activities as well as existing policies presents a first step.

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