

**The politics of electricity planning in South Africa:  
A review of dominant advocacy coalitions seeking to influence the Integrated Resource  
Plan of 2010 (IRP2010), and its update in 2013**

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### **Declaration, for transparency**

The author was actively involved in South Africa's energy policy lobbying and advocacy sector between 2007 and 2014. During this time, she organised a number of national cross-sector workshops on electricity planning, participated at coordination level in one cross-sectorial national energy network, one cross-sectorial national climate network, and one civil society national electricity network. In all three cases she did so as a member of the grouping identified in this thesis as the "Reform" coalition. During this time, the author was occasionally responsible for compiling formal minutes of meetings and reports of conferences. Throughout this seven year period, circumstances changed rapidly and the author noted key contextual points in her diaries. Referred to as 'Researcher records', the researcher relied on her personal diaries, copies of emails as well as formal minutes and reports for the policy period under review when needing to triangulate primary and secondary data.

In February 2015, no longer involved in energy policy lobbying and advocacy, the author was invited by the Minister of Energy to serve on the Ministerial Advisory Council on Energy (MACE). The substantive work of the Council commenced in October 2015. The dissertation review period has thus intentionally been selected to end in June 2015 in order to avoid any perceived conflict of interest.

### **Declaration: plagiarism**

I know the meaning of plagiarism and declare that all of the work in the document, save for that which is properly acknowledged, is my own.

Signed:

**Signed**

Brenda Martin, August 2016.

## Acknowledgements

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At a crucial moment in the analysis, I lost a chunk of analytical writing which I have never been able to fully recover. This accident helped me to see an entirely new thread and framing of analysis which had not been visible to me before. So finally, I am thankful for happy accidents, and the gifts they bear.

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## Acronyms

ACF	Advocacy Coalitions Framework
AGC	ANC Annual General Conference
ANC	African National Congress
BUSA	Business Unity South Africa
COP17	17th session of the Conference of the Parties to the UNFCCC, Durban, 2011
COSATU	Congress of South African Trade Unions
CPUT	Cape Peninsula University of Technology
CSIR	Council for Scientific and Industrial Research
CSP	Concentrated solar power
DEA	Department of Environmental Affairs
DME	Department of Minerals and Energy
DoE	Department of Energy
DPE	Department of Public Enterprises
EC	Energy conservation
EE	Energy efficiency
EEDSM	Energy efficiency demand side management
EGI-SA	Electricity Governance Initiative of South Africa
EIUG	Energy Intensive Users' Group
ELA	Earthlife Africa
EOSA	Energy Outlook for South Africa
ESCSC	Energy security cabinet sub-committee
ESSC	Energy Security Sub-Committee
EWP	Energy Policy White Paper
GCIS	Government Communication and Information System
GDP	Gross domestic product
GHG	Greenhouse gas
IEA	International Energy Agency
IEP	Integrated Energy Plan
IGCC	Intergovernmental Committee on Climate Change
INDC	Intended Nationally Determined Contribution
IPPs	Independent power producers
IRP	Integrated resource planning
IRP2010	Integrated Resource Plan, 2010
IRP2013	Integrated Resource Plan, 2013
ISMO	Independent system market operator
ISO	Independent system operator
ISEP	Integrated Strategic Electricity Plan
LCOE	Levelised Cost of Energy
LCP	Least cost planning
LPG	Liquid petroleum gas
LTMS	Long Term Mitigation Scenarios
MACE	Ministerial Advisory Council on Energy
MEC	Minerals-energy complex
MYPD	Multi-year price determination
NBI	National Business Initiative
NCCR	National Climate Change Response White paper
NEDLAC	National Economic Development and Labour Council

NEP	National Electrification Programme
NERSA	National Electricity Regulator of South Africa
NGP	New Growth Path
NIRP	National Integrated Resource Plan
NNECCC	National Nuclear Executive Coordinating Committee (later renamed the ESSC)
NNR	National Nuclear Regulator
NPC	National Planning Commission
OCGT	Open cycle gas turbine
PAMSA	Paper Manufacturers' Association of South Africa
PBMR	Pebble bed modular reactor
PV	Photovoltaic
RBS	Revised balanced scenario
RE	Renewable energy
REFIT	Renewable Energy Feed-in Tariff
REIPPPP	Renewable Energy Independent Power Producers' Procurement Process
RFP	Request for proposals
SA	South Africa
SACP	South African Communist Party
SAFCEI	South African Faith Communities' Environment Institute
SANEA	South African Nuclear Energy Association
SEA	Sustainable Energy Africa
SESSA	Sustainable Energy Society of Southern Africa
Solar PV	Solar photovoltaic
SNAPP	Sustainable National Accessible Power Planning (a modelling tool developed by ERC, UCT)
TTT	Technical Task Team of the IRP
UCT	University of Cape Town
UNFCCC	United Nations Framework Convention on Climate Change
WSSD	World Summit on Sustainable Development

## Abstract

This dissertation analyses the politics of electricity planning in South Africa by reviewing the activities and issues advocated by two dominant coalitions seeking to influence electricity planning in South Africa (SA) in the period June 2010 to June 2015. There are two policy events that are the focus of the research: the Integrated Resource Plan of 2010 (IRP2010), and its 2013 update report. The research is mainly concerned with the political influence exerted by the identified advocacy coalitions and the political context they acted within, during the period under review.

The research and the analysis of findings has been guided by the Advocacy Coalitions Framework (ACF) theory. In keeping with ACF methodology, the research is based on an understanding of the preceding 10 to 15 years in order to better interpret current unfolding policy events, identify the coalitions and their activities, and ultimately present key findings that are based on empirical evidence.

The narrative seeks to take account of parallel unfolding dimensions which collectively portray a noteworthy tapestry: *coalition beliefs and activities, and policy events* within the SA electricity supply sector *over time*. By the final chapter, it should be clear who exerted influence, what their dominant advocacy issues were, whether such influence was evident in policy that was promulgated, and what changed along the way.

Empirical findings provide answers to the following research questions:

1. From the IRP2010 to its 2013 Update report, which were the dominant coalitions seeking to influence planning?
2. What were the dominant advocacy issues raised by these coalitions?
3. What evidence could be found for how the issues of dominant advocacy coalitions were realised in electricity policy?
4. What can be concluded and what are the implications for future electricity planning?

The dissertation begins with a brief introduction of what the theoretical framework ACF would consider the energy policy system i.e. the international and the national energy and electricity governance context. ACF is then applied to understand the politics of electricity planning in South Africa, two dominant advocacy coalitions active within that sub-system, and their advocated beliefs, in order to answer the first two research questions.

Chapter 5 and 6 together answer research question 3. In chapter 5, ACF is applied to understand process and outcomes for the IRP2010 as promulgated. Chapter 6 considers the process and outcomes related to the IRP's 2013 update report which is not recognised in policy, and describes some of the shifts that occurred within and between coalitions and within the electricity policy sub-system by June 2015.

The picture that emerges is that of an electricity sector within a new democracy that has sought to move beyond its apartheid-era policy legacies and has become characterised by decision-making based on politics rather than evidence. It is concluded that recent decision-making and planning processes in South Africa's electricity sector have undergone distinct periods of open and closed consultative process. It is found that there has been a steady opening up of process particularly during the policy period up to December 2010. From 2011 onward, a closing down of process has steadily been underway, particularly in relation to the

IRP2013 update report. This has occurred at the same time as broad public support for transparent decision-making that is based on evidence had grown.

While the analysis focuses on issues of ideological belief, politics and process, rather than on technology and economics, it was found that two distinct and contested electricity supply investment options related to power sector reform have dominated the advocacy beliefs and actions of the two coalitions reviewed, as well as the policy choices made by government: nuclear power on the one hand, and renewable energy on the other. These supply options and some of the issues of political economy associated with them are considered in the latter parts of the dissertation.

#### A summary of the main findings

1. Two high-level coalitions have dominated the IRP2010 process and its 2013 update: one favouring orthodox solutions to power supply, and the other favouring transition to a reformed power sector.
2. The coalitions are:
  - a. The Orthodox coalition: enjoying both greater political support for and capacity to influence the achievement of conventional economic growth. Their advocacy tended to focus on past experience and retaining the power supply status quo.
  - b. The Reform coalition: less politically influential, and enjoying less political support. Their advocacy tended toward learning from past experience and changing the status quo.
3. Among the issues which the two coalitions differ on, the five most contested issues were: tariffs and investment, power sector reform, climate change, nuclear power, and renewable energy.
4. The promulgated electricity plan reflects wins and losses to both coalitions. For the IRP2010, more evidence was found of policy ‘wins’ for the Orthodox coalition. For the 2013 update report, more evidence was found of policy ‘wins’ for the Reform coalition. Nevertheless, given that the 2013 update report is not recognised in policy, it is concluded that the Orthodox coalition has been more influential in its advocacy.
5. For the IRP 2013 update report, analysis of policy wins and losses became more complex, with alliances shifting within and between the two coalitions under review.
6. Evidence has been found of an initial steady opening up of public consultation process in the decade preceding 2010, which later closed down steadily by June 2015. The closing down of process has been most evident to those involved in electricity planning, since mid-2010.
7. The influential role of the Presidency, on the nuclear investment decision is perceived by electricity planning stakeholders to have begun in June 2010.
8. The clear political support for nuclear procurement has resulted in greater unified advocacy against nuclear power, and lesser advocacy against renewable energy.
9. The continued non-recognition of the IRP2013 update report in policy has benefited both wind power investment and new nuclear power procurement.
10. Ultimately, the delay in the promulgation of a well-regarded, technically robust updated IRP threatens confidence in electricity planning process and is perceived by senior electricity actors to be entrenching a situation where politics is currently playing a more influential role than evidence, in South Africa’s electricity planning.

## Chapter 1: Introduction

At the time of writing (August 2016), the Integrated Resource Plan of 2010 (IRP2010) is South Africa's official Electricity Plan. Promulgated in April 2011, in policy, it is formally located as a subset of the country's Integrated Energy Plan (IEP) which covers all sub-sectors of energy, including liquid fuels. In policy, the IRP is meant to be guided by the IEP, and provide policy direction for demand-based expansion of the national electricity supply spectrum over a defined period (DoE, 2010a). In practice, the IEP follows the IRP in terms of policy direction (Interviews<sup>1</sup>). Currently the defined planning period is 2010 to 2030. In keeping with policy, the IRP2010 was updated in 2013, with a draft report made available for public comment. However, this update has not been recognised in policy and no further updates have been provided.

The long-term planning goal for IRP2010 is to ensure sustainable development considering technical, economic and social constraints as well as externalities. Its short-term purpose is the identification of the requisite investments in the electricity sector that maximise the national interest at minimum present-day cost (DoE, 2010a). Government's commitment is thus to growing access to energy in both the short term and the long term. However as one of the most unequal countries in the world, access to energy in South Africa continues to be bedevilled by major developmental challenges (Baker et al. 2015). These challenges emanate to a large extent from legacies of Apartheid government-led social oppression and division, inter-generational economic inequality, and decades of a lack of access to services such as basic health care and quality education, manifesting in ongoing high levels of social inequity, violence, crime and unemployment in democratic South Africa (Wilson, 2009). According to the 2011 Census, 40% of South Africans of employable age were unemployed in 2010, many of whom had given up on the hope of ever finding work, with the majority under 35 years of age.

At the core of South Africa's energy-intensive economy lies its electricity sector. Most of South Africa's electricity is derived from coal. Specifically, coal-fired power plants account for 85% of installed capacity and 92% of national electricity generated (DEA, 2014; IEA, 2014), making a significant contribution to the country's economy. Coal use contributed approximately 45% of the country's emissions in 2010. South Africa is ranked 14<sup>th</sup> highest greenhouse gas emitter in the world (DEA, 2014). In addition, the power sector directly uses approximately 2% of national water resources and indirectly, pollutes an even greater share of water resources (Zipplies, 2008).

Electricity generation is dominated by Eskom, the wholly state-owned national utility, a vertically integrated monopoly which also owns and operates the national electricity grid. Eskom supplies about 95% of South Africa's power and is financed by net financial market liabilities and assets as well as reserves. While Eskom does not have exclusive generation rights, it has a practical monopoly on bulk electricity. It also operates the integrated national high-voltage transmission system and supplies electricity directly to large consumers such as mines, mineral beneficiators and other large industries. In addition, it supplies electricity

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<sup>1</sup> The reported experience of all respondents. See Chapter 2, "interview methodology and analysis of findings" for a description of how respondent feedback is presented throughout the dissertation.

directly to commercial farmers and, to a large number of residential consumers. It sells in bulk to municipalities, which in turn distribute to consumers within their boundaries<sup>2</sup>.

Increasing electricity tariffs along with declining value in international commodity markets has reduced South Africa's capacity to compete internationally since at least 2008 (Interviews<sup>3</sup>). Between 2001 and 2011, electricity tariffs increased by 378% (Abrahams et al, 2013; Trollip et al, 2014). At the same time, the era of cheap coal and electricity has ended at a time when global pressure to reduce carbon emissions is growing.

## Electricity governance

The term “governance” refers to the spectrum of influence over policy-making and planning which is made up of public and private actors and institutions (Goodin, 2006). In South Africa this spectrum is complex: while the Department of Energy (DoE) holds formal responsibility for setting energy policy and undertaking all related planning, the Department of Public Enterprises (DPE) has oversight responsibility for the national utility Eskom and is its principle shareholder. Both are accountable to their respective Ministries which are in turn accountable to the Cabinet.

The National Energy Regulator (NERSA) was established in 2004 to determine electricity tariffs, set the conditions under which electricity may be sold, imported, exported and traded and approves licences for generation, distribution and transmission. NERSA and DoE both report to the Minister of Energy while the National Treasury monitors Eskom's financial exposure. Eskom is responsible for balancing power supply and demand, managing grid and system stability, monitoring and managing system risks and providing real time information on the power system.

Other concerned government actors include the Department of Environmental Affairs (DEA), local governments (metropolitan, district and local municipalities), and the inter-ministerial Energy Security Sub-committee located in the Presidency. Beyond government, influential stakeholders include the Energy Intensive Users' Group (EIUG)<sup>4</sup>, the Chamber of Mines, the National Economic Development and Labour Council (NEDLAC)<sup>5</sup>, and members of the international community like development institutions and agencies who offer (often conditional) both financial and human resources. Less influential stakeholders include members of civil society, the academy and the informal commercial sector (Interviews<sup>6</sup>).

Although the DoE is responsible for energy planning and NERSA for regulation, Eskom has the longest standing track record and in-house planning expertise (Marquard, 2006). In practice therefore, Eskom conducts the research and provides the necessary information to inform policy and planning; Eskom project-managed the IRP2010 process (Interviews<sup>7</sup>; Researcher records) and the DoE invited stakeholder inputs in two rounds of consultation

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<sup>2</sup> Eskom website: [www.eskom.co.za](http://www.eskom.co.za).

<sup>3</sup> Respondents 5, 8, 14, 15

<sup>4</sup> The EIUG is made up of 36 member companies including the five largest coal mining companies in South Africa.

<sup>5</sup> Extract from NEDLAC website: At NEDLAC, government, organised business, organised labour and organised community groupings gather at national level to debate and aim to reach consensus on issues of social and economic policy, to make economic decision-making more inclusive, and to promote the goals of economic growth and social equity.

<sup>6</sup> Respondents 1 & 2, 5-8, 21-24.

<sup>7</sup> Respondents 1 & 2, 5-8, 21-24.

before making recommendations to the Minister who in turn sought Cabinet approval for the IRP2010 to be signed off by the President and promulgated. This research has found that the 2013 update report did not enjoy a similar level of public engagement and transparency. The draft update report was published on the DoE's website, some of the key findings were presented at Integrated Energy Planning (IEP) public hearings held by the DoE. While public comments were invited, the DoE never reverted with a finalised update report. The draft update report remains available on the DoE website in that form, and the promulgated IRP2010 continues to guide electricity planning.

### **Electricity legislation and policy**

The National Energy Act 34 of 2008 is meant to ensure diverse, sufficient, affordable supply in support of economic growth and poverty alleviation. The sector is regulated by the national Electricity Regulation Act 4 of 2006 and the Electricity Regulation Amendment Act 28 of 2007, both of which form the legal basis for the IRP and outline the responsibility and authority of NERSA. Policies include guidelines for the electrification of so-called 'unproclaimed areas', electrification bulk infrastructure, pricing, free basic electricity and free basic alternative energy policies. Alongside policy, a number of policy guidelines and specific regulations have been established over time: on new generation capacity, electrification, pricing, free basic electricity, and free basic alternative energy. The Integrated Resource Plan of 2010 is the country's official Electricity Plan (DoE, 2010a).

### **The political forces influencing electricity planning**

Since the 1990s, the global electricity industry has undergone significant change (IEA, 2015). With growing awareness of climate change and links between power generation technologies and greenhouse gas emissions, political pressure is being exerted by many countries' citizens and economies are increasingly shifting away from unsustainable, fossil-based energy resources toward sustainable and renewable resource use. In South Africa, the growing ripple effects of these wider energy sector changes have also been felt.

The advent of democratic government in 1994 was accompanied by socio-economic and socio-political activities and decision-making shifting from being accepted as a state-dominated domain towards one guided by greater public participation, and greater insistence on accountability and transparency and that is guided by a widely respected Constitution that was adopted in 1996 (Wilson, 2009). While such changes have many benefits, decision-making has also become more complex. Democratic decision-making is often slow, and it is challenging to retain consistency throughout processes that often span extended periods of time, accompanied by rapidly changing social, economic and political events and contested priorities.

Broad energy planning, investment and power sector planning in South Africa is treated with high strategic value politically, economically and socially. The state's policy choices, the economic effects of unreliable power supply, the increasingly common delays and lack of transparency that characterise updating policy, as well as the pros and cons of privatisation of the national utility are all subjected to vocal and contested debate in the media and among ordinary South Africans. All interviewed respondents felt that the Energy portfolio is one of the most strategic among government ministries, second only to Finance. Political influence

is a broad ambition that extends to all levels of South African society, and this is seldom more evident than within the electricity sector.

Issues of contestation in relation to broad energy supply, particularly as these relate to climate change, jobs and economic growth occur not only between coalitions, but within the ruling party and the Tripartite Alliance made up of the African National Congress (ANC), the Congress of South African Trade Unions (COSATU) and the South African Communist Party (SACP) (Baker et al, 2014). This kind of contestation and the decision-making that emerge have long term strategic effects that in turn pose potential threats to long-standing, powerful financial interests within what Fine and Rustomjee (1996) have described as the country's minerals-energy complex (MEC).

All of the respondents interviewed for this dissertation agreed with the view that decisions taken within the electricity sector, particularly for large-scale and long-term investment, can have a direct influence on prospects for economic growth, and an indirect effect on the capacity for public spending on other pressing socio-economic (and indeed other energy) needs. Thus it is understood by all respondents that electricity investment choice that is unaware of wider economic and environmental effects can result in market failures like infrastructure investment lock-in, long-term sovereign debt, and continued tariff escalation. In addition, it is understood that given its power contribution in the region, electricity planning choices made in SA can have serious knock-on effects for relationships with neighbouring countries.

At domestic industrial policy level, it is also understood by respondents that SA electricity policy has long-standing and powerful roots within the MEC. MEC refers to a constantly evolving system of production and consumption based on cheap coal coupled with cheap labour used to generate cheap electricity and providing input into, within and between South Africa's energy, mining and minerals beneficiation sectors. This system is mirrored by an interconnected industrial elite comprising both private capital and state actors (Fine & Rustomjee, 1996). The SA electricity sector is thus understood to be located within a broader range of historically contested, unequally influenced terrain of power interlinked with important areas of national and regional development – present and future. As such it is an area of planning that is highly politicised within South Africa, with many facets that remain opaque to the general public. Who gets to decide, how decisions are arrived at, and on what basis, is often quite unclear and government accountability is perceived as low<sup>8</sup>.

## Research questions

In the context of the electricity supply system, governance and political forces described above, the dissertation sets out to answer the following research questions:

1. From the IRP2010 to its 2013 Update report, which were the dominant coalitions seeking to influence planning?
2. What were the dominant advocacy issues raised by these coalitions?
3. What evidence could be found for how the issues of dominant advocacy coalitions were realised in electricity policy?

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<sup>8</sup> View held by a majority of respondents from both coalitions. See Chapter 2, "interview methodology and analysis of findings" for a description of how respondent feedback is presented throughout the dissertation.

#### 4. What can be concluded and what are the implications for future electricity planning?

Before turning to the methodology used to answer these questions in Chapter 2, the research is located within the existing literature on electricity planning.

#### **Locating the research within the literature**

Existing literature concerned with electricity planning mainly focuses on technical aspects. This includes a focus on IRP methodologies e.g. economy-wide modelling, technical feasibility in developing countries, international and local best practice (Malik & Sumaoy, 2001; Graeber & Spalding-Fecher, 2000; Borchers, 2000; Steyn, 2001; ERC, 2013). By comparison, less research has focused on the politics or the political economy of electricity supply (Nakhooda 2010; Baker, 2011; Roux 2012; Baker et al, 2015) and at the time of this research, no research specifically of the politics of events related to the IRP's 2013 update report was found.

Power sector reform has been a part of the discourse in South Africa since the late 1990s: in 1998 the Energy Policy White Paper (EWP) first formally introduced the idea of 'market reform' within the SA electricity sector. It drew attention to the importance of research and development of alternative and renewable energy resources and energy efficient technologies (DME, 1998). This policy process was recognised by a majority of respondents as part of a pioneering period of open public consultation for energy planning. Eberhard has published the bulk of literature available on this topic (Eberhard, 2007; Gratwick & Eberhard, 2008; Eberhard, 2010; Eberhard & Gratwick, 2010). In 2010, Pickering produced a report on the likely functions of the government-proposed independent system operator (ISO) to balance daily supply and demand. Relevant to this dissertation, the report provides valuable insight into electricity sector political context at the time and provides early perspective on independent power producer potential as well as including detailed consideration of technical aspects of distribution, power and generation sector reform.

Marquard (2006) produced a comprehensive and seminal study of the origins and development of South African energy policy. His PhD thesis on this topic included consideration of the electricity sector and proved an invaluable preparatory resource for this research, both for historical perspective and important early insight into the application of theoretical frameworks.

Trollip, Butler, Burton, Caetano & Godinho (2014) investigated energy security in South Africa for the Mitigation Action Plans and Scenarios (MAPS) project. The paper provides valuable historical narratives and perspectives on energy security generally and provides comprehensive insight into the contribution of the electricity sector to the country's energy supply crisis. It covers several issues raised by this research, but not necessarily covered in similar depth: tariffs, reserve margins, independent power producers, and the continued electricity insecurity of poor households.

The research which relates most directly to the substance of this dissertation has been conducted by UK-based researcher Dr Lucy Baker. Her PhD thesis published in 2012, enquired into the political economy of socio-technical transitions in SA's electricity sector and considered the power shifts (both technical and political) under way. In addition, Baker has subsequently produced two journal articles based on her PhD, one of which focused on the politics of electricity planning (2016) and another which presented a case study of SA as

part of a broader consideration of the political economy of energy transitions (2014). All three publications have informed the selection of research questions and scope for this dissertation and later assisted the analysis of research findings.

While this dissertation was being written up, Baker et al. (2015) produced a review of the political economy of decarbonisation of SA's electricity sector. Although focused on decarbonisation, the report included consideration of the IRP and dominant coalitions that were useful to triangulation of research findings.

Finally, Grové Steyn's PhD thesis (2001) on decision-making and risk in SA's electric power sector provides important seminal insight into the associated risks of inflexible technology investment, the problems of moral hazard, information asymmetry and planning in uncertainty, which both informed research analysis and preparation for the concluding chapter of the dissertation.

Electricity policy advocacy coalitions themselves have produced a number of assessments related to the IRP2010 and its update. Throughout the research, grey literature was gathered from electronic sources as well as willing actors prior to, during, and after interviews. The researcher reviewed many brochures, reports, newspaper and on-line articles and transcripts of media interviews reflecting a variety of advocacy perspectives. From these materials, the views of two high-level advocacy coalitions interested in the allocations of, assumptions of, and policy signals for orthodox or reformed power supply in particular, have emerged empirically, as dominant. A list of the reviewed grey material is included at the end of the formal list of references.

The Department of Energy website<sup>9</sup> serves as a comprehensive online database of the IRP process, with all draft copies of the policy, related regulations and policies, technical resources on input parameters, information for participants wishing to engage in the consultation process and stakeholder presentations from public hearings held in Cape Town, KwaZulu-Natal and Johannesburg during 2010.

In addition to the resources cited throughout the dissertation, the researcher's preserved records for 2010 to 2015, provided some reminders of context and detail throughout the research.

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<sup>9</sup> [www.doe-irp.co.za](http://www.doe-irp.co.za)

## Chapter 2: ACF, its application and the research scope

First, the guiding theoretical framework ACF is introduced along with a brief indication of how the framework has been applied in the research methodology. The six key elements of ACF are highlighted, as these have guided the overall research, before the specific methodologies for identifying coalitions and conducting interviews is outlined. Finally, clarity is provided on what has been included and what excluded in the research scope.

### The Advocacy Coalitions Framework

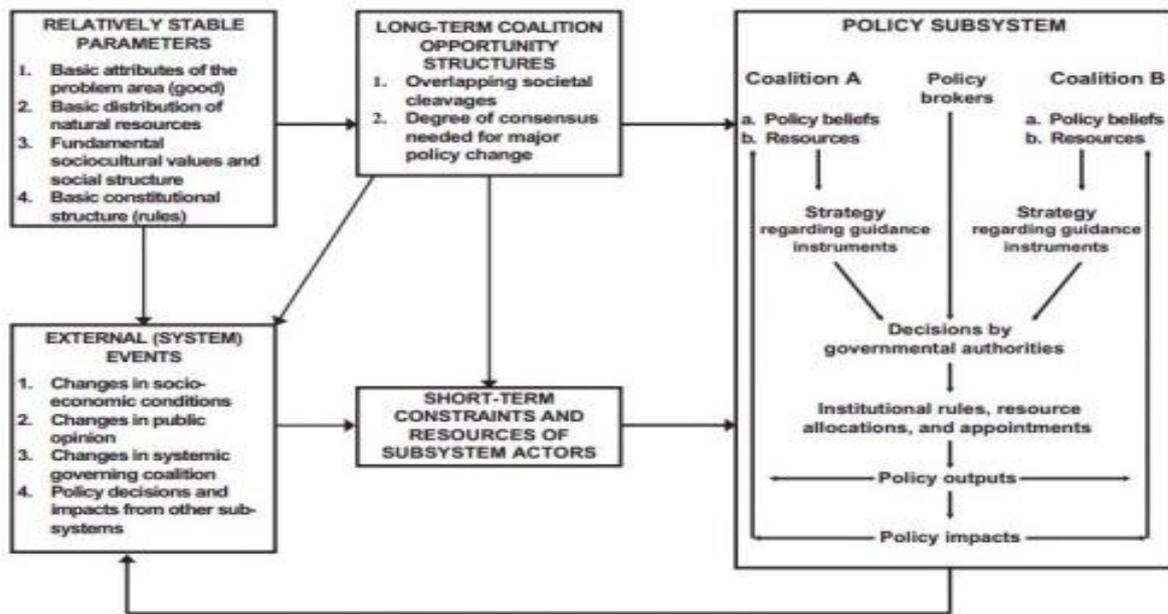
Paul Sabatier and Hank Jenkins-Smith developed the ACF as a theoretical framework to describe and explain a complicated policy-making environment which:

- contains multiple actors and levels of government;
- produces decisions despite high levels of uncertainty and ambiguity;
- takes years to turn decisions into outcomes;
- and processes policy issues in very different ways e.g. some issues involve intensely politicised public disputes containing many actors, and other issues are treated as technical and processed routinely, largely by policy specialists, out of the public spotlight (Sabatier and Jenkins-Smith, 1999)

While ACF seeks to be a general framework for analysis of policy and policy change, it has typically been described as a theory (Schlager, 2007) and is often applied alongside two other theoretical frameworks: Multiple Streams and Punctuated Equilibrium, as “leading contemporary theories of the policy process” (Grossman, 2014). Most applications of ACF have dealt with energy and environmental policy in the United States, Canada and Europe. Substantive topics have included nuclear security, air pollution, marine protected areas and climate policy.

Sabatier’s ACF flow diagram (2007) provides a useful overview of the theoretical framework, locating its key elements and their connections, as shown in Figure 1.

In practice, movement within the framework is dynamic and often non-linear. Not all aspects will be clearly evident in all cases, nor will policy events necessarily always include all elements. However, understanding the likely variables in play and drawing conclusions on how they relate to one another can inform policy analysis and guide research.

Figure 1: Flow diagram of the Advocacy Coalition Framework<sup>10</sup>

2007 Advocacy Coalition Framework Flow Diagram

Advocacy coalitions include policy participants that both share similar policy core beliefs manifest through selected issues, and engage in a nontrivial degree of coordination (Sabatier & Jenkins-Smith, 1999). Within policy coalitions there may be actors known as ‘policy brokers’ who seek to find reasonable compromise between differing coalitions and within the coalitions themselves (Sabatier & Weible, 2005).

In theory, once policy decisions are taken and policy promulgated e.g. the IRP2010, the policy sub-system continues with routine policy-making including relatively minor policy change e.g. the IRP2010 update process. In such cases, monitoring of implementation is also meant to be routine. The broader system includes factors which are relatively stable such as social values and the broad constitutional structure. External system events, also referred to as ‘shocks’ sometimes prompt policy sub-system instability which in turn can prompt rapid, major policy change. These can include events such as the global financial crisis of 2008, Fukushima in 2011 or an enforceable global climate regime which has direct domestic policy effects. Such events can also prompt coalitions to revisit their policy core beliefs, particularly in the case of monumental ‘failure’ of policy realisation and sometimes can result in departure to a new coalition. As has been pointed out above, in practice, movement within the framework is dynamic and often non-linear.

### Critique of ACF

The research revealed no application of ACF within a developing economy, or newly-formed democratic context. In such contexts, policy development would be far less linear and therefore scientifically trackable, civil society may be engaging with policy in more diverse methods, and post-revolutionary government would be grappling with shifting from a revolutionary movement, to the application of good governance.

<sup>10</sup> The sources of Figures and Tables in this dissertation are identified by references as above; where no source is identified, it is an original figure prepared for this research.

A further limitation of ACF is that it requires a perspective based on observation of a decade or more, in order to understand the influential dimensions of policy change. In practice this can be both time-consuming and costly as the work would typically involve extended time series analysis of observation, questionnaire and interview data (Sabatier & Weible, 2005) and require substantial resources beyond what is available to a mini-thesis such as this one.

Critics of ACF have also pointed out the difficulties of applying ACF e.g. where a decadal perspective is not possible, that definite coalitions are not always identifiable and that even within coalitions where members share beliefs, distribution of advocacy efforts will not be equal (Blomquist & Schlager, 2000) and thus difficult to measure scientifically.

Understanding exactly how advocacy coalitions access and use resources and apply strategies requires extensive field interviews with actors over an extended period of time (Weible & Sabatier, 2009), a level of research that lies beyond the scope of this dissertation.

Given the limitations of resources, time and the requirements for a mini-thesis, the researcher has applied ACF as simply and consistently as possible: by preparing to usefully study electricity planning events and actions, focusing on the elements identified by ACF; and applying ACF in order to analyse research findings. The research has been based on semi-structured interviews conducted over a period of three years (with a minority of documented prior work by the researcher being included where suitable), a review of primary and secondary publications covering the previous decade (drawing on the prior work of scholars who have investigated these in detail), and analysis of the policy events themselves, through consideration of the advocated beliefs of two coalitions through two key policy events. The dissertation includes analysis of how these beliefs were ultimately reflected in policy, the conclusions that can be drawn and implications for electricity planning.

### **The six key ACF elements that guide reliable policy analysis**

These ACF components have served to guide the research throughout, as well as the analysis of findings in order to ensure that reliable conclusions may be drawn:

1. Understanding of the policy subsystem: the coalitions, issues, actors, policy brokers, rules, strategies, policy impacts and policy outputs.
2. Identification of the short-term constraints and resources of sub-system actors.
3. Recognition of external system events: socio-economic, socio-political, related policy.
4. Understanding of relatively stable parameters: the rules, basic attributes of the problem.
5. Consideration of long term coalition opportunity structures: how policy change has happened.
6. Analysis of advocacy result(s): what has been included in policy, what has been excluded?

All of these components have been considered throughout the dissertation and have provided a useful ‘spine’ and checklist for consistent application of ACF.

### **Methodology for identifying the coalitions**

Advocacy coalitions were selected on the basis of the expressed common issues or beliefs they aligned themselves with formally or informally, and whether they co-operated: formally or informally. As described on page 6, initial identification of the coalitions was based on a

draft list compiled by the researcher through literature review and in preparation for interviews. The finalised list of coalition members and their issues evolved throughout the research, and benefited from respondent feedback, confirming the researcher's selection.

The analysis of two distinct coalitions, their advocacy issues and the final list of coalition members has thus benefited from respondent feedback. A map of general advocacy issues raised within the sector also emerged from this process but was not analysed. It is included here for broader contextual clarification purposes only.

### **Interview methodology and analysis of findings**

Findings from interviews with senior actors representing a diverse range of political agendas for the IRP2010 and 2013 update process were combined with the primary and secondary literature analysis already described above. Initial findings were then shared with a small number of experts for critical comment before the researcher finalised her dissertation for submission.

The researcher had previously conducted empirical research into broad energy planning before (Worthington & Martin, 2014; Martin & Fig, 2015) and with the permission of affected respondents, included four electricity-related interviews from previously documented interview minutes.

A total of 26 semi-structured interviews were conducted (a copy of the typical interview outline is included as Annexure 1), of which 23 sufficiently comparable interviews were analysed to contribute to the empirical research findings presented here. In selecting these 23 interviews, priority was given to those which provided a diversity of sector-specific perspectives on the IRP process e.g. civil society, business, labour, government (local and national) and academia as well as a reasonable balance of contributions from each of the two coalitions analysed. Annexure 2 provides a list of the respondents' affiliations – organisations and coalitions, along with an indication of those respondents who participated in a critical review of initial findings.

*Please note that throughout the dissertation, respondent views are presented within the text, as follows:* where unique points (only expressed by one or two respondents) are included, respondents are listed. In the case of 100% consensus among respondents, reference is made to 'All respondents'. Where more than 12 of the 23 interviewed respondents supported a view, this was taken as 'a majority' or 'most' and specific respondents are not listed. Where between 8 and 12 respondents supported a view, this was taken as 'many', and specific respondents indicated. Views shared between 3 and 7 respondents were referred to as 'a few' or 'some', and specific respondents indicated. Respondents included 17 individuals from the two coalitions analysed, and six individuals not aligned with any of the two coalitions.

The literature review began in September 2015. Some interviews were conducted in parallel with literature review and research analysis until the end of February 2016. Research findings were triangulated through desk analysis applying ACF guidelines between December 2015 and early April 2016. As a final step to ensure the robustness of empirical findings, between April and May 2016, draft findings were shared with willing experts in small semi-structured workshops and their critical feedback contributed to updated findings before the researcher wrote up and finalised her dissertation for submission.

As noted above, electricity planning is a politically sensitive and often highly polarised and contested issue in South Africa. Most government stakeholders and members of coalitions expressed the preference to be interviewed anonymously. For the sake of consistency and simplicity, the identities of all participants have been protected, with interview notes authenticated by respondents and recordings entrusted to the researcher, in confidence. The researcher has provided her supervisor with proof of the authenticity of interviews.

All stakeholders interviewed occupy senior, influential positions in South African electricity planning or SA energy policy and planning and/or advocacy itself. Ethics clearance for conducting interviews was applied for and approved by the University of Cape Town's Ethics clearance committee early in September 2015.

### **Scope of the research**

Aside from an initial consideration of relevant recent historical national electricity policy, related energy sector and political developments relevant to the IRP process, the research is mainly concerned with electricity planning-related political activities during the five year period *between June 2010 and June 2015*.

### **Exclusions from the scope of the research**

While reference is made to the Integrated Energy Planning process (IEP), which has often overlapped with the IRP2010 process, and while acknowledging that electricity is a sub-sector of energy, this research does not delve into the politics of broader energy planning. The research also does not analyse in any depth the economic or technical supply components of electricity system raised by coalitions. The findings only refer to economics and supply components as they relate directly to dominant lobbying and advocacy issues of the coalitions analysed e.g. the potential economic benefits, costs, assumptions and risks of nuclear power and renewable energies respectively.

Aside from the five issues selected for analysis, there were a number of other advocacy issues raised by the coalitions reviewed which were ultimately not included in the research. A broader set of issues was considered, but the detailed analysis of policy engagement focused only on the most contested issues. Other issues raised by coalitions included how universal electricity access can be achieved through policy, the methodologies and assumptions underpinning the IRP2010 scenarios, and the transparency and inclusiveness of the process. The research has deliberately excluded assessment of the merits or shortcomings of expressed advocacy issues.

## Outline of the dissertation

Following the introduction, Chapter 2 outlines the theoretical framework and methodologies applied. With ACF to guide the analysis, Chapters 3 to 7 then seek to answer the four research questions. Based on the six key elements of ACF, answering the research questions required that the following main research tasks be undertaken:

1. Identification of external factors affecting policy change: applying ACF to describe the basic attributes of the problem, basic distribution of energy-related resources, fundamental cultural values and social structure, basic legal structure pertaining to energy, definitions and scope (Chapters 1 and 2).
2. Understanding the policy context: a succinct review of the politics of electricity planning including internal and external policy events, how political influence is exerted and the ACF-based conclusions that can be drawn along with a mapping of broad electricity sector advocacy issues (Chapter 3).
3. Identification of two main coalitions and their advocacy issues: based on an overall mapping of dominant electricity sector policy advocacy, the memberships of two coalitions, identified in relation to their main advocacy issues and the issues most contested between them (Chapter 4).
4. Analysis of the issues raised by the two coalitions and presentation of evidence for realisation of such issues in policy, during Policy event 1 – the IRP2010: systematic presentation of evidence gathered during interviews and comparison of relevant policy outcomes on advocated issues (Chapter 5).
5. Analysis of the issues raised by the two coalitions and presentation of evidence for realisation of such issues in draft policy, during Policy event 2 – the IRP2013 update report: presentation of evidence gathered during interviews and narrative comparison of policy outcomes between IRP2010 and its update, along with a brief reflection on subsequent related events (Chapter 6).
6. Written up conclusions and potential implications (Chapter 7).

Chapters 3 to 6 will therefore collectively present the main empirical findings of the research, while Chapters 4 to 7 will most directly respond to the selected research questions.

## Chapter 3: The politics of electricity planning in South Africa

Broadly applied, politics is the practice and theory of how influence is exerted. More narrowly, the term refers to the activities of governments, members of institutions, and citizens (organised or individually) who try to influence the way a country is governed. A variety of methods of influence are commonly employed in politics. These include promoting or forcing narrow political views, engaging in strategic, long term negotiation and law making. It may even lead to the exertion of force through intimidation or outright warfare. Who influences, who is influenced, how influence is exerted, and the policy effects of such influence all make up the practice of politics (Chazan et al, 1992; Goodin, 2006).

There are three distinct policy periods covered within this chapter. It commences with a brief preamble outlining the history and evolution of policy and politics within SA's electricity sector up to 2000. Then, in keeping with the ACF requirement for a policy perspective of a decade or more to guide policy analysis of a policy event or events, analysis of the period between 2000 and 2010 is undertaken before the focus narrows further, to the period formally under review: June 2010 to June 2015. The last two periods are punctuated by analytical conclusions from an ACF perspective that can be drawn at selected milestones.

### Preamble

Steyn (2001) and Marquard (2006) have provided detailed review and analysis of SA's energy and electricity policy history and politics from the early 1900s onward. Marquard (2006) concluded that during the policy periods before 2000, policy crises had played a significant role in generating support for various energy policy initiatives and had ultimately significantly influenced the scope of the energy policy system and electricity subsystem policy domain. Some of these crises relate directly to the findings of this dissertation, and are worth noting briefly here as a preamble.

Prior to democracy (officially, 1994), as the dominant electricity planning entity, Eskom's approach had been dominated by a 'security of supply' objective, with accompanying low tariffs. This planning approach resulted in a significant overcapacity in the electricity generation sector which ultimately both supported and promoted electricity-intensive business up to the early 1990s (Marquard, 2006). Before the advent of democracy, providing everyone with access to electricity was not a policy priority. In the early 1990s, about one third of SA households were connected to the electricity grid (Winkler et al, 2011). The democratically elected ANC-led government set ambitious targets for universal electricity access and its target-driven National Electrification Programme (NEP) was an important part of this developmentally-oriented strategy. The NEP connected more than 3.4 million households within 7 years (Winkler et al, 2011). Between 1995 and 1998, at a time of wider 'structural adjustment' economic policy, in an early policy partnership<sup>11</sup> and led by government, the Energy Policy White Paper first introduced the idea of 'market reform' within the electricity sector. The need for power sector reform was argued on the basis of the importance of diversity of supply and the need for research and development of alternative and renewable energy resources and energy efficient technologies was advocated (DME,

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<sup>11</sup> Between the Minister for Public Works (Jeff Radebe), Minister of Finance (Trevor Manuel) and the Minister for Minerals and Energy (Penuel Meduna).

1998; Interviews).<sup>12</sup> The EWP also stated that no further nuclear capacity would be required for a number of years. Key power sector reforms that were implemented as a result of the EWP were: the creation of the national energy regulator (NERSA), a two tier planning system that saw the national utility Eskom and NERSA responsible for electricity planning, and regulation of the nuclear sector (Nuclear Energy Act 46 of 1999; National Nuclear Regulator Act 47 of 1999). Significantly, the EWP predicted that electricity demand would exceed supply capacity by the year 2007.

In 1999, six years after the Nuclear Energy Act had been published, a policy subsystem event relevant to this research took place: the pebble bed modular reactor (PBMR) programme was launched. Approval of the PBMR programme was championed by the deputy president (Thabo Mbeki), members of the Orthodox coalition actively advocated for it and in one of the earliest Reform coalition activities, members of the Reform coalition advocated against it (Interviews<sup>13</sup>). The PBMR was recalled by a majority of respondents as a pivotal policy ‘win’ for the Orthodox coalition, with the high level support of the deputy president adding political weight to their efforts, as well as a pivotal ‘loss’ for the Reform coalition (Interviews<sup>14</sup>). With this brief reflection on early democratic policy context, the focus now shifts to ACF analysis of policy events in the decade leading up to 2010.

Based on the above preamble, ACF has been applied to consider policy evolution specific to the formal review period, with emphasis on events relevant to the two advocacy coalitions under review, and in order to interpret these events and activities in terms of the evolution of these advocacy coalitions. Given the challenge of simultaneously dealing with events, advocacy issues and the specific events signifying evolution of coalitions over time, a narrative approach is taken in order to arrive at a reasonably historically-informed point to guide analysis presented within Chapters 4 and 5.

## 2000 onward

In 2000 two important internal electricity subsystem events occurred: Eskom produced its first Integrated Strategic Electricity Plan (ISEP) and NERSA produced its National Integrated Resource Plan (NIRP). ISEP enjoyed technical credibility and NIRP enjoyed political legitimacy (Roux, 2012). An ‘external system event’<sup>15</sup> also occurred that year: South Africa voluntarily submitted its first Initial National Communication under the United Nations Framework Convention on Climate Change (UNFCCC).

In 2001, in a move interpreted by some respondents<sup>16</sup> as further government support for power sector reform, and what ACF would classify ‘a decision by government authorities’, Cabinet adopted a resolution that up to 30% of existing generating plant should be sold to the private sector. As it happens, this resolution remained a theoretical one that was not implemented. By 2004 it was re-interpreted by power sector reform actors to imply that 30% of ‘new’ generation capacity should be built by the private sector through independent power

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<sup>12</sup> These events recalled by a majority of respondents.

<sup>13</sup> Respondents 5, 8, 24 & 26

<sup>14</sup> View supported by a majority of respondents.

<sup>15</sup> ACF refers to policy events which occur in other policy subsystems, but with knock-on effects on the policy subsystem being considered, as ‘external’ system events.

<sup>16</sup> Respondents 8, 14, 17, 18 & 24

producers (IPPs). DME eventually initiated the procurement of only one 1 000 MW open cycle gas turbine (OCGT) peaking plant which underwent several years of policy adjustment until financial closure was reached in 2007 (Interviews<sup>17</sup>).

Eskom was converted into a public company on 1 July 2002. The effects on the policy sub-system of this change would continue to be felt for the next decade and more. Also in that month, a key external system event occurred: SA ratified the Kyoto Protocol. Although this latter agreement only entered into force early in 2005, the subsystem was theoretically required to start to take this into account in its planning.

With the PBMR programme underway, the Energy Outlook for SA (EOSA, DME 2002), prepared for the World Summit on Sustainable Development (Johannesburg, 2002) promoted nuclear power as ‘the safest alternative for large-scale energy generation’. While recognising the high capital costs of this technology, the EOSA argued for the economic growth potential of nuclear power and excluded the practicality of RE technologies for base load application outright, stating that there were only four large-scale power options available for SA’s long term future: coal, nuclear, imported hydro and imported gas (DME, 2002). Interestingly, while the resulting WSSD Plan of Implementation included reference to the need for rural electrification and decentralised energy systems along with increased use of RE cleaner liquid and gaseous fuels and enhanced energy efficiency, it did not mention nuclear technology at all (DME, 2002). In what could be considered a ‘policy learning’ in ACF terms, it appears that government stance on renewable energy had been adjusted during the WSSD deliberations (Interviews<sup>18</sup>). In May 2001, a policy output – the White Paper on RE Policy – was gazetted. It included what was seen by all respondents as a major shift in SA’s RE policy, likely due to politics: a target of ‘10,000 GWh in final energy consumption by 2013’ (DME, 2003; Interviews<sup>19</sup>).

In March 2003, the first Integrated Energy Plan had been published by DME. The IEP envisioned continued investigation into nuclear options, promoted energy efficiency demand side management (EEDSM) and diversification of energy supply through an increased share of natural gas and renewable energy (DME, 2003). At this point in time, South Africa’s electricity tariffs were among the lowest in the world and energy conservation and efficiency were not a common local priority (Baker et al., 2015). Nevertheless, in March 2005, government and industry agreed on a voluntary Energy Efficiency Accord to support achievement of the strategy (DME, 2005). There was little evidence of implementation of this accord for a few years (Interviews<sup>20</sup>).

### Analytical conclusions at this point in the history

Applying the theoretical framework ACF, it can be concluded that up to about 2005, the policy system as a whole was characterised by a focus on policy development ‘for the rainbow nation’ especially policies aimed at overcoming socio-economic legacies of the apartheid era i.e. the major project of social transition which arguably continues to be under way. Tensions between differing political stances on the values and ideals of the anti-

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<sup>17</sup> All points from interviews with respondents 8,14, 17, 18 & 24

<sup>18</sup> Respondents 12, 13, 17, 21

<sup>19</sup> All respondents agreed with this view.

<sup>20</sup> Respondents 8, 14, 15, 20

apartheid struggle and post-1994 democratic government, the delineation of political power domestically and abroad, and calls for an ‘African renaissance’ were starting to emerge within the broader policy system. In general, none of the key actors responsible for planning were paying attention to long term electricity supply investment during this period (Interviews<sup>21</sup>). Policy subsystem actors associated with the State were dominant in the sector e.g. DME, DPE, Finance, Labour, the Presidency and Eskom. Advocacy coalitions active within the energy and electricity sectors were thus mainly made up of government actors, the national utility and long-standing vested interests in energy-intensive industries. These actors were very selective in their attentions and beliefs-based advocacy on issues related to democratic transition and, given the country’s energy-intensive economy, it was easy for them to continue to protect vested interests in the status quo (Interviews<sup>22</sup>).

The roots of some of advocacy issues such as a commitment to nuclear power investment, later advocated by the Orthodox coalition, were being reflected in policy stances. Power sector reform was being led by inter-ministerial partnership with support from the national utility and influential entities like the World Bank. As a whole, the power sector was being prepared to adjust to minor restructuring, in alignment with global power sector reforms already under way and as part of wider domestic economic reform.

Civil society networks were not yet organising into visible, influential advocacy coalitions of belief, but members of the Reform coalition were starting to coalesce around issues e.g. opposition to PBMR and the expansion of nuclear power. Civil society was mainly focused on the transition to democracy and the many associated challenges and anti-nuclear lobbying and advocacy was commonly undertaken by small NGOs with limited strategic effort or impact (Interviews).<sup>23</sup> ANC party policy in relation to nuclear power had begun to shift away from what it had been during the anti-apartheid struggle era (largely anti-nuclear) to clear policy stance shifts indicating that nuclear power was now ‘up for discussion’ as Respondent 24 put it (Interviews).

Within the broad policy system, macro socio-economic and political imperatives like the need for job creation, economic growth and global competitiveness, and government starting to participate in global and geo-politics, including climate negotiations were starting to directly influence the macro and micro policy priorities of government, with knock-on effects that would become increasingly visible within the electricity policy sub-system.

## 2006 onward

In early 2006, more or less in line with the 1998 EWP prediction, the first post-1994 load shedding and rolling blackouts occurred in some parts of SA. The cumulative effect was a significant growth in public awareness of the need to achieve energy security, the questioning of planning choices made and a greater insistence on a relatively new common belief: the value of accountability. The result was that within the electricity subsystem, the task of

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<sup>21</sup> Respondents 2, 3, 6, 15

<sup>22</sup> Respondents 3, 12, 21, 24

<sup>23</sup> Respondents 8, 12,13, 17, 24

planning had begun to shift from being a specialised, secluded concern of electricity and policy experts to being an issue of broad, contested public debate (Roux, 2012; Interviews<sup>24</sup>).

In March 2006, the SA Cabinet commissioned a process to examine the potential for mitigation of the country's greenhouse gas emissions through the Long-Term Mitigation Scenarios (LTMS). The LTMS aimed to provide a non-partisan scientific analysis for long term climate policy. It concluded that immediate action and extensive further work was required across the board: energy efficiency, cleaner coal, nuclear power, renewable energy and public transport along with related social behaviour change (LTMS, 2008). A majority of interviewed members of both coalitions expressed the belief that LTMS was perceived as politically unacceptable: those from the Orthodox coalition felt that LTMS was based on inflated carbon reduction targets, those from the Reform coalition felt that LTMS was insufficiently ambitious and was unlikely to influence policy implementation that would drive a transition away from coal (Interviews<sup>25</sup>; Researcher records).

Also in 2006, what ACF refers to as a 'relatively stable parameter' changed: The Electricity Regulation Act was amended to require Eskom's proposed tariff increases to be approved by NERSA through a multi-year price determination (MYPD) executed in 3-year cycles. From this point onward, and in a significant departure from previous practice, in order to justify tariff increases linked to new capacity, an IRP would have to have been submitted.

In his February 2007 State of the Nation Address, delivered at a time when periodic two-hour long rolling national blackouts were worse than the power interruptions that had occurred in 2006, President Mbeki reassured the public that targets for national water access, sanitation and electricity were 'on track for achievement by 2012' (Presidency, 2007). At the same time, members of the Orthodox coalition stepped up their advocacy in relation to the belief of what constituted secure base load power supply. This coalition started generating data on economic losses relating to power interruptions in support of their advocacy issue: increased investment in base load supply. Meanwhile, members of the Reform coalition stepped up their advocacy against nuclear power, with a focus on the issues relating to power sector reform through a greater share of renewables, and for behaviour change to drive carbon emissions reduction through energy efficiency and conservation. Climate change was increasingly entering the public discourse and policy decisions with potential knock-on effects in SA's energy-intensive economy were required, and were increasingly contested. The coalitions under review were now embarking on what would evolve into their most active period of contested belief-based advocacy (Interviews<sup>26</sup>; Researcher records).

Kicking off what was also described by a majority of respondents from both coalitions as 'a season of enhanced public engagement and transparency within the energy sector', in September 2007, an inter-sectorial National Energy Summit was hosted in order to review the EWP (1998). A commitment to improve energy governance was included in the Summit's declaration. Also in 2007, in another government policy-related partnership, DPE and National Treasury had commissioned a series of studies reviewing South Africa's network infrastructure. A review of electricity examined the structure of supply, the efficiency of

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<sup>24</sup> A view expressed by a majority of respondents.

<sup>25</sup> Views expressed variously by a majority of respondents from both coalitions.

<sup>26</sup> Respondents from each of the coalitions all supported the view that their respective collective advocacy activities were stepped up from this point onward (2007).

distribution, identified areas of market dominance and monopoly abuse, and proposed regulatory safeguards. It echoed some of the points made by the EWP of 1998 and highlighted the urgent need for investment in capacity expansion, for such investment to be undertaken at the least cost, review of Eskom's management, for generation-cost reflectivity to be implemented, and for transmission maintenance to be undertaken (Eberhard & Newberry, 2008).

In December 2007, a significant broad policy event, the ANC's 52<sup>nd</sup> Annual General Conference (AGC), took place in Polokwane. The conference elected Deputy President Jacob Zuma and his supporters to lead the party, although Mbeki was still the country's President. It would be less than a year before Mbeki would be recalled by the party and Zuma appointed South Africa's President. Members of both coalitions were asked to address the AGC and both hoped to influence the conference to support their views in favour of renewables (the Reform coalition) and nuclear (the Orthodox coalition). Both felt they had failed to prevail, given that attention had been focused on the party leadership battle under way (Interviews<sup>27</sup>; Researcher records). While the conference resolution recognised the need for action on climate change and also resolved to 'ensure security of supply of energy resources and diversification of the energy mix', it opted for the middle ground by including both renewable energy and nuclear power as supply options (ANC, 2007).

In January 2008, the national grid was brought to near collapse with a widespread and persistent third round of regular national load shedding. Public and investor confidence in Eskom was severely shaken while government continued to largely be given the benefit of the doubt (Interviews<sup>28</sup>). Also in that month, DME released its Energy Security Master Plan (2007-2025), identifying the gaps in supply and presented an Integrated Resource Plan (NIRP3) with Eskom being tasked with the responsibility to develop actual projects to meet demand. This plan was never again mentioned in DME annual reports, although it was recalled by some interview respondents (Interviews<sup>29</sup>). In a significant policy subsystem event, DME was split into two separate departments: Energy and Mineral Resources in a process that began in 2008 and concluded in 2009. This contributed to policy development delay and interrupted emerging public engagement process for integrated energy policy development (Fischer & Martin, 2012; Interviews<sup>30</sup>).

Resuming the trend of improved public engagement, a National Stakeholder Summit on Electricity was initiated by the ANC and convened in May 2008. Significantly, the declaration of this Summit recognised the need for a significant (more cost-reflective) electricity tariff increase in order to restore the financial health of Eskom and the necessary investment in electricity generation and transmission infrastructure (Interviews<sup>31</sup>).

Also in 2008, in order to 'facilitate co-operative governance' on climate change, an Intergovernmental Committee on Climate Change (IGCC) was established (GCIS, 2016). The IGCC continues to serve as the President's 'delivery forum' for climate change outputs but no evidence of this body exerting any political influence was found in this research.

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<sup>27</sup> Respondents 2, 3, 5, 18, 19, 24

<sup>28</sup> A majority respondent view.

<sup>29</sup> Respondents 8, 12, 14, 24

<sup>30</sup> Respondents 7 – 9, 14, 15, 23

<sup>31</sup> Respondents 7-9, 14, 15, 23

The National Energy Act of November 2008 included the requirement to ensure that diverse energy resources were available, in sustainable quantities and at affordable prices. It also located the responsibility for planning with the Minister of Energy and committed the Minister to developing and annually reviewing and publishing an IEP that had been subjected to considered public comments.

### Analytical conclusions

This period was characterised by stronger inter-departmental partnerships, by rapidly increasing public interest in electricity policy, and improved transparency in governance. A dynamic external factor had started to exert some influence on domestic policy: climate change and, given SA's emission-intensive energy generation setup, the need to take action on mitigation. An external system shock – the global financial meltdown of 2008 – did not have immediate effects on South Africa, but economists understood that these effects would be felt before long. Government demonstrated policy learning by adjusting to external pressure to recognise the role of RE. Energy efficiency was starting to appear to be an important topic, with detailed policy and targets to drive its achievement in practice, even though this was seen by most sub-system actors as lip service. The knock-on effects of energy planning and climate policy were starting to become public knowledge, and the need to diversify the energy mix and reform the power sector was gaining public interest.

Load shedding and rolling blackouts led to significant growth in public awareness of the value of electricity planning, which motivated a new season of government-led policy reform. This area of planning moved from being a specialised, secluded concern of electricity and policy experts to being an issue of broad public debate and engagement. Electricity planning had started to become a politically charged issue in SA's democracy.

Broad policy advocacy coalitions were starting to emerge and broader civil society engagement with electricity policy had started to grow. Some clear advocacy coalitions had started to emerge: those focused on job creation and economic growth – regardless of supply resource; those focused on environmental justice – regardless of economic growth; those focused on good governance – regardless of economic and energy planning; and those interested in the role of base load, the opportunities presented by nuclear power commercialisation, and the competitive advantage of domestic industry. Coalitions were being formed all over the country, with the dominant (most vocal, most actively visible) ones emerging in the main economic hubs: Johannesburg, Cape Town and KwaZulu-Natal. The state had begun to echo the advocacy beliefs expressed by the Orthodox coalition in relation to 'energy security'.

### 2009 to mid-2010

Early in 2009, in order to meet the MYPD tariff increase requirements, Eskom hastily repackaged the ISEP as the IRP1. This was rejected by government, and a ministerial determination was issued in the absence of a proper IRP.<sup>32</sup> Nevertheless, this heralded the start of the IRP2 process which was later renamed IRP2010.

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<sup>32</sup> IRP1 included policy objectives for 10 000 GWh RE (approximately 4% of the energy mix) by 2013, the implementation of energy efficiency and demand side management through a standard offer financial incentive scheme, and installation of one million solar water heaters.

Continuing the government narrative in support of power sector reform, Minister of Energy Dipuo Peters included reference to an “ISO” (independent system operator) in her 2009 budget speech (DoE, 2009). During the year, three significant policy subsystem events took place: 1) new Generation Regulations were issued, including new discretionary powers for the new Minister of Energy and new planning mechanisms by which new generation capacity would be estimated; 2) a National Climate Policy Development Summit was held; and 3) NERSA published Renewable Energy Feed-in Tariff (REFIT) guidelines.

The “new Gen Regs” as they came to be referred to, aimed to clarify the roles of Eskom, the Minister of Energy, the Minister of Finance and NERSA. It also formally unified the NIRP and ISEP processes under the auspices of the DoE and included REFIT regulations. Eskom’s System Operation and Planning (SO&P) department was now tasked with the responsibility of developing the IRP in collaboration with the DoE and NERSA. Most significantly, the Minister of Energy would have the final say over the IRP and in concurrence with the Minister of Finance, ‘the final say over public/private allocation of generation opportunities’ (Pickering, 2010). From this point forward, in the absence of up to date policy, the new Gen Regs have effectively governed electricity planning, except for nuclear power related matters which continued to be governed by Executive power (Interviews<sup>33</sup>). A Cabinet statement on 6 September 2009 designated Eskom as ‘single buyer of power from Independent power producers’ provided yet another indication of government policy shift toward power sector reform, but interpretation of whether ‘single buyer’ referred to the national utility or some other entity like an independent market operator was left open to wide interpretation (Pickering, 2010). The National Climate Summit (as it became known) resulted in a number of climate-related commitments informed by the LTMS and ultimately resulted in the drafting of the National Climate Change Response White Paper of October 2011.

Since about 2007, but perhaps far more visibly since 2009 when SA hosted the 17<sup>th</sup> United Nations Conference of the Parties, public awareness of the need to reduce greenhouse gas emissions had grown remarkably (Interviews<sup>34</sup>). This awareness had exceeded public policy that could incentivise low-carbon lifestyle choices, particularly energy-related choices given SA’s massive dependence on coal for energy supply, that were in keeping with stated government ambition. In May 2009, the Greenhouse Gas Inventory SA (1990-2000) had been presented at the UN climate meeting. At the time, four-fifths of the country’s emissions were associated with energy supply (transport, industrial, commercial and residential). This placed South Africa 19<sup>th</sup> on the global ranking of GHG emissions in 2000. A distinct vision disconnect, possibly even a contradiction between SA’s energy and climate policies was increasingly highlighted by the Reform coalition in its advocacy (Interviews<sup>35</sup>) and later confirmed by a policy analysis produced by Trollip and Tyler for the National Planning commission, in 2011.

In September 2009 a Green Paper on National Strategic Planning was published by the Presidency. The paper proposed a National Planning Commission (NPC) which was inaugurated in May 2010 with the mandate of taking a broad, cross-cutting, independent and critical view of South Africa, to help define the SA to be achieved by 2030 and to map out a

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<sup>33</sup> Views held by a majority of respondents.

<sup>34</sup> Respondents 7, 11-13, 23

<sup>35</sup> Respondents 11-13, 21-24

path toward achieving these objectives (Presidency, 2009). Throughout 2009 DoE, Eskom and NERSA had been developing the first version of the IRP and they produced a preliminary report in September 2009 (Researcher records; Interviews<sup>36</sup>). This document is no longer available in the public domain.

In February 2010, the DPE minister, Barbara Hogan announced government's intention to reduce support for the PBMR programme and cut 75% of programme staff (DPE, 2010). Also in February 2010, an IRP Technical Task Team (TTT)<sup>37</sup> was officially established by DoE, but this information was only made publicly known after the first public consultations began – in response to a written request for clarity from members of the Reform coalition (Interviews). The TTT's objectives were: to produce 'a technically competent and credible' IRP and 'develop a stakeholder engagement strategy and plan for its implementation' (DoE, 2010c). Respondents from the Reform coalition claim that the TTT was initiated 'secretly' and sustained by energy-intensive users who were mainly pursuing fossil-fuel friendly policy certainty (Interviews). The TTT was made up mainly of members aligned with advocacy beliefs of the Orthodox coalition. Meetings of the TTT were closed to the public and requests to the DoE for copies of its minutes were refused. From this point onward members of the Reform coalition regularly highlighted the 'bias of the secret committee of experts advising the DoE' on electricity planning (media reports; IRP2010 submissions; Interviews<sup>38</sup>).

Some months later, in May 2010, the IRP2010 process was opened up to public consultation via invited written comments no later than June 2010 on the first Draft IRP2010 input parameter sheets.<sup>39</sup>

Following on the heels of a series of system failures i.e. inadequate generation planning, failure to implement proposed sector reforms to admit IPPs and delayed decisions on Eskom's new build programme all of which had led to a dangerous decline in system reserve margin and growing electricity supply insecurity, President Zuma in his June 2010 State of the Nation Address formally committed government to establishing an independent system operator. Later the word 'market' was inserted and the acronym ISMO – independent system market operator – became commonly used. ISMO would 'look at the participation of independent power producers and protecting the poor from rising electricity prices', effectively a formal move toward power sector reform (Presidency, 2010). Significantly, it was proposed that *generation capacity planning* could be included as a function of ISMO. All respondents recalled a largely positive response to the establishment of ISMO, with the exception of two respondents from the Orthodox coalition who recalled the cautionary note from the National Union of Mineworkers and the view expressed by the SA National Energy Agency that 'there was no need for a new institution within the sector' (Interviews<sup>40</sup>).

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<sup>36</sup> Respondents 3, 6, 14, 19, 24

<sup>37</sup> Members of the TTT: 4 DoE officials including the Director General Nelisiwe Magubane, 2 Eskom system operations and planning, 6 energy intensive users, 1 local government-owned power company, 1 IPP association, 1 academic, 1 consultancy.

<sup>38</sup> Respondents 21-24.

<sup>39</sup> Public comment initially opened for a 30-day period, later extended to 60 days on request from both coalitions (respondents 21-24)

<sup>40</sup> Respondents 8 and 14.

## Analytical conclusions

Public awareness and related advocacy beliefs across a range of policy themes was growing: the strategic importance of electricity planning, climate change and the need to reduce greenhouse gas emissions, the effects of investment on electricity tariffs, the need for consultative and transparent national planning, and nuclear risk. Public engagement with policy was also maturing, with electricity supply shortfalls being a major driver of interest, as well as linkages being made with external events like climate change and the local effects of the global financial crisis.

The function of Planning was taking a more prominent position on the policy landscape. The two Coalitions under review were both taking clearer shape, with clearly expressed common beliefs and with stronger national and growing international alliances. The maturity of governance in general was starting to emerge. Figure 2 presents an overview of the broad, high-level advocacy issues for the electricity sector as a whole in 2010 and 2011, providing a perspective on the context and the range of political pressure points. No ‘policy brokers’ were identified during interviews covering the history up to this point.

In Chapter 4, issues associated specifically with the two advocacy coalitions under review are introduced as a prelude to identifying the five most contested issues. These five contested issues then become the focus of the dissertation.

Figure 2: Main advocacy issues within SA’s broad electricity sector in 2010/11



## Chapter 4: Analysing members of the Coalitions and their key issues

Chapter 3 provided necessary historical policy context in order to start to introduce key actors, policy events and the main advocacy issues within the sector by 2011. This chapter now answers research questions 1 and 2.

In keeping with the ACF methodology, coalitions were identified on the basis of the common beliefs they aligned themselves with or coalesced around, and whether they co-operated with one another, formally or informally on issues. Interview respondents were then identified (as described in Chapter 2), representing members of the two coalitions as well as other influential actors within the sub-system. The list of respondents is included as Annexure 2.

Initial lists of coalition members were shared with interview respondents and then updated based on respondent feedback and with new insights gained as the research progressed. The research also revealed a list of government actors that regularly echoed the expressed beliefs of each of the coalitions. Rather than include government actors within coalitions, these have been kept separate, in order to emphasise dynamics of political power, influence and support.

There are many advocacy issues raised by stakeholders in South Africa's electricity sector. The research has confirmed that, as in other cases analysed in South Africa's electricity sector, advocacy coalitions are not static or linear and advocacy strategies are often difficult for non-members to understand. While on occasion 'advocacy issues' are quite distinctly associated with specific coalitions, whether seen from internal or external perspective, sometimes aspects of very different coalition beliefs include unexpected points of overlap. On occasion, coalitions that hold fundamentally differing positions on 'issues' will agree in their critical assessments of policy assumptions and process e.g. demand and GDP growth assumptions, perceptions of unfair exertion of influence on government decision-making process, and a lack of consistency in policy. At times, policy learning for a coalition will include understanding the effectiveness of applying strategies like 'smoke and mirrors' so that coalitions will appear to advocate for a position while in fact intending to achieve an opposite policy outcome. Finally, there are many actors and networks that do not self-identify formally with specific coalitions, yet express beliefs that clearly align with those of specific coalitions. These include government actors. In such cases, non-coalition actors can have greater powers of influence on policy that are often only evident in the policy choices ultimately made.

While acknowledging the complexity of coalitions and how they are formed and sustained over time, two high-level advocacy coalitions were identified by the research, and their 'face value' activities reviewed. This was achieved on the basis of expressed coalition issues in IRP2010 submissions, media reports and views provided by respondents. Readers are asked to bear in mind that the specific advocacy coalition findings in relation to the IRP2010 process presented here apply to the period June 2010 to June 2011, and for the update, to the period December 2013 to June 2015. It is acknowledged that many contextual and coalition shifts happened during and after these periods. It is further emphasised that the policy process applied for the IRP2010 and the IRP2013 differed substantially.

The two most prominent advocacy coalitions and their core beliefs are described below.

**Coalition 1, labelled the “Orthodox coalition”:** Centralised base load provides secure supply which can in turn drive economic growth that is ultimately good for everyone. Secure supply can be provided mainly via centralised coal and nuclear power, both of which are derived from economically-justifiable mineral resource exploitation.

One of this coalition’s core beliefs was described by Respondent 8 as follows:

‘Nuclear energy enables attainment of South Africa’s climate change mitigation ambitions’ and ‘nuclear energy is a proven technology which can further enhance the reliability of base load electricity supply in support of Government’s economic and social goals’.

**Coalition 2, labelled the “Reform coalition”:** Power sector reform can directly enable sustainable growth and ensure long term common well-being. Such supply can be achieved mainly via a mix of centralised and distributed renewable power supply derived from sustainable resource application.

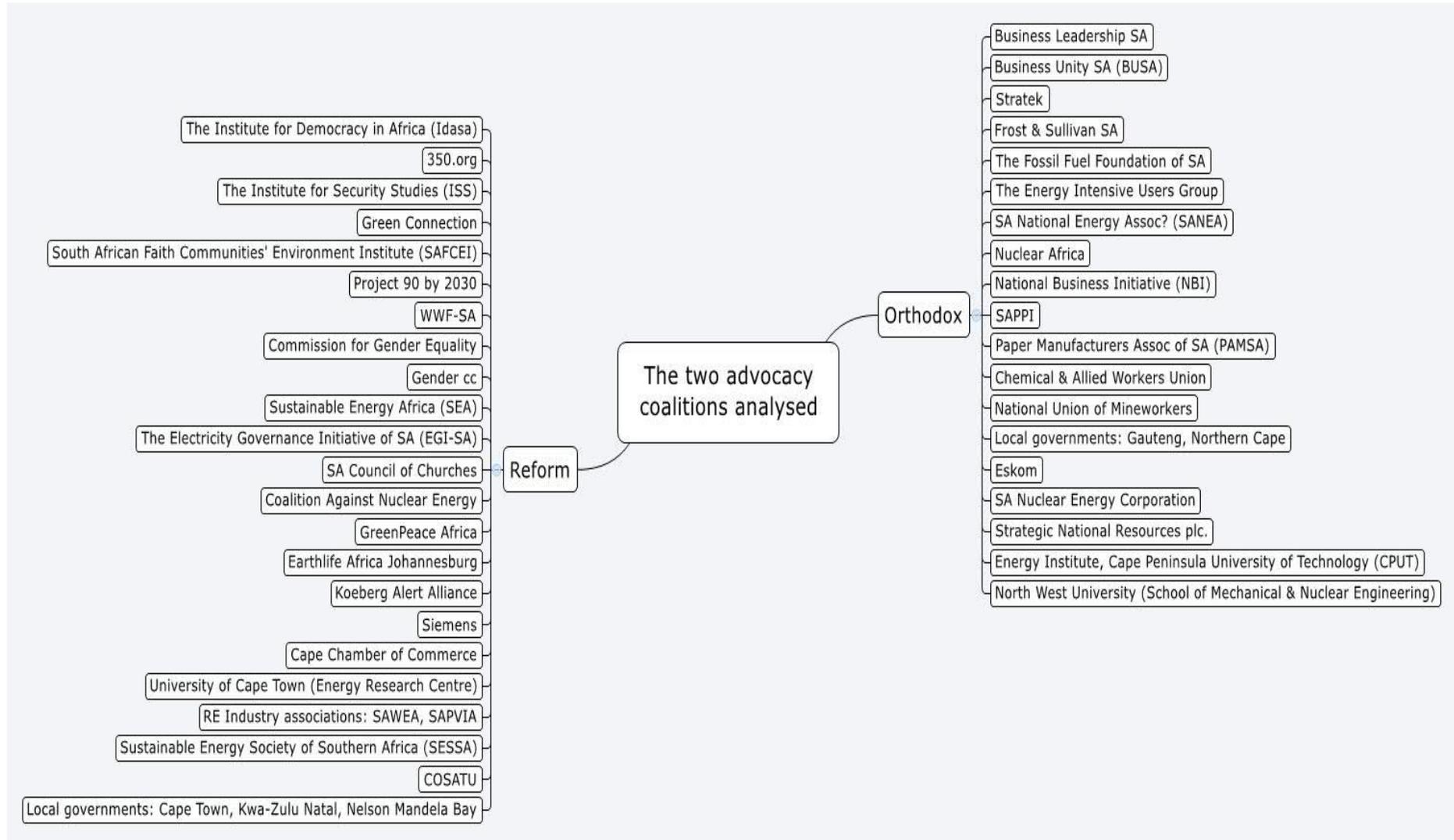
One of this coalition’s core beliefs was expressed by Respondent 11 as:

‘It is important that we make decisions today that can steer us towards a steady, just transition away from fossil fuels and nuclear supply toward renewable energy. A system-wide switch to renewables will create jobs and will be less financially and environmentally risky for all, especially future generations.’

### **Members of the two coalitions**

The members making up the two coalitions under review are included in Figure 3.

Figure 3: Members of the two coalitions under review



The research also confirmed the following government actors that shared some expressed beliefs with the Orthodox coalition during the IRP2010 process (Interviews<sup>41</sup>):

- The President
- The National Nuclear Executive Coordinating Committee (NNECC) (renamed ‘the Energy Security Sub-Committee’ (ESSC) in 2013, chaired by the President)
- The Department of Energy
- The National Nuclear Regulator (NNR)
- The Department of Public Enterprises
- The Department of Trade and Industry

The following government actors shared expressed beliefs with the Reform coalition during the IRP2010 process (Interviews<sup>42</sup>):

- The National Planning Commission
- The Department of Environmental Affairs
- National Treasury, on the topic of carbon tax.

### **General advocacy issues of the two coalitions**

The researcher studied all presentations available on the DoE website between June 2015 and January 2016. After triangulating these and other submissions not posted on the website with grey literature and the recollections of interview respondents, she summarised and listed the main advocacy issues raised by the two coalitions. These summarised lists were then subjected to critical review by interview respondents and two independent industry experts. General advocacy issues for the two coalitions were grouped under 5 selected, contested issue-based themes which were also subjected to critical review. The sector and coalition-related maps provided here thus represent reviewed summaries of expressed coalition beliefs and are not to be read ‘verbatim’. Figure 3 summarises the broad issues for which the two coalitions were found to have advocated. Upon further analysis, particularly after interviews were completed, the research revealed that five issues emerged as the most contested by both coalitions. From this point onward in the dissertation, reflecting key research findings, these five issues are the focus of analysis.

### **The five most contested advocacy issues**

Research questions 1 and 2 have now been answered. As can be seen from Figure 4 below, a wide range of advocacy issues were raised by the two coalitions. However, the research revealed, by majority view that the five most contested IRP2010 advocacy issues between the two coalitions were:

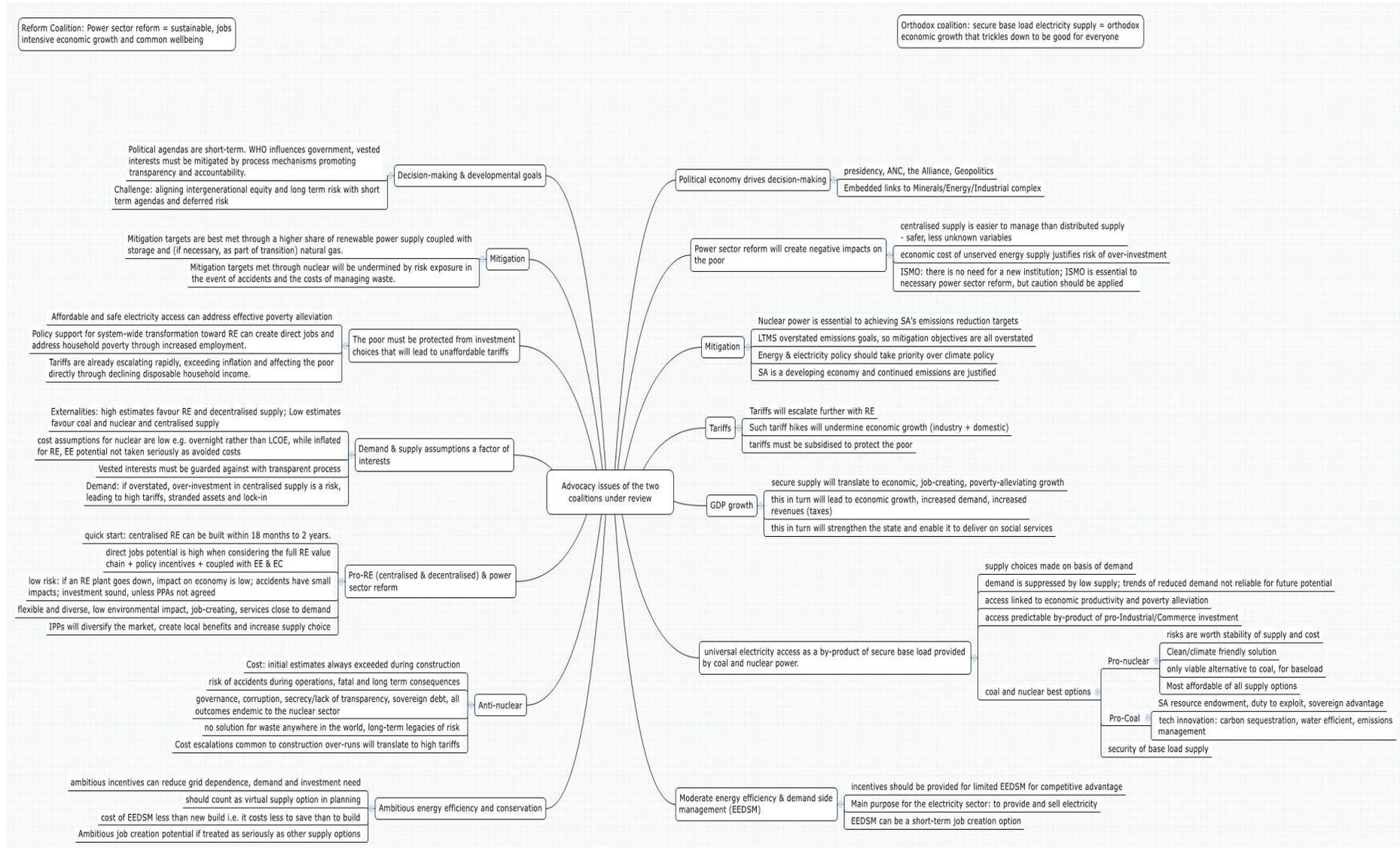
1. Tariffs, and investment, affordability
2. Power sector reform
3. Climate change
4. Nuclear power
5. Renewable energy

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<sup>41</sup> A majority of respondents from both coalitions expressed this view.

<sup>42</sup> A majority of respondents from both coalitions expressed this view.

Figure 4: Broad advocacy beliefs of the two Coalitions under review



## Chapter 5: Applying ACF to understand coalitions' influence on the IRP2010 process

In Chapter 4, the two dominant advocacy coalitions seeking to influence planning, along with their advocacy issues have been introduced along with the emerging five most contested and thus dominant issues. In starting to answer the third research question: “What evidence could be found for how the issues of dominant advocacy coalitions were realised in electricity policy?” this chapter applies ACF to understand events, expressed beliefs and advocated issues for the period between mid-2010 and April 2011, when the IRP2010 was promulgated. The chapter concludes with analysis of findings, in order to assess policy realisation. The next chapter will add the final set of findings in response to research question 3.

First, integrated resource planning practice is briefly considered in general terms, before shifting to policy-relevant events leading up to South Africa's electricity planning process between October 2010 and December 2011. The chapter concludes with an assessment of policy in order to gauge how influential each of the coalitions had been in their advocacy efforts.

### Electricity planning, also known as integrated resource planning (IRP)

Unlike other planning approaches which only take into account direct costs incurred by the utility and the consumer, the IRP approach (also known as least cost planning or LCP) has four key distinguishing characteristics (Hirst & Goldman, 1991):

1. Explicit consideration of energy efficiency and load management programmes as least cost alternatives to some new build.
2. Consideration of both environmental factors and direct economic costs.
3. Public participation and consultation.
4. Analysis of the uncertainties and risks posed by different resource portfolios and by external factors.

Power planning generally is essentially concerned with the comparison of alternative electricity futures with the support of mathematical computer models. The issue of uncertainty is dominant, hence scenario analysis based on various input parameters has emerged as common practice to balance divergent views about the future. A range of scenarios are constructed according to different (often conflicting) goals, and then tested by sensitivity analysis<sup>43</sup> so that a most plausible scenario may be selected which can result in a plan. This process is not wholly dependent on input data and modelling (Roxburgh, 2009). As the South African experience has demonstrated, public participation toward consensus building can be an important factor contributing to broad acceptance of a promulgated plan.

The process of identifying and then engaging with demand assumptions and related supply mix findings, selecting which scenarios to consider seriously and which to ignore, should ideally be subject to discussion and negotiation among a variety of individuals with diverse views. Given that subjectivity is understood to be present at all stages of the process from

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<sup>43</sup> Sensitivity analysis is a statistical tool used to test the robustness of the plan.

modelling to public engagement and Cabinet approval, transparency is an essential part of the process (Borchers, 2000).

Seeking to balance a review of government-led process and the actions of the two selected coalitions over time, what follows considers two periods in the development of IRP2010 periods: May to October 2010, and November to December 2010. The reader's attention is drawn particularly to the points made by the DoE in relation to the priority placed on 'cost effectiveness', the basis of consultative, knowledge (as opposed to interest)-driven decision-making, the commitment to mitigating uncertainty by implementing an IRP review process, and the continued commitment to transparent public engagement process. These points will be revisited later on in the dissertation.

### **The IRP2010 and related policy events between May and October 2010**

In May 2010, the IRP2010 process was opened up to public comments within 30 days on the input parameter sheets of the first Draft IRP2010, which proposed a revised balanced scenario (RBS)<sup>44</sup>. From this point forward until about December 2010, the IRP's public consultation process was experienced by a majority of respondents as 'unprecedented in its transparency and consultative approach'. The official credited most widely for promoting this approach is Kannan Lakmeharan (of Eskom system operations and planning) (Interviews<sup>45</sup>). However, some members of the reform coalition released quantitative analysis of how DoE responded to their comments on the draft IRP's input parameters, finding that there was no response to 61% of their comments (EGI-SA, October 2010). Also, where the DoE did respond to comments, the standard response was: 'apply subjective expert judgement'. The latter part of 2010 is thus recalled, by all Reform coalition respondents and a minority of Orthodox coalition members as a time when the open public engagement process which had briefly characterised the IRP process up to that point began to close (Interviews<sup>46</sup>).

The draft IRP and its proposed revised balanced scenario had been based on the selection of 'a cost-optimal solution for new build options' which were then 'balanced' with qualitative measures such as job creation (DoE, 2011). RBS included allocations for: 'a nuclear fleet' of 9.6GW, 6.3GW coal, 11.4GW renewables and 11GW of other generation sources (DoE, 2010a).

In July 2010, with approximately R10 billion spent, and with a further R30 billion required to achieve commercialisation, government formally announced its decision to 'mothball' the PBMR programme (DPE, 2010a). The anti-nuclear movement claimed a policy victory and a specific policy lesson was identified by Reform coalition respondents as follows: 'pressuring government via the parliamentary portfolio committee works!' A member of the Orthodox coalition (Respondent 8) recalled this event as follows: 'government had to admit that the initial goal: commercial viability, was not going to be achieved and thus was forced to close down the programme – it was an economic decision, not a technical one, nothing to do with anti-nuclear lobbying'.

In parallel with the IRP process, in September 2010, the Medium Term Risk Mitigation Plan 'to keep the lights on' had been published. The plan specifically dealt with the anticipated

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<sup>44</sup> This period later extended to 60 days on request from both coalitions (confirmed by a majority of respondents)

<sup>45</sup> A majority of respondents supported this view.

<sup>46</sup> All Reform coalition respondents and Orthodox coalition respondents 8, 14 and 15

electricity supply shortfall between 2011 and 2016 and included non-Eskom electricity generation initiatives (like own-generation of major industries) and EEDSM programmes (like the National Solar Water Heater Rollout programme) as well as a 963MW power buy-back programme from the Energy Intensive Users' Group. Respondents recalled these sub-system events as influential in the sense that 'keeping the lights on' would become a growing narrative of government, applied 'opportunistically' to justify continued investment in large power supply and/or deflect attention from the long-term low tariffs offered to energy intensive users (Interviews<sup>47</sup>).

Given South Africa's significant energy carbon footprint, it is worth noting here as an external system event, the National Climate Change Response White Paper (NCCR) with emission reduction targets aligned with the LTMS was published in October 2011, just in time for the 17<sup>th</sup> session of the Conference of the Parties to the UNFCCC (COP17) which was hosted by South Africa. Climate mitigation objectives and adaptation goals all had significant likely implications for energy policy. Many respondents expressed the view that in practice, initial policy effects were not taken seriously. In addition, these same respondents speculated that both the NCCR and the Renewable Energy Independent Power Producers Procurement Process (REIPPPP) would have been unlikely to benefit from such policy support had it not been for COP17 (Interviews<sup>48</sup>). Once again it seemed, the imperatives of politics had directly influenced policy events.

### **Analytical conclusions at this point**

The broad advocacy issues for electricity planning in 2010/11 that were noted during the research have been presented in Figure 4 above. By 2010, public engagement with policy process had grown significantly and included remarkable interest in issues like electricity planning, climate change policy, electricity tariffs, national planning, and nuclear risk and/or opportunity. Within the electricity policy subsector, public engagement activities had started to become strategically driven, focused and resourceful. Clear coalitions were now dominant and active within the SA energy policy sector, and many of these had links with international alliances. Coalitions were based on unifying beliefs related to public health and well-being, rights of the earth, economic growth linked directly to electricity growth, the state's prerogative on long term public investment, public engagement process, air quality, the country's national emissions, and questions of centralised and decentralised power supply. On the whole, by October 2010, the exercise of political influence, the effects of divergent power dynamics, the different advocacy strategies that had been applied, consistent lobbying points and visible actors were emerging from all sectors. Active lobbying coalitions in SA's electricity policy sub-sector were more visible than ever before.

### **November to December 2010: toward the promulgated IRP**

The process of finalising the IRP from RBS to promulgation is now considered in the light of the five most contested advocacy issues selected for analysis.

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<sup>47</sup> Respondents 21-24

<sup>48</sup> Respondents 2, 6, 8, 11, 13, 17, 20, 23.

Following written comments on the first draft report, DoE released a second draft Integrated Electricity Resource Plan for SA (IRP2010) in October 2010. This draft recommended the Revised Balanced Scenario to the Cabinet for approval before the process was opened up again for public comments in writing and in public hearings in Cape Town, KwaZulu-Natal and Gauteng during November and early December 2010. Many written submissions had been received on RBS and the opportunities to do presentations at public hearings were taken up by a large number of individuals and organised groups, including members of the two coalitions under review. In retrospect, this was a moment of unprecedented transparency and civil society consultation in South Africa's power generation planning (Pickering, 2010).

Key DoE and Eskom actors involved in the process were: Nelisiwe Magubane, DoE Director-General, Ompi Aphane, one of the DoE Deputy Directors-General and Kanan Lakmeharan, Eskom Divisional Executive: System Operations & Planning, Eskom (Nov 2008 to Jan 2011). A majority of interview respondents from both coalitions pointed to the influential role played by Lakmeharan to ensure that the IRP2010 policy process was both transparent and consultative. He was recognised as one of the only 'policy brokers' who earned and sustained trust across coalitions, in respondent interviews (Interviews<sup>49</sup>).

The DoE opened each hearing with the same introductory presentation and emphasised its impartiality and interest in decision-making based on knowledge and consultation:

*"This IRP consultation process is designed to allow the DoE to arrive at a plan for the country which is based on knowledge, data, reason and consultation – and not on ideological convenience or the needs of a narrow constituency!"* It further emphasised that the IRP2010 was 'not a short or medium-term operational plan but a plan that directs the expansion of the electricity supply over the 20 year period' (DoE, 2010a).

The department also shared the following information regarding its proposed generation mix:

- That RE generation involves 'massive land requirements';
- That the 'footprint of nuclear power is much smaller than that of solar and wind';
- That 'a 1 000MW nuclear plant requires less than two square kilometres of land. Comparable solar and wind plants require respectively, 130 and 500 square kilometres of land';
- That the 'international order book for nuclear is long' – for the next 20 years 'there is an order book for over 600 reactors globally';
- There are lessons to be learned for implementation scales from the Spanish example; and
- The 'risk adjusted scenario needs to have a production study to determine its suitability and impact' (DoE, 2010a).

As most Reform coalition respondents saw it, government's bias toward nuclear power and against renewables was evident from the start of the public hearings (Interviews<sup>50</sup>).

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<sup>49</sup> This view confirmed by a majority of respondents interviewed.

<sup>50</sup> Respondents 7, 11, 13, 21, 23 and 24.

## Summary of submissions

### Submissions were received from the following groupings (DoE, 2010a):<sup>51</sup>

NGOs & civil society:	67
Academics and consultants:	63
Industry and business:	70

The researcher has studied presentations available on the DoE website at the time of writing (March/April 2016). After triangulating these with grey literature (listed at the end of references) and the recollections of interview respondents, she summarised the main common advocacy issues raised by the two coalitions in response to the IRP2010 draft below. These summaries have also benefited from critical review by willing interview respondents later in the writing process.

While a far larger number of civil society submissions could be expected in the context of growing public awareness and mobilisation, it is worth noting that participation in public policy formulation requires time, resources and capacity - the time to read through documents, the capacity to understand technical detail, resources such as access to the internet, knowledgeable advisers, funds to travel to public hearings, as well as the loss of income-earning time spent in public hearings. For these reasons, parties with the best access to capacity and resources tend to be best able to influence public participation processes. It was therefore unsurprising that participation in the IRP2010 was dominated by well-resourced groups and individuals.

While many submissions commended the DoE for its transparency on technical matters, concerns were raised in relation to process: tight timeframes for submissions, the practical constraints on engagement of rural and poor communities, the lack of capacity building to enable broad engagement on technical issues, uncertainty in relation to whether (or to what extent) decisions had already been made by government and the IRP process would merely provide a ‘rubber stamp’, and the fact that the IRP process should not be completed before, or in isolation of the Integrated Energy Plan (summary of IRP2010 submissions).

At the hearings the DoE noted that ‘most respondents called for a low-carbon economy and for a thrust to be on renewable energy (wind, solar, geothermal etc.) in future, to a maximum of 75% of total energy supplied by 2050’. It also noted that ‘many’ were opposed to nuclear and coal as future energy solutions, pointing particularly to the costs and financing difficulties of both. The DoE found cost references within renewable energy supply options to be contradictory (wind and concentrated solar power – CSP – in particular). In the DoE’s view, there had been ‘general confusion and lack of discrimination’ between concepts e.g. inputs, outcomes, policy, regulating instruments such as tariffs, constraints and remedies to unblock such constraints. Finally, there had been many calls for water and infrastructure impacts to be considered when making generation technology choices.

<sup>51</sup> These numbers do not add up to 81 submissions. When asked to clarify, DoE said that it would ‘revert after consultation’. This did not take place as promised (respondents 22-24).

The DoE listed the number of comments received for each input parameter (see below) and indicated that all received comments had been incorporated into the further analysis for each parameter. The five issues highlighted in this dissertation as having been contested by both coalitions were well represented on this list.

<b>IRP parameter</b>	<b>Total</b>
Renewable generation	200
The IRP2010 consultation process	111
Demand response	94
Economic factors	92
Climate change	78
Non-Eskom generation	68
Security of supply	52
Demand forecast	32
Price elasticity [of demand]	29
Cost of generation options	28
Non IRP-related	25
Water	22

DOE, 2010a

The most critical dimensions of the IRP noted by the DoE, which also reflected many of the five most contested issues of the two coalitions under review, were as follows:

- Electricity prices/ tariffs;
- Carbon and emissions;
- Regional development;
- Generation mix; and
- Implementation timeframes and costs.

Based on this, the DoE had concluded that SA faces ‘a period of tough choices, primarily between economic growth and economic stagnation’ and expressed a view also held by the Orthodox coalition that ‘no economy can grow in an energy-constrained environment’ (DoE, 2010a). Government’s priority was clearly stated as follows: ‘*The IRP has to provide insight into how South Africa can deliver the requisite energy to fuel growth in the economy AND do so in a manner which is affordable and ensures South Africa remains internationally competitive*’. Finally, the department had understood that ‘the public relished the

participation process and its continued use in long-term planning must be ensured’ (DoE, 2010a; Researcher records; Confirmed in a majority of interviews).

It is worth noting here a few parallel policy events unfolding within the electricity policy sub-system at the same point in time. REFIT regulations were repealed in November 2010 and finally replaced with a competitive bidding process (REBID). REBID was subsequently replaced with the Renewable Energy Independent Power Producers’ Procurement Process in May 2011. When it was launched, REIPPPP would be managed by National Treasury’s Public-Private Partnership Unit in partnership with the Development Bank of Southern Africa and DoE. At the same time, government adopted the New Growth Path (NGP) as ‘the framework for economic policy and the driver of the country’s jobs strategy’ and referred specifically to ‘a dynamic vision for how we can collectively achieve a more developed, democratic, cohesive and equitable economy and society over the medium term, in the context of sustained growth’ (Economic Development Ministry, 2010). Members of the Reform coalition pointed out in their IRP2010 submissions that the NGP suggested a likely economic growth shift away from energy-intensive smelters to more inclusive, job-creating and low-carbon job creation (EGI-SA, SAFCEI, Earthlife Africa Johannesburg; Interviews.<sup>52</sup>)

### **Analysis of the advocacy issues raised by the two coalitions in response to the draft IRP**

The findings and analysis thereof now start to focus on the five most contested advocacy issues presented within the IRP2010 process by the two coalitions: tariffs, investment affordability, costs; climate change; power sector reform; nuclear power; renewable energy. The ‘headline’ or main advocacy positions of each of the reviewed coalitions are briefly discussed, with greater detail provided in Figures 5 to 9.

DoE’s response to submissions, along with analysis of the extent to which advocacy beliefs were reflected in promulgated policy will then be presented in narrative form, before Chapter 6 looks at the 2013 update report and subsequent events.

It is important to note that not all advocacy issues could be divided absolutely across coalitions. There were both many overlapping points of view and some divergence of views expressed among the many members of the two coalitions. In analysing formal records of presentations, grey literature and interview responses, the researcher has sought to take subtleties into account carefully in the summaries presented below. These summaries were shared in draft form, with interview respondents and thus benefited from respondent feedback.

#### **1. Tariffs, investment affordability, costs**

Both coalitions expressed the need to protect the poor from rising tariffs. On the one hand, the Reform coalition pointed out tariff effects linked to investment plans based on inflated demand, global shifts away from carbon-intensive power, and investment choices that would invariably lead to raised tariffs in time while also reducing funds available to government for social spending. On the other, the Orthodox coalition pointed to linkages between economic growth and secure base load supply, argued that RE supply was variable, expensive and likely to lead to high tariffs; that

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<sup>52</sup> Respondents 21-24.

historically oversupply had led to low tariffs and was less risky. In essence, while the Reform coalition pointed to current best practice, risk aversion and future trends, the Orthodox coalition pointed to historic trends and the risks of innovation. See Figure 5 for further detail.

## **2. Power sector reform**

On this point, the two coalitions differed significantly. The Reform coalition pointed to potential investment savings from distributed supply and better energy efficiency, opportunities to achieve policy consistency, best practice planning approaches to dealing with uncertainty, global trends, and the economic, intergenerational risks of overbuild. The Orthodox coalition argued for economic growth achievable through security of supply, that such supply was best met with SA's coal resources, electricity sales revenue streams, pointed to the ease of managing centralised supply, and finally argued that diversity of supply does not guarantee security of supply. See Figure 6.

## **3. Climate change**

This is a topic where coalition views are not easy to articulate and differentiate. Views on climate science are diverse across both coalitions. While members of the Reform coalition tend toward treating evidence as a basis for decision-making, not all members of this coalition agree on the urgency or methodologies for action. Within the Orthodox coalition, views range between scepticism and outright rejection of climate-related evidence. While there was a general preference among Reform coalition members to err on the side of caution, those who held Orthodox views preferred an approach where security of supply was considered to be more important than the need for energy policy to take climate policy into account. See Figure 7.

## **4. Nuclear power**

While on the whole the Reform coalition advocated against nuclear power and the Orthodox coalition for nuclear power, the research revealed that views within coalitions were heterogeneous. For example, some Reform coalition members saw nuclear power to be an unacceptable supply option regardless of cost, and others who held conditional reservations in relation to nuclear power. The latter group acknowledged that nuclear power produces lower carbon emissions than coal during operations and could therefore be a viable base load alternative to coal, nuclear was expensive and decision-making in respect of nuclear tended to lack transparency. Among Orthodox coalition members, beliefs on benefits ranged between those who saw nuclear as the only viable alternative to coal base load and risks justified, and those who argued that nuclear was completely affordable, wholly beneficial and presented unlimited economic advantages. See Figure 8.

## **5. Renewable energy**

On this point, views between coalitions differed starkly. Members of the Reform coalition described the benefits of RE in detail, how such benefits are enhanced when coupled with energy efficiency and conservation, and pointed out how vested interests tend to undervalue and downplay the potential benefits. Members of the Orthodox coalition pointed to RE's risks, weaknesses and inability to compete with coal and

nuclear. While acknowledging a peripheral role for RE, this coalition emphasised that it was in no way able to address base load supply needs. See Figure 9 for further detail.

Figures 5 to 9 below provide a more detailed sense of the beliefs of each coalition in respect of the five most contested high-level issues. These figures were compiled by the researcher, initially on the basis of literature review and her understanding of the sector, then updated for accuracy after consultation with respondents and critical reviewers as the research progressed. What is presented is thus a synthesis of what has developed through the research.

**Figure 5: Advocacy issue 1: Tariffs, investment, affordability**

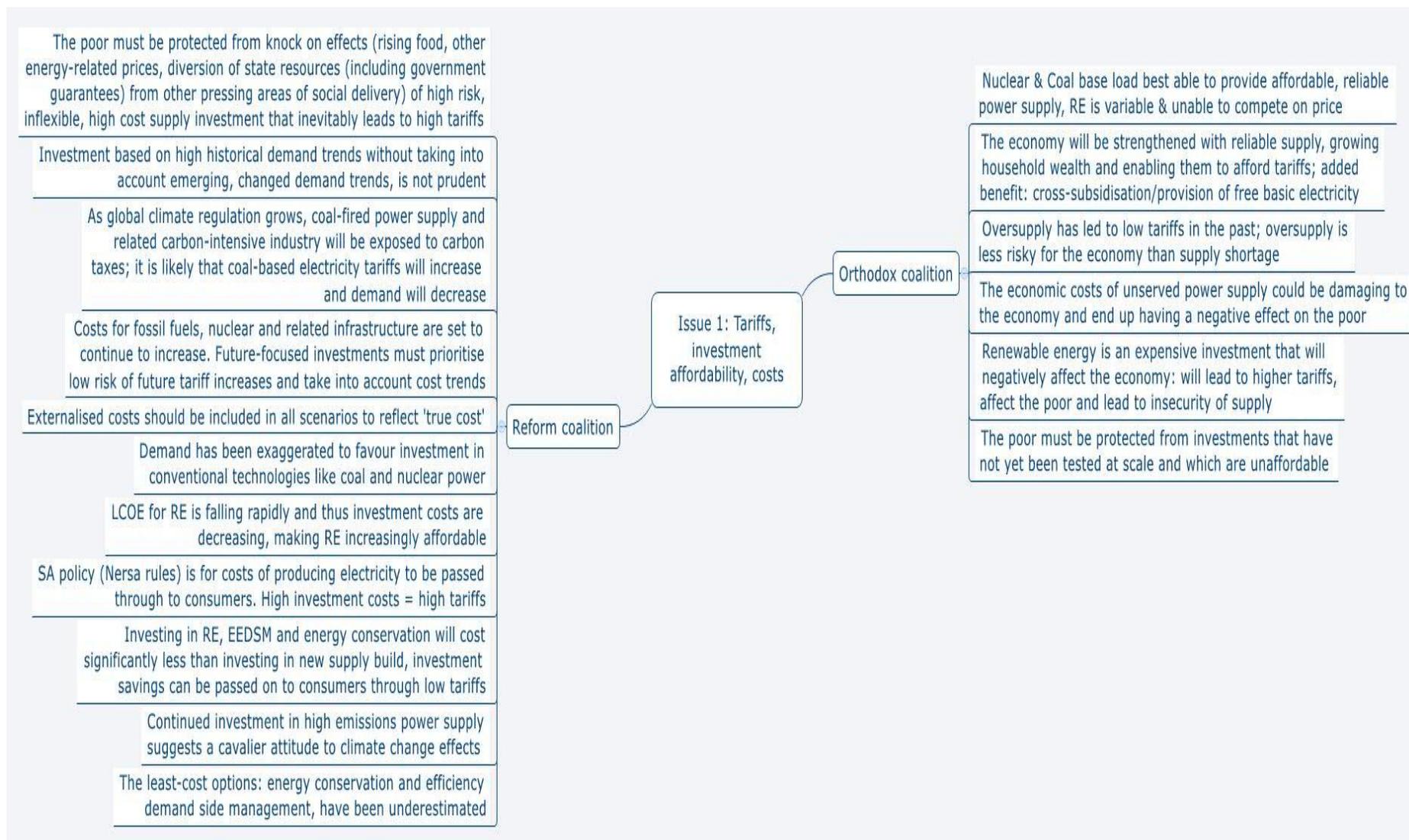
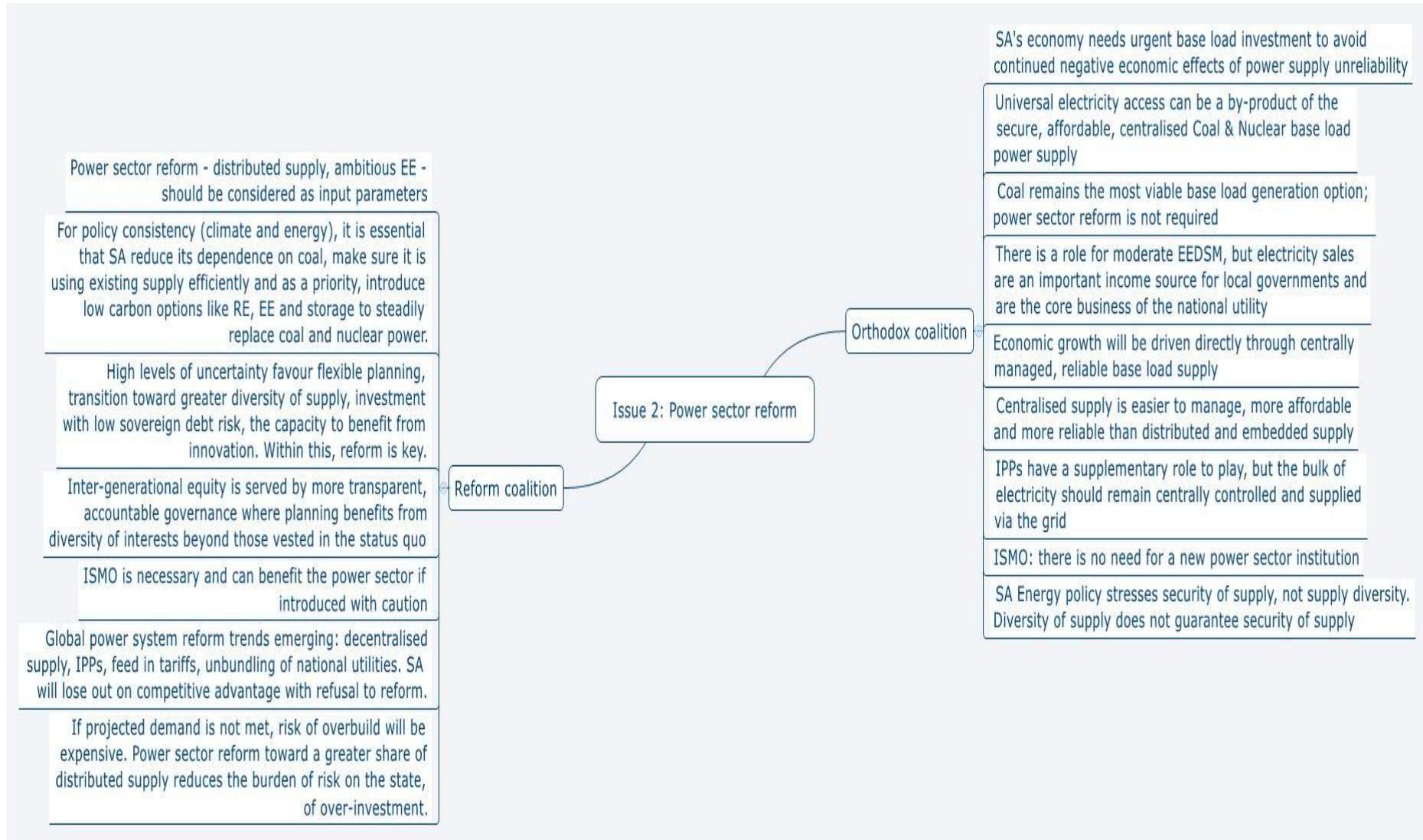


Figure 6: Advocacy issue 2: Power sector reform



**Figure 7: Advocacy issue 3: Climate change**

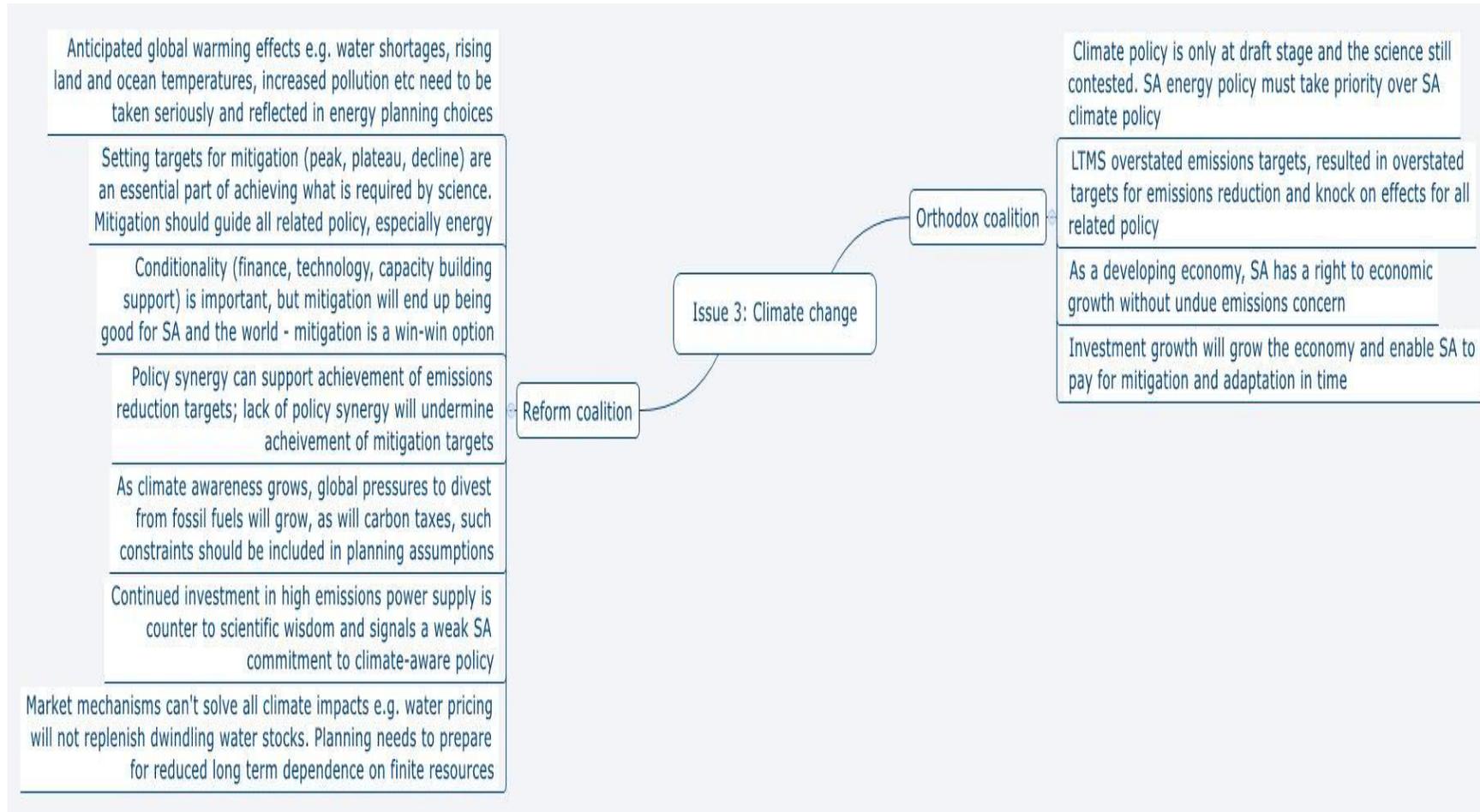


Figure 8: Advocacy issue 4: Nuclear power

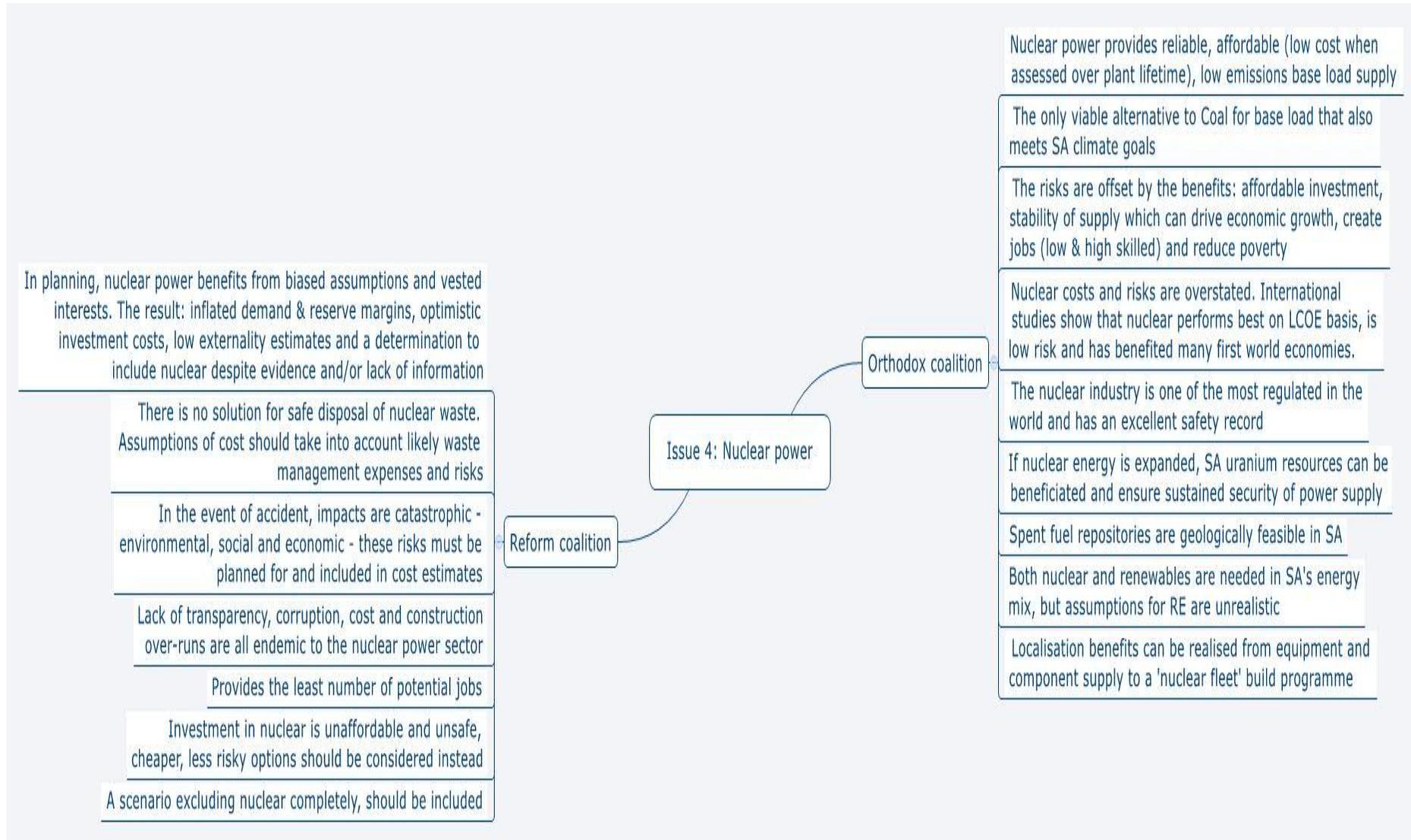
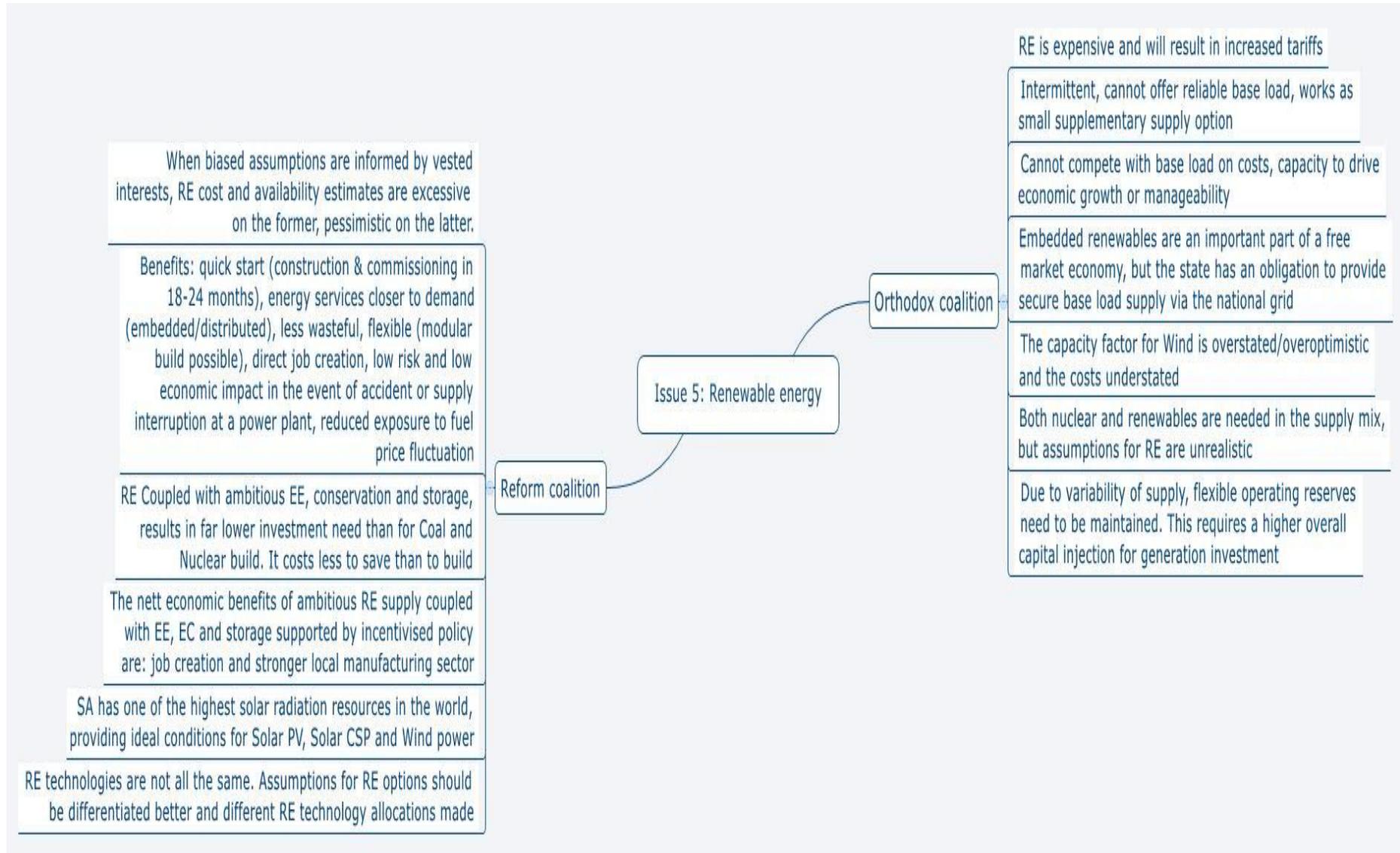


Figure 9: Advocacy issue 5: Renewable energy



To recap events up to this point: a first round of written public participation had been launched by DoE in the second quarter of 2010. This process had led to a second draft IRP, favouring a ‘revised balanced scenario’ which was published in October 2010 for public engagement at hearings held in Cape Town, KwaZulu-Natal and Gauteng. RBS had been based on selection of ‘a cost-optimal solution for new build options’ which were then ‘balanced’ with qualitative measures such as job creation (DoE, 2011). RBS included allocations for ‘a nuclear fleet’ of 9.6GW, 6.3GW coal, 11.4GW renewables and 11GW of other generation sources (DoE, 2010a). The two coalitions made submissions on a number of issues and the five most contested issues highlighted through the research are summarised in Figures 5 to 9 above.

### **Analysis of how coalitions’ advocacy issues were realised in the promulgated IRP2010**

Following a second round of public participation (hearings and written submissions) in November and December 2010, changes to the IRP model assumptions were made. The main changes reflected in policy included the disaggregation of renewable energy technologies, the inclusion of learning rates (both of which affected renewables positively), and the adjustment of investment costs for nuclear power upward by about 40%. Additional cost-optimal scenarios were generated based on these changes and the outcome of these scenarios, in conjunction with ‘policy’ considerations led to the promulgation of a ‘Policy-Adjusted IRP’, effectively aimed at ensuring ‘security of supply’ and assisting with ‘fulfilling South Africa’s Copenhagen commitments to Climate change’ presented to Cabinet for approval in March 2011 (DoE, 2011).

Shortly before the IRP2010 was presented to Cabinet for approval, an ‘external shock’ in the form of a nuclear disaster shook the world. Following the Tohoku earthquake and tsunami on 11 March 2011, level 7 meltdowns took place at three reactors in the Fukushima Daiichi Nuclear Power Plant complex. This was the largest nuclear disaster since Chernobyl in 1986 and it would have significant effects on the global nuclear industry. It did not however, cause South Africa to change its stated commitment to further investment in nuclear power.

The final IRP2010 was promulgated in May 2011 and included allocations for: 9.6GW nuclear, 17.8GW renewable energy (hydro, wind, CSP, solar PV), 6.3GW new coal capacity and 8.9GW ‘other generation’ sources. The ‘policy-adjusted’ scenario referred to the fact that although nuclear costs had been automatically rejected by the (least-cost favouring) model for all modelled scenarios, a nuclear investment allocation had been manually re-inserted on the basis of ‘policy’ (DoE, 2011). In the policy adjusted scenario, the allocated share of coal-fired power in SA’s electricity mix would decline to 65% by 2030, while the nuclear share would increase to 20%. Large hydro was static at 5%, and the differentiated renewables share increased to 9%. The overall effect on supply mix would be that RE would make up 42% of all newly built capacity by 2030.

In summary, the main outcomes of the promulgated IRP2010 relating to this research were:

1. On renewables, investment costs and power sector reform: an increased share for renewables (17.8GW, up from 11.4GW in the RBS) based on improved learning rate assumptions and technology differentiation.

2. On renewables and power sector reform: the installation of renewables (solar PV, CSP and wind) were brought forward ‘in order to accelerate a local industry’.
3. On nuclear power and power sector reform: despite being rejected by the cost-optimal model, a ‘nuclear fleet’ of 9.6GW was included ‘to account for the uncertainties associated with the costs of renewables and fuels’ and to provide base load power.
4. On climate change: the emission constraint of the RBS (275 million tons CO<sub>2</sub> per annum after 2024) was maintained.

On the promulgated IRP2010, an early conclusion can be made that while the forced inclusion of *nuclear power* allocation proved a major policy ‘win’ for the Orthodox coalition, the reduced coal allocation along with the greater RE allocation proved to be two important policy ‘wins’ for the Reform coalition. During interviews for this dissertation, the treatment of renewable and nuclear power options clearly dominated assessments of due process and the trustworthiness of such process. These perceptions would return to prominence with the 2013 update report process, but at this point in time, decisions in relation to these two supply options were already starting to emerge as the most contested of the five selected issues.

While members of the Reform coalition felt vindicated by the steadily improved reflection of learning rates for RE cost assumptions (resulting in a greater share of RE) as well as the differentiation of RE technologies, they felt they had lost a major policy battle because of the forced inclusion of nuclear. Members of the Orthodox coalition felt vindicated by the forced inclusion of nuclear, but felt dissatisfied with the nuclear cost assumptions underpinning this policy choice. Nevertheless, it was acknowledged by all respondents that ultimately the Orthodox coalition had won a major policy goal: the inclusion of a 9.6GW allocation for nuclear power.

Interestingly, both coalitions were dissatisfied with outcomes relating to demand assumptions (linked to issue 1, where demand assumptions informed *investment* scale) and *power sector reform* (Interviews).<sup>53</sup>

Within the promulgated IRP2010, the DoE provided detailed responses to only three of the five contested issues highlighted in this research. First, on *nuclear power*, the DoE’s articulated argument aligned with expressed advocacy beliefs of the Orthodox coalition: that nuclear power supply provided assurance of security of supply (specifically in the event of peak oil-related fuel price increases) and that nuclear power made the most sense for base load capacity.

Secondly, on *climate change*, although the scenarios indicated that the emissions target imposed by RBS should be increased, given the coal-fired generation allocation, the DoE opted to retain the RBS emission constraint arguing that coal-fired generation could be brought forward by six years and increased the allocation of coal imports. A majority of respondents (from both coalitions) felt dissatisfied with this decision: some expressing scepticism for the likelihood that new coal build could be accelerated and others pointing out that exporting carbon emissions to neighbouring countries would not be a sustainable solution (Interviews<sup>54</sup>).

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<sup>53</sup> Respondents 6, 7, 11, 13, 21-23; 9, 14, 18, 20.

<sup>54</sup> A view expressed by a majority of respondents.

Finally, on *power sector reform* and *climate change*, by increasing EEDSM in one of the scenarios, it had been shown to be possible to reduce carbon emissions as well as reduce the need for additional capacity. However, the DoE felt that the risk to security of supply would be negated should the assumed benefits of EEDSM not materialise. Although the point linking EEDSM and carbon emissions reduction was interpreted by a majority of respondents as a moral victory for the Reform coalition, it ultimately signalled another policy victory for the Orthodox coalition in that the allocation for EEDSM was far lower than the Reform coalition had been advocating for. Perhaps most significantly, government's continued refusal to acknowledge the declining costs of renewables on input parameters proved to be another policy 'loss' on issue 5: tariffs, investment, affordability for the Reform coalition (DoE, 2010b; Interviews<sup>55</sup>).

On the whole, the research concluded that the Orthodox coalition was able to exercise more influence on the promulgated IRP2010 than its Reform counterpart. Whether such policy wins would stand the test of time was in question for two reasons:

1. Certain respondents<sup>56</sup> noted that, given the differences in lead times for build programmes, in time, renewables would be in a position to prove themselves faster than nuclear power could be commissioned. Also, the passage of time was expected to undermine arguments in favour of nuclear power, as nuclear unit costs were steadily rising in build programmes already under way at the same time as global renewable unit costs were steadily declining. Whether politics would continue to trump information beyond the policy process remained to be seen (Interviews<sup>57</sup>).
2. With the forced inclusion of a nuclear power 'fleet', it was clear to all respondents from the Reform coalition that government had not delivered on its promise to prioritise 'cost-effectiveness'. These respondents also felt that the goal of consultative, knowledge-driven (rather than interest-driven) decision-making had not been achieved (Interviews<sup>58</sup>).

A majority of respondents agreed that government's commitment to "mitigating uncertainty by implementing an IRP review process" and the commitment to a "continued transparent public engagement process" was an important outcome of the IRP2010 policy process. These views shifted radically for the actual process surrounding the 2013 update report as outlined in the next chapter. This chapter has now begun to answer research question 3, and the next chapter completes this task. In the timeline, the research has now arrived at mid-2011.

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<sup>55</sup> A view expressed by a majority of respondents.

<sup>56</sup> Respondents 2, 3, 6, 7, 13, 19, 21-24.

<sup>57</sup> A view expressed by a majority of respondents.

<sup>58</sup> Respondents 6, 7, 11-13, 21-24.

## Chapter 6: Applying ACF to understand coalitions' influence on the IRP 2013 update report

The previous chapter considered in some detail how the two selected advocacy coalitions engaged with the IRP2010 drafting process, the five most prominent advocacy issues each of the coalitions raised, and the DoE's response to this advocacy engagement. In completing the task of answering research question 3, events in the latter part of 2011 are reviewed before the 2013 update report process is analysed. The chapter concludes with a review of subsequent events to June 2015. The research found that while the consultation process for the IRP2010 had been extensive, consisting of two consultation periods before promulgation, the IRP2013 did not enjoy similar good governance. In essence, the process involved an informal release of a draft update report, with no clarity on the update process undertaken and one consultation period. The uptake of public comments was never reported on by government, and the IRP2013 update report was not taken up in policy. A key finding of the research is that, where the IRP2013 update is concerned, politics – particularly as led by government - has decisively undermined planning-related decision-making that is based on evidence<sup>59</sup>.

### Events in the latter part of 2011

The IRP2010 was promulgated in May 2011. The first DoE request for proposals (RFP) for the REIPPPP, marking direct delivery on the RE allocation in the IRP was issued in August 2011. As described above, this policy event (REIPPPP RFP) had been preceded by a protracted and contested process involving government departments, NERSA, Eskom, banks, investors and members of both the Orthodox and Reform coalitions (Baker & Wlokas, 2014). REIPPPP had an initial policy-linked supply allocation of 3 725MW, but an additional 3 200MW of capacity was allocated by a Ministerial declaration in December 2012.

The final deliverable of the NPC, Vision 2030 (also known as the National Development Plan), was handed over to the Presidency on 11 November 2011. Public comment was invited in March 2012, and the final report was formally launched on 15 August 2012 (Presidency, 2012). Also in November 2011, an inter-ministerial committee on nuclear energy was formed. Named the National Nuclear Energy Executive Coordination Committee (NNEECC) and located within the Presidency, the committee was initially chaired by Deputy President Kgalema Motlanthe. In July 2013, President Jacob Zuma dismissed Motlanthe as his deputy, and immediately took control of the NNEECC as its new Chair (Interviews).<sup>60</sup> Speculation at the time was that Zuma had dismissed Motlanthe because the latter had stood for election as ANC President, an election he lost to Zuma.

Seen from an ACF perspective, at this point in time, sub-system policy change process was affected by a combination of broader policy system factors:

1. External shocks (global financial crisis effects and the Fukushima nuclear disaster);
2. Increasing domestic civil society activism (public participation in stakeholder processes; the rejection of moves by the ANC to introduce a restrictive state secrecy

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<sup>59</sup> A view shared by a majority of respondents.

<sup>60</sup> Respondents identities fully protected on request.

law; justice-related demands for reforms in energy, environment and economic policies); and

3. Growing, organised global social movements aimed at achieving social and economic justice through climate-related lifestyle change.

At the same time, by early 2012 new ministerial determinations allowed for policy process to be officially circumvented. One such determination was for the Minister to add 3 200MW of RE capacity to the REIPPPP RFP by a Ministerial declaration of December 2012 without paying heed to the consultative policymaking process.

In November 2013, when the two-year IRP update deadline had already passed, and with the overdue Integrated Energy Plan (IEP) draft process under way, the DoE invited comment on the scheduled update of IRP2010 by February 2014. The Department did this quite informally with no prior indication by adding the update report as an agenda item at IEP hearings. The main changes were presented verbally, and it was announced that the full update report would be published on the DoE's website, where it continues to be available at the time of writing (June 2016) (Researcher records).

Both coalitions submitted comments on the update report and the DoE made this undertaking on its website: *“Comments received will be considered in preparing a final draft IRP 2010 Update which will be submitted to Cabinet for final approval by March 2014. The approved document will then be promulgated and be published in the Government Gazette”*.

Even though the update report was never approved by Cabinet, this undertaking still appeared on the DoE website at the time of writing in July 2016. Public comments on the IEP draft were received and the process closed in February 2014 but, and at the time of writing, no IEP had yet been released.

It is worth noting that during the policy period analysed above, three different Ministers of Energy served in President Jacob Zuma's cabinet, with the shortest appointment being that of Ben Martins, who served as Minister of Energy for one year.

### **How did the update report differ from the IRP2010?**

Although the process of updating had not been as transparent as the promulgated IRP2010 policy process had been, the findings of the update report enjoyed wide support from both coalitions under review (Interviews<sup>61</sup>).

On process, as Winkler (2013) put it in a blog reflecting on the update report: ‘the most significant down-side ... is on process. IRP 2010 had run a participatory process, with opportunities for many stakeholders to make inputs; this was not repeated, with the update treated as a technical exercise’. Given that the IRP2013 update report was never approved by Cabinet, it is not possible to determine the extent to which the policy advocacy stances of the two coalitions have been realised in policy. Some respondents argued that the fact that the IRP2013 update report has never been recognised in policy represents ‘non-decision-making’ and is a policy ‘win’ for the Orthodox coalition (Interviews<sup>62</sup>). Nevertheless, the majority of respondents were in agreement that the treatment of the IRP2013 update report illustrated

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<sup>61</sup> A view supported by a majority of respondents.

<sup>62</sup> Respondents 12, 21-24

clearly that politics had served to undermine recognition of the value of due process (Interviews<sup>63</sup>).

While the IRP2010 as promulgated is based on a ‘policy-adjusted, least cost’ single plan to deliver a single optimal solution by 2030, the update report was based on a priority of ‘least regret’, with multiple scenarios having been modelled. Most significantly, the update report included ‘decision trees’ which acknowledged the need to apply a more flexible approach in a planning context of uncertainty. The update report was thus considered to be more firmly based on evidence, utilising planning best practice methodology and in greater alignment with related broader climate and energy policies (Interviews<sup>64</sup>).

While recognising the need for lowered demand assumptions based on emerging data, the Update utilised the same annual economic growth aspiration as the National Development Plan – 5.4%. The IRP2010 contained six scenarios in order to arrive at one set of technology allocations for build plans, and had taken into account six demand forecast projections up to 2034. The update report however, ran several scenarios with several technology mix configurations and crucially including four lower-demand forecast scenarios. The planning horizon was extended to 2050 (DoE, 2013).

The supply mix outcomes were that new coal allocations were reduced from 6 250MW to 2 450MW, the projection for closed cycle gas turbine and open cycle gas turbine capacity was increased to 3 550MW (up from 2 370MW in IRP2010) and to 7 680MW (up from 7 330MW) respectively. Hydropower imports were projected downward to 3 000MW (from 4 109MW in IRP2010), while solar PV and CSP allocations were increased to 9 770MW (8 400MW in IRP2010) and 3 300MW (1 200MW) respectively. Interestingly, the allocation for wind decreased from 9 200MW in the IRP2010 to only 4 360MW in the update report.

On GHG emission trajectories, given the availability of data and in a broad policy context of growing awareness of the need for policy to mitigate climate change, the 2013 update went into far greater detail than the IRP2010 had done, including consideration per ton of CO<sub>2e</sub>, carbon tax as per the 2013 National Treasury discussion paper and included a section devoted to a concept still quite new to climate vernacular at the time – carbon budget – advocating treatment of an emission allowance for the electricity sector as a constraint to 2050, instead of an annual limit on carbon tax. The update also included clear policy guidance on nuclear procurement, linked to demand, investment cost and the availability of other supply options (DoE, 2013).

### **Analysis of advocacy coalition beliefs reflected in the IRP 2013 update report**

A majority of respondents interviewed agreed that the IRP2013 report was significantly more than an update. Given the significant shift in planning methodology applied, particularly in relation to planning in uncertainty, as well as the focus on evidence rather than politics, in essence it was viewed as a new plan, with little resemblance to the IRP2010 as promulgated (Interviews<sup>65</sup>). Recognition of the need to take account of uncertainty affected all of the contested issues highlighted by this dissertation: investment affordability, power sector reform, climate change, nuclear and RE, all of which would result in knock-on effects for

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<sup>63</sup> View expressed by a majority of respondents.

<sup>64</sup> A view expressed by a majority of respondents.

<sup>65</sup> A view expressed by a majority of respondents.

allocated investments. The analysis now resumes a focus on the five most contested advocacy issues put forward by the Reform and the Orthodox coalitions before in concluding this chapter, what emerged as the two most contested issues within the update report are considered in greater detail.

The potential for shale gas, other gas developments in the region, the likely mitigation imperatives for SA as part of a global agenda to combat climate change, nuclear costs and future fuel costs for gas and coal were all noted as elements of uncertainty in the Update report. Given this, DoE understood the need for a flexible approach, rather than the fixed capacity plan outcome of the IRP2010. Applying an innovative planning approach, and advocating a methodology also known as the ‘decision tree approach’, the update presented determinants to be considered for investment decisions and provided recommendations on which investments should be considered under different conditions, as these arose. This approach would potentially be relevant to all five contested advocacy issues, particularly issue 2: power sector reform and issue 3: climate change.

Respondent views on the net effects of the flexible approach were predictably complex, but interestingly (from the perspective of politics) also signalled the start of an unfolding shifting of alliances between coalitions. While members of both coalitions disagreed on whether the net effect of decision tree methodology proved to be a win for either coalition, specific aspects within the outcomes of this approach were supported within both coalitions. For example, some respondents from the Reform coalition saw the acknowledgement of uncertainty on nuclear costs and future fuel costs for coal and gas as an opportunity for power sector reform via a decisive shift away from both coal and nuclear due to the assumption that learning about the value of RE would be self-evident within a year or two (Interviews<sup>66</sup>). Meanwhile, some respondents from the Orthodox coalition started to see the rationale for limited power sector reform in that they saw this as an opportunity to argue for shifting the base load mix towards a greater share for gas, rather than a greater share for RE (Interviews<sup>67</sup>).

Another example of inter-coalition agreement was that while a majority of respondents from both coalitions agreed that a decision tree approach was a sensible methodology for planning in conditions of uncertainty, respondents from both coalitions also expressed the concern that this would add to an existing climate of policy uncertainty and leave all sectors with insufficient assurance of long-term investment certainty and exposing all sectors to the risk of underdevelopment (Interviews<sup>68</sup>). Nevertheless, on the issue of power sector reform, a majority of respondents felt that between the IRP2010 process and the update report, the two coalitions had moved closer to convergence in their advocacy positions (Interviews<sup>69</sup>).

An example of differences both within and among coalitions was on the issue of gas supply. While during the IRP2010 process gas supply had not surfaced as a point of contestation, given the update report’s treatment of gas, gas supply now became a significant issue. The research confirmed that a majority of Reform coalition respondents were not in favour of shale gas exploration, seeing this technology as part of what one respondent described as ‘a

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<sup>66</sup> Respondents 7, 11, 13

<sup>67</sup> Respondents 8, 10, 15

<sup>68</sup> Respondents 9, 12, 14, 26

<sup>69</sup> A view supported by a majority of respondents.

set of unsustainable technology solutions we need to move away from once and for all!’ (Interviews<sup>70</sup>). However, unlike the emerging convergence of beliefs between the two coalitions in relation to renewable energy, there was strong divergence on the issue of gas supply.

The Orthodox coalition showed a clear willingness to opt for pragmatism with regard to gas supply. Some respondents from this coalition maintained the view that *‘energy investment decisions should not be trumped by climate decisions, but if gas works as base load and it has a better emissions profile than coal and is more acceptable than nuclear, then we should explore this.’* Interestingly, this pragmatism now extended to issue 3, climate change in that these same respondents. While they maintained the view that security of energy supply should be prioritised over climate policy, they conceded that even if global pressures on SA to address climate imperatives grew, nuclear would be a better solution than any of the other technology options (Interviews<sup>71</sup>). Members of the Reform coalition held differing degrees of support for gas supply. Views ranged between outright rejection and a preference for gas over new coal and nuclear supply.

An issue which related indirectly to issue 1, specifically investment, was the demand assumptions that informed investment choice. IRP2010 had been based on a fixed demand assumption of 454 TWh, but the update report projected a range of between 345 and 416 TWh. The result was an anticipated investment capacity requirement of no more than 61 200MW (on the upper end of the range), i.e. at least 6 600MW less capacity would be required. The Reform coalition had called for reduced demand assumption since the initial IRP draft early in 2010, linking this to a smaller investment requirement and reduced risk on tariff affordability into the future. The 2013 update report differed greatly from the IRP2010 in that its treatment of the issue of energy demand was acknowledged by a majority of respondents as an important policy win for the Reform coalition. Acknowledging the trend toward reduced demand between 2010 and 2012 and the related risk of generation over-build, the assumptions related to demand were significantly lowered and furthermore, a range of demand was included in the 2013 update. During interviews, while members of the Orthodox coalition retained the view that economic growth could be driven by security of supply, it was agreed that within the coalition the focus of contestation had shifted from a broad push for base load supply and against renewables, to a growing concern in relation to the political currents surrounding nuclear power investment (Interviews).<sup>72</sup> Also, respondents from both coalitions pointed out that this shift in emphasis and advocacy attention ultimately diluted advocacy efforts against renewables and allowed renewables to flourish under the REIPPPP (Interviews).<sup>73</sup>

On the whole, the research found through majority view that the Reform coalition had realised more policy ‘wins’ in the IRP update report (Interviews<sup>74</sup>).

Having considered how the most contested issues were reflected in the update, along with coalition responses, the analysis now shifts to focus on what finally emerged as the two most

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<sup>70</sup> A view expressed by 6 out of the 9 Reform coalition respondents.

<sup>71</sup> Respondents 9, 14, 18.

<sup>72</sup> Respondents 6, 8, 9, 14.

<sup>73</sup> Respondents 2, 3, 7, 8, 13

<sup>74</sup> A view expressed by a majority of respondents.

contested issues of supply, one increasingly less contested in advocacy but with an interesting intra-coalition shift (renewable energy), and the other found to signal greater alignment between the two coalitions' advocacy agendas (nuclear power).

## Renewable energy

In the update report, Solar PV and CSP allocations were increased to 9 770MW (compared to 8 400MW in IRP2010) and 3 300MW (1 200MW) respectively, and the allocation for wind decreased from 9 200MW to only 4 360MW in the 2013 update. While for the update report members of the Reform coalition claimed a policy 'win' on the increased allocations for in Solar PV and CSP (particularly given CSP's potential contribution to base load capacity), it was unclear why government had chosen to decrease the allocation for wind.

Some Reform coalition respondents speculated that there was an unstated overall policy 'cap' on RE, and that wind had been a casualty of the increased share for CSP and solar PV; that the wind lobby was unpopular with government and was being 'punished'; that wind technology itself was unpopular among South African citizens and government was counting on public support to hide what was perceived as a unilateral policy choice (Interviews<sup>75</sup>).

A view expressed by some respondents from both coalitions and which relates simultaneously to the shifts of allegiances between coalitions, while also presenting a new facet of intra-coalition politics unfolding relates to the suggestion that the reduced wind allocation set off the start of a de facto split within the Reform coalition. As one respondent put it: 'it was in the wind sector's interest that the 2013 update report not be realised in policy' (Interviews<sup>76</sup>).

An important shift between coalition member beliefs related to costs. It was clear that RE costs had declined dramatically since IRP2010 promulgation. This led to some Orthodox coalition members aligning their beliefs relating to 'least cost', with the Reform coalition. In essence, this meant that these coalition members gave up support for Nuclear power (Interviews<sup>77</sup>).

## Nuclear power

The update report's view on the IRP2010's nuclear build allocation was by far the most contested of all matters it raised. Given that the update report called for a more cautious approach to nuclear power investment, a majority of respondents expressed the view that this was in fact the key reason for the update not making it into policy (Interviews<sup>78</sup>).

It is worth quoting the IRP2013 update report on this point fully here:

'The nuclear decision can possibly be delayed. The revised demand projections suggest that no new base load capacity is required until after 2025 (and for lower demand not until at least 2035) and that there are alternative options, such as regional hydro, that can fulfil the requirement and allow further exploration of the shale gas

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<sup>75</sup> Respondents 7, 13, 23

<sup>76</sup> Respondents 8,15, 21-24

<sup>77</sup> Respondents 8, 15, 21

<sup>78</sup> A view held by a majority of respondents.

potential before prematurely committing to a technology that may be redundant if the electricity demand expectations to not materialise.’

(IRP 2013 update report executive summary)

In addition, nuclear costs were still assumed, as a central case, at a low \$5 800/kW, but crucially the sensitivity analysis tested the amount at \$7 000/kW. Furthermore, the update suggested that even if demand grew by 2015 and there was ultimately no prospect of shale-gas power, that if nuclear costs in 2015 exceed \$6 500/kW, then ‘the procurement programme should be abandoned’. While clearly signalling the prudence of delay, and pointing to emerging demand figures as well as supply alternatives, the update report articulated a clear policy approach to deciding on nuclear procurement. This resulted in some Orthodox coalition members shifting beliefs to echo that of the Reform coalition, on Costs (Interviews<sup>79</sup>).

On the issue of nuclear power, interviewed respondents themselves mainly stood by their respective coalition beliefs i.e. pro-nuclear (Orthodox coalition) and anti-nuclear (Reform coalition). But, interestingly, there were two key points of agreement among a majority of respondents which suggested that coalition loyalties had shifted, as a direct result of perceived politics (Interviews<sup>80</sup>):

1. That the lack of transparency and accountability on nuclear power investment decision-making was unacceptable, regardless of a pro- or anti-nuclear position;
2. The growing (and subsequently influential) support of the President for the nuclear new build programme had been visible within the policy sub-system from at least June 2010, had likely driven the ‘policy-adjusted’ IRP2010 forced inclusion of nuclear, and had sustained its subsequent pursuit despite the 2013 update report findings.

On point 2 above, it was evident from interviews that a majority of respondents – across coalitions, saw the President’s political support for the nuclear programme as integral to its progress, as well as stimulating the parallel closing down of the consultative nature of SA’s electricity planning process by mid-2014 (Interviews<sup>81</sup>).

In 2014, Sovacool et al assessed the construction costs affiliated with 401 electricity infrastructure projects worldwide and found that these projects collectively incurred \$388 billion in cost overruns, equivalent to a mean cost escalation of \$968 million per project, or a 66.3 percent budget overrun per project, and with nuclear projects presenting a mean cost escalation of 117%. Such evidence was increasingly entering the public domain by mid-2014.

### Subsequent events to June 2015

In June 2014, the Presidency announced that a cabinet Energy Security Sub-Committee had been established to ‘oversee the development of SA’s future energy mix’. This initiative, the Presidency said ‘would replace the NNEECC’ (Presidency, 2014). The ESSC included ministers from the following departments: Defence, Economic Development, Energy, Environmental Affairs, Finance, International Relations & Co-operation, Mineral Resources,

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<sup>79</sup> Respondents 8, 15, 21

<sup>80</sup> Views held by a majority of respondents.

<sup>81</sup> A view supported by a majority of respondents.

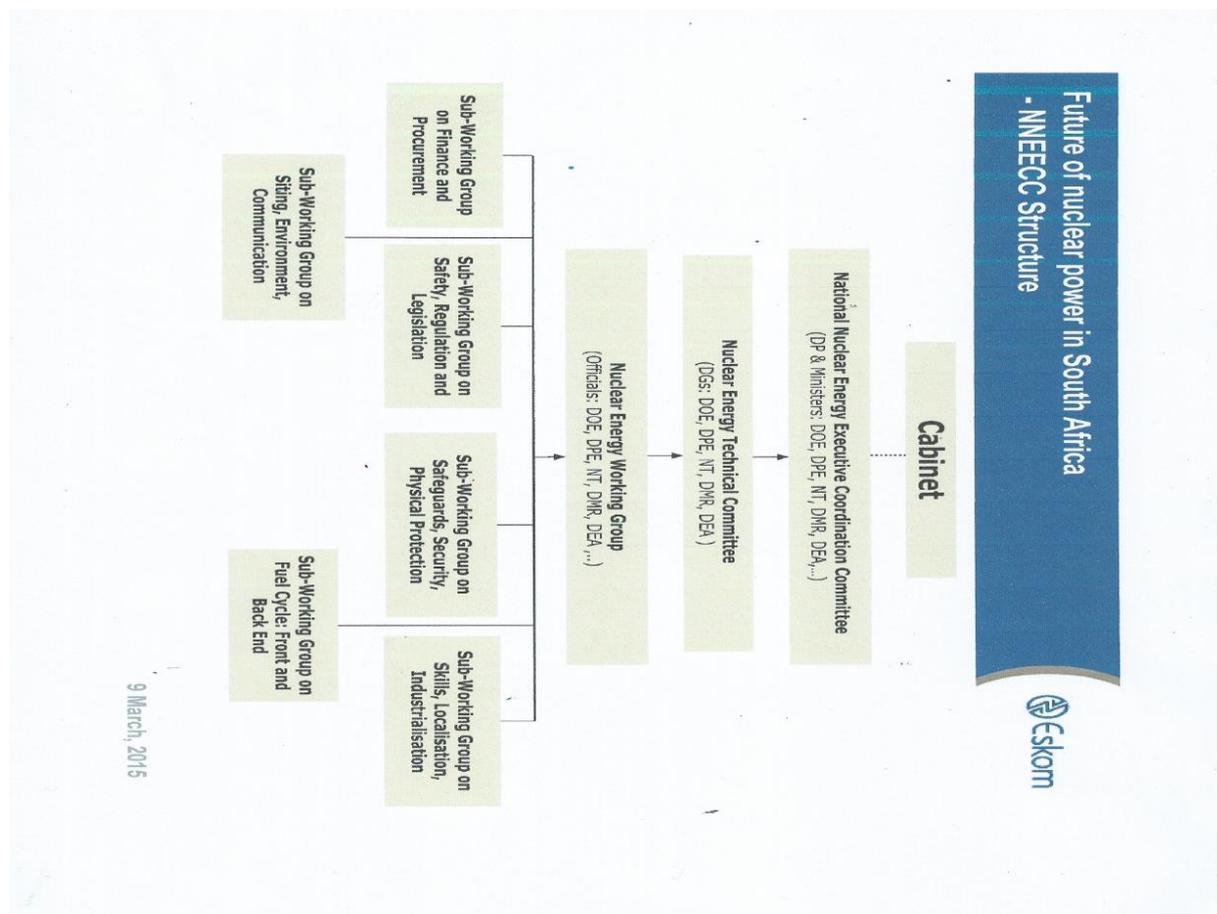
Public Enterprises, State Security, and Trade & Industry. As part of a range of technical committees, a nuclear energy technical committee led by various departmental Directors-General would still report to the ministers on the sub-committee, as would a nuclear energy working group led by senior officials and including technical experts from the private sector.

Respondents involved in the process pointed out that while ministerial representation had changed and President Zuma had taken over leadership from the Deputy President Kgalema Motlanthe, in practice the original structure and focus of the NNEECC was fully maintained in the ESSC (Interviews;<sup>82</sup> Eskom, 2015). A copy of the NNEECC structure provided by Eskom in 2015 is included as Figure 10 below and confirms that the structure remained formally unchanged. In fact, the original committee name was still being used by the members of this inter-ministerial structure in 2015.

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<sup>82</sup> Respondents 4, 5, 16.

Figure 10: The structure of the NNEECC/ESSC



(Source: Eskom, March 2015)

It can be inferred from the above, that by March 2015 there was no structural change to any of the structures for or the people who had been appointed to support the NNEECC inherited by the renamed committee (Eskom, 2015; confirmed in Interviews<sup>83</sup>).

While cost overruns and construction delays have characterised South Africa’s recent large coal-fired power plant build programmes Medupi and Kusile, Medupi’s Unit 6 achieved a full load of 800MW following its first synchronisation in March 2015, and became commercially operational in August 2015. Once completed, Medupi and Kusile will contribute 9 564MW of new coal-derived base load power to the national grid.

By the end of March 2015 Eskom, had contracted capacity of 5 701MW from independent power producers, and a total of 6 327MW from 92 projects awarded in five bidding rounds. The 92 projects represented a total investment of R192 billion, of which approximately R53 billion was through direct foreign investment (Treasury, 2015). The REIPPPP was not only providing evidence of the view held by the Reform coalition that RE was quicker to construct and that learning would drive down costs, reliable data was presented by the Council for

<sup>83</sup> Respondents 5, 18, 19

Scientific and Industrial Research (CSIR) that RE was contributing to SA's economy and contributing to savings on diesel fuel during the electricity crisis (CSIR, 2015).

In the meantime, momentum toward a procurement process for the nuclear new build programme continued to grow, with the Presidency and the Minister of Energy consistently indicating that nuclear investment was 'non-negotiable'. This was despite growing evidence from nuclear build programmes already under way that the IRP2010 estimate of \$5800/kW was a significantly underestimate, with comparative programmes already costing between \$8 000 and \$10 000/ kW by late 2014 (Thomas, 2014).

In conclusion, by June 2015, much had changed within SA's social, economic and political context, with significant implications for its five-year old electricity plan, the IRP2010. Electricity demand had continued to decline, the costs of investment for nuclear and gas had both increased sharply, and tariffs continued to rise. A fourth annual round of country-wide rolling blackouts was resulting in a new national electricity supply crisis with knock-on economic effects. The 2013 Update report was not recognised in policy and no further update of the IRP2010 was forthcoming.

## Chapter 7: Conclusions and implications

Applying the advocacy coalition framework theory, research and analysis of literature and empirical evidence from key stakeholder interviews has been undertaken. Initial key findings were shared with a small number of experts for critical comment before the researcher finalised this dissertation.

Chapter 1 introduced the dissertation, the research questions, the basic attributes of the problem area in the context of South Africa's energy sector, and then delved into the electricity sector and its policy sub-system. Chapter 2 introduced the ACF theoretical framework and how it has been applied in this dissertation. Chapter 3 developed an understanding of the policy sub-system by reflecting via an ACF lens on the evolution of SA's electricity policy, how the reviewed coalitions have emerged, and key policy events relating to electricity planning. This review included what ACF describes as 'system shocks' i.e. related events that have far-reaching effects on unfolding policy.

Chapter 4 then stepped away from the history, to introduce the two coalitions under review and what emerged as five dominant contested beliefs reflected in advocacy positions relevant to the IRP process. Chapter 5 focused on the policy event at the core of the dissertation: the IRP2010, introducing electricity planning practice, the draft policy and what DoE emphasised within it. What the Coalitions specifically advocated for within the five selected themes, was analysed. The promulgated IRP was then considered, with a view to assessing how the advocated issues of coalitions were reflected in policy. At this point, evidence of the influence of politics on planning, was emerging.

Chapter 6 analysed the IRP2013 as well as subsequent related events, highlighting how the update report differed from the IRP2010 and which issues then emerged as most contested. The chapter concluded with consideration of two emerging issues of contestation out of the five previously highlighted: renewable energy and nuclear power. It presented a few illustrated inter and intra coalition shifts. At this point evidence of the influence of politics on planning was confirmed, particularly on the issues of nuclear power investment and non-recognition of the update report in policy.

The research set out to answer the following questions:

1. From the IRP2010 to its 2013 update report, which were the dominant coalitions seeking to influence planning?
2. What were the dominant advocacy issues raised by these coalitions?
3. What evidence could be found for how the issues of dominant advocacy coalitions were realised in electricity policy?
4. What can be concluded and what are the implications for future electricity planning?

Chapter 4, 5 and 6 have sought to answer the first three questions. This chapter now draws conclusions and points to implications for electricity planning, in order to answer the final question.

Application of ACF has made it possible to identify that within the SA electricity sector two high-level coalitions have dominated the IRP2010 process and its 2013 update: one favouring orthodox solutions to power supply, and the other favouring transition to a reformed power sector with similar supply models and decision-making.

The members of the identified coalitions have been mapped and studied, based on the core beliefs they have advocated. The advocated beliefs of the Orthodox coalition have been echoed by influential members of government throughout the policy process under review. The coalition has thus been found to be more politically influential. Despite its beliefs and advocated issues being more visible in the 2013 update report, the Reform coalition has been found to be less politically influential.

While the promulgated electricity plan reflects wins and losses to both coalitions, in the final analysis more evidence has been found of policy ‘wins’ for the Orthodox coalition. Such wins can be attributed to the absence of decision-making, particularly in relation to the 2013 update report and the resulting policy activities relating to nuclear power.

For the IRP 2013 update report, analysis of policy beliefs, wins and losses became more complex, both with alliances shifting within and between the two coalitions under review and with the update report’s continued lack of recognition in policy. The influential role of government, particularly the Presidency, on the nuclear investment decision is perceived to have begun in earnest, in June 2010 and this view is supported by the continued lack of recognition in policy, of the 2013 update report.

The clear political support of government for nuclear power procurement has resulted in increasingly united inter-coalition advocacy against nuclear power, as well as reduced inter-coalition advocacy against renewable energy.

It has also been found that non-recognition of the IRP2013 update report in policy has benefited both wind power and nuclear power procurement. If the update report had resulted in changes to the promulgated IRP, the allocation for wind would have been reduced significantly, and the nuclear procurement decision delayed, pending emerging demand and cost data. While the IRP2010 has not been updated, renewable power supply has been making an increasing contribution to the national electricity supply mix.

Nevertheless, a majority of respondents felt that ultimately the delay in the promulgation of a well-regarded, technically robust updated IRP threatens confidence in electricity planning processes.

At the time of writing (August 2016), despite evidence of growing RE competitiveness and the escalating costs of nuclear power, a majority of Orthodox coalition advocacy beliefs are reflected in formal policy guiding investment decisions. In addition, despite evidence that Reform coalition advocacy positions in relation to renewable energy supply and nuclear investment affordability in particular are proving themselves in practice, these views are largely ignored in the official electricity plan as promulgated in 2010.

Some implications of these conclusions are now presented.

Based on the above conclusions, the reader is reminded of the intentions underpinning Integrated Resource Planning in South Africa. The long-term planning goal for IRP2010 is to ensure sustainable development considering technical, economic and social constraints as well as externalities. Its short-term purpose is the identification of the requisite investments in the electricity sector that maximise the national interest at minimum present-day cost (DoE, 2010a). Government’s primary commitment is thus to growing access to electricity in both the short term and the long term. In addition, as the DoE stated at the IRP public hearings in November/December 2010: *‘The IRP has to provide insight into how South Africa can*

*deliver the requisite energy to fuel growth in the economy AND do so in a manner which is affordable and ensures South Africa remains internationally competitive'* (DoE, 2010a).

While differing on many points relating to how it may be achieved, the two coalitions under review agreed that electricity access is an essential aspect of addressing South Africa's many socio-economic challenges. Specifically, respondents agreed that electricity access is an essential means to achieving and sustaining national economic prosperity (Interviews<sup>84</sup>).

As Acemoglu and Robinson (2012) have found, while prosperity cannot be engineered, one of the key features of economies achieving common, sustained prosperity, is the existence of inclusive economic and political institutions. Having considered a diverse range of global historical examples, they concluded that regardless of the planning choices made, when decision-making is transparent and consultative, when planning in uncertainty includes regular opportunities for review and when innovation is encouraged and political power distributed, nations have a greater chance of achieving prosperity.

As a nation committed to future prosperity and which sees electricity access as essential to such prosperity, South Africa cannot afford the social nor economic costs of stranded assets or major cost overruns. The responsibility to future generations, to limit risk exposure, particularly in relation to tariffs and costs of finance, is a significant one. As Steyn (2006) has pointed out, given that previous experience of investment expansion was seriously flawed, care should be taken to avoid committing irreversibly to expensive, large scale and inflexible energy technology under an atmosphere of crisis and political pressure. Affordable access to electricity is about more than physical access to the grid. In order to utilise such services and achieve socio-economic development, affordability is key (Winkler et al, 2011).

If access to electricity is taken as an essential contributor to broad prosperity, and within this that affordability is a key priority, then updating the national electricity plan, by taking into account the evidence of relevant sub-system changes that have occurred since 2010 is urgent. That such a process should ideally be consultative, transparent and evidence based, rather than driven by politics, is supported by the findings of this research.

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<sup>84</sup> This view supported by all respondents interviewed.

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### Grey literature reviewed

**Academy of Science of South Africa (ASSAf):** Commentary on the IRP 2010-2030 (June 2011) shared by members of both coalitions.

**Cape Chamber of Commerce:** Pamphlets on technology innovation e.g. solar PV, bio waste, landfill methane, natural gas; electricity tariffs.

**Cape Peninsula University of Technology:** Illustrations of economic impacts of power crisis, stimulating economic development, managing health and environmental impacts, flaws in the IRP.

**Democratic Alliance:** press release – ANC misrepresenting IRP 2013 to aid Russian nuclear deal, by Lance Greyling shared by members of Coalition 2.

**Earthlife Africa Johannesburg:** The IRP for the electricity industry, commissioned report by Professor Steve Thomas (2012).

**Electricity governance initiative:** briefing paper on the implications of the IRP2010; pamphlets linked to the Smart electricity planning report; ‘Power to the people: raising the voice of civil society in electricity planning – Integrated Resources Plan 2010 inputs and departmental responses.’ (Analysis of comments on IRP2 input parameters).

**Energy Intensive User Group (EIUG):** comparison of IRP2010 and 2013 update report, prepared by BDO consulting services.

**Energy Research Centre (ERC):** IRP update makes a step change to informed decision-making. Energy Research Centre Blog by Harald Winkler (2013).

**Eskom:** Recap of IRP 2010-30, investment and technology choices in the SA power sector (2013).

**Greenpeace:** Pamphlets on electrifying Africa, transforming South Africa's energy sector.

**Project 90 by 2030:** Pamphlets on sustainable electricity supply, electricity planning, energy-related behaviour change, active citizenship and governance; one (non-peer reviewed) briefing paper: A vision for a sustainable electricity sector (2013).

**SAFCEI:** Pamphlets advocating for renewable energy and against nuclear power.

**Nuclear Industry Association of SA (NIASA):** Review of the IRP 2013 update report prepared by Dr Dawid E. Serfontein (2014).

**Oxfam:** Pamphlet on operating in a safe and just space, using the 'doughnut model' to explore environmental sustainability and social justice.

**The researcher's work diaries, minutes of meetings and IRP-related emails:** for 2009, 2010, 2011, 2013 and 2014.

## Annexures

### Annexure 1: Informed consent and interview outline (for UCT ethics purposes)

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Dear respondent,

My name is Brenda Martin and I am conducting research towards a Masters' degree in Energy & Development at the University of Cape Town. I provide details of my research below.

Please understand that your participation in this interview is voluntary. The choice to participate is yours alone. If you choose not to participate, there will be no negative consequence. If you choose to proceed but wish to withdraw at any time, you will be free to do so. However, I would be grateful if you would allow me to interview you. Some additional points to note:

- The interview should not take longer than 1 hour in total.
  - I will record your answers in summary form and you will be given the opportunity to confirm that I have understood you correctly.
  - As far as I am aware, there is no direct benefit or harm attached to your agreeing to participate in this interview.
  - Confidentiality will be maintained as per our agreement at the conclusion of the interview.
  - All data relating to my research will be utilised for the purposes of completing my dissertation only.
  - A copy of my finalised dissertation can be made available to you, on request.
- 

#### Research Outline

The politics of electricity planning in South Africa: a review of the dominant advocacy coalitions seeking to influence the Integrated Resource Plan of 2010 (IRP2010), and its update in 2013.

#### Research questions

1. From the IRP2010 to its 2013 Update report, which were the dominant coalitions seeking to influence planning? This question will identify the dominant coalitions and their members, including main actors.
2. What were the dominant advocacy issues raised by these coalitions? This question will identify the core issues of only the dominant coalitions, for analysis.
3. What evidence could be found for how the issues of dominant advocacy coalitions were realised in electricity policy?
4. What can be concluded and what are the implications for future electricity planning?

#### Purpose of the study

To analyse the politics of electricity planning in South Africa, and in doing so review the dominant advocacy coalitions seeking to influence the Integrated Resource Plan of 2010 (IRP2010), and its update in 2013.

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#### Themes we may cover in the interview:

- The governance framework for electricity planning in South Africa.
  - The role of institutions in electricity planning.
  - The active coalitions within the electricity sector
  - Decision-making in uncertainty
  - The IRP2010 (draft and promulgated)
  - The IRP2013 Update report
-

**Annexure 2: Interview schedule**

<b>Respondent interviews selected for analysis</b>			
<b>Name</b>	<b>Coalition/Organisation at the time</b>	<b>Interview method</b>	<b>Initial findings critical respondent</b>
Respondent 1	DoE	Skype	•
Respondent 2	DoE	Skype	
Respondent 3	NERSA	Meeting	
Respondent 4	DEA	Phone	
Respondent 5	Technical advisor to NNEECC/ESCSC	Phone	•
Respondent 6	Reform coalition	Email	•
Respondent 7	Reform coalition	Phone	
Respondent 8	Orthodox coalition	Meeting	•
Respondent 9	Orthodox coalition	Phone	
Respondent 11	Reform coalition	Skype	
Respondent 12	Reform coalition	Meeting	•
Respondent 13	Reform coalition	Meeting	
Respondent 14	Orthodox coalition	Meeting	
Respondent 15	Orthodox coalition	Meeting	•
Respondent 16	Parliament	Meeting	
Respondent 17	Orthodox coalition	Meeting	
Respondent 18	Orthodox coalition	Meeting	•
Respondent 19	Orthodox coalition	Meeting	
Respondent 20	Orthodox coalition	Meeting	
Respondent 21	Reform coalition	Meeting	•

Respondent 22	Reform coalition	Meeting	
Respondent 23	Reform coalition	Phone	
Respondent 24	Reform coalition	Meeting	

### Annexure 3: Ethics clearance

**EBE Faculty: Assessment of Ethics in Research Projects**

Any person planning to undertake research in the Faculty of Engineering and the Built Environment at the University of Cape Town is required to complete this form before collecting or analysing data. When completed it should be submitted to the supervisor (where applicable) and from there to the Head of Department. If any of the questions below have been answered YES, and the applicant is NOT a fourth year student, the Head should forward this form for approval by the Faculty EIR committee: submit to Ms Zakiya Chikte ([Zakiya.chikte@uct.ac.za](mailto:Zakiya.chikte@uct.ac.za); New EBE Building, Ph 021 650 5739). Students must include a copy of the completed form with the dissertation/thesis when it is submitted for examination.

Name of Principal Researcher/Student: B. Mathi Department: ERC, EBE

If a Student: Degree: MPhil Supervisor:

If a Research Contract indicate source of funding/sponsorship:

Research Project Title: The Politics of Electricity Planning in SA.

Overview of ethics issues in your research project:

Question 1: Is there a possibility that your research could cause harm to a third party (i.e. a person not involved in your project)?	YES	NO <input checked="" type="checkbox"/>
Question 2: Is your research making use of human subjects as sources of data? If your answer is YES, please complete Addendum 2.	YES	NO <input checked="" type="checkbox"/>
Question 3: Does your research involve the participation of or provision of services to communities? If your answer is YES, please complete Addendum 3.	YES	NO <input checked="" type="checkbox"/>
Question 4: If your research is sponsored, is there any potential for conflicts of interest? If your answer is YES, please complete Addendum 4.	YES	NO <input checked="" type="checkbox"/>

If you have answered YES to any of the above questions, please append a copy of your research proposal, as well as any interview schedules or questionnaires (Addendum 1) and please complete further addenda as appropriate.

I hereby undertake to carry out my research in such a way that

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

Signed by:

	Full name and signature	Date
Principal Researcher/Student:	<u>Signed</u>	<u>01/01/15</u>

This application is approved by:

Supervisor (if applicable):	<u>Signed</u>	<u>1/13/15</u>
HOD (or delegated nominee): Final authority for all assessments with NO to all questions and for all undergraduate research. Chair: Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the above questions.	<u>Signed</u>	<u>1/14/15</u>